Technical Annex on the application of the common specifications of the Register of Infrastructure

According to art. 7 and the Annex of Commission Implementing regulation (EU) 2019/777 of 16 May 2019 on the common specifications for the register of railway infrastructure, as amended by Commission Implementing Regulation (EU) 2023/1694 of 10 August 2023

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1. Revision History

Revision	Date	Created By	Changes
3.1.0	31-03-2025	ERA	• First publication
3.1.1	12-05-2025	ERA	• This version fixes missing axioms for era:Feature, era:SubsidiaryLocation and era:PrimaryLocation.
3.1.2	26-07-2025	ERA	• Added SHACL constraint for era:redLightsRequired country applicability. • Deprecated era:phaseInfoChangeSupplySystem and era:systemSeparationInfoChangeSupplySystem. • Bug fixes in annotation properties and removed the XMLName annotation from the new entities in current legal text. • Added SubsidiaryLocation as subclass of era:Feature. • Removed transitivity to fix the reasoner issue and removed the parent–child relation from era:PrimaryLocation.
3.1.3	05-09-2025	ERA	• Changed the range of properties: era:subsetName, era:subsidiaryLocationName, era:startsAt, era:endsAt. • Added rdfs:subPropertyOf dcterms:identifier to era:hotAxleBoxDetectorIdentification, era:lineId, era:platformId, era:radioNetworkId, and era:tenGISId. • Removed the rdfs:subClassOf axiom of era:CommonCharacteristicsSubset ⊑ rdf:List.

Revision	Date	Created By	Changes
			• Updated concept schemes: era-skos-SignalTypes and era-skos-referenceSystems. • Updated SHACL validations of era:hasPart.
3.1.4	17-10-2025	ERA	• Added era:RunningTrack as domain of era:vehiclesCompatibleTrafficLoad and era:vehicleTypesCompatibleTrafficLoad. • Added missing annotations for deprecated properties using dcterms:isReplacedBy on era:passesThroughTunnel and era:platformEdge. • Modified the range of era:offsetFromOrigin to xsd:double (GitLab #165). • Added era:inNUTS3 and era:passengerFlag with domain era:PrimaryLocation, with corresponding SHACL shapes; also added era:permitUseReflectivePlates. • Added skos:altLabel, updated rdfs:comment, and dcterms:source to era:redLightsRequired. • Added missing era:legalDeadlines to properties that lacked this annotation.

2. Scope of This Guide

2.1. Scope of this guide

This is a browsable version of the Technical Annex on the application of the common specifications of the Register of Infrastructure.
The entities and their relationships within the domain of railway infrastructure are compliant with the art. 7 and the Annex of Commission Implementing regulation (EU) 2019/777 of 16 May 2019 on the common specifications for the register of railway infrastructure, as amended by Commission Implementing Regulation (EU) 2023/1694 of 10 August 2023.
The applicability and the data format were discussed and agreed within the specific RINF Topical Working Groups.
It is intended to facilitate its application of the RINF Regulation, but it does not substitute it.
This technical annex provides the details needed to identify and complete the technical characteristics of the railway infrastructure elements.
This document does not introduce any new legally binding advice.
It serves as a clarification tool for legal documents issued for RINF without however dictating in any manner compulsory procedures to be followed and without establishing any legally binding practice.
The guide needs to be read and used only in conjunction with the RINF Regulation.

2.2. Content of the guide

This Guide is the basic document for all participants of the process of building RINF in European scale: for National Registration Entities (NREs) to build registers and collect data of their respective member states? (MS) network.

The guide delivers the extended definitions of all the objects and parameters of the RINF.
It provides guidance on the most common situations and solutions advised for modelling the railway network.
Examples and variety of possible solutions should support and unify constructions of registers of different MS of the EU.
This guide also delivers wide description of parameters, including their format, utility and explanation.
The instructions for use of the RINF via access to RINF application will be published as deliverable of RINF application ? they are not included in this guide.

Table 1: Namespaces used in the document

	http://data.europa.eu/949/
cc	http://creativecommons.org/ns#
dcterms	http://purl.org/dc/terms/
era	http://data.europa.eu/949/
foaf	http://xmlns.com/foaf/0.1/
geo	http://www.opengis.net/ont/geosparql#
org	http://www.w3.org/ns/org#
owl	http://www.w3.org/2002/07/owl#
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#
rdfs	http://www.w3.org/2000/01/rdf-schema#
sf	http://www.opengis.net/ont/sf#
skos	http://www.w3.org/2004/02/skos/core#
time	http://www.w3.org/2006/time#
unit	http://qudt.org/vocab/unit/
vs	http://www.w3.org/2003/06/sw-vocab-status/ns#
xml	http://www.w3.org/XML/1998/namespace
xsd	http://www.w3.org/2001/XMLSchema#

3. RINF Parameter Groups Hierarchy

- Section of line generic information (1.1.0.0.0)
  - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
  - National line identification (1.1.0.0.0.2)
  - Operational point at start of section of line (1.1.0.0.0.3)
  - Operational point at end of section of line (1.1.0.0.0.4)
  - Length of section of line (1.1.0.0.0.5)
  - Nature of Section of Line (1.1.0.0.0.6)
- Route book specific parameters (1.1.0.0.1)
  - Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)

- Operating language (1.1.0.0.1.2 | 1.2.0.0.0.8)
- Operational regime (1.1.0.0.1.3)

- Running track generic information (1.1.1.0.0)
  - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
  - Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
  - Normal running direction (1.1.1.0.0.2)
  - Lineside distance indication (1.1.1.0.0.3)
  - Connected to (1.1.1.0.1.2 | 1.2.4.1)
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    - EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)
    - EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)
  - Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)
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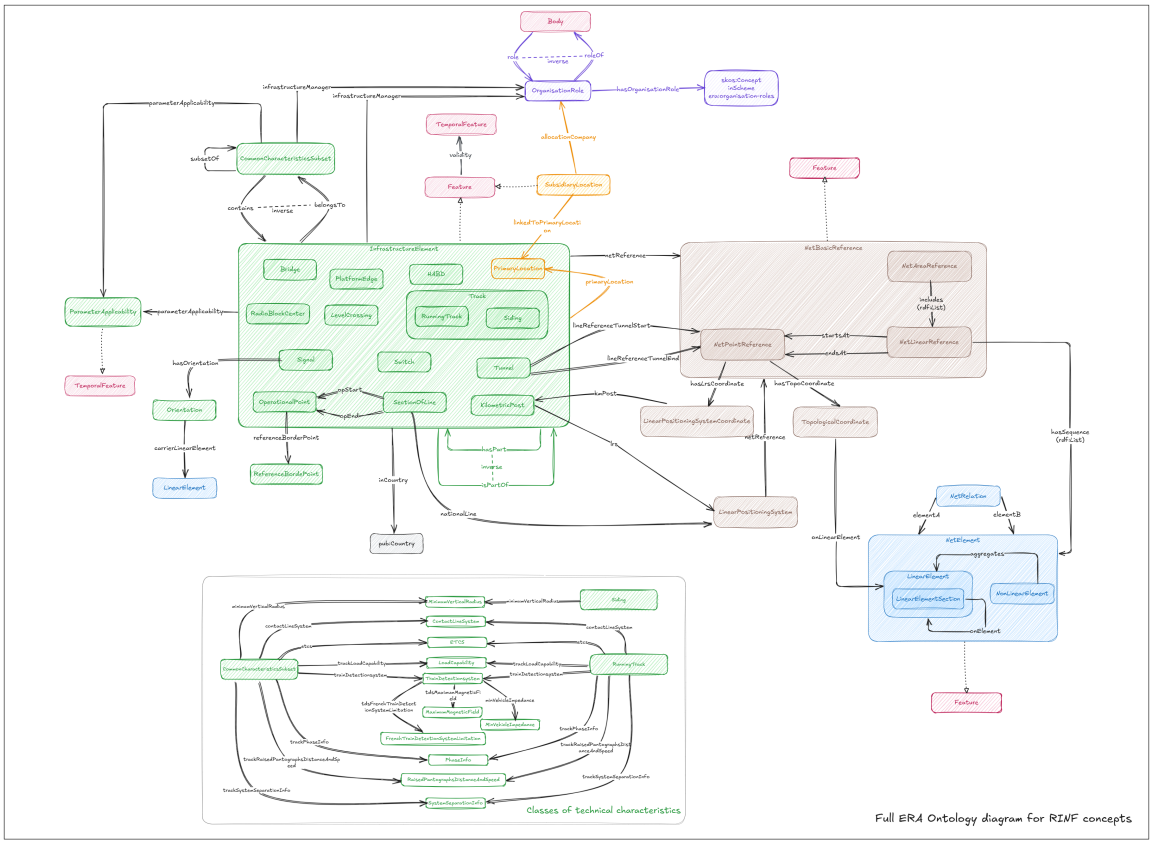
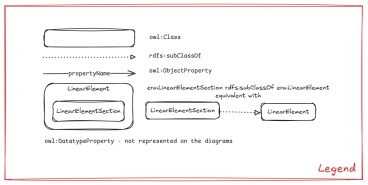
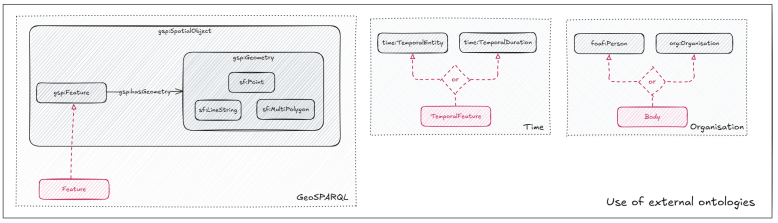
        - Type of track circuits or axle counters to which specific checks are needed (1.1.1.3.7.1.2 | 1.2.1.1.6.1)
        - Document with the procedure(s) related to the type of train detection systems declared in "Type of track circuits or axle counters to which specific checks are needed" (1.1.1.3.7.1.3 | 1.2.1.1.6.2)
        - Section with train detection limitation (1.1.1.3.7.1.4 | 1.2.1.1.6.3)
    - Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)
        - Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)
        - Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)

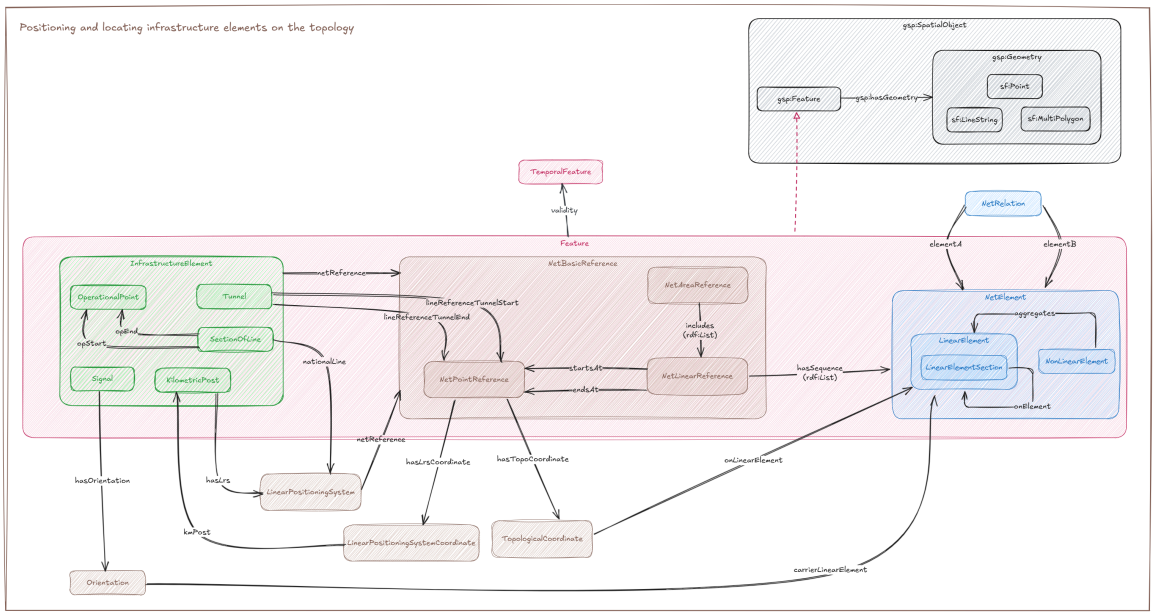
        - Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
        - Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
        - Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)
    - Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)
        - Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)
        - Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)
    - Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)
        - ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
        - Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)
    - Brake related parameters (1.1.1.3.11)
        - Maximum braking distance requested (1.1.1.3.11.1)
        - Availability by the IM of additional information (1.1.1.3.11.2)
        - Documents available by the IM relating to braking performance (1.1.1.3.11.3)
    - Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)
        - ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
        - ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
        - ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)
    - Signal (1.1.1.3.14)
        - Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)
        - Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
        - Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
        - Relative distance of the danger point (1.1.1.3.14.4 | 1.2.1.0.8.4)
        - Kilometer number (1.2.0.0.0.6)
- Rules and restrictions (1.1.1.4 | 1.2.3)
    - Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
    - Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
- Vehicles for which Route compatibility is verified (1.1.1.5)
    - List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.1)
    - List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.2)
- Operational point generic information (1.2.0.0.0)
    - Name of operational point (1.2.0.0.0.1)
    - Unique OP ID (1.2.0.0.0.2)
    - Primary location (1.2.0.0.0.3)
    - Type of operational point (1.2.0.0.0.4)
    - Type of track gauge changeover facility (1.2.0.0.0.4.1)
    - Schematic overview of the operational point in digital form (1.2.0.0.0.7)
    - Schematic overview of the operational point (1.2.0.0.0.7.1)
    - Digital schematic overview (1.2.0.0.0.7.2)
- Platform (1.2.1.0.6)
    - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
    - TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)

    - Identification of platform (1.2.1.0.6.2)
    - Usable length of platform (1.2.1.0.6.4)
    - Height of platform (1.2.1.0.6.5)
    - Existence of platform assistance for starting train (1.2.1.0.6.6)
    - Range of use of the platform boarding aid (1.2.1.0.6.7)
    - Curvature of the platform (1.2.1.0.6.8)
- Siding (1.2.2)
    - Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
    - TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
    - Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
    - Identification of siding (1.2.2.0.0.2)
    - Usable length of siding (1.2.2.0.2.1)
    - Gradient for stabling tracks (1.2.2.0.3.1)
    - Minimum radius of vertical curve (1.2.2.0.3.3)
    - Fixed installations for servicing trains (1.2.2.0.4)
        - Existence of toilet discharge (1.2.2.0.4.1)
        - Existence of external cleaning facilities (1.2.2.0.4.2)
        - Existence of water restocking (1.2.2.0.4.3)
        - Existence of refuelling (1.2.2.0.4.4)
        - Existence of sand restocking (1.2.2.0.4.5)
        - Existence of electric shore supply (1.2.2.0.4.6)


Full ERA Ontology diagram for RINF concepts
Classes of technical characteristics


Legend


GeoSPARQL
Time
Organisation
Use of external ontologies


Positioning and locating infrastructure elements on the topology

4. RINF Ontology Classes

Body C

Is an organisation or a physical person

IRI: *http://data.europa.eu/949/Body*

Is subclass of
Organization
Person

Has Properties
Role

Validation

Validation Rules:
Body Shape

Bridge C

It is a structure constructed for the exclusive purpose of carrying railroad traffic across an obstruction. It can be used for defining non-stopping areas, big metal mass, resistance to traffic load etc.

IRI: *http://data.europa.eu/949/Bridge*

Is subclass of
Infrastructure element

Contact Line System C

System that is used to transmit electrical energy to road or rail vehicles.

IRI: *http://data.europa.eu/949/ContactLineSystem*

Has RINF parameters
Type of contact line system (1.1.1.2.2.1.1)
Energy supply system (Voltage and frequency) (1.1.1.2.2.1.2)
Umax2 for the French network (1.1.1.2.2.1.3)
Maximum train current (1.1.1.2.2.2)
Maximum current at standstill per pantograph (1.1.1.2.2.3 | 1.2.2.0.6.1)
Permission for regenerative braking (1.1.1.2.2.4)
Conditions applying in regards to regenerative braking (1.1.1.2.2.4.1)
Maximum contact wire height (1.1.1.2.2.5)
Minimum contact wire height (1.1.1.2.2.6)
Current or power limitation on board required (1.1.1.2.5.1)

Permission for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.1)
Permitted conditions for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.2)

Validation

Validation Rules:
Contact Line System Shape

Message: contactLineSystemType (1.1.1.2.2.1.1): The Contact Line System {$this} ({?clsLabel}), has a 'Not electrified' type, and at least one of its parameters has values for at least one of the range of parameters between 1.1.1.2.2.1.2 and 1.1.1.2.5.3. This happens at least with property {?p} (RINF index {?index}).

ERA Document C

Document in any of the ERA systems, e.g. reference document in RINF.

IRI: *http://data.europa.eu/949/Document*

Is subclass of
Document

Has Properties
Document URL

Validation

Validation Rules:
Document Shape

ERA Feature C

Class that encompasses the features that are part of the physical infrastructure (class InfrastructureElement) and the topological objects (class TopologicalObject). It is a subclass of the geographical Feature class that has a spatial representation.

IRI: *http://data.europa.eu/949/Feature*

Is subclass of
Feature

Is superclass of
Infrastructure element
Net Basic Reference
Net element
Reference border point
Subsidiary location

Has Properties

Validity

Validation

Validation Rules:
Feature Shape

ETCS C

TSI compliant train protection system ERTMS / ETCS application level and baseline related to the track side equipment.

IRI: *http://data.europa.eu/949/ETCS*

Has RINF parameters

European Train Control System (ETCS) level (1.1.1.3.2.1 | 1.2.1.1.1.1)
ETCS baseline (1.1.1.3.2.2 | 1.2.1.1.1.2)
ETCS infill installed line-side (1.1.1.3.2.4 | 1.2.1.1.1.4)
ETCS system compatibility (1.1.1.3.2.9 | 1.2.1.1.1.9)
ETCS M_version (1.1.1.3.2.10 | 1.2.1.1.1.10)
Is the ETCS trackside engineered to transmit Track Conditions (1.1.1.3.2.12 | 1.2.1.1.1.12)
Track conditions which can be transmitted (1.1.1.3.2.12.1 | 1.2.1.1.1.12.1)

Validation

Validation Rules:
Etcsshape

Message: Indication of the etcsLevelType (1.1.1.3.2.1, 1.2.1.1.1.1): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-levels/.

Hot Axle Box Detector C

A trackside Hot Axle Box Detector (HABD), necessary for the route compatibility check.
Specific for the French, Italian and Swedish networks

IRI: *http://data.europa.eu/949/HABD*

Is subclass of

Infrastructure element

Has RINF parameters

Trackside HABD TSI compliant (1.1.1.1.7.5)
Identification of trackside HABD (1.1.1.1.7.6)
Generation of trackside HABD (1.1.1.1.7.7)
Railway location of trackside HABD (1.1.1.1.7.8)

Direction of measurement of trackside HABD (1.1.1.1.7.9)

Infrastructure element C

This class encompasses all those classes that represent features that are implemented in the European railway infrastructure. It is a subclass of the ERA Feature that has a spatial representation. It covers tracks, platforms, signals, tunnels, operational points, and sections of line.
A feature that belongs to the infrastructure can be abstracted (hasAbstraction) as a topological object. It also is related to the infrastructure manager through the property infrastructureMgr.

IRI: *http://data.europa.eu/949/InfrastructureElement*

Is subclass of
ERA Feature

Is superclass of
Bridge
Hot Axle Box Detector
Kilometric Post
Level crossing
Operational Point
Platform edge
Primary Location
Radio Block Center
Section Of Line
Signal
Special area
Switch
Track
Tunnel

Has RINF parameters
Operating language (1.1.0.0.1.2 | 1.2.0.0.0.8)
Primary location (1.2.0.0.0.3)

Has Properties
Belongs to
Has part
In country
Infrastructure manager
Is part of
Net reference
Parameter applicability

Validation

Validation Rules:
Infrastructure Element Shape

Message: imCode (1.2.1.0.6.1): Each infrastructure element {$this} with label {?label} refers to a network (subset with common characteristics), that in turn refers to an instance of an OrganisationRole. This instance must have an era:organisationRole pointing to the value era-organisation-roles:IM in the orgRoles SKOS concept scheme. The error is due to a {?value} different from

Kilometric Post C

Represents a kilometric post in the linear positioning system.

IRI: *http://data.europa.eu/949/KilometricPost*

Is subclass of
Infrastructure element

Has RINF parameters
Kilometer number (1.2.0.0.0.6)

Has Properties
Has linear referencing system
Kilometric post name
Measured distance

Validation

Validation Rules:
Kilometric Post Shape

Level crossing C

A level crossing is an intersection where a railway line crosses a road or a path at the same level. It can be used for the implementation of the ETCS trackside or to identify potential collision scenarios

IRI: *http://data.europa.eu/949/LevelCrossing*

Is subclass of
Infrastructure element

Linear Element C

Pieces of tracks composing the topology

IRI: *http://data.europa.eu/949/LinearElement*

Is subclass of
Net element

Is superclass of
Linear Element Section

Has Properties
Length of net linear element

Validation

Validation Rules:
Linear Element Shape

Additional Information

General explanation:
This class represents an edge in the topological graph. It represents a linear element in the network.

Linear Element Section C

Represents a section of a linear element.

IRI: *http://data.europa.eu/949/LinearElementSection*

Is subclass of
Linear Element

Has Properties
Applies in both directions
End offset from the origin
On element
Start offset from origin

Validation

Validation Rules:
Linear Element Section Shape

Additional Information

General explanation:
A linear element section is a finer granularity of a linear element, representing a specific portion of it. This concept is introduced to address the cases when a linear element needs to be split such as a part of it is used by a net referencing (more in the paragraph describing the positioning on the network). By using start and end offsets measured from origin of the element in ascending order, sections eliminate the need for intrinsic coordinates and instead rely on distances along the linear element.

Linear Positioning System C

Represents a linear positioning system used for referencing positions on the network.
It can also represent a sequence of one or more sections of line, used for regular railway operations.

IRI: *http://data.europa.eu/949/LinearPositioningSystem*

Has Properties
Line identifier

Net reference
Type of line referencing system

Validation

Validation Rules:
Linear Positioning System Shape

Message: lrsMethod: The linear positionung system {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lines/ReferenceSystems.

Linear Positioning System Coordinate C

Represents coordinates in a linear positioning system.

IRI: *http://data.europa.eu/949/LinearPositioningSystemCoordinate*

Has Properties

Km post for reference
Offset

Validation

Validation Rules:
Linear Positioning System Coordinate Shape

Lineside indications of distance C

Frequency, appearance and positioning of a sign indicating distance as reference post. Two types of signs are normally available: kilometre post and hectometre post.
- A kilometre post is a lineside sign indicating the distance from a specific point, usually being the starting point of the railway line.
- A hectometre post is a lineside sign indicating a relative distance.

IRI: *http://data.europa.eu/949/LinesideDistanceIndication*

Has Properties

Lineside distance indication appearance
Lineside distance indication frequency
Lineside distance indication positioning

Validation

Validation Rules:
Lineside Distance Indication Shape

Load capability C

This class together with properties loadCapabilityLineCategory and loadCapabilitySpeed replaces the previous loadCapability SKOS property.

IRI: *http://data.europa.eu/949/LoadCapability*

Has Properties

Load capability line category
Load capability speed

Validation

Validation Rules:

Load Capability Shape

Additional Information

General explanation:

At this step, RINF does not allow to enter additional data referred to additional speed regulations and operating requirements relating to locomotives (e.g., locomotive classes and associated maximum speed) or traffic types (e.g., maximum speed of freight traffic or passenger traffic).

The load capability describes the weakest point of this track within this section of line (which is normally a bridge or other sub-track structure). It is expressed as a combination of the line category and speed permitted for trains exerting loads defined for this line category. The result of the classification process is set out in EN 15528:2021 (Annex A) and referred to in that standard as “Line Category”.

It represents the ability of the infrastructure to withstand the vertical loads imposed by vehicles on the track for regular service as a combination of Line Category with a permitted speed according to EN 15528:2021

More than one combination may be published for the same track if applicable, but it has to be done by repetition of the parameter with one value selected only - that is why 'Y' is given in line 'Can be repeated'.

For the following cases, it is not possible to use EN 15528:20021categories of line classification:
- TSI categories of line P1520 and F1520 (passenger traffic or freight traffic at any speed)
- TSI categories of line P1600 and F1600 (passenger traffic or freight traffic at any speed)

Maximum magnetic field C

IRI: *http://data.europa.eu/949/MaximumMagneticField*

Has Properties

Maximum magnetic field direction X
Maximum magnetic field direction Y
Maximum magnetic field direction Z

Validation

Validation Rules:
Maximum Magnetic Field Shape

Minimum radius of vertical curve C

IRI: *http://data.europa.eu/949/MinimumVerticalRadius*

Has Properties

Minimum radius of vertical curve crest
Minimum radius of vertical curve hollow

Validation

Validation Rules:
Minimum Vertical Radius Shape

Additional Information

General explanation:
Presentation of parameter 1.2.2.0.3.3 'Minimum radius of vertical curve'

Minimum Vehicle Impedance C

Impedance as defined in the TSI CCS (Annex I, Appendix A, Table A.2 -Index 77).

Minimum vehicle impedance (between wheels and pantograph) (only for vehicles equipped for 1500V or 3000V DC).

Per Voltage:
[1500]: [CCCC]+[ZZZZ], with input capacitance [CCCC](Cin) and input impedance [ZZZZ](Zin)
[3000]: [CCCC]+[ZZZZ], idem.

IRI: *http://data.europa.eu/949/MinVehicleImpedance*

Has Properties

Minimal vehicle input capacitance
Minimal vehicle input impedance
Minimum Vehicle Impedance (Voltage applicable)

Validation

Validation Rules:

Min Vehicle Impedance Shape

Message: minVehicleInputImpedance (1.1.1.3.4.2.2, 1.2.1.1.3.2.2):The Train Detection System {$this} ({?clsLabel}), has a 'track circuit' type that makes the minVehicleInputImpedance parameter applicable. This error is due to {?minVehicleImpedance} not having a value for such a parameter.

Additional Information

General explanation:
The MinVehicleImpedance class is applicable for track circuits.

See also:
https://www.era.europa.eu/system/files/2023-09/index077_-_ERA_ERTMS_033281_v5.pdf

Net Area Reference C

Represents an area reference in the network.

IRI: *http://data.europa.eu/949/NetAreaReference*

Is subclass of
Net Basic Reference

Has Properties
Includes list of linear references

Validation

Validation Rules:
Net Area Reference Shape

Additional Information

General explanation:
It is used for infrastructure elements positioned in relation to the topology as a subnetwork. (e.g.: tunnels, non-stopping area, stations etc.)

Example:
Example: non-stopping area, cross section area, area of implementation of GPRS etc.

Net Basic Reference C

Basic positioning reference within the ERA ontology. It represents different types of geographical locations. Geographical coordinates are provided according to the standard World Geodetic System (WGS84).

IRI: *http://data.europa.eu/949/NetBasicReference*

Is subclass of
ERA Feature

Is superclass of

Net Area Reference
Net Linear Reference
Net Point Reference

Validation

Validation Rules:
Net Basic Reference Shape

Additional Information

General explanation:

See also:
https://wiki.railtopomodel.org/wiki/Object_positioning_in_the_network

Net element C

It is a representation of all building blocks of the topology. It references an associated topological network element.

IRI: *http://data.europa.eu/949/NetElement*

Is subclass of
ERA Feature

Is superclass of
Linear Element
Non-Linear Element

Validation

Validation Rules:
Net Element Shape

Additional Information

See also:
https://wiki.railtopomodel.org/wiki/Topological_structure_(network)

Net Linear Reference C

Represents a linear reference in the network.

IRI: *http://data.europa.eu/949/NetLinearReference*

Is subclass of
Net Basic Reference

Has Properties
Ends at
Has sequence
Starts at

Validation

Validation Rules:
Net Linear Reference Shape

Additional Information

General explanation:
It is used for infrastructure elements positioned in relation to the topology as a line, or along a path. (e.g.: tracks, bridges, platform edges, etc.)

Example:
Example: tracks, tunnels, bridges, platform edges etc.

Net Point Reference C

Represents a point reference in the network.

IRI: *http://data.europa.eu/949/NetPointReference*

Is subclass of
Net Basic Reference

Has Properties
Applies to direction
Has line referencing system coordinate
Has topological coordinate

Validation

Validation Rules:
Net Point Reference Shape

Message: appliesToDirection: The net point reference {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/orientations/Directions.

Additional Information

General explanation:
It is used for infrastructure elements positioned in relation to the topology as a point. (e.g.: signals, ETCS balises, buffer stops, etc.)

Net Relation C

Defines a relation between two elements.

IRI: *http://data.europa.eu/949/NetRelation*

Has Properties
Element A
Element B

Is on origin of element A
Is on origin of element B
Navigability

Validation

Validation Rules:
Net Relation Shape

Message: era:navigability: The net relation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/navigabilities/Navigabilities.

Additional Information

General explanation:
Connectivity and the navigability between consecutive linear elements are resolved by using net relations. It models how different elements are related to each other, representing a transition from one element to another.
Net relations specify where two linear elements connect. This could be at the origin of one element, the end of another, or even at specific offsets along their lengths. For example, two tracks might connect at a junction, with one ending at offset 1500 and the other beginning at offset 0.
NetRelation explicitly models these connections by linking two linear elements (elementA and elementB) and defining their physical or logical relationship.
Net relations also specify the permitted directions of travel:
• AB: Trains can move from element A to element B.
• BA: Trains can move from element B to element A.
• Both: Movement is bidirectional.
• None: No movement is allowed between the two elements.
To make this even more precise, net relations include information about whether the connection is at the origin of each element. For example, a relation might indicate that Track A ends at its origin (offset 0) and connects to Track B at its start (isOnOriginOfElementA and isOnOriginOfElementB).

See also:
https://wiki.railtopomodel.org/wiki/Topological_structure_(network)

Non-Linear Element C

Represents a non-linear element in the network.

IRI: *http://data.europa.eu/949/NonLinearElement*

Is subclass of
Net element

Has Properties
Aggregates

Validation

Validation Rules:
Non Linear Element Shape

Additional Information

General explanation:

Non-linear elements complement the linear structure by serving as connection or interaction points. They represent features such as stations, depots, or complex junctions. They often serve as aggregation points for linear elements, where multiple tracks meet or like logical entities that support operations like passenger boarding or train storage. These elements may optionally aggregate linear elements.

Operational Point C

An operational point (OP) means any location for train service operations, where train services may begin and end or change route, and where passenger or freight services may be provided; operational point also means any location at boundaries between Member States or infrastructure managers.

IRI: *http://data.europa.eu/949/OperationalPoint*

Is subclass of

Infrastructure element

Has RINF parameters

Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
Name of operational point (1.2.0.0.0.1)
Unique OP ID (1.2.0.0.0.2)
Type of operational point (1.2.0.0.0.4)
Type of track gauge changeover facility (1.2.0.0.0.4.1)
Schematic overview of the operational point in digital form (1.2.0.0.0.7)
Schematic overview of the operational point (1.2.0.0.0.7.1)
Digital schematic overview (1.2.0.0.0.7.2)

Has Properties

Reference border point

Validation

Validation Rules:

Operational Point Shape

Message: uopid (1.2.0.0.0.2): The OperationalPoint {$this} with id {?uopid} and label {?opLabel} is a border point that references a ReferenceBorderPoint, but its uopid does not match the borderPointId of the referenced point ('{?uopid}' ≠ '{?refId}').

Organisation Role C

Represents an n-ary relationship between a Body and a role

IRI: *http://data.europa.eu/949/OrganisationRole*

Has RINF parameters

Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)

Has Properties

Has organisation role
Role of

Validation

Validation Rules:
Organisation Role Shape

Message: Indication of the hasOrganisationRole: The OrganisationRole {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/organisation-roles/.

Orientation C

Represents the orientation of a railway object in relation to a carrier linear element. It can be described by direction, orientation and side.

IRI: *http://data.europa.eu/949/Orientation*

Has Properties

Carrier linear element
Direction
On side
Orientation

Validation

Validation Rules:
Orientation Shape

Message: side: The Orientation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined Sides in the SKOS concept scheme http://data.europa.eu/949/concepts/orientations/Sides.

Parameter applicability C

Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable. This interval can be applied for any of the technical characteristics or general information of infrastructure elements. This helps identifying planned changes applied to technical parameters over time.

IRI: *http://data.europa.eu/949/ParameterApplicability*

Is subclass of

Temporal Feature

Has Properties

Of parameter
Parameter value
Parameter value type

Validation

Validation Rules:

Parameter Applicability Shape

Message: parameterValueType: The parameter applicability {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/parameterApplicability/ValueTypes.

Phase info C

Indication of required several information on phase separation.

IRI: *http://data.europa.eu/949/PhaseInfo*

Has Properties

- Phase info distance type
- Phase info Km
- Phase info length
- Phase info pantograph lowered
- Phase info switch off breaker

Validation

Validation Rules:

Phase Info Shape

Platform edge C

Platform for the purpose of RINF is understood as a platform edge. A platform concerns only the part of the structure neighbouring to the track (interfaced with trains).

IRI: *http://data.europa.eu/949/PlatformEdge*

Is subclass of

- Infrastructure element

Has RINF parameters

- TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
- Identification of platform (1.2.1.0.6.2)
- Usable length of platform (1.2.1.0.6.4)
- Height of platform (1.2.1.0.6.5)
- Existence of platform assistance for starting train (1.2.1.0.6.6)
- Range of use of the platform boarding aid (1.2.1.0.6.7)
- Curvature of the platform (1.2.1.0.6.8)

Validation

Validation Rules:

Platform Edge Shape

Message: Platform height (1.2.1.0.6.5): The platform {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/platform-heights/PlatformHeights.

Primary Location C

Primary Location is a place used by IM to define a path for a train in TAF/TAP TSI framework/messages. This location is a rail point inside the rail network where train starts, ends, stops, or runs through or change line. This location must be managed by an Infrastructure Manager (IM) identified by company code.

Primary locations are identified by single and unique Primary Location codes. Primary location code is allocated based on processes defined by national entity. Primary location codes are used in any kind of TAF/TAP communication.

See: Handbook 9.3.3 / page 60

IRI: *http://data.europa.eu/949/PrimaryLocation*

Is subclass of

Infrastructure element

Has Properties

Container handling flag
Freight flag
Handover point flag
In NUTS-3
Passenger flag
Primary location code
Primary location name

Validation

Validation Rules:

Primary Location Shape

Additional Information

Example:

Primary locations are for example: stations, yards, halts, handover points, border points, open access terminals.

See also:

http://taf-jsg.info/wp-content/uploads/2025/07/JSG-Handbook-3.7-with-XSD-3.5.1.0.pdf

Radio Block Center [C]

ETCS trackside centralised unit controlling ETCS train movements in level 2.

A centralised safety unit that receives train position information via radio and sends movement authorities via radio to trains.

IRI: *http://data.europa.eu/949/RadioBlockCenter*

Is subclass of

Infrastructure element

Has RINF parameters

Reasons for which an ETCS Radio Block Center can reject a train (1.1.1.3.2.15 | 1.2.1.1.1.15)
ID of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
Phone number of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)

Validation

Validation Rules:

Radio Block Center Shape

Additional Information

See also:

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1693&qid=1698394526534
https://www.era.europa.eu/system/files/2023-09/index003_-_SUBSET-023_v400.pdf

Reference border point [C]

List of reference border points that are specified in the RINF Application Guide.

IRI: *http://data.europa.eu/949/ReferenceBorderPoint*

Is subclass of

ERA Feature

Has Properties

Border point identification

Validation

Validation Rules:

Reference Border Point Shape

Message: ReferenceBorderPoint {$this} is referenced by {?op1} and {?op2} with inconsistent uopid or coordinates (geo:asWKT). All OPs pointing to the same ReferenceBorderPoint must have the same uopid and identical coordinates.

Requirements for number of raised pantographs and spacing between them, at the given speed C

Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.
Each track can have several raised pantographs per train allowed (structured) values, and each one has values for number of pantographs, minimum distance between pantographs, in metres, and speed considered in km/h.

IRI: *http://data.europa.eu/949/RaisedPantographsDistanceAndSpeed*

Has Properties

Raised pantographs speed
Requirements for number of raised pantographs, at the given speed
Requirements for spacing between raised pantographs, at the given speed

Validation

Validation Rules:

Raised Pantographs Distance And Speed Shape

Additional Information

General explanation:

This class gives the information about the number of pantographs and the distance between them at a given speed for which the Overhead Contact Line (OCL) has been designed.
As for different speeds different combinations of number of pantographs and distance between them may exist, so this class can be repeated to present all of them.

Running track C

A running track means any track used for train service movements; passing loops and meeting loops on plain line or track connections only required for train operation are not published

IRI: *http://data.europa.eu/949/RunningTrack*

Is subclass of

Track

Has RINF parameters

Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
Normal running direction (1.1.1.0.0.2)
Lineside distance indication (1.1.1.0.0.3)
EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)
EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)

TEN geographic information system identity (GIS ID) (1.1.1.1.2.1.2)
Category of line (1.1.1.1.2.2 | 1.2.1.0.2.2)
Part of a Railway Freight Corridor (1.1.1.1.2.3 | 1.2.1.0.2.3)
Load capability (1.1.1.1.2.4)
National classification for load capability (1.1.1.1.2.4.1)
Compliance of structures with the High Speed Load Model (HSLM) (1.1.1.1.2.4.2)
Railway location of structures requiring specific checks (1.1.1.1.2.4.3)
Document with the procedure(s) for static and dynamic route compatibility checks (1.1.1.1.2.4.4)
Maximum permitted speed (1.1.1.1.2.5)
Temperature range (1.1.1.1.2.6)
Maximum altitude (1.1.1.1.2.7)
Existence of severe climatic conditions (1.1.1.1.2.8)
Gauging (1.1.1.1.3.1.1 | 1.2.1.0.3.4)
Railway location of particular points requiring specific checks (1.1.1.1.3.1.2 | 1.2.1.0.3.5)
Document with the transversal section of the particular points requiring specific checks (1.1.1.1.3.1.3 | 1.2.1.0.3.6)
Standard combined transport profile number for swap bodies (1.1.1.1.3.4)
Standard combined transport profile number for semi-trailers (1.1.1.1.3.5)
Specific information (1.1.1.1.3.5.1)
Gradient profile (1.1.1.1.3.6)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Standard combined transport profile number for containers (1.1.1.1.3.8)
Standard combined transport profile number for roller units (1.1.1.1.3.9)
Nominal track gauge (1.1.1.1.4.1 | 1.2.1.0.4.1)
Cant deficiency (1.1.1.1.4.2)
Rail inclination (1.1.1.1.4.3)
Existence of ballast (1.1.1.1.4.4)
TSI compliance of in-service values for switches and crossings (1.1.1.1.5.1)
Minimum wheel diameter for fixed obtuse crossings (1.1.1.1.5.2)
Maximum train deceleration (1.1.1.1.6.1)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Use of magnetic brakes (1.1.1.1.6.3 | 1.2.1.0.4.3)
Document with the conditions for the use of eddy current brakes (1.1.1.1.6.4)
Document with the conditions for the use of magnetic brakes (1.1.1.1.6.5)
Use of flange lubrication forbidden (1.1.1.1.7.1)
Existence of level crossings (1.1.1.1.7.2)
Existence of trackside hot axle box detector (HABD) (1.1.1.1.7.4)
Steady red lights required (1.1.1.1.7.10)
Belonging to a quieter route (1.1.1.1.7.11)
Permit of use of reflective plates (1.1.1.1.7.12)
Conditions for use of reflective plates (1.1.1.1.7.12.1)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.1)
EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.2)
Accepted TSI compliant pantograph heads (1.1.1.2.3.1)
Accepted other pantograph heads (1.1.1.2.3.2)
Requirements for number of raised pantographs and spacing between them, at the given speed (1.1.1.2.3.3)
Contact strip material metallic content (1.1.1.2.3.4)
Permitted contact strip material (1.1.1.2.3.4)
Phase separation (1.1.1.2.4.1.1)
Information on phase separation (1.1.1.2.4.1.2)
System separation (1.1.1.2.4.2.1)
Information on system separation (1.1.1.2.4.2.2)
Distance between signboard and phase separation ending (1.1.1.2.4.3)
Contact force permitted (1.1.1.2.5.2)
Automatic dropping device required (1.1.1.2.5.3)
Document with restriction related to power consumption of specific electric traction unit(s) (1.1.1.2.5.4)

Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation (1.1.1.2.5.5)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem (1.1.1.3.1.1)
Error corrections required for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
ETCS infill necessary for line access (1.1.1.3.2.3 | 1.2.1.1.1.3)
Existence of operating restrictions or conditions (1.1.1.3.2.6 | 1.2.1.1.1.6)
Train integrity confirmation from on-board (not from driver) necessary for line access (1.1.1.3.2.8 | 1.2.1.1.1.8)
Safe consist length information from on-board necessary for access the line and SIL (1.1.1.3.2.11 | 1.2.1.1.1.11)
ETCS trackside implements level crossing procedure or an equivalent solution (1.1.1.3.2.13 | 1.2.1.1.1.13)
Cant Deficiency used for the basic SSP (1.1.1.3.2.14 | 1.2.1.1.1.14)
Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP (1.1.1.3.2.14.1 | 1.2.1.1.1.14.1)
D_NVROLL (1.1.1.3.2.16.1 | 1.2.1.1.1.16.1)
Q_NVEMRRLS (1.1.1.3.2.16.2 | 1.2.1.1.1.16.2)
V_NVALLOWOVTRP (1.1.1.3.2.16.3 | 1.2.1.1.1.16.3)
V_NVSUPOVTRP (1.1.1.3.2.16.4 | 1.2.1.1.1.16.4)
D_NVOVTRP (1.1.1.3.2.16.5 | 1.2.1.1.1.16.5)
T_NVOVTRP (1.1.1.3.2.16.6 | 1.2.1.1.1.16.6)
D_NVPOTRP (1.1.1.3.2.16.7 | 1.2.1.1.1.16.7)
T_NVCONTACT (1.1.1.3.2.16.8 | 1.2.1.1.1.16.8)
M_NVCONTACT (1.1.1.3.2.16.9 | 1.2.1.1.1.16.9)
M_NVDERUN (1.1.1.3.2.16.10 | 1.2.1.1.1.16.10)
Q_NVDRIVER_ADHES (1.1.1.3.2.16.11 | 1.2.1.1.1.16.11)
Q_NVSBTSMPERM (1.1.1.3.2.16.12 | 1.2.1.1.1.16.12)
National Values used for the brake model (1.1.1.3.2.16.13 | 1.2.1.1.1.16.13)
Big Metal Mass (1.1.1.3.2.18 | 1.2.1.1.1.18)
GSM-R version (1.1.1.3.3.1 | 1.2.1.1.2.1)
Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption (1.1.1.3.3.2 | 1.2.1.1.2.2)
Optional GSM-R functions (1.1.1.3.3.3 | 1.2.1.1.2.3)
Additional information on network characteristics (1.1.1.3.3.3.1 | 1.2.1.1.2.3.1)
GPRS for ETCS (1.1.1.3.3.3.2 | 1.2.1.1.2.3.2)
Area of implementation of GPRS (1.1.1.3.3.3.3 | 1.2.1.1.2.3.3)
GSM-R use of group 555 (1.1.1.3.3.4 | 1.2.1.1.2.4)
GSM-R networks covered by a roaming agreement (1.1.1.3.3.5 | 1.2.1.1.2.5)
Existence of GSM-R roaming to public networks (1.1.1.3.3.6 | 1.2.1.1.2.6)
Details on GSM-R roaming to public networks (1.1.1.3.3.7 | 1.2.1.1.2.7)
No GSMR coverage (1.1.1.3.3.8 | 1.2.1.1.2.8)
Radio system compatibility voice (1.1.1.3.3.9 | 1.2.1.1.2.9)
Radio system compatibility data (1.1.1.3.3.10 | 1.2.1.1.2.10)
GSM-R network is configured to allow forced de-registration of a functional number by another driver (1.1.1.3.3.11 | 1.2.1.1.2.11)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Existence of train detection system fully compliant with the TSI (1.1.1.3.4.1 | 1.2.1.1.3.1)
Train protection legacy system (1.1.1.3.5.3 | 1.2.1.1.4.1)
Other radio systems installed (Radio Legacy Systems) (1.1.1.3.6.1 | 1.2.1.1.5.1)
Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)
Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)
Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)

Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)
ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)
Maximum braking distance requested (1.1.1.3.11.1)
Availability by the IM of additional information (1.1.1.3.11.2)
Documents available by the IM relating to braking performance (1.1.1.3.11.3)
ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)
Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.1)
List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.2)
Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch (1.2.1.1.2.12)

Has Properties

Contact line system
Has bridge
Hot axle box detector (HABD)
Train detection system
TSI compliant train protection system (ETCS)

Validation

Validation Rules:

Running Track Shape

Message: permittedContactForce (1.1.1.2.5.2): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

Additional Information

General explanation:

There might be more than one track within the Section of Line, so then the whole set of data for track has to be repeated for each track within the SoL.

Section Of Line [C]

A section of line means the part of line between adjacent operational points and may consist of several tracks.

IRI: *http://data.europa.eu/949/SectionOfLine*

Is subclass of

Infrastructure element

Has RINF parameters

National line identification (1.1.0.0.0.2)
Operational point at start of section of line (1.1.0.0.0.3)
Operational point at end of section of line (1.1.0.0.0.4)
Length of section of line (1.1.0.0.0.5)
Nature of Section of Line (1.1.0.0.0.6)

Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)
Operational regime (1.1.0.0.1.3)

Validation

Validation Rules:
Section Of Line Shape

Message: Indication of the trackDirection (1.1.1.0.0.2):): The track {?track} in the Section of Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/track-running-directions/TrackRunningDirections.

Additional Information

General explanation:
Each network shall be described using as many SoLs as necessary. Each SoL is generated and identified by OP IDs at start and at end. A SoL only belongs to one Line.

Section with train detection limitation C

Specific for route compatibility check on French network.

IRI: *http://data.europa.eu/949/FrenchTrainDetectionSystemLimitation*

Has Properties
Section with train detection limitation
Section with train detection limitation number, only for French network

Validation

Validation Rules:
French Train Detection System Limitation Shape

Message: Indication of the frenchTrainDetectionSystemLimitationNumber: The train detection system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection-numbers/FrenchTrainDetectionSystemLimitationNumbers.

Siding C

Sidings are all those tracks where running trains in service movements ends and which are not used for operational routing of a train.

IRI: *http://data.europa.eu/949/Siding*

Is subclass of
Track

Has RINF parameters
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Maximum current at standstill per pantograph (1.1.1.2.2.3 | 1.2.2.0.6.1)

Maximum contact wire height (1.1.1.2.2.5)
Identification of siding (1.2.2.0.0.2)
Usable length of siding (1.2.2.0.2.1)
Gradient for stabling tracks (1.2.2.0.3.1)
Minimum radius of vertical curve (1.2.2.0.3.3)
Existence of toilet discharge (1.2.2.0.4.1)
Existence of external cleaning facilities (1.2.2.0.4.2)
Existence of water restocking (1.2.2.0.4.3)
Existence of refuelling (1.2.2.0.4.4)
Existence of sand restocking (1.2.2.0.4.5)
Existence of electric shore supply (1.2.2.0.4.6)

Validation

Validation Rules:
Siding Shape

Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1, 1.2.1.0.6.3, 1.2.2.0.0.3): The siding or subset with common characteristics {$this} with label {?sidingLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.

Signal C

A railway signal is a visual display device (next to the tracks or via a DMI in the cabin) that conveys instructions or provides advance warning of instructions regarding the driver's authority to proceed.

IRI: *http://data.europa.eu/949/Signal*

Is subclass of
Infrastructure element

Has RINF parameters
Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)
Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
Relative distance of the danger point (1.1.1.3.14.4 | 1.2.1.0.8.4)

Has Properties
Has orientation

Validation

Validation Rules:
Signal Shape

Message: Indication of the signalOrientation (1.1.1.3.14.3, 1.2.1.0.8.3): The Signal or CommonCharacteristicsSubset {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/track-running-directions/OrientationDirections.

Additional Information

See also:
https://www.era.europa.eu/system/files/2023-09/index003_-_SUBSET-023_v400.pdf

Special area C

Encompasses all those areas (outside of the operational gauge) or sections (those in tunnels excluded) which influence operation in the gauge itself, such as
- safe areas,
- restricted areas (non-stopping areas or industrial risk locations).

For these areas in tunnels, use era:SpecialTunnelArea.

IRI: *http://data.europa.eu/949/SpecialArea*

Is subclass of
Infrastructure element

Is superclass of
Special tunnel area

Has Properties
Special area type

Special tunnel area C

Area or location within a tunnel where there are:
- a safe area: a walkway, evacuation and rescue points;
- a restricted area (non-stopping area or industrial risk location in a tunnel).

IRI: *http://data.europa.eu/949/SpecialTunnelArea*

Is subclass of
Special area

Subset with common characteristics C

A set of different infrastructure objects sharing the same common technical characteristics. The parameters may not be restricted to only one railway subsystem, but it can include common characteristics from each one of them (infrastructure, energy, track-side CCS)

IRI: *http://data.europa.eu/949/CommonCharacteristicsSubset*

Has RINF parameters
Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)
Lineside distance indication (1.1.1.0.0.3)
EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)

EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
TEN geographic information system identity (GIS ID) (1.1.1.1.2.1.2)
Category of line (1.1.1.1.2.2 | 1.2.1.0.2.2)
Part of a Railway Freight Corridor (1.1.1.1.2.3 | 1.2.1.0.2.3)
Load capability (1.1.1.1.2.4)
National classification for load capability (1.1.1.1.2.4.1)
Compliance of structures with the High Speed Load Model (HSLM) (1.1.1.1.2.4.2)
Railway location of structures requiring specific checks (1.1.1.1.2.4.3)
Document with the procedure(s) for static and dynamic route compatibility checks (1.1.1.1.2.4.4)
Maximum permitted speed (1.1.1.1.2.5)
Temperature range (1.1.1.1.2.6)
Maximum altitude (1.1.1.1.2.7)
Existence of severe climatic conditions (1.1.1.1.2.8)
Gauging (1.1.1.1.3.1.1 | 1.2.1.0.3.4)
Railway location of particular points requiring specific checks (1.1.1.1.3.1.2 | 1.2.1.0.3.5)
Document with the transversal section of the particular points requiring specific checks (1.1.1.1.3.1.3 | 1.2.1.0.3.6)
Standard combined transport profile number for swap bodies (1.1.1.1.3.4)
Standard combined transport profile number for semi-trailers (1.1.1.1.3.5)
Specific information (1.1.1.1.3.5.1)
Gradient profile (1.1.1.1.3.6)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Standard combined transport profile number for containers (1.1.1.1.3.8)
Standard combined transport profile number for roller units (1.1.1.1.3.9)
Nominal track gauge (1.1.1.1.4.1 | 1.2.1.0.4.1)
Cant deficiency (1.1.1.1.4.2)
Rail inclination (1.1.1.1.4.3)
Existence of ballast (1.1.1.1.4.4)
TSI compliance of in-service values for switches and crossings (1.1.1.1.5.1)
Minimum wheel diameter for fixed obtuse crossings (1.1.1.1.5.2)
Maximum train deceleration (1.1.1.1.6.1)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Use of magnetic brakes (1.1.1.1.6.3 | 1.2.1.0.4.3)
Document with the conditions for the use of eddy current brakes (1.1.1.1.6.4)
Document with the conditions for the use of magnetic brakes (1.1.1.1.6.5)
Use of flange lubrication forbidden (1.1.1.1.7.1)
Existence of level crossings (1.1.1.1.7.2)
Acceleration allowed near level crossing (1.1.1.1.7.3)
Existence of trackside hot axle box detector (HABD) (1.1.1.1.7.4)
Steady red lights required (1.1.1.1.7.10)
Belonging to a quieter route (1.1.1.1.7.11)
Permit of use of reflective plates (1.1.1.1.7.12)
Conditions for use of reflective plates (1.1.1.1.7.12.1)
EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.5 | 1.2.1.0.5.3 | 1.2.2.0.5.3)
EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.6 | 1.2.1.0.5.4 | 1.2.2.0.5.4)
Cross section area (1.1.1.1.8.8)
Compliance of the tunnel with TSI INF (1.1.1.1.8.8.1)
Existence of emergency plan (1.1.1.1.8.9 | 1.2.1.0.5.6 | 1.2.2.0.5.6)
Fire category of rolling stock required (1.1.1.1.8.10 | 1.2.1.0.5.7 | 1.2.2.0.5.7)
National fire category of rolling stock required (1.1.1.1.8.11 | 1.2.1.0.5.8 | 1.2.2.0.5.8)
Existence of walkways (1.1.1.1.8.12 | 1.2.1.0.5.10 | 1.2.2.0.5.9)
Existence of evacuation and rescue points (1.1.1.1.8.13 | 1.2.1.0.5.11 | 1.2.2.0.5.10)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.1)

EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.2)
Accepted TSI compliant pantograph heads (1.1.1.2.3.1)
Accepted other pantograph heads (1.1.1.2.3.2)
Requirements for number of raised pantographs and spacing between them, at the given speed (1.1.1.2.3.3)
Contact strip material metallic content (1.1.1.2.3.4)
Permitted contact strip material (1.1.1.2.3.4)
Phase separation (1.1.1.2.4.1.1)
Information on phase separation (1.1.1.2.4.1.2)
System separation (1.1.1.2.4.2.1)
Information on system separation (1.1.1.2.4.2.2)
Distance between signboard and phase separation ending (1.1.1.2.4.3)
Contact force permitted (1.1.1.2.5.2)
Automatic dropping device required (1.1.1.2.5.3)
Document with restriction related to power consumption of specific electric traction unit(s) (1.1.1.2.5.4)
Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation (1.1.1.2.5.5)
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem (1.1.1.3.1.1)
Error corrections required for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)
ETCS infill necessary for line access (1.1.1.3.2.3 | 1.2.1.1.1.3)
Has ETCS national packet 44 application implemented (1.1.1.3.2.5 | 1.2.1.1.1.5)
Existence of operating restrictions or conditions (1.1.1.3.2.6 | 1.2.1.1.1.6)
Train integrity confirmation from on-board (not from driver) necessary for line access (1.1.1.3.2.8 | 1.2.1.1.1.8)
Safe consist length information from on-board necessary for access the line and SIL (1.1.1.3.2.11 | 1.2.1.1.1.11)
ETCS trackside implements level crossing procedure or an equivalent solution (1.1.1.3.2.13 | 1.2.1.1.1.13)
Cant Deficiency used for the basic SSP (1.1.1.3.2.14 | 1.2.1.1.1.14)
Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP (1.1.1.3.2.14.1 | 1.2.1.1.1.14.1)
D_NVROLL (1.1.1.3.2.16.1 | 1.2.1.1.1.16.1)
Q_NVEMRRLS (1.1.1.3.2.16.2 | 1.2.1.1.1.16.2)
V_NVALLOWOVTRP (1.1.1.3.2.16.3 | 1.2.1.1.1.16.3)
V_NVSUPOVTRP (1.1.1.3.2.16.4 | 1.2.1.1.1.16.4)
D_NVOVTRP (1.1.1.3.2.16.5 | 1.2.1.1.1.16.5)
T_NVOVTRP (1.1.1.3.2.16.6 | 1.2.1.1.1.16.6)
D_NVPOTRP (1.1.1.3.2.16.7 | 1.2.1.1.1.16.7)
T_NVCONTACT (1.1.1.3.2.16.8 | 1.2.1.1.1.16.8)
M_NVCONTACT (1.1.1.3.2.16.9 | 1.2.1.1.1.16.9)
M_NVDERUN (1.1.1.3.2.16.10 | 1.2.1.1.1.16.10)
Q_NVDRIVER_ADHES (1.1.1.3.2.16.11 | 1.2.1.1.1.16.11)
Q_NVSBTSMPERM (1.1.1.3.2.16.12 | 1.2.1.1.1.16.12)
National Values used for the brake model (1.1.1.3.2.16.13 | 1.2.1.1.1.16.13)
Big Metal Mass (1.1.1.3.2.18 | 1.2.1.1.1.18)
GSM-R version (1.1.1.3.3.1 | 1.2.1.1.2.1)
Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption (1.1.1.3.3.2 | 1.2.1.1.2.2)
Optional GSM-R functions (1.1.1.3.3.3 | 1.2.1.1.2.3)
Additional information on network characteristics (1.1.1.3.3.3.1 | 1.2.1.1.2.3.1)
GPRS for ETCS (1.1.1.3.3.3.2 | 1.2.1.1.2.3.2)
Area of implementation of GPRS (1.1.1.3.3.3.3 | 1.2.1.1.2.3.3)
GSM-R use of group 555 (1.1.1.3.3.4 | 1.2.1.1.2.4)
GSM-R networks covered by a roaming agreement (1.1.1.3.3.5 | 1.2.1.1.2.5)

Existence of GSM-R roaming to public networks (1.1.1.3.3.6 | 1.2.1.1.2.6)
Details on GSM-R roaming to public networks (1.1.1.3.3.7 | 1.2.1.1.2.7)
No GSMR coverage (1.1.1.3.3.8 | 1.2.1.1.2.8)
Radio system compatibility voice (1.1.1.3.3.9 | 1.2.1.1.2.9)
Radio system compatibility data (1.1.1.3.3.10 | 1.2.1.1.2.10)
GSM-R network is configured to allow forced de-registration of a functional number by another driver (1.1.1.3.3.11 | 1.2.1.1.2.11)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Existence of train detection system fully compliant with the TSI (1.1.1.3.4.1 | 1.2.1.1.3.1)
Train protection legacy system (1.1.1.3.5.3 | 1.2.1.1.4.1)
Other radio systems installed (Radio Legacy Systems) (1.1.1.3.6.1 | 1.2.1.1.5.1)
Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)
Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)
Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)
Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)
Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)
ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)
Maximum braking distance requested (1.1.1.3.11.1)
Availability by the IM of additional information (1.1.1.3.11.2)
Documents available by the IM relating to braking performance (1.1.1.3.11.3)
ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)
Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)
List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.1)
List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.2)
Diesel or other thermal traction allowed (1.2.1.0.5.9)
Height of platform (1.2.1.0.6.5)
Existence of platform assistance for starting train (1.2.1.0.6.6)
Range of use of the platform boarding aid (1.2.1.0.6.7)
Curvature of the platform (1.2.1.0.6.8)
Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch (1.2.1.1.2.12)
Gradient for stabling tracks (1.2.2.0.3.1)
Minimum radius of vertical curve (1.2.2.0.3.3)
Existence of toilet discharge (1.2.2.0.4.1)
Existence of external cleaning facilities (1.2.2.0.4.2)
Existence of water restocking (1.2.2.0.4.3)
Existence of refuelling (1.2.2.0.4.4)
Existence of sand restocking (1.2.2.0.4.5)
Existence of electric shore supply (1.2.2.0.4.6)
ETCS national packet 44 application implemented
Document with operating restrictions or conditions

Has Properties

Contact line system

Contains
Hot axle box detector (HABD)
In country
Infrastructure manager
Name of a subset with common characteristics
Parameter applicability
Subset of
Train detection system
TSI compliant train protection system (ETCS)

Validation

Validation Rules:

Common Characteristics Subset Shape

Message: vNvsupovtrp (1.1.1.3.2.16.4, 1.2.1.1.1.16.4):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the vNvsupovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.

Subsidiary location C

Subsidiary location must be linked to a Primary Location and specifies in more detailed way part, attributes, or usage of Primary location. It may be also a non-rail point or a rail point that is not managed by an Infrastructure Manager (IM). It may be defined by entity having company code according to their needs. The Subsidiary location is optional and dependent upon business needs.

IRI: *http://data.europa.eu/949/SubsidiaryLocation*

Is subclass of

ERA Feature

Has Properties

Allocation company
Linked to primary location
Subsidiary location code
Subsidiary location name
Subsidiary location type

Validation

Validation Rules:

Subsidiary Location Shape

Message: subsidiaryLocationType: The Subsidiary Location {$this} (label {?slLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/subsidiary-location-types/SubsidiaryLocationTypes.

Additional Information

See also:

http://taf-jsg.info/wp-content/uploads/2024/01/20231018-JGS-Handbook-3.4-with-XSD-3.4.0.0.pdf

Switch C

A unit of track comprising two fixed rails (stock rails) and two movable rails (switch rails) used to direct vehicles from one track to another track.

IRI: *http://data.europa.eu/949/Switch*

Is subclass of
Infrastructure element

System separation info C

Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/SystemSeparationInfo*

Has Properties
System separation info pantograph lowered
System separation info Km
System separation info length
System separation info switch off breaker

Validation

Validation Rules:
System Separation Info Shape

Temporal Feature C

The union of TemporalDuration that represents a time extent and TemporalEntity that represents a temporal interval or instant.

IRI: *http://data.europa.eu/949/TemporalFeature*

Is subclass of
Temporal duration
Temporal entity

Is superclass of
Parameter applicability

Topological Coordinate C

Represents a topological coordinate.

IRI: *http://data.europa.eu/949/TopologicalCoordinate*

Has Properties
Offset from origin
On linear element

Validation

Validation Rules:
Topological Coordinate Shape

Track C

A pair of rails over which rail borne vehicles can run.

IRI: *http://data.europa.eu/949/Track*

Is subclass of
Infrastructure element

Is superclass of
Running track
Siding

Has RINF parameters
Connected to (1.1.1.0.1.2 | 1.2.4.1)
Acceleration allowed near level crossing (1.1.1.1.7.3)
Has ETCS national packet 44 application implemented (1.1.1.3.2.5 | 1.2.1.1.1.5)
Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)
Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
ETCS national packet 44 application implemented
Document with operating restrictions or conditions

Train Detection System C

Safety system used to detect the presence of vehicles on the railway track.

IRI: *http://data.europa.eu/949/TrainDetectionSystem*

Has RINF parameters
Frequency bands for detection (1.1.1.3.4.2 | 1.2.1.1.3.2)
Evaluation parameters if maximum interference current is not measured in the preferred bands (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
Maximum interference current (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)

Vehicle impedance (1.1.1.3.4.2.2 | 1.2.1.1.3.2.2)
Maximum magnetic field (1.1.1.3.4.2.3 | 1.2.1.1.3.2.3)
Type of train detection system (1.1.1.3.7.1.1 | 1.2.1.1.3.1.1)
Type of track circuits or axle counters to which specific checks are needed (1.1.1.3.7.1.2 | 1.2.1.1.6.1)
Document with the procedure(s) related to the type of train detection systems declared in "Type of track circuits or axle counters to which specific checks are needed" (1.1.1.3.7.1.3 | 1.2.1.1.6.2)
Section with train detection limitation (1.1.1.3.7.1.4 | 1.2.1.1.6.3)

Validation

Validation Rules:

Train Detection System Shape

Message: Indication of types of train detection system installed (1.1.1.3.7.1.1, 1.2.1.1.3.1.1): The train detection system {$this} (label {?tdsLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection/TrainDetectionSystems.

Tunnel C

A railway tunnel is an excavation or a construction around the track provided to allow the railway to pass for example higher land, buildings or water.

IRI: *http://data.europa.eu/949/Tunnel*

Is subclass of

Infrastructure element

Has RINF parameters

Tunnel identification (1.1.1.1.8.2 | 1.2.1.0.5.2 | 1.2.2.0.5.2)
Start of tunnel kilometer (1.1.1.1.8.3)
Start of tunnel location (1.1.1.1.8.3)
End of tunnel (1.1.1.1.8.4)
End of tunnel kilometer (1.1.1.1.8.4)
EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.5 | 1.2.1.0.5.3 | 1.2.2.0.5.3)
EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.6 | 1.2.1.0.5.4 | 1.2.2.0.5.4)
Length of tunnel (1.1.1.1.8.7 | 1.2.1.0.5.5 | 1.2.2.0.5.5)
Cross section area (1.1.1.1.8.8)
Compliance of the tunnel with TSI INF (1.1.1.1.8.8.1)
Document available from the IM with precise description of the tunnel (1.1.1.1.8.8.2)
Existence of emergency plan (1.1.1.1.8.9 | 1.2.1.0.5.6 | 1.2.2.0.5.6)
Fire category of rolling stock required (1.1.1.1.8.10 | 1.2.1.0.5.7 | 1.2.2.0.5.7)
National fire category of rolling stock required (1.1.1.1.8.11 | 1.2.1.0.5.8 | 1.2.2.0.5.8)
Existence of walkways (1.1.1.1.8.12 | 1.2.1.0.5.10 | 1.2.2.0.5.9)
Existence of evacuation and rescue points (1.1.1.1.8.13 | 1.2.1.0.5.11 | 1.2.2.0.5.10)
Diesel or other thermal traction allowed (1.2.1.0.5.9)

Has Properties

Special tunnel area

Validation

Validation Rules:

Tunnel Shape

Message: nationalRollingStockFireCategory (1.1.1.1.8.11, 1.2.1.0.5.8, 1.2.2.0.5.8): The Tunnel {$this} ({?clsLabel}), has a 'rolling stock fire' category that makes the nationalRollingStockFireCategory parameter applicable. This error is due to {$this} not having a value for such a parameter.

5. RINF Parameters

Section of line generic information DP OP

General Information

Number:
1.1.0.0.0

Belongs to parameters group
RINF Technical characteristic

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
National line identification (1.1.0.0.0.2)
Operational point at start of section of line (1.1.0.0.0.3)
Operational point at end of section of line (1.1.0.0.0.4)
Length of section of line (1.1.0.0.0.5)
Nature of Section of Line (1.1.0.0.0.6)

Organisation code DP

Four alpha-numeric code allocated by ERA to a body. It represents the Infrastructure Manager (IM) code in RINF.
Infrastructure manager means any body or firm responsible in particular for establishing, managing and maintaining railway infrastructure, including traffic management and control-command signalling;
the functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or firms. Definition in (Article 3(2))

IRI: *http://data.europa.eu/949/organisationCode*

Parameter of
Organisation Role

General Information

Number:
1.1.0.0.0.1
1.1.1.1.8.1
1.2.1.0.0.1
1.2.1.0.5.1
1.2.1.0.6.1

1.2.2.0.0.1
1.2.2.0.5.1

XML Name:
SOLIMCode
OPTrackPlatformIMCode
OPSidingIMCode
OPTrackTunnelIMCode
OPSidingTunnelIMCode
SOLTunnelIMCode
OPTrackIMCode

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)
Running track generic information (1.1.1.0.0)
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Platform (1.2.1.0.6)
Siding (1.2.2)
Identifier

Data Format

Data Presentation
String

Format:
AAAA

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Organisation Code
Comment: Four alpha-numeric code allocated by ERA to a body. It represent's the Infrastructure Manager (IM) code in RINF. Infrastructure manager means any body or firm responsible in particular for establishing, managing and maintaining railway infrastructure, including traffic management and control-command and signalling; the functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or firms. Definition in (Article 3(2)).
Message: organisationCode (1.2.1.0.6.1, 1.1.0.0.0.1, 1.1.1.1.8.1, 1.2.1.0.0.1, 1.2.1.0.5.1, 1.2.2.0.0.1, 1.2.2.0.5.1): An OrganisationRole must have exactly one value of organisationCode. This error may be due to not having a value, having more than one value, having a value that is not a string or having a value that is not a four character code

OPE TSI References

Appendix D2 Index
1.1

Additional Information

General explanation:

The Code is a unique identifier for the Infrastructure Manager and it shall be verified on national level.
- If the IM is subject to TAF/TAP TSIs, it corresponds to the code used in TAF/TAP TSIs.
- In other cases, it corresponds to the "organisation code" assigned by the Agency for the specific needs of the RINF.
Each Section of Line shall concern only one IM.
To be able to follow the "only once" principle, the infrastructure manager code is a property of the organisation having the role of infrastructuer manager. For data provision, a subset of elements with common characteristics should be created with the era:infrastructureManager property having as value the instance of the infrastructure mananger role.

Example:

```
Simplified example:

:ABCD_IM rdf:type era:OrganisationRole;

  era:hasOrganisationRole era-skos:InfrastructureManager.

  era:organisationCode "ABCD".



:0000_IM rdf:type era:OrganisationRole;

  era:hasOrganisationRole era-skos:InfrastructureManager.

  era:organisationCode "0000".



:imNetwork rdf:type era:SubsetWithCommonCharacteristics;

  era:infrastructureManager :ABCD_IM.

#IM code parameter as a common characteristic

:track1 rdf:type era:Track;

  era:belongsTo :imNetwork.

#IM Code parameter - directly attached to a track

:track2 rdf:type era:Track;

  era:infrastructureManager :0000_IM.
```

National line identification OP

Indicates a relationship with a national railway line at a specific kilometer point. For a Section of Line: unique line identification or unique line number within Member State.

IRI: *http://data.europa.eu/949/nationalLine*

Parameter of
Section Of Line

General Information

Number:
1.1.0.0.0.2

XML Name:
SOLLineIdentification

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Linear Positioning System

Validation

Validation Rules:
National Line So L
Comment: Unique line identification or unique line number within Member State.
Message: nationalLine (1.1.0.0.0.2): Each SoL belongs to exactly one linear positioning system. This error is due to not having a value, having more than one value, or having a value that is not an instance of LinearPositioningSystem.

Additional Information

General explanation:
Each SoL can belong to only one national line.

In case when SoL is the track connecting between OPs within big node (resulting from division of big station into several smaller) the line can be identified using the name of this track.

Operational point at start of section of line OP

Operational point at the start of section of line (kilometres increasing from start OP to the end OP).

IRI: *http://data.europa.eu/949/opStart*

Parameter of
Section Of Line

General Information

Number:
1.1.0.0.0.3

XML Name:
SOLOPStart

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Operational Point

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Op Start Exists

Op Start
Comment: Each SoL may have only one start OP, and each OP has unique OP ID within the MS. The "uniqueOPID" is defined in parameter 1.2.0.0.0.2. Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP. That is why the start OP is always located at lowest kilometre of the line within the SoL. Data collected in the UK in miles will be transformed to km for uploading to the RINF application. The OP ID must exist in the MS file of RINF. The value of this parameter must be different from 1.1.0.0.0.4. No validation will be performed by RINF application regarding which is the start and which the end OP. This requires national verification.
Message: opStart (1.1.0.0.0.3): There must be exactly one OP start for this section of line and it must be different from the OP end.

OPE TSI References

Appendix D2 Index
3.1.1

Additional Information

General explanation:
Each SoL may have only one start OP, and each OP has unique OP ID within the MS.
The "uniqueOPID" is defined in parameter 1.2.0.0.0.2.
Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP.
That is why the start OP is always located at lowest kilometre of the line within the SoL.
No validation will be performed by RINF application regarding which is the start and which the end OP. This requires IM's verification.

Operational point at end of section of line OP

Operational point at the end of section of line (kilometres increasing from start OP to the end OP).

IRI: *http://data.europa.eu/949/opEnd*

Parameter of

Section Of Line

General Information

Number:
1.1.0.0.0.4

XML Name:
SOLOPEnd

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Operational Point

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Op End
Comment: Each SoL may have only one end OP, and each OP has unique OP ID within the MS. The "uniqueOPID" is defined in parameter 1.2.0.0.0.2. Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP. That is why the start OP is always located at lowest kilometre of the line within the SoL. Data collected in the UK in miles will be transformed to km for uploading to the RINF application. The OP ID must exist in the MS file of RINF. The value of this parameter must be different from 1.1.0.0.0.3. No validation will be performed by RINF application regarding which is the start and which the end OP. This requires national verification.
Message: opEnd (1.1.0.0.0.4): There must be exactly one OP end for this section of line and it must be different from the OP start.
Op End Exists

OPE TSI References

Appendix D2 Index
3.1.2

Additional Information

General explanation:

Each SoL may have only one end OP, and each OP has unique OP ID within the MS. The “uniqueOPID” is defined in parameter 1.2.0.0.0.2.
Each SoL has the principal direction of the traffic defined by increasing kilometres running from the start OP to the end OP.
That is why the end OP is always located at highest kilometre of the line within the SoL.
No validation will be performed by RINF application regarding which is the start and which the end OP. This requires IM's verification.

Length of section of line DP

Length between operational points at start and end of section of line.

IRI: *http://data.europa.eu/949/lengthOfSectionOfLine*

Parameter of

Section Of Line

General Information

Number:
1.1.0.0.0.5

XML Name:
SOLLength

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)
Length

Data Format

Data Presentation
Double

Unit of Measure:
Kilometre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Sol Length
Comment: General description: The length of SoL is theoretical distance between centre points of Ops which are selected in such a way to represent the average value for all tracks within the SoL. It is advised to include distances applied by IM for commercial purposes. Validation: No validation will be performed by RINF application regarding the length of SoL. This requires national verification.
Message: lengthOfSectionOfLine (1.1.0.0.0.5): Each SoL has exactly one length. This error is due to that either there is no length for the specified SoL, more than one length has been defined, or the datatype cannot be converted into an xsd:double.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.2.3

Nature of Section of Line OP

Kind of section of line expressing size of presented data which depends on fact whether it connects OPs generated by division of a big node into several OPs or not.

IRI: *http://data.europa.eu/949/solNature*

Parameter of
Section Of Line

General Information

Number:
1.1.0.0.0.6

XML Name:
SOLNature

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Section of line generic information (1.1.0.0.0)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Section of Line Natures

Values :

Code	Value	Explanation
10	Regular SoL	Not available
20	Link	Not available

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Sol Nature Skos
Comment: Indication of the SOL nature.
Message: SoL nature (1.1.0.0.0.6): The SOL {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/sol-natures/SoLNatures.

Sol Nature Applicability
Comment: If the value of this parameter is "Link", then for all tracks belonging to this SoL, all the parameters of the following groups of parameters are not applicable: 1.1.1.1 Infrastructure subsystem; 1.1.1.2 Energy subsystem; 1.1.1.3 Control-command and signalling subsystem.
Message: SoL nature (1.1.0.0.0.6): The SoL {$this} ({?solLabel}), with opStart {?opStartID} and opEnd {?opEndID}, has a SOLnature of type Link, and at least one of its tracks has values for at least one of the groups of parameters 1.1.1.1, 1.1.1.2 or 1.1.1.3. This happens at least with the track {?track} ({?trackLabel}), with property {?p} (RINF index {?index}).

Sol Nature
Comment: General description: Validation: If the value of this parameter is 'Link', then for all tracks belonging to this SoL, all the parameters of the following groups of parameters are not applicable: 1.1.1.1 Infrastructure subsystem, 1.1.1.2 Energy subsystem, 1.1.1.3 Control-command and signalling subsystem.
Message: SoL nature (1.1.0.0.0.6): Either no SOL nature is specified for this SoL, or more than one SoL nature has been specified.

Route book specific parameters DP OP

General Information

Number:
1.1.0.0.1

Belongs to parameters group
RINF Technical characteristic

Related parameters
Industrial risks — locations where it is dangerous for the driver to step out (1.1.0.0.1.1)
Operating language (1.1.0.0.1.2 | 1.2.0.0.0.8)
Operational regime (1.1.0.0.1.3)

Industrial risks — locations where it is dangerous for the driver to step out DP

Indication that the full section of line (or a part of it) it is identified by the Infrastructure Managers (and communicated to the RU) where drivers are not supposed to get off the locomotive.

IRI: *http://data.europa.eu/949/existenceOfIndustrialRisk*

Parameter of

Section Of Line
Subset with common characteristics

General Information

Number:
1.1.0.0.1.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Route book specific parameters (1.1.0.0.1)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/NYA

Has Characteristics:
Functional property (unique value)

OPE TSI References

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3.2.5

Additional Information

General explanation:
Although it is just an indication of existence of an industrial risk, the area covering the industrial risk should be references on the topological network.
For the route book purpose, the industrial risks should be defined as linear references instead of area. SpecialArea of type "industrial risk" should be used

Operating language OP

The language or languages used in daily operation by infrastructure manager and published in its Network Statement, for the communication of operational or safety related messages between the staff of the infrastructure manager and the railway undertaking.

IRI: *http://data.europa.eu/949/operatingLanguage*

Parameter of

Infrastructure element

General Information

Number:

1.1.0.0.1.2
1.2.0.0.0.8

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Route book specific parameters (1.1.0.0.1)

Data Format

Data Presentation
Concept

Format:
http://publications.europa.eu/resource/authority/language

Taxonomy Reference:
Language

Values :

Code	Value	Explanation
BUL	Bulgarian	Not available
CES	Czech	Not available
DAN	Danish	Not available
DEU	German	Not available
ELL	Greek	Not available
ENG	English	Not available
EST	Estonian	Not available
FIN	Finnish	Not available
FRA	French	Not available
GLE	Irish	Not available
HRV	Croatian	Not available
HUN	Hungarian	Not available
ITA	Italian	Not available
LAV	Latvian	Not available
LIT	Lithuanian	Not available
MLT	Maltese	Not available
NLD	Dutch	Not available
NOR	Norwegian	Not available
POL	Polish	Not available
POR	Portuguese	Not available
RON	Romanian	Not available
SLK	Slovak	Not available
SLV	Slovenian	Not available
SPA	Spanish	Not available
SWE	Swedish	Not available

Flags

Applicability Flags:

Y/NYA

OPE TSI References

Appendix D2 Index

3.5.1

Operational regime OP

Double track type.

IRI: *http://data.europa.eu/949/operationalRegimeType*

Parameter of

Section Of Line

General Information

Number:
1.1.0.0.1.3

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Route book specific parameters (1.1.0.0.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Operational regime types

Values :

Code	Value	Explanation
10	Mono-directional single track line	Not available
20	Bi-directional single track line	Not available
30	Reversible multiple track line	Not available
40	Double or multiple track line	Not available

Flags

Applicability Flags:
Y/NYA

Validation

Validation Rules:
Operational Regime Type
Comment: Double track type.
Message: operationalRegimeType: Each SectionOfLine may have at most one value for operational regime which must be an IRI. This error is due to having more than one values, or a value that is not an IRI.

Operational Regime Type Skos
Comment: Double track type.
Message: operationalRegimeType: The SectionOfLine {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/operational-regime-types/OperationalRegimeTypes.

OPE TSI References

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3.2.7

Running track generic information DP OP

General Information

Number:
1.1.1.0.0

Belongs to parameters group
RINF Technical characteristic

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
Normal running direction (1.1.1.0.0.2)
Lineside distance indication (1.1.1.0.0.3)
Connected to (1.1.1.0.1.2 | 1.2.4.1)

Identification of track DP

Unique track identification or unique track number within operational point or section of line

IRI: *http://data.europa.eu/949/trackId*

Parameter of
Running track

General Information

Number:
1.1.1.0.0.1
1.2.1.0.0.2

XML Name:
SOLTrackIdentification
OPTrackIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Running track generic information (1.1.1.0.0)

Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
No Repeated Track Ids So L
Comment: Each track shall have unique identification or number within the SoL. This number cannot be used for naming any other track in the same SoL.
Message: trackId (1.1.1.0.0.1): Each track shall have unique identification or number within the SoL. This number cannot be used for naming any other track in the same SoL. There is a problem with SoL {$this} ({?solLabel}) and tracks {?track1} ({?track1Label}) and {?track2} ({?track2Label}), since they have the same identifier: {?value}.
Track Id
Comment: Unique track identification or unique track number within an OP or a section of line.
Message: trackId (1.1.1.3.3.3.3, 1.2.1.1.2.3.3): The identification of a track must be a string. This error may be due to having a track with no identification or with more than one value as identification, or having a value that is not a string.
No Repeated Track Ids Op
Comment: Each track shall have unique identification or number within the OP. This number cannot be used for naming any other track in the same OP.
Message: trackId (1.2.1.0.0.2):: Each track shall have unique identification or number within the OP. This number cannot be used for naming any other track in the same OP. There is a problem with OP {$this} ({?opLabel}) and tracks {?track1} ({?track1Label}) and {?track2} ({?track2Label}), since they have the same identifier: {?value}.

OPE TSI References

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2.2.1.1

Additional Information

General explanation:
Each track shall have unique identification or number within the SoL. This number cannot be used for naming any other track in the same SoL.
The check regarding the uniqueness of the ID within the SoL has to be done on national level (preferably by IM).

Normal running direction OP

The normal running direction is:
- the same as the direction defined by the start and end of the SoL: (N)

- the opposite to the direction defined by the start and end of the SoL: (O)
- both directions: (B)

IRI: *http://data.europa.eu/949/trackDirection*

Parameter of

Running track

General Information

Number:
1.1.1.0.0.2

XML Name:
SOLTrackDirection

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Running track generic information (1.1.1.0.0)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Track Running Directions

Values :

Code	Value	Explanation
10	N	The normal running direction is the same as the direction defined by the start and end of the Section of Line.
20	O	The normal running direction is the opposite/reverse as the direction defined by the start and end of the Section of Line.
30	B	The normal running direction is both directions defined by the Section of Line.

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
So Ltrack Direction Max Count
Comment: The normal running direction is: 1) the same as the direction defined by the start and end of the SoL 2) the opposite to the direction defined by the start and end of the SoL 3) both directions defined for SoL.
Message: There should be at most one Track Direction. There is a problem with SoL {$this} ({?solLabel}) and its track {?track} ({?trackLabel}). This track has at least two different values for this property: {?value1} and {?value2}

So Ltrack Direction Min Count
Comment: The normal running direction is: 1) the same as the direction defined by the start and end of the SoL 2) the opposite to the direction defined by the start and end of the SoL 3) both directions defined for SoL.
Message: There should be at least one Track Direction. There is a problem with SoL {$this} ({?solLabel}) and its track {?track} ({?trackLabel}). This track has no values for this property
Track Direction Skos
Comment: The normal running direction is: 1) the same as the direction defined by the start and end of the SoL 2) the opposite to the direction defined by the start and end of the SoL 3) both directions defined for SoL.
Message: Indication of the trackDirection (1.1.1.0.0.2):): The track {?track} in the Section of Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/track-running-directions/TrackRunningDirections.

OPE TSI References

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2.2.1.1

Lineside distance indication OP

Indication of types of appearance of track lineside distance indications.

IRI: *http://data.europa.eu/949/linesideDistanceIndication*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.0.0.3

Belongs to parameters group
Running track generic information (1.1.1.0.0)

Data Format

Data Presentation
Lineside indications of distance

Format:
[NNNN] frequency in meters
Appearance - selectable list
[L/R] - the side along the track where the lineside indication is positioned (left or right)

Validation

Validation Rules:
Lineside Distance Indication Ccs
Comment: Indication of types of appearance of track lineside distance indications.
Message: linesideDistanceIndication (1.1.1.0.0.3) : The common characteristics subset may have at most one value of a lineside distance indication that must be an instance of LinesideDistanceIndication. This error may be due to the subset having more than one value or having a value that is not an instance of the class LinesideDistanceIndication.

Lineside Distance Indication Rt
Comment: Indication of types of appearance of track lineside distance indications.
Message: linesideDistanceIndication (1.1.1.0.0.3) : The track must have exactly one value of a lineside distance indication that must be an instance of LinesideDistanceIndication. This error may be due to the track having no value, having more than one value or having a value that is not an instance of the class LinesideDistanceIndication.

OPE TSI References

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3.1.3

Additional Information

General explanation:
Frequency, appearance and positioning of a sign indicating distance as reference post. Two types of sign are normally available: kilometer post and hectometer post.
- A kilometer post is a lineside sign indicating the distance from a specific point, usually being the strarting point of the railway line.
- An hectometer post is a lineside sign indicating a relative distance.

Connected to OP

Represents a bidirectional connection between two Track instances.

IRI: *http://data.europa.eu/949/connectedTo*

Parameter of
Track

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Running track generic information (1.1.1.0.0)

Data Format

Data Presentation
Track

Flags

Applicability Flags:
Y/N/NYA

Additional Information

General explanation:

This property defines a connection between two tracks. It is symmetric, meaning if a track A is connected to track B, then track B is also connected to track A. A track cannot be connected to itself (irreflexive property).
Used to indicate connectivity between track instances in a network, ensuring that connections are non-self-referential and in the normal running direction of the track.

This is a simplistic representation of the internal connectivity of the tracks in an operational point or the connectivity of the tracks between operational points and sections of line.
For a more detailed representation of connectivity and navigability, this information should be available on the topology of the network.

Example:

```
Track_A connectedTo Track_B implies Track_B connectedTo Track_A.
```

Infrastructure subsystem DP OP

General Information

Number:
1.1.1.1

Belongs to parameters group
RINF Technical characteristic

Related parameters
Declarations of verification for track (1.1.1.1.1)
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)
Line layout (1.1.1.1.3 | 1.2.1.0.3)
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Switches and crossings (1.1.1.1.5)
Track resistance to applied loads (1.1.1.1.6)
Health, safety and environment (1.1.1.1.7)
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Declarations of verification for track DP

General Information

Number:
1.1.1.1.1

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.1 | 1.2.1.0.1.1 | 1.2.2.0.1.1)
EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem (1.1.1.1.1.2 | 1.2.1.0.1.2 | 1.2.2.0.1.2)

EC declaration of verification for infrastructure element relating to compliance with the requirements from TSIs applicable to infrastructure subsystem DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationINF*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.1.1
1.2.1.0.1.1
1.2.2.0.1.1

XML Name:
IDE_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.1.1)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Verification Infs
Comment: Indication of the verification of the infrastructure manager
Message: verificationINF (1.2.2.0.1.1, 1.2.1.0.1.1, 1.2.2.0.1.1): Each Siding or subset with common characteristics may have one or more verificationINF. This error is due to the value not being a string or the value not following this pattern: country code/national registration number/year between 1900 and 2100/progressive counter.

Verification Inf
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'.
Message: verificationINF (1.1.1.1.1.1, 1.2.1.0.1.1): The verificationINF must be a string following the format 'XX/XXXXXXXXXXXXX/YYYY/DDDDDD' where XX is the country code, XXXXXXXXXXXXX is the unique number for EC declarations, YYYY is the year of the declaration (1900-2100) and DDDDDD is the sequential number of the declaration. This error is due to the value not following the pattern.

Additional Information

General explanation:
The parameter may be repeated only when several EC declarations were issued related to the INF subsystem.
With the extension of scope according to the IOD, geographical scope of the INF TSI now includes all the networks (TEN and off-TEN) with the following nominal track gauges: 1435, 1520, 1524, 1600 and 1668 mm

EI declaration of demonstration (as defined in Commission 2014/881/EU (2)) relating to compliance with the requirements from TSIs applicable to infrastructure subsystem DP

Unique number for EI declarations following the same format requirements as specified for EC declarations in Annex VII of Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/demonstrationINF*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.1.2
1.2.1.0.1.2
1.2.2.0.1.2

XML Name:
IDE_EIDemonstration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.1.1)

Data Format

Data Presentation
String

Format:

CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Demonstration Infs
Comment: Unique number for EI declarations following the same format requirements as specified in the 'Documents about practical arrangements for transmitting interoperability documents'
Message: demonstrationINF (1.1.1.1.1.2, 1.2.1.0.1.2, 1.2.2.0.1.2): Each siding or subset with common characteristics may have one or more demonstrationINF. This error is due to the value not being a string or the value not following this pattern: country code/national registration number/year between 1900 and 2100/progressive counter.
Demonstration Inf
Comment: Unique number for EI declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'.
Message: demonstrationINF (1.1.1.1.1.2, 1.2.1.0.1.2): The demonstrationINF must be a string following the format 'XX/XXXXXXXXXXXXX/YYYY/DDDDDD' where XX is the country code, XXXXXXXXXXXXX is the unique number for EI declarations, YYYY is the year of the declaration (1900-2100) and DDDDDD is the sequential number of the declaration. This error is due to the value not following the pattern.

Additional Information

General explanation:
EI declaration of demonstration (as defined Commission 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to infrastructure subsystem.

It may happen that several EI declarations were issued - then parameter has to be repeated as many times as many declarations were issued.

The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary basis, so when EI declaration do not exist then the parameter is optional. If EI declaration was not issued, then field shall be left empty. It may happen that several EI declarations were issued - then parameter has to be repeated as many times as many declarations were issued.

The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary basis, so when EI declaration do not exist then the parameter is optional. If EI declaration was not issued, then field shall be left empty.

Performance parameter DP OP

General Information

Number:
1.1.1.1.2
1.2.1.0.2
1.2.2.0.2

Belongs to parameters group

Infrastructure subsystem (1.1.1.1)

Related parameters

TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
TEN geographic information system identity (GIS ID) (1.1.1.1.2.1.2)
Category of line (1.1.1.1.2.2 | 1.2.1.0.2.2)
Part of a Railway Freight Corridor (1.1.1.1.2.3 | 1.2.1.0.2.3)
Load capability (1.1.1.1.2.4)
National classification for load capability (1.1.1.1.2.4.1)
Compliance of structures with the High Speed Load Model (HSLM) (1.1.1.1.2.4.2)
Railway location of structures requiring specific checks (1.1.1.1.2.4.3)
Document with the procedure(s) for static and dynamic route compatibility checks (1.1.1.1.2.4.4)
Maximum permitted speed (1.1.1.1.2.5)
Temperature range (1.1.1.1.2.6)
Maximum altitude (1.1.1.1.2.7)
Existence of severe climatic conditions (1.1.1.1.2.8)

TEN classification of track OP

Indication of the part of the trans-European network the infrastructure element belongs to.

IRI: *http://data.europa.eu/949/tenClassification*

Parameter of

Platform edge
Running track
Siding
Subset with common characteristics

General Information

Number:
1.1.1.1.2.1
1.2.1.0.2.1
1.2.1.0.6.3
1.2.2.0.0.3

XML Name:
IPP_TENClass
IPL_TENClass

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)
Platform (1.2.1.0.6)
Siding (1.2.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
TEN Classifications

Values :

Code	Value	Explanation
10	Part of the TEN-T Comprehensive Network	Not available
20	Part of the TEN-T Core Freight Network	Not available
30	Part of the TEN-T Core Passenger Network	Not available
40	Off TEN	Not available
50	Part of the TEN-T Extended Core Freight Network	Not available
60	Part of the TEN-T Extended Core Passenger Network	Not available

Flags

Applicability Flags:

Y/N

Validation

Validation Rules:

Ten Classification Skost
Comment: Indication of the TEN classification of track.
Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.

Ten Classification S
Comment: Indicates the part of the trans-European network the platform belongs to.
Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1, 1.2.1.0.6.3, 1.2.2.0.0.3): This error may be due to having a Platform with a TEN classification that is not an URI.

Ten Classification P
Comment: Indicates the part of the trans-European network the platform belongs to.
Message: TEN classification (1.2.1.0.6.3): This error may be due to having a Platform with a TEN classification that is not an URI.

Ten Classification T
Comment: Indication of the part of the trans-European network the line belongs to.
Message: tenClassification (1.1.1.1.2.1, 1.2.1.0.2.1): The track or subset with common characteristics has a TEN classificaion value (Indication of the part of the trans-European network the line belongs to) that must be an IRI.

Ten Classification Skoss
Comment: Indication of the part of the trans-European network the line belongs to.
Message: TEN classification (1.1.1.1.2.1, 1.2.1.0.2.1, 1.2.1.0.6.3, 1.2.2.0.0.3): The siding or subset with common characteristics {$this} with label {?sidingLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.

Ten Classification Skosp
Comment: Indicates the part of the trans-European network the platform belongs to.
Message: TEN classification (1.2.1.0.6.3): The platform {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ten-classifications/TENClassifications.

Additional Information

General explanation:

Article 39 2. freight lines of the core network as indicated in Annex I: at least 22,5 t axle load, 100 km/h line speed and the possibility of running trains with a length of 740 m.

TEN geographic information system identity (GIS ID)
DP

Indication of the GIS identity (GIS ID) of the section of TEN-T database to which the track belongs

IRI: *http://data.europa.eu/949/tenGISId*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.1.2

XML Name:
IPP_TENGISID

Deadline:
1 January 2021

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Ten Gisid Applicability
Comment: Indication of the GIS identity (GIS ID) of the section of TEN-T database to which the track belongs.
Message: tenGISId (1.1.1.1.2.1.2): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Y if the answer to parameter 1.1.1.1.2.1 is not off TEN.
Ten Gisid
Comment: Indication of the GIS identity (GIS ID) of the section of TEN-T database to which the track belongs.
Message: tenGISId (1.1.1.1.2.1.2): The track or subset with common characteristics must have at most one character string value (GIS Id) of the section of TEN-T database to which the track belongs. This error may be due to having a track with more than one TEN GIS identity or that the value is not a string.

Additional Information

General explanation:

This parameter will be deprecated in a next revision. Please use value "Not applicable" until the RINF regulation is aligned. The information below remains for reference only.

TENtec is the European Commission's information system to coordinate and support the Trans-European Transport Network Policy (TEN-T). For more details about the system and the legal background please follow the link to the TENtec Public Portal.

The list of sections of the TEN networks with their GIS IDs can be requested via MOVE-TENTEC-PUBLIC@ec.europa.eu

Category of line OP

Classification of a line according to the TSI INF

IRI: *http://data.europa.eu/949/lineCategory*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.2
1.2.1.0.2.2

XML Name:
IPP_LineCat

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Line Categories

Values :

Code	Value	Explanation
10	P1	Not available
20	P2	Not available
30	P3	Not available
40	P4	Not available
50	P5	Not available
60	P6	Not available
70	P1520	Not available
80	P1600	Not available
90	F1	Not available
100	F2	Not available
110	F3	Not available
120	F4	Not available
130	F1520	Not available
140	F1600	Not available

Flags

Applicability Flags:

Y/N

Validation

Validation Rules:

Line Category Skos
Comment: Classification of a line according to the TSI INF.
Message: lineCategory (1.1.1.1.2.2, 1.2.1.0.2.2): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/line-category/LineCategories.
Line Category
Comment: Classification of a line according to the TSI INF.
Message: lineCategory (1.1.1.1.2.2, 1.2.1.0.2.2): The track or subset with common characteristics must have a classification of a line value that is an IRI.

Additional Information

General explanation:

INF TSI (4.2.1) classifies lines based on the type of traffic (traffic code).

TSI categories of line shall be used for the classification of existing lines to define a target system so that the relevant performance parameters will be met.

The TSI category of line is a combination of traffic codes. For lines where only one type of traffic is carried (for example a freight only line), a single code can be used to describe the requirements; where mixed traffic runs the category will be described by one or more codes for passenger and freight in case of two types of traffic. Then the parameter is repeated if relevant. The combined traffic codes describe the envelope within which the desired mix of traffic can be accommodated.

Technical scope of the INF TSI includes all the networks (TEN and off-TEN) for nominal track gauges 1435, 1520, 1524, 1600 and 1668 mm.
It is not applicable when track is not included in technical scope of the TSI.
When more than one value of the parameter has to be published, then parameter has to be repeated as many times as many values of the parameter will be published.

Example:

```
If a line is operated by passenger trains with speed of 250 km/h, local
commuter trains with speed of 120 km/h and heavy freight trains in the night,
then the best combination of traffic codes seems to be P2, P5 and F1.

Then, the TSI category of line for this case would simply be P2-P5-F1.
```

Part of a Railway Freight Corridor OP

Indication whether the line is designated to a Railway Freight Corridor.

IRI: *http://data.europa.eu/949/freightCorridor*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.3
1.2.1.0.2.3

XML Name:
IPP_FreightCorridor

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Freight Corridors

Values :

Code	Value	Explanation
10	Rhine-Alpine RFC	Not available
20	North Sea-Mediterranean RFC	Not available
30	Scandinavian – Mediterranean RFC	Not available
40	Atlantic RFC	Not available
50	Baltic-Adriatic RFC	Not available
60	Mediterranean RFC	Not available
70	Orient-EastMed RFC	Not available
80	North Sea-Baltic RFC	Not available
90	Rhine – Danube RFC	Not available
100	Alpine-Western Balkan RFC	Not available
110	Amber RFC	Not available

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Freight Corridor
Comment: Indication whether the line is designated to a Railway Freight Corridor
Message: freightCorridor (1.1.1.1.2.3, 1.2.1.0.2.3): Each track or subset with common characteristics may have an indication whether the line is designated to a Railway Freight Corridor that is an IRI. This error is due to having a value that is not an IRI.
Freight Corridor Skos
Comment: Indication whether the line is designated to a Railway Freight Corridor
Message: Indication whether the line is designated to a Railway Freight Corridor (1.1.1.1.2.3, 1.2.1.0.2.3): The National Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/freight-corridor/FreightCorridors.

Additional Information

General explanation:
Not applicable if the line is not part of an RFC. If a line belongs to several corridors, repeat the parameter.

Load capability OP

Relates the track with the class LoadCapability. A combination of the line category and speed at the weakest point of the track.

IRI: *http://data.europa.eu/949/trackLoadCapability*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4

XML Name:
IPP_LoadCap

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Load capability

Format:
The value of this parameter is an instance of the era:LoadCapability class which consists of 2 properties:
- era:loadCapabilityLineCategory - as a taxonomy of load models representing line category
- era:loadCapabilitySpeed - integer for the value of speed [km/h] permitted for a specific load model

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is: [CCCC] [NNN],
where:
- [CCCC] is a single selection from the predefined list of load models representing line category
- [NNN] is the value of speed [km/h] permitted for a specific load model.

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y

Validation

Validation Rules:

Track Load Capability
Comment: Relates the track with the class LoadCapability. A combination of the line category and speed at the weakest point of the track.
Message: trackLoadCapability (1.1.1.1.2.4): The track or subset with common characteristics defines a load capability value that must be an instance of LoadCapability.

OPE TSI References

Part of RCC Algorithm:

true

Additional Information

General explanation:

At this step, RINF does not allow to enter additional data referred to additional speed regulations and operating requirements relating to locomotives (e.g., locomotive classes and associated maximum speed) or traffic types (e.g., maximum speed of freight traffic or passenger traffic).

The load capability describes the weakest point of this track within this section of line (which is normally a bridge or other sub-track structure).
It is expressed as a combination of the line category and speed permitted for trains exerting loads defined for this line category.
The result of the classification process is set out in EN 15528:2021 (Annex A) and referred to in that standard as Line Category.

The Load capability for UK in respect of Northern Ireland consists of RA and speed in miles per hour. RA shall be applied according to UK Railway Group Standard GE/RT8006, Issue Two, September 2010.

More than one combination may be published for the same track if applicable, but it has to be done by repetition of the parameter with one value selected only that is why Y is given in line Can be repeated.
For the following cases, it is not possible to use EN 15528:2021 categories of line classification:
- TSI categories of line P1520 and F1520 (passenger traffic or freight traffic at any speed)
- TSI categories of line P1600 and F1600 (passenger traffic or freight traffic at any speed)

When more than one value of the parameter has to be published, then parameter has to be repeated as many times as many values of the parameter will be published.

Example:

The set of selected data may include: B2-160, D4-120 and E5-100

When classifying infrastructure lines into line categories, the following options shall be used by the infrastructure manager to optimize freight traffic:

Option 1: determination of the line category at maximum freight traffic speed (maximum 120 Km/h)

Option 2: determination of a line category at an associated lower speed (less than the maximum freight traffic speed)

Example of option 1 (Annex F of EN 15528:2021): In a given track, if the traffic is mixed, the local speed of the line is 90 Km/h and the determined line category is D4 at a maximum of 90 Km/h, the information displayed should be: D4/90.

Example of option 2 (Annex F of EN 15528:2021): In a given track, if the traffic is mixed, the local speed of the line is 120 Km/h and the determined line category is C4 at a maximum of 120 Km/h and D4 at maximum of 90 Km/h, the information displayed should be: C4/120 and D4/90.

National classification for load capability DP

National classification for load capability

IRI: *http://data.europa.eu/949/nationalLoadCapability*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.1

XML Name:
IPP_NCLoadCap

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
National Load Capability
Comment: National classification for load capability
Message: nationalLoadCapability (1.1.1.1.2.4.1): The track or subset with common characteristics has a national load capability value that must be a string. This error may be due to the track having a value of national load capability that is not a character string.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Some Networks are using National classification for load capability (instead of parameter 1.1.1.1.2.4 Load capability that provide load capability in accordance with EN 15528)

Example:

```
The French IM SNCF reseau is using the concept of 'groupe
Demeaux' with the following definition is 'Groupe de
classification de la voie tenant compte de la resistance de son
armement en flexion verticale'.
```

Compliance of structures with the High Speed Load Model (HSLM) DP

For sections of line with a maximum permitted speed of 200 km/h or more. Information regarding the procedure to be used to perform the dynamic compatibility check.

IRI: *http://data.europa.eu/949/highSpeedLoadModelCompliance*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.2

XML Name:
IPP_HSLMCompliant

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
High Speed Load Model Compliance
Comment: For sections of line with a maximum permitted speed of 200km/h or more information regarding the procedure to be used to perform the dynamic compatibility check
Message: highSpeedLoadModelCompliance (1.1.1.1.2.4.2): The track or subset with common characteristics must have at most one high speed load model compliance value that must be Y/N (boolean). This error may be due to the track having more than one value or having a value of high speed load model compliance that is not Y/N.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
(TSI INF 4.2.7.1.2(2)) Applicable if the maximum permitted speed of the running track is more than 200km/h and the structures within the section of line are all compatible with the High Speed Load Model (HSLM); information regarding the procedure to be used to perform the dynamic compatibility check shall be provided as well.

Railway location of structures requiring specific checks DP

Localisation of structures requiring specific checks

IRI: *http://data.europa.eu/949/structureCheckLocation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.3

XML Name:
IPP_StructureCheckLoc

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Double

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
This information is to be linked with parameter 1.1.1.1.2.4.4

Validation Rules:
Structure Check Location
Comment: Localisation of structures requiring specific checks.
Message: structureCheckLocation (1.1.1.1.2.4.3): The track or subset with common characteristics has a location of the structure check value that must be a double (real) number and follow the format [±NNNN.NNN]. This error may be due to the track having a value that does not follow the pattern or is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The railway location identifies the location of the structure in the system of reference of the line to which the track belongs.

Example:

```
The IM A knows that its bridge X might have problems with
combination of speed and load above a certain limit values Z, and
for that the IM A has a specific procedure W for the check to be
done; if the vehicle operation is intended to be within this case
(above the limit Z), then RU shall proceed in accordance to the
procedure W; therefore the bridge X shall be referred to in the
parameter of the RINF:  1.1.1.1.2.4.3 / Railway location of
structures requiring specific checks.
```

Document with the procedure(s) for static and dynamic route compatibility checks OP

Electronic document available in two EU languages from the IM stored by the Agency with:

- precise procedures for the static and dynamic route compatibility checks;
Or
- relevant information for carrying out the checks for specific structures.

IRI: *http://data.europa.eu/949/compatibilityProcedureDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.4.4

XML Name:
IPP_StructureCheckDocRef

Deadline:
16 January 2020

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Compatibility Procedure Document
Comment: Document with the procedure for static and dynamic compatibility checks.
Message: compatibilityProcedureDocument (1.1.1.1.2.4.4): The track or subset with common characteristics has a name of the compatibility procedure document that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Maximum permitted speed DP

Nominal maximum operational speed on the line as a result of infrastructure, energy and control, command signalling subsystem characteristics expressed in kilometres/hour.

IRI: *http://data.europa.eu/949/maximumPermittedSpeed*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.5

XML Name:
IPP_MaxSpeed

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Integer

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Maximum Permitted Speed
Comment: Maximum permitted speed.
Message: maximumPermittedSpeed (1.1.1.1.2.5): The track or subset with common characteristics must have at most one value of maximum permitted speed that is an integer that lies within the range 0 to 500. This error may be due to the track having more than one value of maximum permitted speed, that the value does not lie within the range, or that the value is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.1.4

Additional Information

General explanation:
"Speed on the line" shall be understood as speed on the track of the section of line in question.

Example:

```
In case INF, ENE and/or CCS allow different speeds, the max
permitted speed on this track of this section of line shall be
the lowest one.

In case the maximum permitted speed for freight and passenger
trains operation are different, the max permitted speed on this
track of this section of line shall be the highest one.
```

Temperature range OP

Temperature range for unrestricted access to the line.

IRI: *http://data.europa.eu/949/temperatureRange*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.2.6

XML Name:
IPP_TempRange

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Temperature ranges

Values :

Code	Value	Explanation
10	T1	Not available
20	T2	Not available
30	T3	Not available
40	Tx	Not available

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Temperature Range Skos
Comment: Indication of the temperature range of track.
Message: Indication of the temperature range (1.1.1.1.2.6):): The track {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/temperature-ranges/TemperatureRanges.
Temperature Range
Comment: Indication of the temperature range of track.
Message: temperatureRange (1.1.1.1.2.6): Each track or subset with common characteristics may have exactly one temperature range value that must be an IRI. This error may be due to the track not having a temperature range, or having more than one temperature range.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
T1 (-25 to +40)
T2 (-40 to +35)
T3 (-25 to +45)
Tx (-40 to +50)

Maximum altitude DP

Highest point of the section of line above sea level in reference to Normal Amsterdam's Peil (NAP).

IRI: *http://data.europa.eu/949/maximumAltitude*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.2.7

XML Name:
IPP_MaxAltitude

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Double

Format:
[+/-][NNNN]

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Maximum Altitude
Comment: Highest point of the section of line above sea level in reference to Normal Amsterdam's Peil (NAP).
Message: maximumAltitude (1.1.1.1.2.7): The track or subset with common characteristics must define at most one maximum altitude value that must be a double (real) number with format[±NNNN]. This error may be due to the track having more than one value of maximum altitude or that the value is not a double (real) number.

Additional Information

General explanation:
Normaal Amsterdams Peil (NAP), called also Amsterdam Ordnance Datum, it is a vertical datum commonly in use in Europe as reference level for the description of the height of objects in relation to the sea level.

The value of the parameter shall be given in metres, with tolerance of +/-100m.

Existence of severe climatic conditions DP

Climatic conditions on the line are severe according to European standard.

IRI: *http://data.europa.eu/949/hasSevereWeatherConditions*

Parameter of
Running track

Subset with common characteristics

General Information

Number:
1.1.1.1.2.8

XML Name:
IPP_SevereClimateCon

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Performance parameter (1.1.1.1.2 | 1.2.1.0.2 | 1.2.2.0.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Severe Weather Conditions
Comment: Climatic conditions on the line are severe according to European standard.
Message: hasSevereWeatherConditions (1.1.1.1.2.8): The track or subset with common characteristics must have at most one existence of severe weather conditions value that must be Y/N (boolean). This error may be due to the track having more than one value of has severe weather conditions or that the value is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

Value 'true' shall be selected in case there are possible severe climatic conditions to be expected, i.e. a significant amount of snow or ice is to be expected during winter and vehicle should be designed accordingly to be able to run in such conditions. (compliance to 4.2.6.1.2(3),(4) of TSI Loc&Pas required). 'False' to be selected otherwise.

Nominal and severe conditions are defined at TSI Loc&Pas level, section 4.2.6.1.2, which requires that the applicant declares to which snow conditions a vehicle complies with : either "nominal" or "severe" conditions. This technical aspect is reflected in the parameter 4.3.3 "Snow, ice and hail conditions" of ERATV , which will provide the two possible values:
- Nominal conditions correspond to compliance with clause 4.7 of EN 50125 as referred in the §4.2.6.1.2 (1) of TSI Loc&Pas.
To be noted: It is not required to precise the categorisation S1, S2 or S3 as mentioned in the EN 50125.
- Severe conditions correspond to compliance with §4.2.6.1.2 (3) and (4) : the applicant designs and tests its vehicle according to the different scenarios mentioned in the TSI §4.2.6.1.2 (3) (snowdrift, powder snow, temperature gradient, etc.) and set the related provisions to achieve this as required by §4.2.6.1.2 (4) (obstacle deflector of sufficient size, effect of ice and snow on running gear and brake function, etc.).

Line layout DP OP

General Information

Number:
1.1.1.1.3
1.2.1.0.3

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Gauging (1.1.1.1.3.1.1 | 1.2.1.0.3.4)
Railway location of particular points requiring specific checks (1.1.1.1.3.1.2 | 1.2.1.0.3.5)
Document with the transversal section of the particular points requiring specific checks (1.1.1.1.3.1.3 | 1.2.1.0.3.6)
Standard combined transport profile number for swap bodies (1.1.1.1.3.4)
Standard combined transport profile number for semi-trailers (1.1.1.1.3.5)
Specific information (1.1.1.1.3.5.1)
Gradient profile (1.1.1.1.3.6)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Standard combined transport profile number for containers (1.1.1.1.3.8)
Standard combined transport profile number for roller units (1.1.1.1.3.9)

Gauging OP

Gauges as defined in European standard or other local gauges, including lower or upper part.

IRI: *http://data.europa.eu/949/gaugingProfile*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.3.1.1
1.2.1.0.3.4

XML Name:
ILL_Gauging

Deadline:
16 January 2020

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Gauging Profiles

Values :

Code	Value	Explanation
10	GA	Not available
20	GB	Not available
30	GC	Not available
40	G1	Not available
50	DE3	Not available
60	G2	Not available
70	GB1	Not available
80	GB2	Not available
90	BE1	Not available
100	BE2	Not available
110	BE3	Not available
120	FR-3.3	Not available
130	PTb	Not available
140	PTb+	Not available
150	PTc	Not available
160	FIN1	Not available
170	SEa	Not available
180	SEc	Not available
190	DE1	Not available
200	DE2	Not available
210	Z-GCD	Not available
220	UK1	Not available
230	UK1[D]	Not available
240	W6	Not available
250	FS	Not available
260	S	Not available
270	GHE16	Not available
280	GEA16	Not available
290	GEB16	Not available

Code	Value	Explanation
300	GEC16	Not available
310	IRL1	Not available
320	IRL2	Not available
330	IRL3	Not available
340	GI1	Not available
341	FR-3.4.1	Not available
342	FR-3.4.2	Not available
350	GI2	Not available
360	GI3	Not available
370	GEE10	Not available
380	GED10	Not available
389	AFG	Not available
390	AFM 423	Not available
400	NL1	Not available
410	NL2	Not available
411	M30	Not available
412	M80	Not available
413	Tram-train 2.40	Not available
414	Tram-train 2.65	Not available
415	Métrique BA	Not available
416	Métrique SGV	Not available
417	Métrique Cerd.	Not available
418	GB:GČD	Not available
419	GCZ3	Not available
420	GČD	Not available
421	GEI1	Not available
422	GEI2	Not available
423	GEI3	Not available
424	GEI14	Not available

Code	Value	Explanation
425	AFM 425	Not available
426	EBV2_reduziert	Not available
427	AFM 427	Not available
428	EBV3_reduziert	Not available
429	EBV3	Not available
430	EBV4	Not available
431	EBV1	Not available
432	EBV2	Not available
433	AF4.0 – EP	Not available
434	AF4.1 – EP	Not available
435	AF4.2 – EP	Not available
436	AF4.0 – IP	Not available
437	AF4.1 – IP	Not available
438	AF4.2 – IP	Not available
500	Other	Not available

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Gauging Profile Skos
Comment: Indication of the gauging profile of track.
Message: Gauging profile (1.1.1.1.3.1.1, 1.2.1.0.3.4): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gaugings/GaugingProfiles.
Gauging Profile
Comment: Gauges as defined in European standard or other local gauges, including lower or upper part.
Message: gaugingProfile (1.1.1.1.3.1.1, 1.2.1.0.3.4): The track or subset with common characteristics must define a value that is an IRI. The error is due to having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

It is possible to include additional values than the already identified and included in the concept scheme. They will be introduced by the Agency on request via a process of change request.

UK in respect of the Northern Ireland have a reference profile, but defined based on national rule:
7.3.2.2 Specific case Ireland and UK for Northern Ireland ('P')
It is permissible for the reference profile of the upper and the lower part of the unit to be established in accordance with the national technical rules notified for this purpose.

See also:
- Annex D1 OPE TSI
- INF TSI: 4.2.3.1, 4.2.3.2

Railway location of particular points requiring specific checks DP

Location of particular points requiring specific checks due to deviations from gauging referred to in parameter "Gauging"

IRI: *http://data.europa.eu/949/gaugingCheckLocation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.1.2
1.2.1.0.3.5

XML Name:
ILL_GaugeCheckLoc

Deadline:
16 January 2020

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Gauging Check Location
Comment: Location of particular points requiring specific checks due to deviations from gauging referred to in 1.1.1.1.3.1.1.
Message: gaugingCheckLocation (1.1.1.1.3.1.2, 1.2.1.0.3.5): The track or subset with common characteristics has a location of the gauging check that must be a string and follow the format [±NNNN.NNN]. The error is due to the value not following the pattern.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
This parameter is applicable when the IM wants to highlight a particular point requiring checks and provide info via parameter 'Document with the transversal section of the particular points requiring specific checks'.

The railway location identifies the location of the structure in the system of reference of the line to which the track belongs.

The location (generally the distance from the origin of the line to the point of interest for the specific check) on a line is given in kilometres with decimals (precision of 0.001).

Document with the transversal section of the particular points requiring specific checks OP

Electronic document available from the IM stored by the Agency with the transversal section of the particular points requiring specific checks due to deviations from gauging referred to in parameter "Gauging". Where relevant, guidance for the check with the particular point may be attached to the document with the transversal section.

IRI: *http://data.europa.eu/949/gaugingTransversalDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.1.3
1.2.1.0.3.6

XML Name:
ILL_GaugeCheckDocRef

Deadline:
16 January 2020

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Gauging Transversal Document
Comment: Document with the transversal section of the particular points requiring specific checks.
Message: gaugingTransversalDocument (1.1.1.1.3.1.3, 1.2.1.0.3.6): The track or subset with common characteristics has a transversal document of the gauging check value that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Standard combined transport profile number for swap bodies OP

Coding for combined transport with swap bodies (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B]

IRI: *http://data.europa.eu/949/profileNumberSwapBodies*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.4

XML Name:
ILL_ProfileNumSwapBodies

Deadline:
by 16 March 2019 at the latest for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation

Concept

Taxonomy Reference:

Profile Numbers for Swap Bodies

Values :

Code	Value	Explanation
10	C 22	Not available
15	C 25	Not available
18	C 30	Not available
20	C 32	Not available
30	C 38	Not available
40	C 45	Not available
50	C 50	Not available
60	C 55	Not available
70	C 60	Not available
80	C 65	Not available
90	C 70	Not available
100	C 80	Not available
110	C 90	Not available
120	C 341	Not available
130	C 349	Not available
140	C 351	Not available
150	C 357	Not available
160	C 364	Not available
161	C 365	Not available
162	C 371	Not available
165	C 375	Not available
170	C 380	Not available
174	C 384	Not available
180	C 385	Not available
189	C 389	Not available
190	C 390	Not available
200	C 395	Not available
210	C 400	Not available
220	C 405	Not available

Code	Value	Explanation
230	C 410	Not available
240	C 420	Not available
242	C 422	Not available
245	C 450	Not available
250	Other	Not available
260	C S55	Not available
270	C S385	Not available

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Profile Number Swap Bodies Skos
Comment: Coding for combined transport with swap bodies as defined in UIC Code.
Message: Indication of the profileNumberSwapBodies(1.1.1.1.3.4):): The track {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/profile-num-swap-bodies/ProfileNumbersSwapBodies.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The technical number is made up of the wagon compatibility code (1 letter) and the standard combined transport profile number (2 digits when width <= 2550 mm or 3 digits when, 2550 < width <= 2600 mm).

Standard combined transport profile number for semi-trailers OP

Coding for combined transport for semi-trailers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].

IRI: *http://data.europa.eu/949/profileNumberSemiTrailers*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.5

XML Name:

ILL_ProfileNumSemiTrailers

Deadline:
by 16 March 2019 at the latest for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Profile Numbers for Semi-Trailers

Values :

Code	Value	Explanation
10	P 22	Not available
15	P 25	Not available
18	P 30	Not available
20	P 32	Not available
30	P 38	Not available
40	P 45	Not available
50	P 50	Not available
60	P 55	Not available
69	P 59	Not available
70	P 60	Not available
80	P 65	Not available
90	P 70	Not available
100	P 80	Not available
110	P 90	Not available
120	P 341	Not available
130	P 349	Not available
140	P 351	Not available
150	P 357	Not available
160	P 364	Not available
161	P 365	Not available
162	P 371	Not available
165	P 375	Not available
170	P 380	Not available
174	P 384	Not available
180	P 385	Not available
190	P 390	Not available
200	P 395	Not available
210	P 400	Not available
220	P 405	Not available

Code	Value	Explanation
230	P 410	Not available
240	P 420	Not available
242	P 422	Not available
245	P 450	Not available
250	Other	Not available
260	P S55	Not available
270	P S385	Not available

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Profile Number Semi Trailers Skos
Comment: Coding for combined transport with semi-trailers as defined in UIC Code.
Message: Indication of the profileNumberSemiTrailers(1.1.1.1.3.5):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/profile-num-semi-trailers/ProfileNumbersSemiTrailers.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The technical number is made up of the wagon compatibility code (1 letter) and the standard combined transport profile number (2 digits when width <= 2500 mm or 3 digits when 2500 < width <= 2600 mm). Additional values than the already identified in the list above are possible. They will be introduced by the Agency on request via a process of change request.

Specific information DP

Any relevant information from the IM relating to the line layout

IRI: *http://data.europa.eu/949/specificInformation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.5.1

XML Name:
ILL_SpecificInfo

Deadline:
1 January 2021

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Specific Information
Comment: Any specific information from the IM.
Message: specificInformation (1.1.1.1.3.5.1): The track or subset with common characteristics has a specific information value that must be a string. This error may be due to having a value of specific information from the IM that is not a character string.

Additional Information

General explanation:
This parameter allows the IM to provide plain text with specific information about the track

Gradient profile DP

Sequence of gradient values and locations of change in gradient

IRI: *http://data.europa.eu/949/gradientProfile*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.6

XML Name:
ILL_GradProfile

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
String

Format:
in XML: +/-NN.N (+/-NNNN.NNN)

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Gradient Profile
Comment: Sequence of gradient values and locations of change in gradient.
Message: gradientProfile (1.1.1.1.3.6): The track or subset with common characteristics has a gradient profile value that must be a string with a sequence of comma-separated values in the format [+/-][NN.N]([+/-][NNNN.NNN]). This error may be due to having a sequence of values that are not a string or that do not follow the pattern.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.2.2

Additional Information

General explanation:
Data on the values of gradient along a SoL is given as a chain of information:

Gradient (location) The first location corresponding to the start of the first value of the gradient is the centre point of start OP. If there are different values of the gradient, the parameter will be repeated. The last location will correspond to the point where the last value of the gradient starts. This value will be available until the centre point of the end OP.

If there is only one value for the gradient along the track, then the location is not required, only the +/-NN.N value is expected.

Gradient is expressed in mm/m; location is expressed in km of the line.

Positive gradient (uphill) is marked with "+" and negative gradient (downhill) is marked by "-".

The sequence shall follow the increasing kilometres of the line, and this does not take into consideration the running direction of the specific track. This will make the profile easier to read.

Changes in gradient shall be registered only as far as necessary for train running calculations (minimum length of constant gradient shall be 500 m, the minimum change of gradient value shall be 0,5 mm/m).

The required precision for gradient value is 0,5 mm/m, the required precision of location of the points of change of gradient is 10 m. The points of change of gradient are the points of vertical intersection of each vertical curve.

Minimum radius of horizontal curve DP

Radius of the smallest horizontal curve, expressed in metres.

IRI: *http://data.europa.eu/949/minimumHorizontalRadius*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.3.7
1.2.2.0.3.2

XML Name:
ILL_MinRadHorzCurve

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)
Siding (1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Integer

Format:
NNNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Minimum Horizontal Radius S
Comment: Radius of the smallest horizontal curve of the track in metres.
Message: minimumHorizontalRadius (1.2.2.0.3.2, 1.2.2.0.3.2): Each siding or subset with common characteristics may have a minimumHorizontalRadius in meters. This error is due to having more than one minimum horisontal radius value or having a minimum horizontal radius that is not an integer number.

Minimum Horizontal Radius
Comment: Radius of the smallest horizontal curve of The track or subset with common characteristics in metres.
Message: minimumHorizontalRadius (1.1.1.1.3.7, 1.2.2.0.3.2): The track or subset with common characteristics defines a minimum radius of horizontal curve. This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNNNNN].

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
To describe a straight section of line value " 99999" shall be used.

Standard combined transport profile number for containers OP

Coding for combined transport for containers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B]

IRI: *http://data.europa.eu/949/standardCombinedTransportContainers*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.8

Deadline:
12 months after the adoption of the Article 7 Guide for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Standard combined transport containers

Values :

Code	Value	Explanation
00	ISO 00	Not available
01	ISO 01	Not available
02	ISO 02	Not available
03	ISO 03	Not available
04	ISO 04	Not available
05	ISO 05	Not available
06	ISO 06	Not available
07	ISO 07	Not available
08	ISO 08	Not available
09	ISO 09	Not available
10	ISO 10	Not available
11	ISO 11	Not available
12	ISO 12	Not available
13	ISO 13	Not available
14	ISO 14	Not available
15	ISO 15	Not available
16	ISO 16	Not available
17	ISO 17	Not available
18	ISO 18	Not available
19	ISO 19	Not available
20	ISO 20	Not available
21	ISO 21	Not available
22	ISO 22	Not available
23	ISO 23	Not available
24	ISO 24	Not available
25	ISO 25	Not available
26	ISO 26	Not available
27	ISO 27	Not available
28	ISO 28	Not available

Code	Value	Explanation
29	ISO 29	Not available
30	ISO 30	Not available
31	ISO 31	Not available
32	ISO 32	Not available
33	ISO 33	Not available
34	ISO 34	Not available
35	ISO 35	Not available
36	ISO 36	Not available
37	ISO 37	Not available
38	ISO 38	Not available
39	ISO 39	Not available
40	ISO 40	Not available
41	ISO 41	Not available
42	ISO 42	Not available
43	ISO 43	Not available
44	ISO 44	Not available
45	ISO 45	Not available
46	ISO 46	Not available
47	ISO 47	Not available
48	ISO 48	Not available
49	ISO 49	Not available
50	ISO 50	Not available
51	ISO 51	Not available
52	ISO 52	Not available
53	ISO 53	Not available
54	ISO 54	Not available
55	ISO 55	Not available
56	ISO 56	Not available
57	ISO 57	Not available

Code	Value	Explanation
58	ISO 58	Not available
59	ISO 59	Not available
60	ISO 60	Not available
61	ISO 61	Not available
62	ISO 62	Not available
63	ISO 63	Not available
64	ISO 64	Not available
65	ISO 65	Not available
66	ISO 66	Not available
67	ISO 67	Not available
68	ISO 68	Not available
69	ISO 69	Not available
70	ISO 70	Not available
71	ISO 71	Not available
72	ISO 72	Not available
73	ISO 73	Not available
74	ISO 74	Not available
75	ISO 75	Not available
76	ISO 76	Not available
77	ISO 77	Not available
78	ISO 78	Not available
79	ISO 79	Not available
80	ISO 80	Not available
81	ISO 81	Not available
82	ISO 82	Not available
83	ISO 83	Not available
84	ISO 84	Not available
85	ISO 85	Not available
86	ISO 86	Not available

Code	Value	Explanation
87	ISO 87	Not available
88	ISO 88	Not available
89	ISO 89	Not available
90	ISO 90	Not available
91	ISO 91	Not available
92	ISO 92	Not available
93	ISO 93	Not available
94	ISO 94	Not available
95	ISO 95	Not available
96	ISO 96	Not available
97	ISO 97	Not available
98	ISO 98	Not available
99	ISO 99	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Standard Combined Transport Containers Skos
Comment: Coding for combined transport for containers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportContainers (1.1.1.1.3.8):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/standard-combined-transport-containers/StandardCombinedTransportContainers.
Standard Combined Transport Containers
Comment: Coding for combined transport for containers (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportContainers (1.1.1.1.3.8): The track defines a standard combined transport profile number for containers. This error is due to having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Standard combined transport profile number for roller units OP

Coding for combined transport for roller units (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B]

IRI: *http://data.europa.eu/949/standardCombinedTransportRollerUnits*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.3.9

Deadline:
12 months after the adoption of the Article 7 Guide for lines belonging to the TEN (1.1.1.1.2.1)

Belongs to parameters group
Line layout (1.1.1.1.3 | 1.2.1.0.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Standard combined transport profile numbers for roller units

Values :

Code	Value	Explanation
00	B 22	Not available
01	B 25	Not available
02	B 30	Not available
03	B 32	Not available
04	B 38	Not available
05	B 45	Not available
06	B 50	Not available
07	B 55	Not available
08	B 59	Not available
09	B 60	Not available
10	B 65	Not available
11	B 70	Not available
12	B 80	Not available
13	B 90	Not available
14	B 341	Not available
15	B 349	Not available
16	B 351	Not available
17	B 357	Not available
18	B 364	Not available
19	B 365	Not available
20	B 371	Not available
21	B 375	Not available
22	B 380	Not available
23	B 384	Not available
24	B 385	Not available
25	B 389	Not available
26	B 390	Not available
27	B 395	Not available
28	B 400	Not available

Code	Value	Explanation
29	B 405	Not available
30	B 410	Not available
31	B 420	Not available
32	B 422	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Standard Combined Roller Units Skos
Comment: Coding for combined transport for roller units (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportRollerUnits (1.1.1.1.3.9):): The track or subset with common characteristics {$this} in the Section of Line {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/standard-combined-transport-roller-units/StandardCombinedTransportRollerUnits.
Standard Combined Roller Units
Comment: Coding for combined transport for roller units (for all freight and mixed-traffic lines) in accordance with the specification referenced in Appendix A-1, index [B].
Message: standardCombinedTransportRollerUnits (1.1.1.1.3.9): The track or subset with common characteristics defines a standard combined transport profile number for roller units. This error is due to having or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Track parameters DP OP

General Information

Number:
1.1.1.1.4
1.2.1.0.4

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Nominal track gauge (1.1.1.1.4.1 | 1.2.1.0.4.1)
Cant deficiency (1.1.1.1.4.2)
Rail inclination (1.1.1.1.4.3)
Existence of ballast (1.1.1.1.4.4)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Permission for regenerative braking (1.1.1.2.2.4)

Nominal track gauge OP

A single value expressed in millimetres that identifies the track gauge.

IRI: *http://data.europa.eu/949/wheelSetGauge*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.4.1
1.2.1.0.4.1

XML Name:
ITP_NomGauge

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Nominal Track Gauges

Values :

Code	Value	Explanation
10	750	Not available
20	1000	Not available
30	1435	Not available
40	1520	Not available
50	1524	Not available
60	1600	Not available
70	1668	Not available
unknown	Unknown	Track gauge type not known

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Wheel Set Gauge Skos
Comment: A single value expressed in millimeters that identifies The track or subset with common characteristics gauge.
Message: Nominal track gauge (1.1.1.1.4.1, 1.2.1.0.4.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/nominal-track-gauges/NominalTrackGauges.
Wheel Set Gauge
Comment: A single value expressed in millimeters that identifies the track gauge.
Message: wheelSetGauge (1.1.1.1.4.1, 1.2.1.0.4.1): The track or subset with common characteristics must have at most one wheel set gauge value that is an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
In case of multi-rail track, a set of data is to be published separately to each pair of rails to be operated as separate track (the whole set of parameters for the separate track has to be delivered be careful then with the track identification). Nominal track gauges provided by the INF TSI are only 1435, 1520, 1524, 1600 and 1668.

Cant deficiency DP

Maximum cant deficiency expressed in millimetres defined as difference between the applied cant and a higher equilibrium cant the line has been designed for.

IRI: *http://data.europa.eu/949/cantDeficiency*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.4.2

XML Name:
ITP_CantDeficiency

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)

Data Format

Data Presentation

Integer

Format:
+/-NNN

Unit of Measure:
Millimetre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Cant Deficiency
Comment: Maximum cant deficiency expressed in millimeters defined as difference between the applied cant and a higher equilibrium cant the line has been designed for.
Message: cantDeficiency (1.1.1.1.4.2): The track or subset with common characteristics must have at most one cant deficiency value that is an integer. This error may be due to the track having more than one cant deficiency value or to having a value that is not an int.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
In case of positive value of cant deficiency or zero symbol '+' shall be applied. In case of negative cant deficiency symbol '-' has to be selected. Value of the cant deficiency shall be given in millimetres. In case of lateral uncompensated acceleration on a 1435 mm track gauge of 1.0 m/s2 the value of 153 mm may be published.

Rail inclination OP

An angle defining the inclination of the head of a rail relative to the running surface.

IRI: *http://data.europa.eu/949/railInclination*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.4.3

XML Name:
ITP_RailInclination

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Format:
In XML the accepted value is NN, where N is a digit from 0 to 9.

Taxonomy Reference:
Rail Inclinations

Values :

Code	Value	Explanation
10	1/10	Not available
20	1/20	Not available
30	1/30	Not available
40	1/40	Not available
80	1/80	Not available

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Rail Inclination
Comment: An angle defining the inclination of the head of a rail relatie to the running surface.
Message: railInclination (1.1.1.1.4.3): The track or subset with common characteristics must have at most one rail inclination measurement value that is an IRI. This error may be due to the track having more than one rail inclination measurement value or to having a value that is not an IRI.
Rail Inclination Skos
Comment: An angle defining the inclination of the head of a rail relatie to the running surface.
Message: Indication of the rail inclination (1.1.1.1.4.3):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/rail-inclinations/RailInclinations.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

This inclination is in most cases expressed for MS globally, but anyway it requires presentation for the specific track, when in one SoL more values occur.
An angle defining the inclination of the head of a rail when installed in the track relative to the plane of the rails (running surface), equal to the angle between the axis of symmetry of the rail (or of an equivalent symmetrical rail having the same rail head profile) and the perpendicular to the plane of the rails. The typical values for the railway inclination are 1:20, 1:30, 1:40.

Existence of ballast DP

Specifies whether track construction is with sleepers embedded in ballast or not.

IRI: *http://data.europa.eu/949/hasBallast*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.4.4

XML Name:
ITP_Ballast

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for tracks with permitted speed (parameter 1.1.1.1.2.5) greater than 250km/h

Validation Rules:

Has Ballast
Comment: Specifies whether the track construction is with sleepers embedded in ballast or not.
Message: hasBallast (1.1.1.1.4.4): The track or subset with common characteristics must have at most one existence of ballast value that is Y/N (boolean). This error may be due to the track having more than one has ballast value or to having a value that is not Y/N (boolean).
Has Ballast Applicability
Comment: Specifies whether track construction is with sleepers embedded in ballast or not.
Message: hasBallast (1.1.1.1.4.4): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Y for tracks with permitted speed (parameter 1.1.1.1.2.5) greater than 250km/h.

Additional Information

General explanation:
This parameter is related to phenomena of ballast pick-up observed for the high-speed traffic.
Requirements regarding ballast pick-up reduction at infrastructure subsystem level only applies to lines intended to be operated at speed greater than 250 km/h and is an open point in INF TSI: 4.2.10.3
The parameter is about the phenomenon of ballast pick-up observed for the high-speed traffic, not about the ballast itself.
As so far any specifications for mitigation of the problem were disclosed, the only information from RINF will be data about the network where the problems may be faced.

Switches and crossings DP

General Information

Number:
1.1.1.1.5

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
TSI compliance of in-service values for switches and crossings (1.1.1.1.5.1)
Minimum wheel diameter for fixed obtuse crossings (1.1.1.1.5.2)

TSI compliance of in-service values for switches and crossings DP

Switches and crossings are maintained to in service limit dimension as specified in TSI.

IRI: *http://data.europa.eu/949/tsiSwitchCrossing*

Parameter of
Running track

Subset with common characteristics

General Information

Number:
1.1.1.1.5.1

XML Name:
ISC_TSISwitchCrossing

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Switches and crossings (1.1.1.1.5)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Tsiswitch Crossing
Comment: Switches and crossings are maintained to in service limit dimension as specified in TSI.
Message: tsiSwitchCrossing (1.1.1.1.5.1): The track or subset with common characteristics must have at most one existence of TSI switches and crossing value that is Y/N (boolean). This error may be due to the track having more than one tsi swith crossing value or to having a value that is not Y/N (boolean).

Additional Information

General explanation:
If for existing track at least one parameter has less strict value than specified in the TSI, then 'N' (false) shall be selected.

Minimum wheel diameter for fixed obtuse crossings
DP

Maximum unguided length of fixed obtuse crossings is based on a minimum wheel diameter in service expressed in millimetres.

IRI: *http://data.europa.eu/949/minimumWheelDiameter*

Parameter of
Running track

Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.1.5.2

XML Name:
ISC_MinWheelDiaFixObtuseCrossings

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Switches and crossings (1.1.1.1.5)
Vehicle type technical characteristic

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Millimetre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Minimum Wheel Diameter
Comment: Maximum unguided length of fixed obtuse crossings is based on a minimum wheel diameter in service expressed in millimiters.
Message: minimumWheelDiameter (1.1.1.1.5.2): The track or subset with common characteristics must have at most one minimum wheel diameter value that is an integer. This error may be due to the track having more than one minimum wheel diameter value or to having a value that is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The minimum TSI value is 330 mm and this shall be used as a default value unless advised otherwise. If the value of the wheel diameter is bigger than 330 mm, it has to be specified.
New lines are assumed to be compliant with the TSI INF. When the line is compliant to TSI the default value of 330 mm has to be presented.

Track resistance to applied loads DP OP

General Information

Number:
1.1.1.1.6

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Maximum train deceleration (1.1.1.1.6.1)
Use of eddy current brakes (1.1.1.1.6.2 | 1.2.1.0.4.2)
Use of magnetic brakes (1.1.1.1.6.3 | 1.2.1.0.4.3)
Document with the conditions for the use of eddy current brakes (1.1.1.1.6.4)
Document with the conditions for the use of magnetic brakes (1.1.1.1.6.5)
Permission for regenerative braking (1.1.1.2.2.4)

Maximum train deceleration DP

Limit for longitudinal track resistance given as a maximum allowed train deceleration and expressed in metres per square second.

IRI: *http://data.europa.eu/949/maximumTrainDeceleration*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.1

XML Name:
ILR_MaxDeceleration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Double

Format:
N.N

Unit of Measure:
Metre per Square Second

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Not applicable if line is not in scope of INF TSI

Validation Rules:
Maximum Train Deceleration
Comment: Limit for longitudinal track resistance given as a maximum allowed train deceleration and expressed in m/s2.
Message: maximumTrainDeceleration (1.1.1.1.6.1): The track or subset with common characteristics must have at most one maximum train deceleration value that is a double (real) number . This error may be due to the track having more than one maximum train deceleration value or to having a value that is not a real (double) number.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
New lines are assumed to be compliant with the TSI INF.
For TSI compliant lines the default value of 2.5 m/s2 shall be presented.

If for the design of the track the braking forces were assumed on basis of the deceleration lower value than 2.5 m/s2, the applied value of the deceleration has to be specified.

Use of eddy current brakes OP

Indication of limitations on the use of eddy current brakes.

IRI: *http://data.europa.eu/949/eddyCurrentBraking*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.2
1.2.1.0.4.2

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Eddy Current Braking

Values :

Code	Value	Explanation
10	Allowed	Not available
20	Allowed under conditions	Not available
30	Allowed only for emergency brake	Not available
40	Allowed under conditions only for emergency brake	Not available
50	Not allowed	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Eddy Current Braking
Comment: Indication of limitations on the use of eddy current brakes.
Message: eddyCurrentBraking (1.1.1.1.6.2, 1.2.1.0.4.2): The track or subset with common characteristics must have a single use of eddy current brakes value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Eddy Current Braking Skos
Comment: Indication of limitations on the use of eddy current brakes.
Message: eddyCurrentBraking (1.1.1.1.6.2, 1.2.1.0.4.2): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/eddy-current-braking/EddyCurrentBraking.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.5

Additional Information

General explanation:
The use of both brakes is allowed or not under exterior conditions (depending on the features of the train engines for example).
The RINF can't be filled without more precisions.

Use of magnetic brakes OP

Indication of limitations on the use of magnetic brakes.

IRI: *http://data.europa.eu/949/magneticBraking*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.3
1.2.1.0.4.3

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Magnetic Braking

Values :

Code	Value	Explanation
10	Allowed	Not available
20	Allowed under conditions	Not available
30	Allowed under conditions only for emergency brake	Not available
40	Allowed only for emergency brake	Not available
50	Not allowed	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Magnetic Braking
Comment: Indication of limitations on the use of magnetic brakes.
Message: magneticBraking (1.1.1.1.6.3, 1.2.1.0.4.3): The track or subset with common characteristics must have a single use of magnetic brakes value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Magnetic Braking Skos
Comment: Indication of limitations on the use of magnetic brakes.
Message: magneticBraking (1.1.1.1.6.3, 1.2.1.0.4.3): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/magnetic-braking/MagneticBraking.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.6

Document with the conditions for the use of eddy current brakes OP

Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of eddy current brakes identified in 1.1.1.1.6.2.

IRI: *http://data.europa.eu/949/eddyCurrentBrakingConditionsDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.4

XML Name:
ILR_ECBDocRef

Deadline:
16 January 2020

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory value to be provided when 1.1.1.1.6.2/Use of eddy current brakes is allowed under conditions or allowed under conditions only for emergency brake

Validation Rules:
Eddy Current Braking Conditions Document Applicability
Comment: Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of eddy current brakes identified in 1.1.1.1.6.2.
Message: eddyCurrentBrakingConditionsDocument (1.1.1.1.6.4): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Y in case of Y for 1.1.1.1.6.2 Use of eddy current brakes is “allowed under conditions” or “allowed under conditions only for emergency brake””.
Eddy Current Braking Conditions Document
Comment: Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of eddy current brakes identified in 1.1.1.1.6.2.
Message: eddyCurrentBrakingConditionsDocument (1.1.1.1.6.4): The track or subset with common characteristics has an eddy current braking conditions document value that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.5

Additional Information

General explanation:
If there exist conditions to allow the use of eddy current brakes.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Document with the conditions for the use of magnetic brakes OP

Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of magnetic brakes identified in 1.1.1.1.6.3.

IRI: *http://data.europa.eu/949/magneticBrakingConditionsDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.6.5

XML Name:
ILR_MBDocRef

Deadline:
16 January 2020

Belongs to parameters group
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory value to be provided when 1.1.1.1.6.3 / Use of magnetic brakes is 'allowed under conditions' or 'allowed under conditions only for emergency brake'.

Validation Rules:
Magnetic Braking Conditions Document Applicability
Comment: Electronic document available in two EU languages from the IM stored by the Agency with conditions for the use of magnetic brakes identified in 1.1.1.1.6.3.
Message: magneticBrakingConditionsDocument (1.1.1.1.6.5): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Y if the answer to 1.1.1.1.6.3 / Use of magnetic brakes is “allowed under conditions” or “allowed under conditions only for emergency brake”.
Magnetic Braking Conditions Document
Comment: Electronic documents available in two EU languages from the IM stored by the Agency with conditions for the use of magnetic brakes identified in 1.1.1.1.6.3.
Message: magneticBrakingConditionsDocument (1.1.1.1.6.5): The track or subset with common characteristics has a magnetic braking conditions document value that must be a Document.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.6

Additional Information

General explanation:
If there exist conditions to allow the use of magnetic brakes.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Health, safety and environment DP OP

General Information

Number:
1.1.1.1.7

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Use of flange lubrication forbidden (1.1.1.1.7.1)
Existence of level crossings (1.1.1.1.7.2)
Acceleration allowed near level crossing (1.1.1.1.7.3)
Existence of trackside hot axle box detector (HABD) (1.1.1.1.7.4)
Trackside HABD TSI compliant (1.1.1.1.7.5)
Identification of trackside HABD (1.1.1.1.7.6)
Generation of trackside HABD (1.1.1.1.7.7)
Railway location of trackside HABD (1.1.1.1.7.8)
Direction of measurement of trackside HABD (1.1.1.1.7.9)
Steady red lights required (1.1.1.1.7.10)
Belonging to a quieter route (1.1.1.1.7.11)
Permit of use of reflective plates (1.1.1.1.7.12)
Conditions for use of reflective plates (1.1.1.1.7.12.1)

Use of flange lubrication forbidden DP

Indication whether the use of on-board device for flange lubrication is forbidden.

IRI: *http://data.europa.eu/949/flangeLubeForbidden*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.1

XML Name:
IHS_FlangeLubeForbidden

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Flange Lube Forbidden
Comment: Indication whether the use of on-board device for flange lubrication is forbidden.
Message: flangeLubeForbidden (1.1.1.1.7.1): The track or subset with common characteristics must have at most one flange lube forbidden value that is Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Existence of level crossings DP

Indication whether level crossings (including pedestrian track crossing) exist on the section of line.

IRI: *http://data.europa.eu/949/hasLevelCrossings*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.2

XML Name:
IHS_LevelCrossing

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Level Crossings
Comment: Indication whether level crossings (including pedestrian track crossing) exist onf the section line.
Message: hasLevelCrossings (1.1.1.1.7.2): The track or subset with common characteristics must have at most one existence of level crossings value that is Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
This parameter concerns the level crossing of the railway with a road or a street. Provision the correct location of the level crossing(s) is not required, but RINF data model allows providing such information on a voluntary basis, and it can be a geographical information and/or a reference to a line referencing system.

Acceleration allowed near level crossing OP

Existence of limit for acceleration of train if stopping or recovering speed close to a level crossing expressed in a specific reference acceleration curve.

IRI: *http://data.europa.eu/949/accelerationLevelCrossing*

Parameter of
Subset with common characteristics
Track

General Information

Number:
1.1.1.1.7.3

XML Name:
IHS_AccelerationLevelCrossing

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory value when the level crossing is defined

Validation Rules:
Acceleration Level Crossing Applicability
Comment: Existence of limit for acceleration of train if stopping or recovering speed close to a level crossing expressed in a specific reference acceleration curve.
Message: accelerationLevelCrossing (1.1.1.1.7.3): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Applicable only when selected value of parameter 1.1.1.1.7.2 is 'Y'
Acceleration Level Crossing
Comment: Existence of limit for acceleration of train if stopping or recovering speed close to a level crossing expressed in a specific reference acceleration curve.
Message: accelerationLevelCrossing (1.1.1.1.7.3): The track or subset with common characteristics must have at most one acceleration level crossing value that is a Document. This error may be due to having more than one value or having a value that is not an instance of Document.

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Existence of trackside hot axle box detector (HABD) DP

Existence of trackside HABD

IRI: *http://data.europa.eu/949/hasHotAxleBoxDetector*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.4

XML Name:
IHS_HABDExist

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Hot Axle Box Detector
Comment: Existence of trackside hot axle box detector.
Message: hasHotAxleBoxDetector (1.1.1.1.7.4): The track or subset with common characteristics must have at most one existence of hot axle box detector value that is Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The aim of axle bearing condition monitoring is to detect deficient axle box bearings. The TSI Loc&Pas provides with the requirement that units of maximum design speed higher than or equal to 250 km/h, on board detection equipment shall be provided. For units of maximum design speed lower than 250 km/h, and designed to be operated on others track gauge systems than the 1 520 mm system, axle bearing condition monitoring shall be provided and be achieved either by on board equipment or by using track side equipment. Track side equipment (also known as HABD) are defined from the perspective of rolling stock, for which the zone visible to the trackside equipment is defined by the area referred in the standard EN 15437-1:2009, as required by the TSI Loc&Pas.
This parameter is to indicate whether the section of line is equipped with trackside hot axle box detector (HABD) and is necessary for the route compatibility check.

Trackside HABD TSI compliant DP

Specific for the French, Italian and Swedish networks.
Trackside HABD compliant to TSI means that the HABD Trackside is compliant with:
- EN 15437-1:2009 referred in TSIs (LOC&PAS: 4.2.3.3.2.2, WAG TSI: 4.2.3.4),
- Specific cases mentioned in TSIs (LOC&PAS TSI, WAG TSI).

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorTSICompliant*

Parameter of
Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.5

XML Name:
IHS_TSIHABD

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Hot Axle Box Detector Tsicompliant Country Applicability

Message: hotAxleBoxDetectorTSICompliant: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.
Hot Axle Box Detector Tsicompliant
Comment: Trackside HABD compilant to TSI means that the HABD is compliant with EN 15437:2009 and specific cases mentioned in TSIs.
Message: hotAxleBoxDetectorTSICompliant (1.1.1.1.7.5): The HABD must have at most one value that defines if the hot axle box detector is TSI compliant and the value is Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Identification of trackside HABD DP

Specific for the French, Italian and Swedish networks.
Applicable if trackside HABD is not TSI compliant, identification of trackside hot axle box detector.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorIdentification*

Parameter of
Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.6

XML Name:
IHS_HABDID

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:
Hot Axle Box Detector Identification Country Applicability

Message: hotAxleBoxDetectorIdentification: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.
Hot Axle Box Detector Identification Applicability
Comment: Specific for the French Italian and Swedish networks. Applicable if trackside HABD is not TSI compliant, identification of trackside hot axle box detector.@en
Message: hotAxleBoxDetectorIdentification (1.1.1.1.7.6): This error is due to HABD {? label}, violating the rule: “Y” if the answer to parameter 1.1.1.1.7.5 is “N”
Hot Axle Box Detector Identification
Comment: Specific for the French, Italian and Swedish networks. Applicable if trackside HABD is not TSI compliant. Identification of the trackside HABD.
Message: hotAxleBoxDetectorIdentification (1.1.1.1.7.6): The HABD must have at most one value that defines the identification of the hot axle box detector and the value is a character string. This error may be due to having more than one value or having a value that is not a string.

OPE TSI References

Part of RCC Algorithm:
true

Generation of trackside HABD DP

Specific for the French Italian and Swedish networks.
Generation of trackside hot axle box detector.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorGeneration*

Parameter of

Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.7

XML Name:
IHS_HABDGen

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:
Hot Axle Box Detector Generation Applicability
Comment: Specific for the French Italian and Swedish networks. Generation of trackside hot axle box detector. "Y" if the answer to parameter 1.1.1.1.7.5 is "N"
Message: hotAxleBoxDetectorGeneration (1.1.1.1.7.7): This error is due to HABD {? label}, violating the rule: "Y" if the answer to parameter 1.1.1.1.7.5 is "N"
Hot Axle Box Detector Generation
Comment: Applicable if trackside HABD is not TSI compliant. Generation of the trackside HABD.
Message: hotAxleBoxDetectorGeneration (1.1.1.1.7.7): The HABD must have at most one generation of the hot axle box detector value that is a string of characters. This error may be due to having more than one value or having a value that is not a string.
Hot Axle Box Detector Generation Country Applicability

Message: hotAxleBoxDetectorGeneration: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Waiting provision of possible answers by the French, Italian and Swedish NREs

Railway location of trackside HABD DP

Specific for the French Italian and Swedish networks.
Applicable if trackside HABD is not TSI compliant, localisation of trackside hot axle box detector.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorLocation*

Parameter of

Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.8

XML Name:
IHS_HABDLoc

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Double

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:
Hot Axle Box Detector Location Applicability
Comment: Specific for the French Italian and Swedish networks. Applicable if trackside HABD is not TSI compliant, localisation of trackside hot axle box detector.
Message: hotAxleBoxDetectorLocation (1.1.1.1.7.8): This error is due to the HABD {? label}, violating the rule: “Y” if the answer to parameter 1.1.1.1.7.5 is “N”
Hot Axle Box Detector Location Country Applicability

Message: hotAxleBoxDetectorLocation: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.
Hot Axle Box Detector Location
Comment: Applicable if trackside HABD is not TSI compliant. Location of the trackside HABD.
Message: hotAxleBoxDetectorLocation (1.1.1.1.7.8): The HABD has a location of the hot axle box detector(s) value that must be a double (real) number with format [±NNNN.NNN]. This error may be due to having a value that is not a double (real) number or does not follow the pattern [±NNNN.NNN].

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The location (generally the distance from the origin of the line to the point of interest) on a line is given in kilometres with decimals (precision of 0.001).

It may be also possible to provide the location of the HABD as an era:netReference property for the HABD pointing to an era:NetPointReference with (at least)era:LinearPositioningSystemCoordinate

Direction of measurement of trackside HABD OP

Direction of measurement of trackside HABD, specific for the French Italian and Swedish networks.

IRI: *http://data.europa.eu/949/hotAxleBoxDetectorDirection*

Parameter of
Hot Axle Box Detector

General Information

Number:
1.1.1.1.7.9

XML Name:
IHS_HABDDirection

Deadline:
16 January 2020

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Hot Axle Box Detector Directions

Values :

Code	Value	Explanation
10	N	Not available
20	O	Not available
30	B	Not available

Flags

Applicability Flags:

Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the HABD is not TSI compliant (the value of parameter 1.1.1.1.7.5 (Trackside HABD TSI compliant) is 'False')

Validation Rules:
Hot Axle Box Detector Direction Skos
Comment: Direction of measurement of the trackside HABD.
Message: Indication of the hotAxleBoxDetectorDirection (1.1.1.1.7.9):): The HABD {$this} has a value {?concept} through the era:hotAxleBoxDetectorDirection property that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/hot-axle-box-detector-direction/HotAxleBoxDetectorDirections.
Hot Axle Box Detector Direction Applicability
Comment: Specific for the French Italian and Swedish networks. If the direction of measurement is: - the same as the direction defined by the start and end of the SoL: (N); - the opposite to the direction defined by the start and end of the SoL: (O); - both directions: (B). "Y" if the answer to parameter 1.1.1.1.7.5 is "N".
Message: hotAxleBoxDetectorDirection (1.1.1.1.7.9): This error is due to HABD {?label}, violating the rule: "Y" if the answer to parameter 1.1.1.1.7.5 is "N"
Hot Axle Box Detector Direction
Comment: Direction of measurement of the trackside HABD.
Message: hotAxleBoxDetectorDirection (1.1.1.1.7.9): The HABD must have at most one direction of measurement of the hot axle box detector value that is an IRI. This error may be due to HABD having more than one value of hot axle box detector direction, or having a value that is not an IRI.
Hot Axle Box Detector Direction Country Applicability

Message: hotAxleBoxDetectorDirection: This property may only be used for HotAxleBoxDetectors located in France, Sweden, or Italy.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Specific for the French Italian and Swedish networks.
Applicable if trackside HABD is not TSI compliant, direction of measurement of trackside hot axle box detector.
If the direction of measurement is:
- the same as the direction defined by the start and end of the SoL: (N)
- the opposite to the direction defined by the start and end of the SoL: (O)
- both directions: (B)

Steady red lights required DP

Sections where two steady red lights are required in accordance with TSI OPE

IRI: *http://data.europa.eu/949/redLightsRequired*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.10

XML Name:
IHS_RedLights

Deadline:
1 January 2021

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Red Lights Required
Comment: Sections where two steady red lights are required in accordance with Implementing Regulations (EU) 2019/773.
Message: redLightsRequired (1.1.1.1.7.10): The track or subset with common characteristics must have at most one value that defines if two steady red lights are required and the value must be Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).
Red Lights Required Country Applicability

Message: redLightsRequired: This property may only be used for RunningTracks located in Belgium, France, Italy, Portugal, or Spain. This error may be due to applying it to a country other that these, or not having an inCountry annotation in the parent element of the RunningTrack.

Additional Information

General explanation:

Regulation (EU) 2019/773 says:
Specific case:
Belgium, France, Italy, Portugal, Spain and UK may continue to apply notified national rules that require freight trains to be equipped with 2 steady red lights as a condition to run on sections of their network, where this is justified by operating practices already in place and/or national rules notified before end of January 2019.
Cooperation with neighbouring countries:
In the meantime Member States concerned, in particular at the request of the railway undertakings, shall perform an assessment with a view to accept the use of 2 reflective plates in one or more sections of their network if the result of the assessment is positive and define appropriate conditions, which shall be based upon an assessment of the risks and operational requirements. This assessment shall be completed within a maximum period of 6 months after receiving the railway undertaking's request. The acceptance of reflective plates shall be granted, unless the Member State can duly justify the refusal based on the negative result of the assessment.
Member States shall in particular endeavour to permit the use of reflective plates on rail freight corridors, with a view to prioritise the current bottlenecks. These sections and details of any conditions pertaining to them shall be recorded in the RINF. Until the information is encoded in RINF, the infrastructure manager shall ensure the information is communicated to railway undertakings by other appropriate means. The infrastructure manager shall identify the sections of lines on which 2 steady red lights are required in the RINF.

Belonging to a quieter route DP

Belonging to a 'quieter route' in accordance with Article 5b of TSI NOI.

IRI: *http://data.europa.eu/949/isQuietRoute*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.11

XML Name:
IHS_QuietRoute

Deadline:
1 January 2021

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:

Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Is Quiet Route
Comment: Belonging to a 'quiet route' in accordance with Article 5b of Regulation (EU) 1304/2014.
Message: isQuietRoute (1.1.1.1.7.11): The track or subset with common characteristics must have at most one value that defines if it belongs to a 'quiet route' and the value must be Y/N (boolean). This error may be due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
Art 5B: A quieter route means a part of the railway infrastructure with a minimum length of 20 km on which the average number of daily operated freight trains during the night-time as defined in national legislation transposing Directive 2002/49/EC of the European Parliament and of the Council (5) was higher than 12. The freight traffic in the years 2015, 2016 and 2017 shall be the basis for the calculation of that average number. In case the freight traffic due to exceptional circumstances diverges in a given year from that average number by more than 25 %, the Member State concerned can calculate the average number on the basis of the remaining two years.
Art 5.C 1: Member States shall designate quieter routes in accordance with Article 5b and the procedure set out in Appendix D.1 of the Annex. They shall provide the European Union Agency for Railways (the Agency) with a list of quieter routes six months after the date of publication of this Regulation at the latest. The Agency shall publish those lists on its website.

Permit of use of reflective plates DP

Sections where is permitted to use the reflective plates on rail freight corridors, with a view to prioritise the current bottlenecks. Specific case for Belgium, France, Italy, Portugal and Spain until 1.1.2026

IRI: *http://data.europa.eu/949/permitUseReflectivePlates*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.12

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Permit Use Reflective Plates
Comment: Sections where it is permitted to use reflective plates on rail freight corridors, with a view to prioritise current bottlenecks. Specific case for Belgium, France, Italy, Portugal and Spain until 1.1.2026.
Message: permitUseReflectivePlates (1.1.1.1.7.12): The value, if it exists, must the a boolean 'true'. This error is due to the track or subset with common characteristics having a value that is either 'false' or not a boolean.

Additional Information

General explanation:
From TSI OPE: Member States shall in particular endeavour to permit the use of reflective plates on rail freight corridors, with a view to prioritise the current bottlenecks. These sections and details of any conditions pertaining to them shall be recorded in the RINF. Until the information is encoded in RINF, the infrastructure manager shall ensure the information is communicated to railway undertakings by other appropriate means. The infrastructure manager shall identify the sections of lines on which 2 steady red lights are required in the RINF.

Conditions for use of reflective plates OP

Details of any conditions for using the reflective plates on freight corridors. Specific case for Portugal and Spain until 1.1.2025 and Belgium and France until 1.1.2026.

IRI: *http://data.europa.eu/949/conditionsUseReflectivePlates*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.1.7.12.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Health, safety and environment (1.1.1.1.7)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Conditions for use of reflective plates

Values :

Code	Value	Explanation
00	Not applicable	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value is mandatory if the value of parameter "Permit of use of reflective plates" is boolean "Yes"

Validation Rules:
Conditions Use Reflective Plates
Comment: Details of any conditions for using the reflective plates on freight corridors. Specific case for Portugal and Spain until 1.1.2025 and Belgium and France until 1.1.2026.
Message: conditionsUseReflectivePlates (1.1.1.1.7.12.1): The track or subset with common characteristics may have a value of the conditions for use of reflective plates. This error may be due to the track having a value that is not an IRI.
Conditions Use Reflective Plates Skos
Comment: Details of any conditions for using the reflective plates on freight corridors. Specific case for Portugal and Spain until 1.1.2025 and Belgium and France until 1.1.2026.
Message: Indication of the conditionsUseReflectivePlates (1.1.1.1.7.12.1): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/conditions-use-reflective-plates/ConditionsUseReflectivePlates.

Additional Information

General explanation:
From TSI OPE: Member States shall in particular endeavour to permit the use of reflective plates on rail freight corridors, with a view to prioritise the current bottlenecks. These sections and details of any conditions pertaining to them shall be recorded in the RINF. Until the information is encoded in RINF, the infrastructure manager shall ensure the information is communicated to railway undertakings by other appropriate means. The infrastructure manager shall identify the sections of lines on which 2 steady red lights are required in the RINF.

Tunnel DP OP

General Information

Number:
1.1.1.1.8
1.2.1.0.5
1.2.2.0.5

Belongs to parameters group
Infrastructure subsystem (1.1.1.1)

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
Tunnel identification (1.1.1.1.8.2 | 1.2.1.0.5.2 | 1.2.2.0.5.2)
Start of tunnel kilometer (1.1.1.1.8.3)
Start of tunnel location (1.1.1.1.8.3)
End of tunnel (1.1.1.1.8.4)
End of tunnel kilometer (1.1.1.1.8.4)

EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.5 | 1.2.1.0.5.3 | 1.2.2.0.5.3)
EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel (1.1.1.1.8.6 | 1.2.1.0.5.4 | 1.2.2.0.5.4)
Length of tunnel (1.1.1.1.8.7 | 1.2.1.0.5.5 | 1.2.2.0.5.5)
Cross section area (1.1.1.1.8.8)
Compliance of the tunnel with TSI INF (1.1.1.1.8.8.1)
Document available from the IM with precise description of the tunnel (1.1.1.1.8.8.2)
Existence of emergency plan (1.1.1.1.8.9 | 1.2.1.0.5.6 | 1.2.2.0.5.6)
Fire category of rolling stock required (1.1.1.1.8.10 | 1.2.1.0.5.7 | 1.2.2.0.5.7)
National fire category of rolling stock required (1.1.1.1.8.11 | 1.2.1.0.5.8 | 1.2.2.0.5.8)
Existence of walkways (1.1.1.1.8.12 | 1.2.1.0.5.10 | 1.2.2.0.5.9)
Existence of evacuation and rescue points (1.1.1.1.8.13 | 1.2.1.0.5.11 | 1.2.2.0.5.10)
Kilometer number (1.2.0.0.0.6)
Diesel or other thermal traction allowed (1.2.1.0.5.9)

Tunnel identification DP

Unique tunnel identification or unique tunnel number within Member State

IRI: *http://data.europa.eu/949/tunnelIdentification*

Parameter of

Tunnel

General Information

Number:

1.1.1.1.8.2
1.2.1.0.5.2
1.2.2.0.5.2

XML Name:

SOLTunnelIdentification
OPTrackTunnelIdentification
OPSidingTunnelIdentification

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Identifier

Data Format

Data Presentation

String

Flags

Applicability Flags:

Y

Has Characteristics:

Functional property (unique value)

Validation

Validation Rules:

Tunnel Identification

Comment: Unique tunnel identification or unique number within Member State.
Message: tunnelIdentification (1.1.1.1.8.2, 1.2.1.0.5.2, 1.2.2.0.5.2): Each Tunnel can be referred with only one identification. This error may be due to having a Tunnel with no identification, with more than one identification or with an identification that is not a character string.

OPE TSI References

Appendix D2 Index

3.2.3

Additional Information

General explanation:

Here should be given the name, number, code or any other expression which is normally used for the identification of the tunnel other than mentioned in parameters 1.1.1.1.8.3 1.1.1.1.8.4. In case when tunnel does not have its own identification within the Member State, the IM should deliver it himself

Start of tunnel kilometer OP

Part of the Start of tunnel that indicates the km of the line at the beginning of a tunnel.

The Start of tunnel is the Geographical coordinates in decimal degrees and km of the line at the beginning of a tunnel.

IRI: *http://data.europa.eu/949/lineReferenceTunnelStart*

Parameter of

Tunnel

General Information

Number:

1.1.1.1.8.3

XML Name:

SOLTunnelStart

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation

Net Point Reference

Flags

Applicability Flags:

Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Line Reference Tunnel Start
Comment: Part of the Start of tunnel that indicates the km of the line at the beginning of a tunnel.
Message: lineReferenceTunnelStart (1.1.1.1.8.3): A Tunnel may have a start of tunnel location (lineReferenceTunnelStart). This error may be due to a value that is not an IRI, more than one value being provided, or a value that is not a NetPointReference.

Additional Information

General explanation:
Geographical coordinates according to the standard World Geodetic System (WGS). Precision for both geographical latitude and geographical longitude is assumed as [NN.NNNNNNN] in degrees with decimals what gives discretion of 10 cm in the network.
Kilometre shall concern the national line identification given in 1.1.0.0.0.2
Location of the point which is assumed to be the beginning of the tunnel it is the point on the track centre line where is laid the vertical shadow of the extreme part of the tunnel s portal.

Example:

```
Kilometer=`0.895`
```

Start of tunnel location OP

Part of the Start of tunnel that indicates the Geographical coordinates according to the standard World Geodetic System (WGS). Precision for both geographical latitude and geographical longitude is assumed as [NN.NNNNNNN] in degrees with decimals what gives discretion of 10 cm in the network.
The Start of tunnel is the Geographical coordinates in decimal degrees and km of the line at the beginning of a tunnel.

IRI: *http://data.europa.eu/949/startLocation*

Parameter of
Tunnel

General Information

Number:
1.1.1.1.8.3

XML Name:
SOLTunnelStart

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
HasGeometry (1.1.0.0.1.1 | 1.1.1.0.1.1 | 1.1.1.3.14.6 | 1.2.0.0.0.5 | 1.2.1.0.8.5)

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Point

Flags

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Start Location
Comment: Part of the Start of tunnel that indicates the Geographical coordinates according to the standard World Geodetic System (WGS).
Message: startLocation (1.1.1.1.8.3): The Tunnel may have a start location (startLocation) reference that is a Geometry object or a Point. This error mey be due to a startLocation relationship from a Tunnel that is not a Geometry nor a Point.

End of tunnel OP

Geographical coordinates in decimal degrees and km of the line at the end of a tunnel.

IRI: *http://data.europa.eu/949/endLocation*

Parameter of
Tunnel

General Information

Number:
1.1.1.1.8.4

XML Name:
SOLTunnelEnd

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
HasGeometry (1.1.0.0.1.1 | 1.1.1.0.1.1 | 1.1.1.3.14.6 | 1.2.0.0.0.5 | 1.2.1.0.8.5)
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Point

Flags

Applicability Flags:
Y

Has Characteristics:

Functional property (unique value)

Validation

Validation Rules:

End Location

Comment: Geographical coordinates in decimal degrees and km of the line at the end of a tunnel.

Message: endLocation (1.1.1.1.8.4): The Tunnel may have an end location (endLocation) reference that is a Geometry object or a Point. This error mey be due to an endLocation relationship from a Tunnel that is not a Geometry nor a Point.

Additional Information

General explanation:

Geographical coordinates according to the standard World Geodetic System (WGS). Precision for both geographical latitude and geographical longitude is assumed as [NN.NNNNNNN] in degrees with decimals what gives discretion of 10 cm in the network.
Kilometre shall concern the national line identification given in 1.1.0.0.0.2
Location of the point which is assumed to be the end of the tunnel it is the point on the track centre line where is laid the vertical shadow of the extreme part of the tunnel s portal.

Example:

```
Latitude=`51.5479123` Longitude=`-0.076732`
```

End of tunnel kilometer OP

Part of the End of tunnel that indicates the km of the line at the end of a tunnel.

The End of tunnel is the Geographical coordinates in decimal degrees and km of the line at the end of a tunnel.

IRI: *http://data.europa.eu/949/lineReferenceTunnelEnd*

Parameter of

Tunnel

General Information

Number:
1.1.1.1.8.4

XML Name:
SOLTunnelEnd

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Net Point Reference

Flags

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Line Reference Tunnel End
Comment: Part of the End of tunnel that indicates the km of the line at the end of a tunnel.
Message: lineReferenceTunnelEnd (1.1.1.1.8.4): A Tunnel may have an end of tunnel location (lineReferenceTunnelEnd). This error may be due to a value that is not an IRI, more than one value being provided, or a value that is not a NetPointReference.

Additional Information

General explanation:
Parameters of this group (from 1.1.1.1.8.1 to 1.1.1.1.8.13) are only applicable if tunnels exist on the SoL

Example:

```
Kilometer=`0.270`
```

EC declaration of verification relating to compliance with the requirements from TSIs applicable to railway tunnel DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationSRT*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.5
1.2.1.0.5.3
1.2.2.0.5.3

XML Name:
ITU_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Verification Srt
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'
Message: verificationSRT (1.1.1.1.8.5, 1.2.1.0.5.3, 1.2.2.0.5.3): Each Tunnel may have one or more verificationSRT following this pattern country code/national registration number/year between 1900 and 2100/progressive counter. This error may be due to having a value that does not follow the pattern or that is not a character string.

Additional Information

General explanation:
(SRT) in title means that here we include only declarations concerning requirements of SRT TSI for infrastructure system on the specific track.
Parameter shall be repeated when different EC declarations were issued for different elements of infrastructure subsystem on the specific track in the tunnel.
With the extension of scope according to Interoperability Directive 2016/797, geographical scope of the INF, ENE and CCS TSIs now includes all the networks (TEN and off-TEN) with the following nominal track gauges: 1435, 1520, 1524, 1600 and 1668 mm

EI declaration of demonstration (as defined in Recommendation 2014/881/EU) relating to compliance with the requirements from TSIs applicable to railway tunnel DP

Unique number for EI declarations following the same format requirements as specified for EC declarations in Annex VII of Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/demonstrationSRT*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.6
1.2.1.0.5.4
1.2.2.0.5.4

XML Name:
ITU_EIDemonstration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Applicable in case when the demonstration was executed and EI declaration was issued.

The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary bases, so when EI declaration do not exist then the parameter is optional.

Validation Rules:
Demonstration Srt
Comment: Unique number for EI declarations following the same format requirements as specified in the 'Document about practical arrangements for transmitting interoperability documents'
Message: demonstrationSRT (1.1.1.1.8.6, 1.2.1.0.5.4, 1.2.2.0.5.4): Each Tunnel may have one or more demonstrationSRT following this pattern country code/national registration number/year between 1900 and 2100/progressive counter. This error may be due to having a value that does not follow the pattern or that is not a character string.

Additional Information

General explanation:
(SRT) in title means that here we include only declarations concerning requirements of SRT TSI for infrastructure system on the specific track.
Parameter shall be repeated when different EI declarations were issued for different elements of infrastructure subsystem on the specific track in the tunnel.
It may happen that several EI declarations were issued then parameter has to be repeated as many times as many declarations were issued.
The procedure for demonstration that existing network fits to requirements of the TSIs is executed on voluntary bases, so when EI declaration do not exist then the parameter is optional.

Length of tunnel DP

Length of a tunnel in metres from entrance portal to exit portal.

IRI: *http://data.europa.eu/949/lengthOfTunnel*

Parameter of

Tunnel

General Information

Number:
1.1.1.1.8.7
1.2.1.0.5.5
1.2.2.0.5.5

XML Name:
ITU_Length

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Length

Data Format

Data Presentation
Double

Format:
NNNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable for a tunnel with length of 100 metres or more.

Validation Rules:
Length Of Tunnel
Comment: Length of a tunnel in metres from entrance portal to exit portal.
Message: length (1.1.1.1.8.7, 1.2.1.0.5.5, 1.2.2.0.5.5): A Tunnel must have at most one length declaration. This error may be due to having a tunnel with more than one length or to having a value that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

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Additional Information

General explanation:
Length of a tunnel is expressed in metres from portal to portal at the level of the top of rail.

Cross section area DP

Smallest cross section area in square metres of the tunnel

IRI: *http://data.europa.eu/949/crossSectionArea*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.8

XML Name:
ITU_CrossSectionArea

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Square metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the speed of the line is equal or greater than 200km/h

Validation Rules:
Cross Section Area T
Comment: Smallest cross section area in square metres of the tunnel.
Message: crossSectionArea (1.1.1.1.8.8): A Tunnel can have at most one crossSectionArea. This error may be due to having a tunnel with more than one crossSectionArea or having a value that is not an integer number.

Cross Section Area Applicability
Comment: Y (applicable) if is speed of the line equal or greater than 200km/h.
Message: crossSectionArea (1.1.1.1.8.8): The Tunnel {$this} ({?label}) has a maximum permitted speed of {?tunnelSpeed} Km/h . For any tunnel with a speed of the line equal or greater than 200km/h the crossSectionArea parameter is applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Smallest real cross section area (expressed in square metres) of the tunnel.

Reference: 4.2.10.1 of INF TSI on Maximum pressure variations in tunnels.

Compliance of the tunnel with TSI INF DP

Compliance of the tunnel with TSI INF at the maximum permitted speed

IRI: *http://data.europa.eu/949/complianceInfTsi*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.8.1

XML Name:
ITU_TSITunnel

Deadline:
1 January 2021

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory if the speed of the line is equal or greater than 200km/h

Validation Rules:

Compliance Inf Tsi P
Comment: Compliance of the tunnel with INF TSI at the maximum permitted speed.
Message: complianceInfTsi (1.1.1.1.8.8.1): A Tunnel can have at most one complianceInfTsi. This error may be due to having a tunnel with more than one complianceInfTsi or having a value type different than Y/N (boolean).
Compliance Inf Tsi Applicability
Comment: Y (applicable) if is speed of the line equal or greater than 200km/h.
Message: complianceInfTsi (1.1.1.1.8.9, 1.2.1.0.5.6, 1.2.2.0.5.6): The Tunnel {$this} ({?label}) has a maximum permitted speed of {?tunnelSpeed} Km/h . For any tunnel with a speed of the line equal or greater than 200km/h the complianceInfTsi parameter is applicable. This error is due to {$this} not having a value for such a parameter.

Document available from the IM with precise description of the tunnel OP

Electronic document available from the IM stored by the Agency with precise description of the clearance gauge and geometry of the tunnel.

IRI: *http://data.europa.eu/949/tunnelDocRef*

Parameter of
Tunnel

General Information

Number:
1.1.1.1.8.8.2

XML Name:
ITU_TunnelDocRef

Deadline:
1 January 2021

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Tunnel Doc Ref
Comment: Electronic document available from the IM stored by the Agency with precise description of the clearance gauge and geometry of the tunnel
Message: tunnelDocRef (1.1.1.1.8.8.2): A Tunnel has a tunnelDocRef with precise description of the clearance gauge and geometry of the tunnel, and it must be a Document. This error a due to having a value that is not an instance of Document

Additional Information

General explanation:

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Existence of emergency plan DP

Indication whether emergency plan exists.

IRI: *http://data.europa.eu/949/hasEmergencyPlan*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:

1.1.1.1.8.9
1.2.1.0.5.6
1.2.2.0.5.6

XML Name:

ITU_EmergencyPlan

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation

Boolean

Flags

Applicability Flags:

Y/N

Has Characteristics:

Functional property (unique value)

Validation

Dependencies:

Mandatory for tunnels longer than 1 km

Validation Rules:

Has Emergency Plan Applicability
Comment: Applicable for tunnels longer than 1 km.
Message: hasEmergencyPlan (1.1.1.1.8.9, 1.2.1.0.5.6, 1.2.2.0.5.6): The Tunnel {$this} ({?label}) has a length of {?tunnelLength} meters. Any tunnel longer than 1 Km makes the hasEmergencyPlan parameter applicable. This error is due to {$this} not having a value for such a parameter.
Has Emergency Plan
Comment: Indication whether emergency plan exists.
Message: hasEmergencyPlan (1.1.1.1.8.9, 1.2.1.0.5.6, 1.2.2.0.5.6): A Tunnel has an indication about the existence of an emergency plan. This error may be due to having a tunnel with more than one value for hasEmergencyPlan or having a value type different than Y/N (boolean).

Additional Information

General explanation:

A value may not be applicable for tunnels shorter than 1 km, as for them the fire category according SRT TSI does not exist.
Emergency plan has to be a document developed for each tunnel under the direction of the IM, in co-operation, where appropriate, with RUs, Rescue services and relevant authorities. It shall be consistent with the self-rescue, evacuation and rescue facilities provided.
It is applicable for tunnels longer than 1 km, in accordance with section 4.4.2 of SRT TSI, the emergency plan is mandatory only for tunnel length of more than 1km.

SRT TSI: 4.4.2
OPE TSI: 4.2.3.7

Fire category of rolling stock required OP

Categorisation how a passenger train with a fire on board will continue to operate for a defined time period

IRI: *http://data.europa.eu/949/rollingStockFireCategory*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:

1.1.1.1.8.10
1.2.1.0.5.7
1.2.2.0.5.7

XML Name:

ITU_FireCatReq

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation

Concept

Taxonomy Reference:
Rolling Stock Fire Categories

Values :

Code	Value	Explanation
10	A	Rolling stock which is designed and built to operate on underground sections and tunnels of not more than 5 km in length, with side evacuation available is defined as category A
20	B	Rolling stock which is designed and built to operate in all tunnels of the trans-European Network is defined as category B
30	None	None of rolling stock fire categories A or B shall be applied on a tunnel

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for tunnels longer than 1 km

Validation Rules:
Rolling Stock Fire Category Applicability
Comment: Applicable for tunnels longer than 1 km.
Message: rollingStockFireCategory (1.1.1.1.8.10, 1.2.1.0.5.7, 1.2.2.0.5.7): The Tunnel {$this} ({?label}) has a length of {?tunnelLength} meters. Any tunnel longer than 1 Km makes the rollingStockFireCategory parameter applicable. This error is due to {$this} not having a value for such a parameter.
Rolling Stock Fire Category Skos
Comment: Categorisation on how a passenger train with a fire on board will continue to operate for a defined time period
Message: Categorisation on how a passenger train with a fire on board will continue to operate (1.1.1.1.8.10, 1.2.1.0.5.7, 1.2.2.0.5.7): The tunnel {$this} (label {?tunnelLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/rolling-stock-fire/Categories.
Rolling Stock Fire Category
Comment: Categorisation on how a passenger train with a fire on board will continue to operate for a defined time period
Message: rollingStockFireCategory (1.1.1.1.8.10, 1.2.1.0.5.7, 1.2.2.0.5.7): A Tunnel may have an indication about the rollingStockFireCategory. This error may be due to having a tunnel without a rollingStockFireCategory declaration or having a literal as value. This error may be due to a tunnel having more than one value or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

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3.2.3

Additional Information

General explanation:

Wherever category B is not needed, generally the category A has to be understood as the default value. None shall be selected when none of A or B fire category is applied for a specific tunnel. For tunnels shorter than 1km, the fire category according to SRT TSI does not exist.

National fire category of rolling stock required DP

Categorisation of how a passenger train with a fire on board will continue to operate for a defined time period - according to national rules if they exist.

IRI: *http://data.europa.eu/949/nationalRollingStockFireCategory*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.11
1.2.1.0.5.8
1.2.2.0.5.8

XML Name:
ITU_NatFireCatReq

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for tunnels without value for 1.1.1.8.10 and where national values exist.

Validation Rules:
National Rolling Stock Fire Category Applicability
Comment: Applicable only for tunnels when for the parameter 1.1.1.1.8.10 the option 'none' was selected and national rules exist.
Message: nationalRollingStockFireCategory (1.1.1.1.8.11, 1.2.1.0.5.8, 1.2.2.0.5.8): The Tunnel {$this} ({?clsLabel}), has a 'rolling stock fire' category that makes the nationalRollingStockFireCategory parameter applicable. This error is due to {$this} not having a value for such a parameter.

National Rolling Stock Fire Category
Comment: Categorisation on how a passenger train with a fire on board will continue to operate for a defined time period - according to national rules if they exist.
Message: nationalRollingStockFireCategory (1.1.1.1.8.11, 1.2.1.0.5.8, 1.2.2.0.5.8): A Tunnel may have an indication about the nationalRollingStockFireCategory. This error may be due to having a tunnel with more than one value or having a value type different than string.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Data shall include both the category and brief name of the document introducing the categorisation.
A value is mandatory only for tunnels when the value of the parameter 1.1.1.1.8.10 is none and national rules exist.
It may be not applicable when respective national rules do not exist

Existence of walkways DP

Indication of existence of walkways

IRI: *http://data.europa.eu/949/hasWalkway*

Parameter of

Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.12
1.2.1.0.5.10
1.2.2.0.5.9

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Boolean

Format:
[Y/N]

If =Y then TSI-Compliant OR NON-TSI-Compliant

Flags

Applicability Flags:
Y/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for TSI-compliant tunnels longer than 0.5 km

Validation Rules:
Has Walkway
Comment: Indication of existence of walkways.
Message: hasWalkway (1.1.1.1.8.12, 1.2.1.0.5.10, 1.2.2.0.5.9): A Tunnel can have at most one hasWalkway. This error may be due to having a tunnel with more than one hasWalkway or having a value type different than Y/N (boolean).

OPE TSI References

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3.2.3

Additional Information

General explanation:
Indicates the existence of "Escape walkways", if the tunnel is longer than 0.5km then definition from Section 4.2.1.6 of TSI SRT applies.
If the selected value is "true", provide the boolean value for "Is TSI compliant".
On top of the requirements set out in the TSI SRT, the application guide to the TSI allows to use a ballastless track as a walkway. So, a 'Yes' in this parameters might not result in a physical standalone walkway.

For Siding the mechanism to locate a specific object is different depending on the member state. The TWG is still working on it.

Existence of evacuation and rescue points DP

Indication of existence of evacuation and rescue points

IRI: *http://data.europa.eu/949/hasEvacuationAndRescuePoints*

Parameter of
Subset with common characteristics
Tunnel

General Information

Number:
1.1.1.1.8.13
1.2.1.0.5.11
1.2.2.0.5.10

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for TSI-compliant tunnels longer than 0.5 km

Validation Rules:
Has Evacuation And Rescue Points
Comment: Indication of existence of evacuation and rescue points.
Message: hasEvacuationAndRescuePoints (1.1.1.1.8.13, 1.2.1.0.5.11, 1.2.2.0.5.10): A Tunnel has an indication about the existence of an evacuation and rescue points. This error may be due to having a tunnel with more than one value for hasEvacuationAndRescuePoints or having a value type different than Y/N (boolean).

OPE TSI References

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3.2.3

Energy subsystem DP OP

General Information

Number:
1.1.1.2

Belongs to parameters group
RINF Technical characteristic

Related parameters
Declarations of verification for track (1.1.1.2.1)
Contact line system (1.1.1.2.2)
Pantograph (1.1.1.2.3)
OCL separation sections (1.1.1.2.4)
Requirements for rolling stock (1.1.1.2.5)

Declarations of verification for track DP

General Information

Number:
1.1.1.2.1

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.1)

EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem (1.1.1.2.1.2)

EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to energy subsystem DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationENE*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.1.1

XML Name:
EDE_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.2.1)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Verification Ene
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangents for transmitting interoperability documents' .
Message: verificationENE (1.1.1.2.1.1): The track or subset with common characteristics has a number for EC declarations that must follow format CC/XXXXXXXXXXXXX/YYYY/NNNNNN where CC is country code, XXXXX... is a number, YYYY is a year between 1900 and 2100, NNNNNN is the number for the EC declaration. This error may be due to the track having a value that does not follow the pattern.

EI declaration of demonstration (as defined Recommendation 2014/881/EU) for track relating to compliance with the requirements from TSIs applicable to energy subsystem DP

Unique number for EI declarations following the same format requirements as specified for EC declarations in Annex VII of Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/demonstrationENE*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.1.2

XML Name:
EDE_EIDemonstration

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.2.1)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Demonstration Ene
Comment: Unique number for EI declarations following the same format requirements as specified in the 'Document about practical arrangents for transmitting interoperability documents'.
Message: demonstrationENE (1.1.1.2.1.2): The track or subset with common characteristics has a number for EI declarations that must follow format CC/XXXXXXXXXXXXX/YYYY/NNNNNN where CC is country code, XXXXX... is a number, YYYY is a year between 1900 and 2100, NNNNNN is the number for the EI declaration. This error may be due to the track having a value that is not a tring or that does not follow the pattern.

Contact line system DP OP

General Information

Number:
1.1.1.2.2

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Type of contact line system (1.1.1.2.2.1.1)
Energy supply system (Voltage and frequency) (1.1.1.2.2.1.2)
Umax2 for the French network (1.1.1.2.2.1.3)
Maximum train current (1.1.1.2.2.2)
Maximum current at standstill per pantograph (1.1.1.2.2.3 | 1.2.2.0.6.1)
Conditions applying in regards to regenerative braking (1.1.1.2.2.4.1)
Maximum contact wire height (1.1.1.2.2.5)
Minimum contact wire height (1.1.1.2.2.6)
Permission for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.1)
Permitted conditions for charging electric energy storage for traction purposes at standstill (1.2.1.0.7.2)

Type of contact line system OP

Indication of the type of the contact line system.

IRI: *http://data.europa.eu/949/contactLineSystemType*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.2.1.1

XML Name:
ECS_SystemType

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Contact Line Systems

Values :

Code	Value	Explanation
10	Overhead contact line (OCL)	Not available
20	Third Rail	Not available
30	Fourth Rail	Not available
40	Not electrified	Not available

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
If this parameter is repeated, parameters 1.1.1.2.2.1.2, and 1.1.1.2.2.2 shall be created also for the corresponding type. These two parameters are to be considered children of the current.

Validation Rules:
Contact Line System Type Third Or Fourth Rail Applicability
Comment: When the value “Third Rail” or “Fourth Rail” is chosen, parameters 1.1.1.2.2.3, 1.1.1.2.2.5 - 1.1.1.2.4.2.3, 1.1.1.2.5.2 and 1.1.1.2.5.3 are not applicable
Message: contactLineSystemType (1.1.1.2.2.1.1): The Contact Line System {$this} ({?clsLabel}), has a 'Third Rail' or 'Fourth Rail' type, and at least one of its parameters has values for at least one of the parameters 1.1.1.2.2.3, 1.1.1.2.2.5 - 1.1.1.2.4.2.3, 1.1.1.2.5.2 and 1.1.1.2.5.3. This happens at least with property {?p} (RINF index {?index}).
Contact Line System Type Not Electrified Applicability
Comment: When the value "not electrified" is chosen, all parameters 1.1.1.2.2.1.2 - 1.1.1.2.5.3 are not applicable
Message: contactLineSystemType (1.1.1.2.2.1.1): The Contact Line System {$this} ({?clsLabel}), has a 'Not electrified' type, and at least one of its parameters has values for at least one of the range of parameters between 1.1.1.2.2.1.2 and 1.1.1.2.5.3. This happens at least with property {?p} (RINF index {?index}).
Contact Line System Type
Comment: Indication of the type of the contact line system
Message: contactLineSystemType (1.1.1.2.2.1.1): The contact line system must have a contact line system type, and its value must be an IRI. This error is due to the contact line system not having a value for this property, having more than one value for this property, or having a value that is not an IRI.
Contact Line System Type Skos
Comment: Indication of the type of the contact line system
Message: contactLineSystemType (1.1.1.2.2.1.1): The contact line system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/contact-line-systems/ContactLineSystems.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

When the value is "not electrified", then all parameters 1.1.1.2.2.1.2 - 1.1.1.2.5.3 are not applicable.
When the value is “Third Rail” or “Fourth Rail”, then parameters 1.1.1.2.2.3, 1.1.1.2.2.5 - 1.1.1.2.4.2.3, 1.1.1.2.5.2 and 1.1.1.2.5.3 are not applicable

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, if this parameter is repeated, parameters 1.1.1.2.2.1.2, 1.1.1.2.2.2, 1.1.1.2.2.4 and 1.1.1.2.5.1 shall be created also for the corresponding type. These four parameters are to be considered children of the current.
For grouping “children” parameters of the current parameter, an XML attribute called “set” must be declared at the parent and children levels with the same keyword value.

Energy supply system (Voltage and frequency) OP

Indication of the traction supply system (nominal voltage and frequency).

IRI: *http://data.europa.eu/949/energySupplySystem*

Parameter of

Contact Line System
Vehicle Type

General Information

Number:
1.1.1.2.2.1.2

XML Name:
ECS_VoltFreq

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Energy Supply Systems

Values :

Code	Value	Explanation
AC10	AC 25kV-50Hz	Not available
AC20	AC 15kV-16.7Hz	Not available
DC30	DC 3kV	Not available
DC40	DC 1.5kV	Not available
DC60	DC 750V	Not available
DC70	DC 650V	Not available
DC80	DC 600 V	Not available
DC90	DC 850V	Not available

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Energy Supply System
Comment: Indication of the traction supply system
Message: energySupplySystem (1.1.1.2.2.1.2): The contact line system defines the energy supply system.This error is due to a contact line system having more than one value for this property or having a value that is not an IRI.
Energy Supply System Skos
Comment: Indication of the traction supply system
Message: energySupplySystem (1.1.1.2.2.1.2): The contact line system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/energy-supply-systems/EnergySupplySystems.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.3.1

Additional Information

General explanation:
If the real values exceed range of the EN 50163:2004+A1:2007+A2:2020+A3:2022, they could be introduced by the Agency on request via a process of change request.
See: ENE TSI: 4.2.3 and EN 50163:2004: clause 4

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called “Set” will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

Umax2 for the French network DP

Highest non-permanent voltage (Umax2) for France on lines not compliant with values defined in the EN50163:2004+A1:2007+A2:2020+A3:2022

IRI: *http://data.europa.eu/949/umax2*

Parameter of

Contact Line System

General Information

Number:
1.1.1.2.2.1.3

XML Name:
ECS_Umax2

Deadline:
16 January 2020

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Integer

Unit of Measure:
Volt

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Umax2
Comment: Umax2 for lines referred to in sections 7.4.2.2.1 and 7.4.2.11.1 of Regulation (EU) 1301/2014
Message: umax2 (1.1.1.2.2.1.3): The contact line system defines the Umax2 . This error is due to having more than one value for this property, having a value that is not an integer, or having an integer that does not follow the pattern [NNNNNN].

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

Specific for the French network. It may concern DC 1.5kV and AC 25kV.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called “Set” will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

Maximum train current DP

Indication of the maximum allowable train current expressed in amperes.

IRI: *http://data.europa.eu/949/maxTrainCurrent*

Parameter of

Contact Line System

General Information

Number:
1.1.1.2.2.2

XML Name:
ECS_MaxTrainCurrent

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Integer

Unit of Measure:
Ampere

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Maximum Train Current
Comment: Indication of the maximum allowable train current
Message: maxTrainCurrent (1.1.1.2.2.2): Defines the maximum allowable train current of the contact line system. This error is due to having more than one value for this property, having a value that is not an integer, or having an integer that does not follow the pattern [NNNN].

OPE TSI References

Appendix D2 Index
3.3.2

Additional Information

General explanation:
For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called “Set” will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

Maximum current at standstill per pantograph DP

Indication of the maximum allowable train current at standstill expressed in amperes.

IRI: *http://data.europa.eu/949/maxCurrentStandstillPantograph*

Parameter of

Contact Line System
Siding
Vehicle Type

General Information

Number:
1.1.1.2.2.3
1.2.2.0.6.1

XML Name:
ECS_MaxStandstillCurrent

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest for DC systems
30 June 2024 for AC systems

Belongs to parameters group
Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Ampere

Flags

Applicability Flags:
Y/N

Has Characteristics:

Functional property (unique value)

Validation

Dependencies:

This parameter is applicable only the type of contact line system is 'Overhead contact line (OCL)'
In sidings, it may be not applicable, in the following cases:
- siding is not electrified
- Siding is destined to freight traffic, whose trains have a low consumption in stationary (the maximum demand of energy is due to air conditioning systems, which is not significant in these trains).
- Siding is used in access to depots or workshops.

Validation Rules:

Max Current Standstill Pantograph Applicability
Comment: This parameter is applicable ("Y") only if "Overhead contact line (OCL)" is selected for parameter 1.1.1.2.2.1.1.
Message: maxCurrentStandstillPantograph (1.1.1.2.2.3, 1.2.2.0.6.1):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type which makes the maxCurrentStandstillPantograph parameter applicable. This error is due to {$this} not having a value for such a parameter.
Max Current Standstill Pantograph
Comment: Indication of the maximum allowable current at standstill per pantograph
Message: maxCurrentStandstillPantograph (1.1.1.2.2.3, 1.2.2.0.6.1): Defines the maximum allowable current at standstill per pantograph for the contact line system. This error is due to having more than one value for this property, having a value that is not an integer, or having an integer that does not follow the pattern [NNN].
Max Current Standstill Pantograph S
Comment: Indication of the maximum allowable train current at standstill for DC systems expressed in amperes
Message: maxCurrentStandstillPantograph (1.1.1.2.2.3, 1.2.2.0.6.1): Each siding may define the maximum allowable train current at standstill for DC systems expressed in amperes. This error is due to having a max current standstill pantograph value that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:

true

Appendix D2 Index

3.3.8

Additional Information

General explanation:

Parameter related to current taken by the vehicle when it is not in a traction or regenerative mode, e.g. preheating, air-condition, etc.
Due to operational reasons, trains can get stuck on SoL for hours, and in some cases, this parameter is even the reason the air-condition is shut down

Permission for regenerative braking OP

Indication whether regenerative braking is permitted, not permitted, or permitted under specific conditions.

IRI: *http://data.europa.eu/949/conditionalRegenerativeBrake*

Parameter of

Contact Line System

General Information

Number:
1.1.1.2.2.4

XML Name:
ECS_RegenerativeBraking

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Track parameters (1.1.1.1.4 | 1.2.1.0.4)
Track resistance to applied loads (1.1.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Regenerative Braking

Values :

Code	Value	Explanation
10	Allowed	Not available
20	Allowed under conditions	Not available
30	Allowed only for emergency brake	Not available
40	Allowed under conditions only for emergency brake	Not available
50	Not allowed	Not available

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Conditional Regenerative Brake Skos
Comment: Indication whether regenerative braking is permitted, not permitted, or permitted under specific conditions.
Message: conditionalRegenerativeBrake (1.1.1.2.2.4):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/regenerative-braking/RegenerativeBraking.

Conditional Regenerative Brake
Comment: Indication whether regenerative braking is permitted, not permitted, or permitted under specific conditions.
Message: conditionalRegenerativeBrake (1.1.1.2.2.4): The track or subset with common characteristics defines if the regenerative brake is permitted. This error is due to having more than one value for this property or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.3.7

Additional Information

General explanation:
When regenerative braking is "allowed under conditions", a document must be provided under 1.1.1.2.2.4.1.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, an XML attribute called “Set” will be used to link the value of this parameter to the parameter 1.1.1.2.2.1.1 / ECS_SystemType

Conditions applying in regards to regenerative braking OP

Name and/or reference of the document specifying the conditions applying in regards to regenerative braking.

IRI: *http://data.europa.eu/949/conditionsAppliedRegenerativeBraking*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.2.4.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable. Mandatory when parameter 1.1.1.2.2.4 announces Conditions.

Validation Rules:
Conditions Applied Regenerative Braking
Comment: Name and/or reference of the document specifying the conditions applying in regards to regenerative braking.
Message: conditionsAppliedRegenerativeBraking (1.1.1.2.2.4.1): The contact line system has a conditionsAppliedRegenerativeBraking reference that must be a Document. This error is due to having more than one value for this property or having a value that is not a Document.
Conditions Applied Regenerative Braking Applicability
Comment: This parameter is applicable ("Y") only if "Overhead contact line (OCL)" is selected for parameter 1.1.1.2.2.1.1.
Message: conditionsAppliedRegenerativeBraking (1.1.1.2.2.4.1):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type which makes the conditionsAppliedRegenerativeBraking parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.3.7

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Maximum contact wire height DP

Indication of the maximum contact wire height expressed in metres.

IRI: *http://data.europa.eu/949/maximumContactWireHeight*

Parameter of

Contact Line System
Siding
Vehicle Type

General Information

Number:
1.1.1.2.2.5

XML Name:
ECS_MaxWireHeight

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Double

Format:
N.NN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Maximum Contact Wire Height
Comment: Indication of the maximum contact wire height expressed in metres
Message: maximumContactWireHeight (1.1.1.2.2.5): The contact line system or siding defines a maximum contact wire height expressed in metres. This error is due to having more than one value for this property, having a value that is not a double (real) number, or having a number that does not follow the pattern [N.NN] (with up to 2 decimals).
Maximum Contact Wire Height Applicability
Comment: This parameter is applicable (“Y”) only if “Overhead contact line (OCL)” is selected for parameter 1.1.1.2.2.1.1.
Message: maximumContactWireHeight (1.1.1.2.2.6):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type which makes the maximumContactWireHeight parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value given can be design value or the last known measured value. If there is no change in height, nominal value will be given.

Values shall be given in metres with precision of 0.01 m.

Minimum contact wire height DP

Indication of the minimum contact wire height expressed in metres.

IRI: *http://data.europa.eu/949/minimumContactWireHeight*

Parameter of

Contact Line System
Vehicle Type

General Information

Number:
1.1.1.2.2.6

XML Name:
ECS_MinWireHeight

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Contact line system (1.1.1.2.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
When `not electrified` is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable.

Validation Rules:
Minimum Contact Wire Height
Comment: Indication of the minimum minimum contact wire height expressed in metres
Message: minimumContactWireHeight (1.1.1.2.2.6): The contact line system defines a minimum contact wire height expressed in metres. This error is due to having more than one value for this property, having a value that is not a double (real) number, or having a number that does not follow the pattern [N.NN] (with up to 2 decimals).

Minimum Contact Wire Height Applicability
Comment: This parameter is applicable (“Y”) only if “Overhead contact line (OCL)” is selected for parameter 1.1.1.2.2.1.1.
Message: minimumContactWireHeight (1.1.1.2.2.6):The Contact Line System {$this} ({?clsLabel}), has a 'Overhead contact line (OCL)' type which makes the minimumContactWireHeight parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value given can be design value or the last known measured value. If there is no change in height, nominal value will be given.

Values shall be given in metres with precision of 0.01 m.

Pantograph DP OP

General Information

Number:
1.1.1.2.3

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Accepted TSI compliant pantograph heads (1.1.1.2.3.1)
Accepted other pantograph heads (1.1.1.2.3.2)
Requirements for number of raised pantographs and spacing between them, at the given speed (1.1.1.2.3.3)
Contact strip material metallic content (1.1.1.2.3.4)
Permitted contact strip material (1.1.1.2.3.4)

Accepted TSI compliant pantograph heads OP

Indication of TSI compliant pantograph heads which are allowed to be used.

IRI: *http://data.europa.eu/949/tsiPantographHead*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.1

XML Name:

EPA_TSIHeads

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
CompliantPantograph Heads

Values :

Code	Value	Explanation
10	1950 mm (Type 1)	Not available
20	1600 mm (EP)	Not available
30	2000 mm – 2260 mm	Not available
40	None	Not available
50	1950 mm (Type 1) with insulated horns	Not available

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Tsi Pantograph Head Skos
Comment: Accepted TSI compliant pantograph heads.
Message: Indication of the tsiPantographHead (1.1.1.2.3.1):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/compliant-pantograph-heads/CompliantPantographHeads.
Tsi Pantograph Head Applicability
Comment: Indication of TSI compliant pantograph heads which are allowed to be used.
Message: tsiPantographHead (1.1.1.2.3.1): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

The parameter can contain more than one pantograph defined in LOC&PAS TSI. Presentation of those pantographs is done by repetition of the parameter with a single selection.
If declaring acceptance of pantograph heads 1950 (type 1), both insulated and conductive horns shall be accepted.
The head geometry of pantograph type 1600 mm is as depicted in the points 4.2.8.2.9.2.1 of LOC&PAS TSI which refers to EN 50367:2020+A1:2022 Annex A.2 Figure A.6.
The head geometry of pantograph type 1950 mm is as depicted in the points 4.2.8.2.9.2.2 of LOC&PAS TSI which refers to EN 50367:2020+A1:2022 Annex A.2 Figure A.7.
The head geometry for pantograph type 2000/2260 mm is depicted in the point 4.2.8.2.9.2.3 of LOC&PAS TSI.

Accepted other pantograph heads OP

Indication of pantograph heads which are allowed to be used.

IRI: *http://data.europa.eu/949/otherPantographHead*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.2

XML Name:
EPA_OtherHeads

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Other Pantograph Heads

Values :

Code	Value	Explanation
10	1950 mm (Type2)	Not available
20	1950 mm (PL)	Not available
30	1800 mm (NO,SE)	Not available
40	1760 mm (BE)	Not available
70	1450 mm	Not available
100	1700 mm (ES)	Not available
110	1700 mm with insulated horns (ES)	Not available

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Other Pantograph Head Applicability
Comment: Indication of pantograph heads which are allowed to be used.
Message: otherPantographHead (1.1.1.2.3.2): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.
Other Pantograph Head Skos
Comment: Indication of which other pantograph heads are allowed to be used.
Message: Indication of the otherPantographHead (1.1.1.2.3.2):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/other-pantograph-heads/OtherPantographHeads.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The parameter may contain more than one type of the pantograph head - all of them shall be indicated by repetition of the parameter with different single selections.
Additional values than the already identified in the list above are possible. They will be introduced by the Agency on request via a process of change request.

Requirements for number of raised pantographs and

spacing between them, at the given speed OP

Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

IRI: *http://data.europa.eu/949/trackRaisedPantographsDistanceAndSpeed*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.3

XML Name:
EPA_NumRaisedSpeed

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation
Requirements for number of raised pantographs and spacing between them, at the given speed

Format:
Three values: [N] is number of pantographs; [NNN] is minimum distance between pantographs, in metres; [NNN] is the speed considered in km/h.

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Track Raised Pantographs Distance And Speed
Comment: Relates the track with the class RaisedPantporaphsDistanceAndSpeed. Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.
Message: trackRaisedPantographsDistanceAndSpeed (1.1.1.2.3.3): The track defines a raised pantographs distance and speed value that must be an instance of RaisedPantographsDistanceAndSpeed.

Track Raised Pantograph Distance And Speed Applicability
Comment: Relates the track with the class RaisedPantographsDistanceAndSpeed. Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.
Message: trackRaisedPantographsDistanceAndSpeed (1.1.1.2.3.3): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
This parameter gives the information about the number of pantographs and the distance between them at a given speed for which the Overhead Contact Line (OCL) has been designed.

As for different speeds different combinations of number of pantographs and distance between them may exist, so this parameter can be repeated to present all of them.

The raised pantographs distance and speed is the indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

See 4.2.13 (TSI ENE) and 4.2.8.2.9.7 (TSI LOC&PAS)

Contact strip material metallic content DP

Indication of max. percentage of contact strip material Impregnated Carbon permitted to be used.

IRI: *http://data.europa.eu/949/contactStripMaterialMetallicContent*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.3.4

XML Name:
EPA_StripMaterial

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)

Data Format

Data Presentation

Integer

Flags

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory only if impregnated carbon ([NN] % of metallic content)" is selected in 1.1.1.2.3.4, otherwise no value should be provided

Validation Rules:
Contact Strip Material Metallic Content
Comment: In case that the value of the property era:contactStripMaterial is impregnated carbon, it is the metallic content, the maximum percentage allowed.
Message: contactStripMaterialMetallicContent (1.1.1.2.3.4): The track or subset with common characteristics has an indication of the material of the contact strip that must be an integer. This error may be due to the track having a value that is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
In case that the value of the property era:contactStripMaterial is "impregnated carbon", it is the metallic content in % (this value must be added). This is the maximum percentage allowed.

Permitted contact strip material OP

Indication of which contact strip materials are permitted to be used.

IRI: *http://data.europa.eu/949/contactStripMaterial*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.2.3.4

XML Name:
EPA_StripMaterial

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Pantograph (1.1.1.2.3)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Contact strip materials

Values :

Code	Value	Explanation
10	Copper	Not available
20	Plain carbon	Not available
30	Copper steel	Not available
40	Copper alloy	Not available
50	Impregnated carbon (% of metallic content)	Not available
60	Carbon with additive material	Not available
70	Carbon with cladded copper	Not available
80	Sintered copper	Not available
90	Other	Not available

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory only if “Overhead contact line (OCL)” is selected in 1.1.1.2.2.1.1, otherwise the parameter is not applicable.

Validation Rules:
Contact Strip Material Skos
Comment: Indication of the material of the contact strip.
Message: Indication of the contactStripMaterial (1.1.1.2.3.4):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/contact-strip-materials/ContactStripMaterials.
Contact Strip Material Applicability
Comment: Indication of which contact strip materials are permitted to be used.
Message: contactStripMaterial (1.1.1.2.3.4): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

[NN] for impregnated carbon concern the metallic content in %. In case of selection of this option, the respective value of the metallic content has to be added. [NN] is the maximum percentage allowed.

In case of permitted material different than specified in predefined list, send ERA a change request.

When more than one value of the parameter has to be published, then parameter will to be repeated as many times as the number of values.

OCL separation sections DP OP

General Information

Number:
1.1.1.2.4

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Phase separation (1.1.1.2.4.1.1)
Information on phase separation (1.1.1.2.4.1.2)
System separation (1.1.1.2.4.2.1)
Information on system separation (1.1.1.2.4.2.2)
Distance between signboard and phase separation ending (1.1.1.2.4.3)

Phase separation DP

Indication of existence of phase separation and required information.

IRI: *http://data.europa.eu/949/hasPhaseSeparation*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.1.1

XML Name:
EOS_Phase

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
Boolean

Format:
in XML: Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value is mandatory only if 1.1.1.2.2.1.1 parameter values is Overhead contact line (OCL) , otherwise applicability flag is "N" (not applicable)

Validation Rules:
Has Phase Separation Applicability
Comment: Indication of existence of phase separation and required information.
Message: hasPhaseSeparation (1.1.1.2.4.1.1): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.
Has Phase Separation
Comment: Indication of existence of phase separation and required information.
Message: hasPhaseSeparation (1.1.1.2.4.1.1): The track or subset with common characteristics defines at most one existence of phase separation and required information value that is Y/N (boolean). This error may be due to the track having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
In case of existence of phase separation on the track or on the section of the line the option True shall be selected.

Information on phase separation OP

Relates the Track with PhaseInfo. Indication of required several information on phase separation.

IRI: *http://data.europa.eu/949/trackPhaseInfo*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.1.2

XML Name:
EOS_InfoPhase

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation

Phase info

Format:

In RDF the range is an instance of the era:PhaseInfo class with all its properties.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is a character string with the following structure: distance type [MIN/MAX] + length [NNN] + switch off breaker [Y/N] + lower pantograph [Y/N] + km [NNN.NNN]. The structure of the string is as follows:
- distance type [MIN/MAX] - single selection of 'MIN=minimum' or 'MAX=maximum' to show whether the length is a minimum distance between the inner contact strips of the pantographs or a maximum distance between the outer contact strips of the pantographs. Multiple strings for this parameter are accepted;
- length [NNN] - the length of the phase separation in meters;
- switch off breaker [Y/N], single selection of 'yes' or 'no' to show whether the breaker has to be switched off;
- lower pantograph [Y/N], single selection of 'yes' or 'no' to show whether the pantograph has to be lowered,
- Km [NNN.NNN] - the location from the start of the line where the new value is valid.

Flags

Applicability Flags:

Y/N

Validation

Dependencies:

A value is mandatory only if 1.1.1.2.4.1.1 parameter "Phase separation" value is "Y" (true), otherwise applicability flag is "N" (not applicable)

Validation Rules:

Track Phase Info
Comment: Relates the Track with PhaseInfo. Indication of required several information on phase separation.
Message: trackPhaseInfo (1.1.1.2.4.1.2): The track defines a track phase info value that must be an instance of PhaseInfo.
Track Phase Info Applicability
Comment: Relates the Track with PhaseInfo. Indication of required several information on phase separation.
Message: trackPhaseInfo (1.1.1.2.4.1.2): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Applicable when in parameter 1.1.1.2.4.1.1 selected option is ‘Y’

System separation DP

Indication of existence of system separation

IRI: *http://data.europa.eu/949/hasSystemSeparation*

Parameter of

Running track

Subset with common characteristics

General Information

Number:
1.1.1.2.4.2.1

XML Name:
EOS_System

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
It is applicable (Y) only if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:
Has System Separation
Comment: Indication of existence of system separation.
Message: hasSystemSeparation (1.1.1.2.4.2.1): The track or subset with common characteristics has at most one existence of system separation value that must be Y/N (boolean). This error may be due to the track having more than one value or to having a value that is not Y/N (boolean).
Has System Separation Applicability
Comment: Indication of existence of system separation.
Message: hasSystemSeparation (1.1.1.2.4.2.1): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

Additional Information

General explanation:
In case of existence of system separation on the track or on the section of the line and required information on the section of the line, the option Y=yes shall be selected.

Information on system separation OP

Indication of required several information on system separation

IRI: *http://data.europa.eu/949/trackSystemSeparationInfo*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.2.2

XML Name:
EOS_InfoSystem

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
System separation info

Format:
In RDF, the range is an instance of the era:SystemSeparationInfo class with all its properties.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is a character string with the following structure: length [NNN] + switch off breaker [Y/N] + lower pantograph [Y/N] + km [NNN.NNN]

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Mandatory if there is an indication of existence of system separation (parameter 1.1.1.2.4.2.1)

Validation Rules:
Track System Separation Info
Comment: Relates the Track with the SystemSeparationInfo. Indication of required several information on system separation.
Message: trackSystemSeparationInfo (1.1.1.2.4.2.2): The track defines a system separation info value that must be an instance of SystemSeparationInfo.
Track System Separation Info Applicability
Comment: Relates the Track with the SystemSeparationInfo. Indication of required several information on system separation.
Message: trackSystemSeparationInfo (1.1.1.2.4.2.2): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Applicable when in parameter 1.1.1.2.4.2.1 selected option is 'Y'

Additional Information

General explanation:

Length - the length of the system separation in meters
Switch off breaker - single selection of Y=yes or N=no to show whether the breaker has to be switched off
Lower pantograph - single selection of Y=yes or N=no to show whether the pantograph has to be lowered
Km - the location from the start of the line where the new value is valid

Distance between signboard and phase separation ending DP

Distance between the signboard authorizing the driver to raise pantograph or close the circuit breaker after passing the phase separation and the end of the phase separation section.

IRI: *http://data.europa.eu/949/distSignToPhaseEnd*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.4.3

XML Name:
EOS_DistSignToPhaseEnd

Deadline:
16 January 2020

Belongs to parameters group
OCL separation sections (1.1.1.2.4)

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
It is applicable (Y) only if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:

Dist Sign To Phase End
Comment: Specific for route compatibility check on French network. Distance between the signboard authorizing the driver to 'raise pantograph' or 'close the circuit breaker' after passing the phase separation and the end of the phase separation section.
Message: distSignToPhaseEnd: The track or subset with common characteristics must have at most one value of the distance between the signboard authorizing the driver to 'raise pantograph' or 'close the circuit breaker' after passing the phase separation and the end of the phase separation section, and the value is an integer. This error is due to the track having more than one value or to having a value that is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Specific for route compatibility check on French network.

Requirements for rolling stock DP OP

General Information

Number:
1.1.1.2.5

Belongs to parameters group
Energy subsystem (1.1.1.2)

Related parameters
Current or power limitation on board required (1.1.1.2.5.1)
Contact force permitted (1.1.1.2.5.2)
Automatic dropping device required (1.1.1.2.5.3)
Document with restriction related to power consumption of specific electric traction unit(s) (1.1.1.2.5.4)
Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation (1.1.1.2.5.5)

Current or power limitation on board required DP

Indication of whether an on board current or power limitation function on vehicles is required.

IRI: *http://data.europa.eu/949/currentLimitationRequired*

Parameter of
Contact Line System

General Information

Number:
1.1.1.2.5.1

XML Name:
ERS_PowerLimitOnBoard

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
When "not electrified" is chosen in parameter "Type of contact line system", then this parameter is not applicable.

Validation Rules:
Current Limitation Required
Comment: Indication of whether an on board current or power limitation function on vehicles is required.
Message: currentLimitationRequired (1.1.1.2.5.1): The track or subset with common characteristics may have a current limitation required value that is a boolean. This error may be due to the track having a value that is not a boolean.
Current Limitation Required Applicability
Comment: Indication of whether an on board current or power limitation function on vehicles is required.
Message: currentLimitationRequired (1.1.1.2.5.1): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: When 'not electrified' is chosen in parameter 1.1.1.2.2.1.1, then this parameter is not applicable selection ‘N’.

OPE TSI References

Part of RCC Algorithm:
true

Contact force permitted DP

Indication of contact force allowed expressed in newton.

IRI: *http://data.europa.eu/949/permittedContactForce*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.2

XML Name:
ERS_ContactForce

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
String

Format:
The force is either given as: a value of the static force and of the maximum force expressed in newtons, or as a formula for function of the speed

Unit of Measure:
Newton

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value is mandatory if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:
Permitted Contact Force Applicability
Comment: Indication of contact force allowed expressed in newton.
Message: permittedContactForce (1.1.1.2.5.2): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.
Permitted Contact Force
Comment: Indication of contact force allowed expressed in newtons.
Message: permittedContactForce (1.1.1.2.5.2): The track or subset with common characteristics must have at most one value of the contact force allowed expressed in newtons. This error is due to the track having more than one value or to having a value that is not a character string.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The formula of the function shall represent the curve describing the value of the contact force in relation to the speed.
Static and maximum forces are given only for the maximum permitted line speed (see parameter number 1.1.1.1.2.5).

Automatic dropping device required DP

Indication of whether an automatic dropping device (ADD) required on the vehicle.

IRI: *http://data.europa.eu/949/automaticDroppingDeviceRequired*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.3

XML Name:
ERS_AutoDropRequired

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value is mandatory if the value Overhead contact line (OCL) is selected for parameter "Type of contact line system"

Validation Rules:
Automatic Dropping Device Required
Comment: Indication of the requirement of automatic dropping device.
Message: automaticDroppingDeviceRequired (1.1.1.2.5.3): The track or subset with common characteristics must have at most one value of the requirement of automatic dropping device and it is Y/N (boolean). This error is due to the track having more than one value or to having a value that is not Y/N (boolean).
Automatic Dropping Device Required Applicability
Comment: Indication of whether an automatic dropping device (ADD) required on the vehicle.
Message: automaticDroppingDeviceRequired (1.1.1.2.5.3): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: This parameter is applicable ('Y') only if “Overhead contact line (OCL)” is selected for 1.1.1.2.2.1.1.

OPE TSI References

Part of RCC Algorithm:
true

Document with restriction related to power consumption of specific electric traction unit(s) OP

Name and/or reference of the document specifying the restriction(s) related to power consumption of specific electric traction unit(s).

IRI: *http://data.europa.eu/949/documentRestrictionPowerConsumption*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.4

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Document Restriction Power Consumption
Comment: Document with restriction related to power consumption of specific electric traction unit(s).
Message: documentRestrictionPowerConsumption (1.1.1.2.5.4): The track or subset with common characteristics may have a Document with restriction related to power consumption of specific electric traction unit(s) value that is a Document. This error may be due to the track having a value that is not a Document.

Additional Information

General explanation:

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation OP

Name and/or reference of the document specifying the restriction(s) related to the position of Multiple Traction unit(s) to comply with contact line separation.

IRI:
http://data.europa.eu/949/documentRestrictionPositionContactLineSeparation

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.2.5.5

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Requirements for rolling stock (1.1.1.2.5)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Document Restriction Position Contact Line Separation
Comment: Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation.
Message: documentRestrictionPositionContactLineSeparation (1.1.1.2.5.5): The track or subset with common characteristics may have a Document with restriction related to the position of Multiple Traction unit(s) to comply with contact line separation value that is a Document. This error may be due to the track having a value that is not a Document.

Additional Information

General explanation:

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Control-command and signalling subsystem DP OP

General Information

Number:
1.1.1.3

Belongs to parameters group
RINF Technical characteristic

Related parameters
Declarations of verification for track (1.1.1.3.1)
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)
Train protection legacy systems (1.1.1.3.5 | 1.2.1.1.4)
Radio Legacy Systems (1.1.1.3.6 | 1.2.1.1.5)
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)
Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)
Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)
Brake related parameters (1.1.1.3.11)
Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)
Signal (1.1.1.3.14)

Declarations of verification for track DP OP

General Information

Number:
1.1.1.3.1

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem (1.1.1.3.1.1)
Error corrections required for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)

Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function (1.1.1.3.1.2 | 1.2.1.1.1.19)

EC declaration of verification for track relating to compliance with the requirements from TSIs applicable to control, command signalling subsystem DP

Unique number for EC declarations in accordance with Commission Implementing Regulation (EU) 2019/250.

IRI: *http://data.europa.eu/949/verificationCCS*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.1.1

XML Name:
CDE_ECVerification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Declarations of verification for track (1.1.1.3.1)

Data Format

Data Presentation
String

Format:
CC/RRRRRRRRRRRRR/YYYY/NNNNNN

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Verification Ccs
Comment: Unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents'.
Message: verificationCCS (1.1.1.3.1.1): The track or subset with common characteristics defines the unique number for EC declarations following format requirements specified in the 'Document about practical arrangements for transmitting interoperability documents; the value must be a string that follows the pattern [CC/RRRRRRRRRRRRR/YYYY/NNNNNN] where the YYYY characters must be a number between 1900 and 2100, and the NNNNNN characters must be digits. This error is due to having a value that does not follow the pattern.

Additional Information

General explanation:
(CCS) in title means that here we include only declarations concerning command control and signalling subsystem on the specific track. For the specific track the several EC declarations may be issued, so parameter has to repeated as many times as many numbers of declarations has to be presented.

Error corrections required for the on-board ETCS, GSM-R and/or ATO function OP

List of unacceptable errors impacting the IM network that are required to be solved in the on-board according to the TSI CCS point 7.2.10.3 specification maintenance point (ETCS, GSM-R and/or ATO). An additional parameter (era:errorCorrectionsOnboardExplanation) must document if a non-implemented CR has been accepted by the IM.

IRI: *http://data.europa.eu/949/errorCorrectionsOnboard*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.1.2
1.2.1.1.1.19

Deadline:
12 months after the entry into force of TSI CCS and at least 12 months after publication of Article 7 Guide

Belongs to parameters group
Declarations of verification for track (1.1.1.3.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Onboard Error Corrections

Values :

Code	Value	Explanation
887	CR887	Position Report Consistency (Follow-up of CR556)
940	CR940	Minimum Safe Rear End position and position reporting ambiguities
994	CR994	Text message start conditions
1120	CR1120	Uncertain handling of some infill information
1146	CR1146	Euroradio HDLC parameters
1166	CR1166	Ambiguities in driver acknowledgement requirements
1170	CR1170	Ambiguity about the list of traction systems accepted by a diesel engine
1171	CR1171	Messages containing shifted location reference when orientation of LRBG is unknown
1240	CR1240	attack from unlinked balise
1251	CR1251	Use of inconsistent or incomplete terms for the cooperative MA shortening function
1252	CR1252	Ambiguities about release speed and application of A.3.4 in case a train accepts a CES
1259	CR1259	Accuracy of distances measured on-board not considered when determining Release Speed from MRSP
1263	CR1263	MA request condition when LoA speed is above MRSP
1264	CR1264	Exhaustiveness of the list of actions not to be reverted or executed twice
1267	CR1267	Acquiring the list of available networks whilst communication session is established
1274	CR1274	Problem to compare locations in the absence of linking information
1282	CR1282	Subset-044 chapter on safety is inconsistent with Subset-026 regarding handling of EOLM info
1288	CR1288	Shortcomings due to specific locations temporarily considered as the EOA/SvL
1293	CR1293	Ambiguity about clauses to be applied to messages containing high priority data
1295	CR1295	TSR inhibition in SB and SR modes

Code	Value	Explanation
1296	CR1296	Wrong assumption in on-board calculation of release speed
1300	CR1300	Follow-up to CR977
1306	CR1306	Undefined sequence of actions following the filtering of trackside information as per SRS 4.8
1309	CR1309	Enhancement of HDLC to handle retransmission of SABME message
1310	CR1310	DNS/ETCS on-board communication handling
1311	CR1311	Inconsistency in Subset-026 regarding the relevance of Q_SLEEPSESSION for session termination orders
1312	CR1312	Undefined sequence of actions following the filtering of trackside information as per SRS 4.8 (part 2)
1313	CR1313	Unclear management of train position status on passing unlinked BG(s)
1318	CR1318	Ambiguity in determination of location accuracy
1319	CR1319	Support of different transmission speeds (ETCS data)
1324	CR1324	Problems with applying SRS clauses related to the supervision of an unprotected LX
1325	CR1325	Rejection of safety relevant information due to pending acknowledgement of validated train data
1326	CR1326	Display conflict in area D of ETCS DMI
1327	CR1327	Reset of confidence interval
1332	CR1332	Release speed calculated on-board while a LTO in rear of the EOA is stored on-board
1333	CR1333	Subset-026 clause 3.12.4.4 does not cover the case of reception of a new MA without mode profile
1334	CR1334	Ambiguity regarding the mode and level end events for the display of a text message
1335	CR1335	Train categories B3 on B2
1338	CR1338	Issues regarding the forwarding of data to a National System
1340	CR1340	Maximum D_LRBG exceeded

Code	Value	Explanation
1342	CR1342	Unpractical coexistence between level 2 and level 3
1347	CR1347	Unclear specification of 'balise detection degradation' function
1348	CR1348	No change of speed and distance monitoring supervision status
1349	CR1349	Ambiguity in display of override status
1353	CR1353	Undefined term 'the level is configured on-board'
1354	CR1354	Misleading term 'the expected balise group is found'
1358	CR1358	Missing confidence interval to supervise the SR distance
1372	CR1372	Uniqueness of BG IDs vs. VBC function
1376	CR1376	List of available levels after transition announcement
1377	CR1377	Handling of an RBC transition order for a different RBC during an on-going RBC/RBC handover
1382	CR1382	Repositioning information in a BG containing infill MA
1384	CR1384	Issues when the on-board supervises an MA with release speed
1386	CR1386	Inconsistent speed and distance monitoring transition when the train speed is equal to the release or target speed
1387	CR1387	Inconsistency regarding the way to send the Train Data during SoM
1389	CR1389	Reaction when CI of the odometry is exceeding the accuracy requirement of 5m+5% (SS-41)
1396	CR1396	Resolution of the VBC validity period
1397	CR1397	Sorting speed based upon mass per unit length
1398	CR1398	Risk for deadlock in the clock offset update procedure in SUBSET-098
1406	CR1406	Handling of location based information referred to different BGs when the information cannot be relocated to the same BG
1408	CR1408	Train data before SoM position report
1409	CR1409	'Infinite' information in RRI

Code	Value	Explanation
1411	CR1411	Inconsistency section timer expires
1414	CR1414	Traction cut-off ambiguity
1415	CR1415	KMS protocol issue
1417	CR1417	TCP connection loss detection
1418	CR1418	Unclear management of MA section timers
1419	CR1419	Undue extension of MA via a mode profile for further location
1423	CR1423	Unacceptable risks with High Priority Data
1427	CR1427	Radio hole functionality shortcomings
1428	CR1428	Alignment of KM related variables and messages
1431	CR1431	Unclear management of the time stamp of the SH request included in the SH Authorised message
1432	CR1432	Wrong value of T_traction in on-board calculation of release speed
5037	CR5037	Use of High Priority call GID 200
5038	CR5038	FN Numbers registration/deregistration
5039	CR5039	Call arbitration table for cab radios
5040	CR5040	MI/M misalignments in the specifications
5041	CR5041	Radio characteristics for EDOR
5042	CR5042	Handling of temporary functional numbers during cab radio power on
5049	CR5049	PPP Activation timeout is not defined and ETCS DNS query repetition is missing
5050	CR5050	Errors & inconsistencies found in FFFIS for SIM card

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Error Corrections Onboard

Comment: List of unacceptable errors impacting the IM network that are required to be solved in the on-board according to the TSI CCS point 7.2.10.3 specification maintenance point (ETCS, GSM-R and/or ATO).

Message: errorCorrectionsOnboard (1.1.1.3.1.2, 1.2.1.1.1.19): The track or subset with common characteristics may have an error correction required for the on-board ETCS, GSM-R and/or ATO function value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.

Error Corrections Onboard Skos

Comment: List of unacceptable errors impacting the IM network that are required to be solved in the on-board according to the TSI CCS point 7.2.10.3 specification maintenance point (ETCS, GSM-R and/or ATO).

Message: errorCorrectionsOnboard (1.1.1.3.1.2, 1.2.1.1.1.19): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/error-corrections/OnboardErrorCorrections.

Additional Information

General explanation:

This parameter should be limited to those required for the onboard, in order to allow normal service as defined in Art. 10 CR. The values will come from a list.
IM's may choose to make available the optional ETCS error corrections as well, but this should be done using other means than the RINF register.
This parameter should also be understood as ETCS, ATO and GSM-R related error corrections required for the on-board. pending a formal update and approval of the relevant legislative annex.
For the specific track the error corrections to be applied is one list only.

Reasons for Error corrections required, but accepted by the IM for the on-board ETCS, GSM-R and/or ATO function DP

Explanation on why a mandatory onboard CR required to be solved in the on-board (ETCS, GSM-R and/or ATO) was accepted by the IM.

IRI: *http://data.europa.eu/949/errorCorrectionsOnboardExplanation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.1.2
1.2.1.1.1.19

Deadline:

12 months after the entry into force of TSI CCS and at least 12 months after publication of Article 7 Guide

Belongs to parameters group

Declarations of verification for track (1.1.1.3.1)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Error Corrections Onboard Explanation
Comment: Explanation on why a mandatory onboard CR required to be solved in the on-board (ETCS, GSM-R and/or ATO) was accepted by the IM.
Message: errorCorrectionsOnboardExplanation (1.1.1.3.1.2, 1.2.1.1.1.19): The errorCorrectionsOnboardExplanation must be a string. This error is due to having more than one value or having a value that is not a string.

TSI compliant train protection system (ETCS) DP OP

General Information

Number:
1.1.1.3.2
1.2.1.1.1

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
European Train Control System (ETCS) level (1.1.1.3.2.1 | 1.2.1.1.1.1)
ETCS baseline (1.1.1.3.2.2 | 1.2.1.1.1.2)
ETCS infill necessary for line access (1.1.1.3.2.3 | 1.2.1.1.1.3)
ETCS infill installed line-side (1.1.1.3.2.4 | 1.2.1.1.1.4)
Has ETCS national packet 44 application implemented (1.1.1.3.2.5 | 1.2.1.1.1.5)
Existence of operating restrictions or conditions (1.1.1.3.2.6 | 1.2.1.1.1.6)
Train integrity confirmation from on-board (not from driver) necessary for line access (1.1.1.3.2.8 | 1.2.1.1.1.8)
ETCS system compatibility (1.1.1.3.2.9 | 1.2.1.1.1.9)
ETCS M_version (1.1.1.3.2.10 | 1.2.1.1.1.10)
Safe consist length information from on-board necessary for access the line and SIL (1.1.1.3.2.11 | 1.2.1.1.1.11)
Is the ETCS trackside engineered to transmit Track Conditions (1.1.1.3.2.12 | 1.2.1.1.1.12)
Track conditions which can be transmitted (1.1.1.3.2.12.1 | 1.2.1.1.1.12.1)
ETCS trackside implements level crossing procedure or an equivalent solution (1.1.1.3.2.13 | 1.2.1.1.1.13)
Cant Deficiency used for the basic SSP (1.1.1.3.2.14 | 1.2.1.1.1.14)
Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP (1.1.1.3.2.14.1 | 1.2.1.1.1.14.1)
Reasons for which an ETCS Radio Block Center can reject a train (1.1.1.3.2.15 | 1.2.1.1.1.15)
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)
ID of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)

Phone number of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
Big Metal Mass (1.1.1.3.2.18 | 1.2.1.1.1.18)
Document with operating restrictions or conditions
ETCS national packet 44 application implemented

European Train Control System (ETCS) level OP

ETCS application level related to the track side equipment.

IRI: *http://data.europa.eu/949/etcsLevelType*

Parameter of

ETCS

General Information

Number:
1.1.1.3.2.1
1.2.1.1.1.1

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Levels

Values :

Code	Value	Explanation
10	N	Not available
20	1	Not available
30	2	Not available
50	0	Not available
60	NTC	Not available
70	ETCS under construction	Not available

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Etcs Level Type
Comment: Indicates the type associated as a SKOS concept from the era:ETCSLevel related to the track side equipment.
Message: etcsLevelType (1.1.1.3.2.1, 1.2.1.1.1.1): The ETCS has at most one etcsLevelType value and it must be an IRI. This error is due to the ETCS having more than one value or having a value that is not an IRI.
Etcs Level Type Skos
Comment: Indicates the type associated as a SKOS concept from the era:ETCSLevel related to the track side equipment.
Message: Indication of the etcsLevelType (1.1.1.3.2.1, 1.2.1.1.1.1): The ETCS {$this} has a value {? concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-levels/.

OPE TSI References

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3.2.7

Additional Information

General explanation:

The different ERTMS / ETCS application levels are a way to express the possible operating relationships between track and train.

Level definitions are principally related to the track side equipment used, to the way the track side information reaches the on-board units and to which functions are processed in the track side and in the on-board equipment respectively.

If ETCS is on the trackside (one or more levels are selected), all other ETCS parameters (from 1.1.1.3.2.2 to 1.1.1.3.2.10) are applicable and mandatory to be populated with values .
If the line is only equipped with Class B, this should be reflected in Parameter 1.1.1.3.5.3, and this parameter is “N”(not applicable).

The ETCS value NTC is only relevant when the line is dual equipped with ETCS (i.e., balises are placed in the track) and Class B system, and both systems are in operation at the same time.
In those cases, this parameter should be filled relevant ETCS Level and repeated with the value NTC.

If the line is only equipped with Class B, this should be reflected in Parameter 1.1.1.3.5.3, and this parameter etcsLevelType should not be used.

See: TSI CCS (Subset-026, Chapter 2, 2.6)

ETCS baseline OP

ETCS baseline installed lineside.

IRI: *http://data.europa.eu/949/etcsBaseline*

Parameter of

ETCS
Vehicle Type

General Information

Number:

1.1.1.3.2.2

1.2.1.1.1.2

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Baselines

Values :

Code	Value	Explanation
10	Prebaseline 2	Not available
20	Baseline 2	Not available
30	Baseline 3	Not available
40	Baseline 3 maintenance release 1	Not available
50	Baseline 3 release 2	Not available
60	Baseline 4 release 1	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Baseline
Comment: ETCS baseline installed lineside
Message: etcsBaseline (1.1.1.3.2.2, 1.2.1.1.1.2): The ETCS may have an ETCS baseline, and its value must be an IRI. This error is due to the ETCS instance having more than one value or having a value that is not an IRI.
Etcs Baseline Skos
Comment: ETCS baseline installed lineside
Message: etcsBaseline (1.1.1.3.2.2, 1.2.1.1.1.2): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-baselines/.

Etcs Baseline Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsBaseline (1.1.1.3.2.2, 1.2.1.1.1.2): The ETCS {$this} ({?thisLabel}), has a ETCS level type which makes the etcsBaseline parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

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3.2.7

Additional Information

General explanation:
The ETCS baseline needs to be provided for each available ETCS Level. See: TSI CCS (Table A2)

ETCS infill necessary for line access DP

Indication whether infill is required to access the line for safety reasons.

IRI: *http://data.europa.eu/949/etcsInfillLineAccess*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.3
1.2.1.1.1.3

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1) and the ETCS level is 1.

Validation Rules:

Etcs Infill Line Access Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsInfillLineAccess (1.1.1.3.2.3, 1.2.1.1.1.3):The track or subset with common characteristics {$this} ({?label}), has a 'ETCS Level Type' defined which makes the etcsInfillLineAccess parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs Infill Line Access
Comment: Indication whether infill is required to access the line for safety reasons.
Message: etcsInfillLineAccess (1.1.1.3.2.3, 1.2.1.1.1.3): Each track or subset with common characteristics may define the existence of a ETCS infill necessary for line access. This error is due to having more than one indication of ETCS infill necessary for line access value or having an indication of ETCS infill necessary for line access value that is not Y/N (boolean).

Additional Information

General explanation:
As indicated in CCS TSI section 7.2.9.1, an ETCS Level 1 trackside application may require that the on-board is equipped with the corresponding in-fill data transmission (Euroloop or radio) if the release speed is set to zero for safety reasons.

See: TSI CCS 7.2.9.1 & 4.2.3

ETCS infill installed line-side OP

Information about installed trackside equipment capable to transmit infill information by loop or Global System for Mobile communications for Railways (GSM-R) for level 1 installations.

IRI: *http://data.europa.eu/949/etcsInfill*

Parameter of
ETCS
Vehicle Type

General Information

Number:
1.1.1.3.2.4
1.2.1.1.1.4

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Infills

Values :

Code	Value	Explanation
10	None	Not available
20	Euroloop	Not available
30	Radio infill	Not available
40	Euroloop & Radio	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory in case of ETCS level 1 and infill device(s) are installed. Otherwise it is not applicable.

Validation Rules:
Etcs Infill Skos
Comment: Information about installed trackside equipment capable of transmitting infill information by loop or Global System for Mobile communications for Railways (GSM-R) for level 1 installations.
Message: etcsInfill (1.1.1.3.2.4, 1.2.1.1.1.4): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-infills/.
Etcs Infill
Comment: Information about installed trackside equipment capable of transmitting infill information by loop or Global System for Mobile communications for Railways (GSM-R) for level 1 installations.
Message: etcsInfill (1.1.1.3.2.4, 1.2.1.1.1.4): The ETCS may have an ETCS infill, and its value must be an IRI. This error is due to the ETCS instance having more than one value or having a value that is not an IRI.
Etcs Infill Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 contains 1. Related to rule for etcsLevelType
Message: etcsInfill (1.1.1.3.2.4, 1.2.1.1.1.4): The ETCS {$this} ({?thisLabel}), has a ETCS level type value of 1 which makes the etcsInfill parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
TSI CCS (4.2.2 & 4.3.3)

Has ETCS national packet 44 application implemented DP

Indication whether data for national packet 44 applications is transmitted between track and train.

IRI: *http://data.europa.eu/949/hasEtcsNationalPacket44*

Parameter of

Subset with common characteristics
Track

General Information

Number:
1.1.1.3.2.5
1.2.1.1.1.5

Deadline:
12 months after publication of Article 7 Guide
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).

Validation Rules:
Has Etcs National Packet44
Comment: Indication whether data for national packet 44 applications is transmitted between track and train.
Message: hasEtcsNationalPacket44 (1.1.1.3.2.5, 1.2.1.1.1.5): Each track or subset with common characteristics may define the existence of an ETCS national packet 44 application. This error is due to having more than one indication of ETCS national packet 44 application value or having an indication of ETCS national packet 44 application value that is not Y/N (boolean).
Has Etcs National Packet44applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: hasEtcsNationalPacket44 (1.1.1.3.2.5, 1.2.1.1.1.5):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined that makes the hasEtcsNationalPacket44 parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Value can be `false` or a link to the implemented functions. The hasEtcsNationalPacket44 property represents the true or false value. The etcsNationalPacket44Function represents the functions.

Packets 44 are the means to transmit data for national applications between train and track and vice versa, using the data transmission facilities included within the ETCS. NID_XUSER values managed by ERA in a document about ETCS variables available on ERA website.

See: TSI CCS (7.4.3 & 6.2.4.2).

Existence of operating restrictions or conditions DP

Indication whether restrictions or conditions due to partial compliance with the TSI CCS exist.

IRI: *http://data.europa.eu/949/hasETCSRestrictionsConditions*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.6
1.2.1.1.1.6

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Has Etcsrestrictions Conditions
Comment: Indication whether restrictions or conditions due to partial compliance with the TSI CCS exist.
Message: hasETCSRestrictionsConditions (1.1.1.3.2.6, 1.2.1.1.1.6): Each track or subset with common characteristics may define the existence of operating restrictions or conditions. This error is due to having more than one value or having a value that is not Y/N (boolean).
Has Etcsrestrictions Conditions Applicability
Comment: Only applicable (true) when selected value for 1.1.1.3.2.1 (ETCS present).
Message: hasETCSRestrictionsConditions (1.1.1.3.2.6, 1.2.1.1.1.6):The track or subset with common characteristics {$this} ({?label}), has a 'ETCS level' type selected which makes the hasETCSRestrictionsConditions parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

If operational restrictions and conditions are applicable, a document will be provided as a value of era:era:etcsRestrictionsConditionsDoc property. The RU has to contact the IM to be informed about these conditions.

These conditions and restrictions of use are considered in section 6.4 of the CCS TSI. They should be described using the template available on Agency website (Certification
and deviations - Guidelines for using the ERA template) with the following link: https://www.era.europa.eu/activities/european-rail-traffic-management-system-ertms_en#meeting6.

Train integrity confirmation from on-board (not from driver) necessary for line access DP

Indication whether train confirmation from on-board is required to access the line for safety reasons.

IRI: *http://data.europa.eu/949/trainIntegrityOnBoardRequired*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.8
1.2.1.1.1.8

Deadline:
16 January 2020
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS Level 2 is present, ETCS Baseline > 4 MR1 and IM confirms train integrity function is required).
Parameter only applicable when ETCS Baseline > 4 MR1 with operation requiring train integrity.

Validation Rules:

Train Integrity On Board Required
Comment: Indication whether train confirmation from on-board is required to access the line for safety reasons. In hybrid operation, the confirmation can be optional.
Message: trainIntegrityOnBoardRequired (1.1.1.3.2.8, 1.2.1.1.1.8): The track or subset with common characteristics defines a train integrity confirmation from on-board (not from driver) necessary for line access. This error is due to having more than one value or having a value that is not in the list of valid alternatives.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.4.11

Additional Information

General explanation:
In hybrid operation, the confirmation can be optional.
See also: TSI CCS BDC 4.2.2 (Managing information about the completeness of the train (not from driver))

ETCS system compatibility OP

ETCS requirements used for demonstrating technical compatibility.

IRI: *http://data.europa.eu/949/etcsSystemCompatibility*

Parameter of

ETCS
Vehicle Type

General Information

Number:
1.1.1.3.2.9
1.2.1.1.1.9

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS System Compatibilities

Values :

Code	Value	Explanation
10	Not Defined	Not available
20	ESC-EU-0	Not available
30	ESC-SE-01-HiL2	Not available
40	ESC-SE-02-BoL2	Not available
50	ESC-SE-03-L3	Not available
60	ESC-SE-04-HiL2B3	Not available
70	ESC-SE-05-BoL2B3	Not available
71	ESC-ES-211	Not available
72	ESC-ES-221	Not available
73	ESC-ES-231	Not available
74	ESC-ES-232	Not available
75	ESC-ES-241	Not available
76	ESC-ES-251	Not available
77	ESC-ES-262	Not available
78	ESC-ES-271	Not available
79	ESC-ES-281	Not available
80	ESC-ES-292	Not available
81	ESC-ES-311	Not available
82	ESC-ES-312	Not available
83	ESC-ES-321	Not available
84	ESC-ES-332	Not available
85	ESC-ES-341	Not available
86	ESC-ES-351	Not available
87	ESC-ES-381	Not available
88	ESC-ES-412	Not available
89	ESC-ES-422	Not available
90	ESC-ES-432	Not available
91	ESC-ES-441	Not available
92	ESC-ES-511	Not available

Code	Value	Explanation
93	ESC-ES-521	Not available
94	ESC-ES-541	Not available
95	ESC-SE-07	Not available
96	ESC-ES-442	Not available
101	ESC-NL-01	Not available
102	ESC-NL-02	Not available
103	ESC-NL-03	Not available
104	ESC-NL-04	Not available
105	ESC-NL-05	Not available
106	ESC-NL-06	Not available
107	ESC-NL-07	Not available
108	ESC-NL-08	Not available
109	ESC-NL-09	Not available
110	ESC-NL-10	Not available
111	ESC-NL-11	Not available
112	ESC-NL-12	Not available
113	ESC-NL-13	Not available
114	ESC-NL-14	Not available
115	ESC-NL-15	Not available
116	ESC-NL-16	Not available
117	ESC-NL-17	Not available
118	ESC-NL-18	Not available
119	ESC-NL-19	Not available
120	ESC-NL-20	Not available
121	ESC-NL-21	Not available
122	ESC-NL-22	Not available
123	ESC-NL-23	Not available
124	ESC-NL-24	Not available
125	ESC-NL-25	Not available

Code	Value	Explanation
126	ESC-NL-26	Not available
127	ESC-NL-27	Not available
128	ESC-NL-28	Not available
201	ESC-FR-01-LB	Not available
202	ESC-FR-02-LB	Not available
203	ESC-FR-03-LB	Not available
204	ESC-FR-04-LB	Not available
205	ESC-FR-05-LB	Not available
206	ESC-FR-06-LB	Not available
207	ESC-FR-07-SF	Not available
208	ESC-FR-08-SF	Not available
209	ESC-FR-09-SF	Not available
210	ESC-FR-10-SF	Not available
211	ESC-FR-11-SF	Not available
212	ESC-FR-12-SF	Not available
213	ESC-FR-13-SF	Not available
214	ESC-FR-14-SF	Not available
215	ESC-FR-15-SF	Not available
216	ESC-FR-16-SF	Not available
217	ESC-FR-17-SF	Not available
218	ESC-FR-18-SF	Not available
219	ESC-FR-19-SF	Not available
220	ESC-FR-20-SF	Not available
221	ESC-FR-21-SF	Not available
222	ESC-FR-22-LB	Not available
223	ESC-FR-23-LB	Not available
224	ESC-FR-27-LGVEE	Not available
225	ESC-FR-28-LGVEE	Not available
226	ESC-FR-29-LGVEE	Not available

Code	Value	Explanation
227	ESC-FR-30-LGVEE	Not available
228	ESC-FR-31-LGVEE	Not available
229	ESC-FR-32-LGVEE	Not available
230	ESC-BE-02-L2FS	Not available
231	ESC-BE-03-L1LS	Not available
232	ESC-IT-01-RFI-1.0_L2_AVp_RMNA_01	Not available
233	ESC-IT-02-RFI-1.0_L2_AVp_MIBO_01	Not available
234	ESC-IT-03-RFI-1.0_L2_AVp_BOFI_01	Not available
235	ESC-IT-04-RFI-1.0_L2_AVp_TOMI_01	Not available
236	ESC-IT-05-RFI-1.0_L2_AVp_TRBR_01	Not available
237	ESC-IT-06-RFI-1.0_L2_AVp_DD_01	Not available
238	ESC-IT-08-RFI-2.0_L1_Cs_DONO_01	Not available
239	ESC-PL-01-L1	Not available
240	ESC-PL-02-L1LS	Not available
241	ESC-PL-03-L2	Not available
242	ESC-PL-04-L2	Not available
243	ESC-NO-01	Not available
244	ESC-IT-07-RFI-2.0_L1_Cs_ISDO_01	Not available
245	ESC-IT-09-RFI-2.0_L1_Cs_CHIASSO_01	Not available
246	ESC-IT-10-RFI-2.1_L2_Cs_NOPD_01	Not available
247	ESC-IT-11-RFI-2.0_L1_Cs_PTLU_01	Not available
248	ESC-BE-01-L1FS	Not available
249	ESC-BE-04-LGV3_4	Not available
250	ESC-DK-01-East	Not available

Code	Value	Explanation
251	ESC-DK-02-West	Not available
252	ESC-AT-01	Not available
253	ESC-FR-24-AA	Not available
254	ESC-FR-25-AD	Not available
255	ESC-FR-26-AE	Not available
256	ESC-FR-33-SEA	Not available
257	ESC-FR-34-SEA	Not available
258	ESC-FR-35-BPL	Not available
259	ESC-FR-36-BPL	Not available
260	ESC-IT-12-RFI-2.0_L1_Cs_ISDO_CH_01	Not available
261	ESC-IT-13-RFI-2.0_L1_Cs_PTLU_CH_01	Not available
262	ESC-IT-14-RFI_2.1_L1_Cs_VENTIMIGLIA_01	Not available
263	ESC-IT-15-RFI_2.1_L1_Cs_VENTIMIGLIA_FR_01	Not available
264	ESC-IT-16-RFI_2.1_L1_Cs_VIVO_01	Not available
265	ESC-IT-17-RFI_2.1_L2_Cs_MIMOCH_01	Not available
266	ESC-PL-05-L2	Not available
267	ESC-PL-06-L2	Not available
268	ESC-CZ-01	Not available
269	ESC-CZ-02	Not available
270	ESC-RO-01	Not available
271	ESC-DE-01-B2_L2	Not available
272	ESC-DE-02-B3_L2	Not available
273	ESC-NO-02	Not available
274	ESC-IT-18-RFI_2.1_L2_Cs_NOPD_02	Not available

Code	Value	Explanation
275	ESC-IT-19-RFI_1.0_L2_AVp_AGGR01_01	Not available
276	ESC-IT-20-RFI_1.0_L2_AVp_AGGR02_01	Not available
277	ESC-IT-21-RFI_2.0_L1_Cs_AGGR03_01	Not available
278	ESC-IT-22-RFI_1.0_L1_Cs_AGGR04_01	Not available
279	ESC-IT-23-RFI_2.1_L1_Cs_AGGR05_01	Not available
280	ESC-CH-01-L1LS	Not available
281	ESC-CH-02-L2	Not available
282	ESC-CH-03-L1LSL2	Not available
283	ESC-LU-01-RFN	Not available
284	ESC-LU-02-MSM	Not available
285	ESC-LU-03-IG	Not available
286	ESC-DE-03-B3_L1LS	Not available
287	ESC-DE-05-B3-L2	Not available
288	ESC-DE-08-B3-L2	Not available
289	ESC-IT-24-RFI_B2_L2AV_AF_01	Not available
290	ESC-IT-25-RFI_B2_L2AV_HR_01	Not available
291	ESC-IT-26-RFI_B3_L2s_HR_01	Not available
292	ESC-IT-27-RFI_B3_L2s_AF_01	Not available
293	ESC-IT-28-RFI_2.1_L1_Cs_VENTIMIGLIA_IT_01	Not available
294	ESC-IT-29-RFI_B3_L1LS_NAZIONALE_01	Not available

Code	Value	Explanation
295	ESC-IT-30-RFI_B3_L1RI_NAZIONALE_01	Not available
296	ESC-IT-31-RFI_2.0_L1_Cs_ISDO_IT_01	Not available
297	ESC-IT-32-RFI_2.0_L1_Cs_PTLU_IT_01	Not available
298	ESC-SI-01	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs System Compatibility Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsSystemCompatibility (1.1.1.3.2.9, 1.2.1.1.1.9): The ETCS {$this} ({?thisLabel}), has a ETCS level type which makes the etcsSystemCompatibility parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs System Compatibility Skos
Comment: ETCS requirements used for demonstrating technical compatibility.
Message: etcsSystemCompatibility (1.1.1.3.2.9, 1.2.1.1.1.9): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-system-compatibilities/ETCSSystemCompatibilities.
Etcs System Compatibility
Comment: ETCS requirements used for demonstrating technical compatibility.
Message: etcsSystemCompatibility (1.1.1.3.2.9, 1.2.1.1.1.9): The ETCS has a etcsSystemCompatibility value that must be an IRI. This error is due to the ETCS having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

The Values "Not defined" or "ESC-EU-0" should not be combined with other values.

For application in CCS Onboard:
The vehicles are considered compatible with the infrastructure for this parameter, if their parameter value matches any of the values declared on the trackside.

For application in CCS Trackside:
The Infrastructure Manager is responsible for defining the ESC type(s). All sections of the Union network which require the same set of checks for the demonstration of ESC shall have the same ESC type.

See: TSI CCS, Appendix A, Table A 1, 4.2.17 a.
The list of ESC Types is published and maintained by the European Union Agency for Railways in the technical document "ESC/RSC technical document, TD/011REC1028".
The Agency shall assess the checks unless they have been assessed by a NoBo as required in Table 6.3 row 10.
The assessment by the Agency shall be done within 2 months of receipt thereof, unless a longer period is agreed between the Agency and the Infrastructure Manager but not exceeding 4 months in total.
The technical document will be updated within 10 working days after positive assessment.

The ESC Types shall only be used when published with status "Valid" in the Agency Technical document referred above.

ETCS M_version OP

ETCS M_version according to the specification referenced in Appendix A-1, index [C], SRS 7.5.1.9.

IRI: *http://data.europa.eu/949/etcsMVersion*

Parameter of

ETCS

General Information

Number:
1.1.1.3.2.10
1.2.1.1.1.10

Deadline:
12 months after publication of Article 7 Guide for OP tracks
1 January 2021

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS M Versions

Values :

Code	Value	Explanation
10	1.0	Not available
11	1.1	Not available
20	2.0	Not available
21	2.1	Not available
22	2.2	Not available
23	2.3	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Mversion
Comment: ETCS_M version according to SRS 7.5.1.9
Message: etcsMVersion (1.1.1.3.2.10, 1.2.1.1.1.10): The ETCS has at most one ETCS_M version value and it must be an IRI. This error is due to the ETCS having more than one value or having a value that is not an IRI.
Etcs Mversion Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 contains 1. Related to rule for etcsLevelType
Message: etcsMVersion (1.1.1.3.2.10, 1.2.1.1.1.10): The ETCS {$this} ({?thisLabel}), has a ETCS level type '1' which makes the etcsMVersion parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs Mversion Skos
Comment: ETCS_M version according to SRS 7.5.1.9
Message: Indication of the etcsMVersion (1.1.1.3.2.10, 1.1.1.3.2.10):): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-m-versions/ETCSMVersions.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
See: TSI CCS (Subset-026, Chapter 7, 7.5.1.79 M_VERSION)

Safe consist length information from on-board necessary for

access the line and SIL [OP]

Indication whether safe consist train length information from on-board is required to access the line for safety reasons and the required safety integrity level.

IRI: *http://data.europa.eu/949/safeConsistLengthInformationNecessary*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.11
1.2.1.1.1.11

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Safe Consistent Length required with SIL

Values :

Code	Value	Explanation
00	N	Not available
02	Y+2	Not available
04	Y+4	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present and the level of ETCS is 2 (parameter 1.1.1.3.2.1).

Validation Rules:
Safe Consist Length Information Necessary Skos
Comment: Indication whether safe consist train length information from on-board is required to access the line for safety reasons and the required safety integrity level.
Message: safeConsistLengthInformationNecessary (1.1.1.3.2.11, 1.2.1.1.1.11): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/safe-consist-length/SafeConsistLengthNecessary.

Safe Consist Length Information Necessary
Comment: Indication whether safe consist train length information from on-board is required to access the line for safety reasons and the required safety integrity level.
Message: safeConsistLengthInformationNecessary (1.1.1.3.2.11, 1.2.1.1.1.11): The track or subset with common characteristics must have a single Safe consist length information from on-board necessary for access the line and SIL value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Safe Consist Length Information Necessary Applicability
Comment: Only applicable when parameter 1.1.1.3.2.1 is applicable (its Applicable: 'Y').
Message: safeConsistLengthInformationNecessary (1.1.1.3.2.11, 1.2.1.1.1.11):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the safeConsistLengthInformationNecessary parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
See: TSI CCS (Subset-026, Chapter 7, 7.5.1.112.1 and P10)

Is the ETCS trackside engineered to transmit Track Conditions DP

If the trackside does not provide Track Conditions, the driver will need to be informed about such conditions via alternative methods.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/etcsTransmitsTrackConditions*

Parameter of
ETCS

General Information

Number:
1.1.1.3.2.12
1.2.1.1.1.12

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Transmits Track Conditions
Comment: If the trackside does not provide Track Conditions, the driver will need to be informed about such conditions via alternative methods.
Message: etcsTransmitsTrackConditions (1.1.1.3.2.12, 1.2.1.1.1.12): Each Track may define the existence of ETCS trackside engineered to transmit Track Conditions. This error is due to having more than one value or having a value that is not Y/N (boolean).
Etcs Transmits Track Conditions Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsTransmitsTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS {$this} ({?thisLabel}), has a ETCS level type which makes the etcsTransmitsTrackConditions parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
According to the specification referenced in Appendix A-1, index [C]
If the trackside does not provide Track Conditions, the driver will need to be informed about such conditions via alternative methods.
In ETCS level NTC and level 0 track conditions are not managed (at least in Baseline 2)
See: TSI CCS (Subset-026, Chapter 5, section 5.18)

Track conditions which can be transmitted OP

Transmittable track conditions by the CCSSubsystem, according to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/etcsTransmittedTrackConditions*

Parameter of
ETCS

General Information

Number:
1.1.1.3.2.12.1
1.2.1.1.1.12.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Mandatory when ETCS is present (a value is provided on 1.1.1.3.2.1) and value of 1.1.1.3.2.12 is True.

Validation Rules:
Etcs Transmitted Track Conditions Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsTransmittedTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS {$this} ({?thisLabel}), has a ETCS level type which makes the etcsTransmittedTrackConditions parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs Transmitted Track Conditions Skos
Comment: Transmittable track conditions by the CCSSubsystem, as per CCS TSI.
Message: etcsTransmittedTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-transmitted-tcs/TransmittedTrackConditions.
Etcs Transmitted Track Conditions
Comment: Transmittable track conditions by the CCSSubsystem, as per CCS TSI.
Message: etcsTransmittedTrackConditions (1.1.1.3.2.12.1, 1.2.1.1.1.12.1): The ETCS has at most one etcsTransmittedTrackConditions value and it must be an IRI. This error is due to the ETCS having more than one value or having a value that is not an IRI.

Additional Information

General explanation:
See: TSI CCS (Subset-026, Chapter 5, section 5.18.1.1)

ETCS trackside implements level crossing procedure or an equivalent solution DP

If the trackside does not implement any solution to cover non-protected LXs (which are normally protected by means of a technical system), then drivers will be required to comply with instructions received from other sources

IRI: *http://data.europa.eu/949/etcsImplementsLevelCrossingProcedure*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.13
1.2.1.1.1.13

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation

Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable and mandatory when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Etcs Implements Level Crossing Procedure Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsImplementsLevelCrossingProcedure (1.1.1.3.2.13, 1.2.1.1.1.13):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined that makes the etcsImplementsLevelCrossingProcedure parameter applicable. This error is due to {$this} not having a value for such a parameter.
Etcs Implements Level Crossing Procedure
Comment: If The track or subset with common characteristicsside does not implement any solution to cover defective LXs (which are normally protected by means of a technical system), then drivers will be required to comply with instructions received from other sources.
Message: etcsImplementsLevelCrossingProcedure (1.1.1.3.2.13, 1.2.1.1.1.13): Each track or subset with common characteristics may define the existence of level crossing procedure or an equivalent solution for ETCS trackside. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
See: TSI CCS (Subset-026, Chapter 5, section 5.16)

Cant Deficiency used for the basic SSP OP

Essential information for railway undertakings with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP".

IRI: *http://data.europa.eu/949/cantDeficiencyBasicSSP*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.14
1.2.1.1.1.14

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Unit of Measure:
Millimetre

Taxonomy Reference:
Cant Deficiencies - Static Speed Profile Categories (Basic and Specific, type 1)

Values :

Code	Value	Explanation
80	80	Not available
100	100	Not available
130	130	Not available
150	150	Not available
165	165	Not available
180	180	Not available
210	210	Not available
225	225	Not available
245	245	Not available
275	275	Not available
300	300	Not available
undefined	Undefined	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Cant Deficiency Basic Ssp
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP".
Message: cantDeficiencyBasicSSP (1.1.1.3.2.14, 1.2.1.1.1.14): The track or subset with common characteristics must have a cant deficiency used for the basis SSP value that is an IRI.

Cant Deficiency Basic Sspapplicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: cantDeficiencyBasicSSP (1.1.1.3.2.14, 1.2.1.1.1.14):The track or subset with common characteristics {$this} ({?label}), has a 'ETCS Level Type' defined which makes the cantDeficiencyBasicSSP parameter applicable. This error is due to {$this} not having a value for such a parameter.
Cant Deficiency Basic Sspskos
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP".
Message: cantDeficiencyBasicSSP (1.1.1.3.2.14, 1.2.1.1.1.14): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/cant-deficiencies/CantDeficiencies.

Additional Information

General explanation:
The values indicated in millimetres correspond to tracks with UIC gauge. For tracks with a gauge different from UIC, the values provided here are the equivalent ones for UIC gauge, as the actual physical cant deficiency values differ. Please refer to parameter 1.1.1.1.4.2 for more details.
Subset-026 (3.11.3.2.1.1) definition:
a) The "Cant Deficiency" SSP categories: the cant deficiency value assigned to one category shall define the maximum speed, determined by suspension design, at which a particular train can traverse a curve and thus can be used to set a specific speed limit in a curve with regards to this category.

Other Cant Deficiency train categories for which the ETCS trackside is configured to provide SSP OP

Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter "Cant Deficiency used for the basic SSP".
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/otherCantDeficiencyBasicSSP*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.14.1
1.2.1.1.1.14.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Concept

Unit of Measure:

Millimetre

Taxonomy Reference:
Cant Deficiencies - Static Speed Profile Categories (Basic and Specific, type 1)

Values :

Code	Value	Explanation
80	80	Not available
100	100	Not available
130	130	Not available
150	150	Not available
165	165	Not available
180	180	Not available
210	210	Not available
225	225	Not available
245	245	Not available
275	275	Not available
300	300	Not available
undefined	Undefined	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Other Cant Deficiency Basic Ssp
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter 'Cant Deficiency used for the basic SSP'.
Message: otherCantDeficiencyBasicSSP (1.1.1.3.2.14.1, 1.2.1.1.1.14.1): The track or subset with common characteristics must have other Cant Deficiency train categories basic SSP value that is an IRI. This error is due to having more than one value or having a value that is not an IRI
Other Cant Deficiency Basic Sspskos
Comment: Essential information for drivers of trains with a worse (lower) tolerated cant deficiency than those for which the ETCS trackside provides SSP (Static Speed Profiles) in conjunction with parameter 'Cant Deficiency used for the basic SSP'.
Message: otherCantDeficiencyBasicSSP (1.1.1.3.2.14.1, 1.2.1.1.1.14.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/cant-deficiencies/CantDeficiencies.

Other Cant Deficiency Basic Sspapplicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: otherCantDeficiencyBasicSSP (1.1.1.3.2.14.1, 1.2.1.1.1.14.1):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the otherCantDeficiencyBasicSSP parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

The values indicated in millimetres correspond to tracks with UIC gauge. For tracks with a gauge different from UIC, the values provided here are the equivalent ones for UIC gauge, as the actual physical cant deficiency values differ. Please refer to parameter 1.1.1.1.4.2 for more details.

Subset-026 (3.11.3.2.1.1) definition: b) The "other specific" SSP categories: it groups all other specific SSP categories corresponding to the other international train categories.

Reasons for which an ETCS Radio Block Center can reject a train OP

List of cases subject to system design choices made by the infrastructure manager according to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/reasonsEtcsRadioBlockCenterReject*

Parameter of

Radio Block Center

General Information

Number:

1.1.1.3.2.15
1.2.1.1.1.15

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation

Concept

Taxonomy Reference:

ETCS Reasons RBC can reject a train

Values :

Code	Value	Explanation
00	N/A - no usage of Message 40 (Train rejected)	Not available
01	Invalid ETCS-key	Not available
02	Non-matching ETCS-ID	Not available
03	Incompatible baseline	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Reasons Etcs Radio Block Center Reject
Comment: List of cases subject to system design choices made by the infrastructure manager according to the specification referenced in TSI CCS.
Message: reasonsEtcsRadioBlockCenterReject (1.1.1.3.2.15, 1.2.1.1.1.15): The track or subset with common characteristics must have a single reasons for which an ETCS Radio Block Center can reject a train value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Reasons Etcs Radio Block Center Reject Skos
Comment: List of cases subject to system design choices made by the infrastructure manager according to the specification referenced in TSI CCS.
Message: reasonsEtcsRadioBlockCenterReject (1.1.1.3.2.15, 1.2.1.1.1.15): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-rbc-reject-reasons/ETCSRBCRejectionReasons.

Additional Information

General explanation:
1. Distinguish between mandatory and optional: decision was only to record the mandatory ones, but optional reasons can be added.
2. Providing the non-implemented CR-solution which have been accepted by IM, after check/approval with RU's, is also allowed.

ETCS National Values DP OP

General Information

Number:
1.1.1.3.2.16
1.2.1.1.1.16

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Related parameters

D_NVROLL (1.1.1.3.2.16.1 | 1.2.1.1.1.16.1)
Q_NVEMRRLS (1.1.1.3.2.16.2 | 1.2.1.1.1.16.2)
V_NVALLOWOVTRP (1.1.1.3.2.16.3 | 1.2.1.1.1.16.3)
V_NVSUPOVTRP (1.1.1.3.2.16.4 | 1.2.1.1.1.16.4)
D_NVOVTRP (1.1.1.3.2.16.5 | 1.2.1.1.1.16.5)
T_NVOVTRP (1.1.1.3.2.16.6 | 1.2.1.1.1.16.6)
D_NVPOTRP (1.1.1.3.2.16.7 | 1.2.1.1.1.16.7)
T_NVCONTACT (1.1.1.3.2.16.8 | 1.2.1.1.1.16.8)
M_NVCONTACT (1.1.1.3.2.16.9 | 1.2.1.1.1.16.9)
M_NVDERUN (1.1.1.3.2.16.10 | 1.2.1.1.1.16.10)
Q_NVDRIVER_ADHES (1.1.1.3.2.16.11 | 1.2.1.1.1.16.11)
Q_NVSBTSMPERM (1.1.1.3.2.16.12 | 1.2.1.1.1.16.12)
National Values used for the brake model (1.1.1.3.2.16.13 | 1.2.1.1.1.16.13)

D_NVROLL DP

Parameter used by the ETCS on-board to supervise the distance allowed to be travelled under the roll-away protection and the reverse movement protection, in metres
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/dNvroll*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.1
1.2.1.1.1.16.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
A number of form at NNNNNN.N, from 0 to 327670

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Dnvroll Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: dNvroll (1.1.1.3.2.16.7, 1.2.1.1.1.16.7):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the dNvroll parameter applicable. This error is due to {$this} not having a value for such a parameter.
Dnvroll
Comment: Parameter used by the ETCS on-board to supervise the distance allowed to be travelled under the roll-away protection and the reverse movement protection, in metres.
Message: dNvroll (1.1.1.3.2.16.1, 1.2.1.1.1.16.1): Each track or subset with common characteristics must define the parameter used by the ETCS on-board to supervise the distance allowed to be travelled under the roll-away protection and the reverse movement protection expressed in metres. This error is due to having more than one value or having a value that is not a double (real) number.

Additional Information

General explanation:
Precision: [NNNNNN.N], with N a decimal number (0 9).

See: TSI CCS (Subset 26, chapter 7. 7.5.1.17 D_NVROLL)

Q_NVEMRRLS OP

Qualifier defining whether the application of the emergency brake for reasons other than a trip can be revoked as soon as the conditions for it have disappeared or after the train has come to a complete standstill.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/qNvemrrls*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.2
1.2.1.1.1.16.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Emergency Brake Release Command Qualifiers

Values :

Code	Value	Explanation
0	Revoke emergency brake command at standstill	Not available
1	Revoke emergency brake command when permitted speed supervision limit is no longer exceeded	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Qnvemrrls Skos
Comment: Qualifier defining whether the application of the emergency brake for reasons other than a trip can be revoked as soon as the conditions for it have disappeared or after the train has come to a complete standstill.
Message: qNvemrrls (1.1.1.3.2.16.2, 1.2.1.1.1.16.2): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ebr-qualifier/EBReleaseQualifier.
Qnvemrrls
Comment: Qualifier defining whether the application of the emergency brake for reasons other than a trip can be revoked as soon as the conditions for it have disappeared or after the train has come to a complete standstill.
Message: qNvemrrls (1.1.1.3.2.16.2, 1.2.1.1.1.16.2): The track or subset with common characteristics must have a single Q_NVEMRRLS value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Qnvemrrls Applicability
Comment: Only applicable when parameter 1.1.1.3.2.1 is applicable (its Applicable: 'Y').
Message: qNvemrrls (1.1.1.3.2.16.2, 1.2.1.1.1.16.2):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the qNvemrrls parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
According to the specification referenced in Appendix A-1, index [C] - TSI CCS (Subset-026, chapter 7, 7.5.1.123 Q_NVEMRRLS)

V_NVALLOWOVTRP DP

Speed limit allowing the driver to select the override function in km/h
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/vNvallowovtrp*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.3
1.2.1.1.1.16.3

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNF, with N a decimal number (0 9), NNF must be divisible by 5, so F=(0|5), max. `600`

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Vnvallowovtrp
Comment: Speed limit allowing the driver to select the “override” function in km/h.
Message: vNvallowovtrp (1.1.1.3.2.16.3, 1.2.1.1.1.16.3): The track or subset with common characteristics defines a speed limit allowing the driver to select the “override” function (V_NVALLOWOVTRP). This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNF], with N a decimal number (0÷9), F=(0|5), max. `600`.
Vnvallowovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: vNvallowovtrp (1.1.1.3.2.16.3, 1.2.1.1.1.16.3):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the vNvallowovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Format: [NNF], with N a decimal number (0÷9), [NNF] must be divisible by 5, so F= (0|5), max. `600`.

See: TSI CCS (Subset-026, Chapter 7. 7.5.1.161)

V_NVSUPOVTRP DP

Override speed limit to be supervised when the "override" function is active in km/h.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/vNvsupovtrp*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.4
1.2.1.1.1.16.4

Deadline:
12 months after publication of Article 7 Guide for OP tracks
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNF, with N a decimal number (0 9), NNF must be divisible by 5, so F=(0|5), max. `600`

Unit of Measure:
Kilometre per Hour

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Vnvsupovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: vNvsupovtrp (1.1.1.3.2.16.4, 1.2.1.1.1.16.4):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the vNvsupovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.
Vnvsupovtrp
Comment: Override speed limit to be supervised when the “override” function is active in km/h.
Message: vNvsupovtrp (1.1.1.3.2.16.4, 1.2.1.1.1.16.4): The track or subset with common characteristics defines a override speed limit to be supervised when the “override” function is active (V_NVSUPOVTRP). This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNF], with N a decimal number (0÷9), F=(0|5), max. `600`.

Additional Information

General explanation:
Format: [NNF], with N a decimal number (0÷9), [NNF] is divisible by 5 so F=(0|5), max. `600`.

See: TSI CCS (Subset-026, chapter 7. 7.5.1.163 V_NVSUPOVTRP)

D_NVOVTRP DP

Maximum distance for overriding the train trip in metres, according to the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/dNvovtrp*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.5
1.2.1.1.1.16.5

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNNNNNN.N whereby the last digit is only used when Q_SCALE = 10 CM

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Dnvovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present)
Message: dNvovtrp (1.1.1.3.2.16.5, 1.2.1.1.1.16.5):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the dNvovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.

Dnvovtrp
Comment: Maximum distance for overriding the train trip in metres.
Message: dNvovtrp (1.1.1.3.2.16.5, 1.2.1.1.1.16.5): Each track or subset with common characteristics must define the maximum distance for overriding the train trip expressed in metres. This error is due to having maximum distance for overriding the train trip value that is not a double (real) number.

Additional Information

General explanation:
Precision: the value must be expressed in meter.

Depending on the chosen Q_SCALE, the maximal value will be: +327670 M, +32767 M or +3276.7 M.

As in TSI CCS Subset 26, chapter 7. 7.5.1.15 D_NVOVTRP.

T_NVOVTRP DP

Maximum time for overriding the train trip in seconds.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/tNvovtrp*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.6
1.2.1.1.1.16.6

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:
NNN, with N as a digit from 0 to 9. Value NNN = 255 means ∞ (infinity), so values cannot be higher.

Unit of Measure:
Second

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:

A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Tnvovtrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: tNvovtrp (1.1.1.3.2.16.6, 1.2.1.1.1.16.6):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the tNvovtrp parameter applicable. This error is due to {$this} not having a value for such a parameter.
Tnvovtrp
Comment: Maximum time for overriding the train trip in seconds.
Message: tNvovtrp (1.1.1.3.2.16.6 , 1.2.1.1.1.16.6): The track or subset with common characteristics defines a T_NVOVTRP. This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNN].

Additional Information

General explanation:

Precision: [NNN], with N a decimal number (0÷9)

See: TSI CCS (Subset 26, chapter 7. 7.5.1.149 T_NVOVTRP)

D_NVPOTRP DP

Maximum distance for reversing in Post Trip mode in metres, according to the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/dNvpotrp*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.2.16.7
1.2.1.1.1.16.7

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:

NNNNNNN.N whereby the last digit is only used when Q_SCALE = 10 CM

Unit of Measure:

Metre

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:

Functional property (unique value)

Validation

Validation Rules:

Dnvpotrp Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: dNvpotrp (1.1.1.3.2.16.7, 1.2.1.1.1.16.7):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the dNvpotrp parameter applicable. This error is due to {$this} not having a value for such a parameter.
Dnvpotrp
Comment: Maximum distance for reversing in Post Trip mode in metres
Message: dNvpotrp (1.1.1.3.2.16.7, 1.2.1.1.1.16.7): Each track or subset with common characteristics must define the maximum distance for reversing in Post Trip mode in metres. This error is due to having maximum distance for reversing in Post Trip mode value that is not a double (real) number.

Additional Information

General explanation:

Precision: the value must be expressed in meter.

Depending on the chosen Q_SCALE, the maximal value will be: +327670 M, +32767 M or +3276.7 M.

See: TSI CCS (Subset 26, chapter 7. 7.5.1.16 D_NVPOTRP)

T_NVCONTACT DP

Maximum time without a safe message from Radio Block Center before train reacts in seconds.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/tNvcontact*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.2.16.8
1.2.1.1.1.16.8

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Format:

NNN, with N as a digit from 0 to 9. Value NNN = 255 means ∞ (infinity), so values cannot be higher.

Unit of Measure:

Second

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Tnvcontact
Comment: Maximum time without a safe message from Radio Block Center before train reacts in seconds.
Message: tNvcontact (1.1.1.3.2.16.8, 1.2.1.1.1.16.8): The track or subset with common characteristics defines a maximum time without a safe message from Radio Block Center. This error is due to having more than one value, having a value that is not an integer or having an integer that does not follow the pattern [NNN].
Tnvcontact Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: tNvcontact (1.1.1.3.2.16.8, 1.2.1.1.1.16.8):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the tNvcontact parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Precision: [NNN], with N a decimal number (0÷9), NNN = 255 means ∞ seconds, so values cannot be higher.

See: TSI CCS (Subset 26, chapter 7. 7.5.1.148 T_NVCONTACT)

M_NVCONTACT OP

On-Board system reaction when T_NVCONTACT expires
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/mNvcontact*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.9
1.2.1.1.1.16.9

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Reactions after expired T_NVCONTACT

Values :

Code	Value	Explanation
00	Train Trip	Not available
01	Apply Service Brake	Not available
10	No reaction	Not available
11	Reserved spare	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Mnvcontact Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: mNvcontact (1.1.1.3.2.16.9, 1.2.1.1.1.16.9):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the mNvcontact parameter applicable. This error is due to {$this} not having a value for such a parameter.
Mnvcontact Skos
Comment: On-Board system reaction when T_NVCONTACT expires.
Message: mNvcontact (1.1.1.3.2.16.9, 1.2.1.1.1.16.9): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-reactions-contact/ETCSReactionsNVContact.
Mnvcontact
Comment: On-Board system reaction when T_NVCONTACT expires.
Message: mNvcontact (1.1.1.3.2.16.9, 1.2.1.1.1.16.9): The track or subset with common characteristics may have an M_NVCONTACT value that is an IRI. This error is due to having more than one value or having a value that is not an IRI

Additional Information

General explanation:
See: TSI CCS (Subset-026, chapter 7. 7.5.1.74 M_NVCONTACT)

M_NVDERUN DP

Entry of Driver ID permitted while running According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/mNvderun*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.10
1.2.1.1.1.16.10

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Mnvderun
Comment: Entry of Driver ID permitted while running.
Message: mNvderun (1.1.1.3.2.16.10, 1.2.1.1.1.16.10): Each track or subset with common characteristics may define the M_NVDERUN value. This error is due to having more than one value or having a value that is not Y/N (boolean).
Mnvderun Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: mNvderun (1.1.1.3.2.16.10, 1.2.1.1.1.16.10):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the mNvderun parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
See: TSI CCS (Subset 26, chapter 7. 7.5.1.75 M_NVDERUN)

Q_NVDRIVER_ADHES OP

Qualifier determining whether the driver is allowed to modify the adhesion factor used by the ETCS on-board to calculate the braking curves.
According to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/qNvdriverAdhes*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.11
1.2.1.1.1.16.11

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Driver allowed to change adhesion factor Qualifiers

Values :

Code	Value	Explanation
0	Not allowed	Not available
1	Allowed	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:
Qnvdriver Adhes
Comment: Qualifier determining whether the driver is allowed to modify the adhesion factor used by the ETCS on-board to calculate the braking curves.
Message: qNvdriverAdhes (1.1.1.3.2.16.11, 1.2.1.1.1.16.11): The track or subset with common characteristics must have a single Q_NVDRIVER_ADHES value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.

Qnvdriver Adhes Skos
Comment: Qualifier determining whether the driver is allowed to modify the adhesion factor used by the ETCS on-board to calculate the braking curves.
Message: qNvdriverAdhes (1.1.1.3.2.16.11, 1.2.1.1.1.16.11): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/adhf-qualifier/AdhesionFactorChange.
Qnvdriver Adhes Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: qNvdriverAdhes (1.1.1.3.2.16.11, 1.2.1.1.1.16.11):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the qNvdriverAdhes parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
See: TSI CCS (Subset 26, chapter 7. 7.5.1.122 Q_NVDRIVER_ADHES)

Q_NVSBTSMPERM DP

Permission to use service brake in target speed monitoring

IRI: *http://data.europa.eu/949/qNvsbtsmperm*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.12
1.2.1.1.1.16.12

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Qnvsbtsmperm Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: qNvsbtsmperm (1.1.1.3.2.16.12, 1.2.1.1.1.16.12):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the qNvsbtsmperm parameter applicable. This error is due to {$this} not having a value for such a parameter.
Qnvsbtsmperm
Comment: Permission to use service brake in target speed monitoring.
Message: qNvsbtsmperm (1.1.1.3.2.16.12, 1.2.1.1.1.16.12): Each track or subset with common characteristics may define the Q_NVSBTSMPERM value. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
See: TSI CCS (Subset-026, chapter 7. 7.5.1.124 Q_NVSBTSMPERM)

National Values used for the brake model DP

Set of parameters for adapting the braking curves calculated by the ETCS on-board system to match accuracy, performance and safety margins imposed by the infrastructure manager.
It copies the content of Packet 3 or of Packet 203 as defined in the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/nationalValuesBrakeModel*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.16.13
1.2.1.1.1.16.13

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
ETCS National Values (1.1.1.3.2.16 | 1.2.1.1.1.16)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:

A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

National Values Brake Model
Comment: Set of parameters for adapting the braking curves calculated by the ETCS on-board system to match accuracy, performance and safety margins imposed by the infrastructure manager.
Message: nationalValuesBrakeModel (1.1.1.3.2.16.13, 1.2.1.1.1.16.13): The track or subset with common characteristics has a National Value used for the brake model that must be a string and follow the format [±NNNN.NNN]. The error is due to having more than one value, having a vaalue that is not a string, or it is due to the value not following the pattern.
National Values Brake Model Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: nationalValuesBrakeModel (1.1.1.3.2.16.13, 1.2.1.1.1.16.13):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the nationalValuesBrakeModel parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

Non-harmonizable character string: [Contents of P3/P203] (TSI CCS, Annex I, Appendix A, Table A.2 - Subset-026)

ID of ERTMS/ETCS Radio Block Center DP

Unique RBC identification (NID_C+NID_RBC) as defined in the specification referenced in Appendix A-1, index [C] (TSI CCS).

IRI: *http://data.europa.eu/949/rbcID*

Parameter of

Radio Block Center

General Information

Number:

1.1.1.3.2.17
1.2.1.1.1.17

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)
Identifier

Data Format

Data Presentation

String

Format:

NNNN NNNN with N a decimal number (0÷9)

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Rbc Id
Comment: Unique RBC identification (NID_C+NID_RBC) as defined in the specification referenced in TSI CCS.
Message: rbcID (1.1.1.3.2.17, 1.2.1.1.1.17): The radio block center id must be represented as a String and follow the pattern [NNNN NNNN].This error may be due to having a value that is not a string or that does not follow the pattern

OPE TSI References

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3.4.7

Phone number of ERTMS/ETCS Radio Block Center DP

Unique RBC calling number (NID_RADIO) as defined in the specification referenced in Appendix A-1, index [C].

IRI: *http://data.europa.eu/949/rbcPhone*

Parameter of
Radio Block Center

General Information

Number:
1.1.1.3.2.17
1.2.1.1.1.17

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
String

Format:
NNNN NNNN NNNN NNNN with N a decimal number (0-9)

Flags

Applicability Flags:

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Rbc Phone
Comment: Unique RBC calling number (NID_RADIO) as defined in the specification referenced in TSI CCS.
Message: rbcPhone (1.1.1.3.2.17, 1.2.1.1.1.17): The radio block center phone must be represented as a String and follow the pattern [NNNN NNNN NNNN NNNN].This error may be due to having a value that is not a string or that does not follow the pattern

OPE TSI References

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3.4.7

Big Metal Mass DP

Indication of existence of metal mass in the vicinity of the location, susceptible of perturbating the reading of balises by the on-board system.

IRI: *http://data.europa.eu/949/bigMetalMass*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.2.18
1.2.1.1.1.18

Deadline:
12 months after publication of Article 7 Guide for OP tracks
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Big Metal Mass Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: bigMetalMass (1.1.1.3.2.18, 1.2.1.1.1.18):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the bigMetalMass parameter applicable. This error is due to {$this} not having a value for such a parameter.
Big Metal Mass
Comment: Indication of existence of metal mass in the vicinity of the location, susceptible of perturbating the reading of balises by the on-board system.
Message: bigMetalMass (1.1.1.3.2.18, 1.2.1.1.1.18): Each track or subset with common characteristics may define the existence of a metal mass in the vicinity of the location. This error is due to having more than one indication of existence of big metal mass value or having an indication of big metal mass value that is not Y/N (boolean).

OPE TSI References

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3.4.10

Additional Information

General explanation:
According to the specification referenced in TSI CCS.

TSI compliant radio (RMR) DP OP

General Information

Number:
1.1.1.3.3
1.2.1.1.2

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
GSM-R version (1.1.1.3.3.1 | 1.2.1.1.2.1)
Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption (1.1.1.3.3.2 | 1.2.1.1.2.2)
Optional GSM-R functions (1.1.1.3.3.3 | 1.2.1.1.2.3)
Additional information on network characteristics (1.1.1.3.3.3.1 | 1.2.1.1.2.3.1)
GPRS for ETCS (1.1.1.3.3.3.2 | 1.2.1.1.2.3.2)
Area of implementation of GPRS (1.1.1.3.3.3.3 | 1.2.1.1.2.3.3)
GSM-R use of group 555 (1.1.1.3.3.4 | 1.2.1.1.2.4)
GSM-R networks covered by a roaming agreement (1.1.1.3.3.5 | 1.2.1.1.2.5)
Existence of GSM-R roaming to public networks (1.1.1.3.3.6 | 1.2.1.1.2.6)
Details on GSM-R roaming to public networks (1.1.1.3.3.7 | 1.2.1.1.2.7)
No GSMR coverage (1.1.1.3.3.8 | 1.2.1.1.2.8)
Radio system compatibility voice (1.1.1.3.3.9 | 1.2.1.1.2.9)
Radio system compatibility data (1.1.1.3.3.10 | 1.2.1.1.2.10)
GSM-R network is configured to allow forced de-registration of a functional number by another driver (1.1.1.3.3.11 | 1.2.1.1.2.11)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch (1.2.1.1.2.12)

GSM-R version OP

GSM-R functional requirements specification and system requirements specification in accordance with the specification respectively referenced in Appendix A-1, index [E] and index [F], version number installed lineside.

IRI: *http://data.europa.eu/949/gsmRVersion*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.3.1
1.2.1.1.2.1

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
GSM-R Versions

Values :

Code	Value	Explanation
00	Baseline 0	Not available
10	None	Not available
20	Previous version to Baseline 0	Not available
30	Baseline 0 r3	Not available
40	Baseline 0 r4	Not available
50	Baseline 1	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:

GSM-R must be installed for this parameter to be applicable and a value to be provided. If this property is not used, all GSM-R related properties should not be used either.

Validation Rules:

Gsm Rversion

Comment: GSM-R functional requirements specification and system requirements specification in accordance with the specification respectively referenced in TSI CCS (Annex), version number installed lineside.

Message: gsmRVersion (1.1.1.3.3.1, 1.2.1.1.2.1): The track or subset with common characteristics must have a GSM-R version value that is an IRI.

Gsm Rversion Skos

Comment: GSM-R functional requirements specification and system requirements specification in accordance with the specification respectively referenced in TSI CCS (Annex), version number installed lineside.

Message: gsmRVersion (1.1.1.3.3.1, 1.2.1.1.2.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-versions/GSMRVersions.

OPE TSI References

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3.1.7

Additional Information

General explanation:

GSM-R functional requirements specification and system requirements specification in accordance with the specification respectively referenced in TSI CCS (Annex), version number installed lineside.

Since more than one version may be installed in different areas, this property can have multiple values. In case there is no GSM-R network available, this property shall be flagged as not applicable and all other GSM-R parameters ('Number of active GSM-R mobiles (EDOR) or simultaneous communication session on-board for ETCS Level 2 needed to perform radio block centre handovers without having an operational disruption' and 'Optional GSM-R functions') shall be flagged as not applicable.

Number of active GSM-R mobiles (EDOR) or simultaneous communication session on board for ETCS level 2 needed to perform radio block centre handovers without having an operational disruption OP

Number of simultaneous communication session on board for ETCS level 2 required for a smooth running of the train. This relates to the radio block centre (RBC) handling of communication sessions. Not safety critical and no matter of interoperability.

IRI: *http://data.europa.eu/949/gsmRActiveMobiles*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.3.2
1.2.1.1.2.2

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Number of active GSM-R mobiles

Values :

Code	Value	Explanation
10	0	Not available
20	1	Not available
30	2	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS level 2 must be installed for this parameter to be applicable.

Validation Rules:
Gsm Ractive Mobiles
Comment: Number of simultaneous communication session on board for ETCS level 2 required for a smooth running of the train. This relates to the radio block centre (RBC) handling of communication sessions. Not safety critical and no matter of interoperability.
Message: gsmRActiveMobiles (1.1.1.3.3.2, 1.2.1.1.2.2): The track or subset with common characteristics must have a number of active GSM-R mobiles (EDOR) or simultaneous communication session on-board for ETCS Level 2 needed to perform radio block centre handovers without having an operational disruption value that is a single IRI. This error is due to having more than one value or having a value that is not an IRI.
Gsm Ractive Mobiles Skos
Comment: Number of simultaneous communication session on board for ETCS level 2 required for a smooth running of the train. This relates to the radio block centre (RBC) handling of communication sessions. Not safety critical and no matter of interoperability.
Message: gsmRActiveMobiles (1.1.1.3.3.2, 1.2.1.1.2.2): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-number-active-mobiles/NumberActiveMobiles.
Gsm Ractive Mobiles Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gsmRActiveMobiles (1.1.1.3.3.2, 1.2.1.1.2.2):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gsmRActiveMobiles parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
In case there is no ETCS Level 2 in the line, do this parameter must be flagged as Not Applicable.
In case there is ETCS Level 2 in the line, the minimum number of EDOR required on board would be 1.
In case ETCS baseline 3 release 2 or baseline 4 is selected, select "2" .
Please select " 1" or "2" , taking into account that TSI compliant trains may only be fitted with 1 EDOR.

Optional GSM-R functions OP

Use of optional GSM-R functions which might improve operation on the line. They are for information only and not for network access criteria.

IRI: *http://data.europa.eu/949/gsmROptionalFunctions*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.3
1.2.1.1.2.3

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Optional GSM-R functions

Values :

Code	Value	Explanation
10	Network selection manual (*1)	Not available
20	Network selection via balise (*1)	Not available
30	Network selection automatic (*1)	Not available
40	Public emergency (112) available (*2)	Not available
50	Broadcast calls (VBS) used (*3)	Not available
60	Text message service used (SMS) (*4)	Not available
70	Restriction of display of called/calling user (*5)	Not available
80	Automatically forward of incoming call if no reply (*5)	Not available
90	Automatically forward of incoming call if not reachable (*5)	Not available
100	Use of chargeable Network Services (*6)	Not available
110	General data applications (*7)	Not available
130	ETCS RBC or other devices alerted when initiating a REC (Railway Emergency Call) (*8)	Not available
140	Display at the controller terminal of the location of the mobile initiating a REC (Railway Emergency Call) (*8)	Not available
150	Use of enhanced Railway Emergency Call (eREC) (*8)	Not available
160	GSM-R shunting used (*8)	Not available
170	Data recorded in case of Shunting Emergency Call (*8)	Not available
180	Extended frequency bands used (*9)	Not available
200	Other	Not available

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable

Validation Rules:

Gsm Roptional Functions Skos
Comment: Use of optional GSM-R functions which might improve operation on the line. They are for information only and not for network access criteria.
Message: gsmROptionalFunctions (1.1.1.3.3.2, 1.2.1.1.2.2): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-optional-functions/OptionalFunctions.
Gsm Roptional Functions
Comment: Use of optional GSM-R functions which might improve operation on the line. They are for information only and not for network access criteria.
Message: gsmROptionalFunctions (1.1.1.3.3.3, 1.2.1.1.2.3): The track or subset with common characteristics must have optional GSM-R functions value that is an IRI. This error is due to having a avalue that is not an IRI
Gsm Roptional Functions Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmROptionalFunctions (1.1.1.3.3.2, 1.2.1.1.2.2):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the gsmROptionalFunctions parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

(*1) These inputs refer to the expected behaviour by the network, i.e. if there is any area or point where an automatic selection of network should be done or if there is any location where balises to instruct a change of radio network have been installed.
In order to be able to attend to these indications (automatic network, network change by balise) some configuration is needed in the mobile.
In case there is a balise used to announce the change of the network, or if there are locations where the network selection is planned by the IM to be done automatically (and not manually, as stated in the requirements). It should be considered as an item that is related to the design of the infrastructure.

(*2) the possibility to dial 112 is something specific to the network that should be communicated to the vehicles accessing it.

(*3) the use of broadcast calls is something specific to the network that has to be configured in it.

(*4) it is something specific to the network that has to be configured in it if the service is provided.

(*5) it is something specific to the network that has to be configured in it if the service is provided; something may need to be configured on the network but also in the mobile subscriber data if it wants to use the service. What is requested here is the information of the network capability.

(*6) if they are configured on the network. Please indicate which in the "Other information" box.

(*7) To be selected if other data applications, different from ETCS L2, can be used within the network -

(*8) if it is configured on the network.
"GSM-R Shunting used" in order to make public if the GSM-R is used in the network for shunting activities.

(*9) Please specify in the "Other information" box for which services /applications are they planned and which are the frequencies in use.

(*11) Please use this field to indicate any additional information on network characteristics, e.g.; interference level, leading to the need of additional on-board protection;

Additional information on network characteristics OP

Any additional information on network characteristics or corresponding document available from the IM and stored by the Agency, e.g.; interference level, leading to the recommendation of additional on-board protection.

IRI: *http://data.europa.eu/949/gsmRAdditionalInfo*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.3.1
1.2.1.1.2.3.1

Deadline:
1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable

Validation Rules:
Gsm Radditional Info Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmRAdditionalInfo (1.1.1.3.3.3.1, 1.2.1.1.2.3.1):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the gsmRAdditionalInfo parameter applicable. This error is due to {$this} not having a value for such a parameter.
Gsm Radditional Info
Comment: Any additional information on network characteristics or corresponding document available from the IM and stored by the Agency, e.g.; interference level, leading to the recommendation of additional on-board protection.
Message: gsmRAdditionalInfo (1.1.1.3.3.3.1): The track or subset with common characteristics defines an additional information on network characteristics value that must be a Document.

Additional Information

General explanation:
Please use this field to indicate any additional information on the GSM-R network.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

GPRS for ETCS DP

Indication if GPRS can be used for ETCS

IRI: *http://data.europa.eu/949/gprsForETCS*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.3.3.2
1.2.1.1.2.3.2

Deadline:
1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:
Gprs For Etcs
Comment: Indication if GPRS can be used for ETCS.
Message: gprsForETCS (1.1.1.3.3.3.2, 1.2.1.1.2.3.2): Each track or subset with common characteristics may define the existence of GPRS for ETCS. This error is due to having more than one value or having a value that is not Y/N (boolean).
Gprs For Etcsapplicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gprsForETCS (1.1.1.3.3.3.2, 1.2.1.1.2.3.2):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gprsForETCS parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Sections of EIRENE and ETCS subsets for trackside in TSI

Area of implementation of GPRS DP

Indication of the area in which GPRS can be used for ETCS, expressed as a list of GPRS-enabled RBCs.

IRI: *http://data.europa.eu/949/gprsImplementationArea*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.3.3
1.2.1.1.2.3.3

Deadline:
1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R, ETCS L2 and GPRS for ETCS must be installed for this parameter to be applicable.

Validation Rules:
Gprs Implementation Area Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1), ETCS L2 (parameter 1.1.1.3.2.1) and GPRS for ETCS (parameter 1.1.1.3.3.3.2) must be installed for this parameter to be applicable.
Message: gprsImplementationArea (1.1.1.3.3.3.3, 1.2.1.1.2.3.3):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gprsImplementationArea parameter applicable. This error is due to {$this} not having a value for such a parameter.
Gprs Implementation Area
Comment: Indication of the area in which GPRS can be used for ETCS.
Message: gprsImplementationArea (1.1.1.3.3.3.3): The track or subset with common characteristics defines the area in which GPRS can be used for ETCS value that must be a string. This error may be due to the track having a value that is not a string.

Additional Information

General explanation:
Since GPRS can be used for ETCS, indicate in which areas it is implemented (e.g.: whole section, only between two signals, at the station…)

GSM-R use of group 555 DP

Indication if group 555 is used.

IRI: *http://data.europa.eu/949/usesGroup555*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.4
1.2.1.1.2.4

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:
Uses Group555
Comment: Indication if group 555 is used.
Message: usesGroup555 (1.1.1.3.3.4, 1.2.1.1.2.4): Each track or subset with common characteristics may define the existence of GSM-R use of group 555. This error is due to having more than one value or having a value that is not Y/N (boolean).
Uses Group555applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: usesGroup555 (1.1.1.3.3.4, 1.2.1.1.2.4):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the usesGroup555 parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Sections of EIRENE not covered by references in TSI. GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.

GSM-R networks covered by a roaming agreement OP

Name of the own GSM-R network and list of GSM-R networks which are covered by a roaming agreement (for CS services).

IRI: *http://data.europa.eu/949/gsmrNetworkCoverage*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.5
1.2.1.1.2.5

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
GSM-R Networks

Values :

Code	Value	Explanation
10	GSM-R A (Austria)	Not available
20	GSM-R AL (Albania)	Not available
30	GSM-R B (Belgium)	Not available
40	GSM-R BA (Bosnia Herzegovina)	Not available
50	GSM-R BG (Bulgaria)	Not available
60	GSM-R BY (Belarus)	Not available
70	GSM-R CH (Switzerland)	Not available
80	GSM-R CZ (Czech Rep.)	Not available
90	GSM-R D (Germany)	Not available
100	GSM-R DK (Denmark)	Not available
110	GSM-R E (Spain)	Not available
120	GSM-R EE (Estonia)	Not available
130	GSM-R F (France)	Not available
140	GSM-R FI (Finland)	Not available
150	GSM-R GB (UK (Great Britain))	Not available
160	GSM-R GR (Greece)	Not available
170	GSM-R HR (Croatia)	Not available
180	GSM-R HU (Hungary)	Not available
190	GSM-R I (Italy)	Not available
200	GSM-R IE (Ireland)	Not available
210	GSM-R IS (Iceland)	Not available
220	GSM-R KO (Kosovo)	Not available
230	GSM-R L (Luxembourg)	Not available
240	GSM-R LT (Lithuania)	Not available
250	GSM-R LV (Latvia)	Not available
260	GSM-R MD (Moldova)	Not available
270	GSM-R ME (Montenegro)	Not available
280	GSM-R MK (Macedonia)	Not available

Code	Value	Explanation
290	GSM-R N (Norway)	Not available
300	GSM-R NL (Netherlands)	Not available
310	GSM-R P (Portugal)	Not available
320	GSM-R PL (Poland)	Not available
330	GSM-R RO (Romania)	Not available
340	GSM-R RU (Russia)	Not available
350	GSM-R S (Sweden)	Not available
360	GSM-R SI (Slovenia)	Not available
370	GSM-R SK (Slovakia)	Not available
380	GSM-R SR (Serbia)	Not available
390	GSM-R TR (Turkey)	Not available
400	GSM-R UA (Ukraine)	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable

Validation Rules:
Gsmr Network Coverage Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmrNetworkCoverage (1.1.1.3.3.5, 1.2.1.1.2.5):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the gsmrNetworkCoverage parameter applicable. This error is due to {$this} not having a value for such a parameter.
Gsmr Network Coverage
Comment: List of GSM-R networks which are covered by a roaming agreement.
Message: gsmrNetworkCoverage (1.1.1.3.3.5, 1.2.1.1.2.5): The track or subset with common characteristics must have a GSM-R networks covered by a roaming agreement value that is an IRI.
Gsmr Network Coverage Skos
Comment: List of GSM-R networks which are covered by a roaming agreement.
Message: gsmrNetworkCoverage (1.1.1.3.3.5, 1.2.1.1.2.5): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/gsmr-networks/GSMRNetworks.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

Name of the own GSM-R network and list of GSM-R networks which are covered by a roaming agreement for CS services.
This list is managed by UIC. The Agency will monitor it in order to update the list of possible values when necessary.
For Route Compatibility purposes and simplicity, the own network needs to be declared by the IM, so the RUs can systematically check the compatibility.
For voice services, roaming for CS is applicable. For ETCS, as long as roaming for CS is ensured, the interoperability will be guaranteed.

Existence of GSM-R roaming to public networks DP

Existence of roaming to a public network.

In case of Y, provide the name of the public network(s) under parameter "Details on GSM-R roaming to public networks".

IRI: *http://data.europa.eu/949/publicNetworkRoaming*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.6
1.2.1.1.2.6

Deadline:
12 months after publication of Article 7 Guide for OP tracks
1 January 2021

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable

Validation Rules:

Public Network Roaming
Comment: Existence of roaming to a public network.
Message: publicNetworkRoaming (1.1.1.3.3.6, 1.2.1.1.2.6): Each track or subset with common characteristics may define the existence of GSM-R roaming to public networks. This error is due to having more than one value or having a value that is not Y/N (boolean).
Public Network Roaming Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: publicNetworkRoaming (1.1.1.3.3.6, 1.2.1.1.2.6):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the publicNetworkRoaming parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
Sections of EIRENE not covered by references in TSI.

Details on GSM-R roaming to public networks DP

If roaming to public networks is configured, please indicate to which networks, for which users and in which areas.

IRI: *http://data.europa.eu/949/publicNetworkRoamingDetails*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.7
1.2.1.1.2.7

Deadline:
1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:

Mandatory if GSM-R is installed and era:publicNetworkRoaming is 'true'. Otherwise, it is not applicable.

Validation Rules:

Public Network Roaming Details Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: publicNetworkRoamingDetails (1.1.1.3.3.7, 1.2.1.1.2.7):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the publicNetworkRoamingDetails parameter applicable. This error is due to {$this} not having a value for such a parameter.
Public Network Roaming Details
Comment: If roaming to public networks is configured, please: 1. indicate to which networks, for which users and in which areas. 2. list if any GSM-R functionality is not available when roaming to a public network (e.g. REC, Functional Addressing, Group Calls). 3. also add if there is any operational restriction for vehicles that cannot roam into any of the available public networks.
Message: publicNetworkRoamingDetails (1.1.1.3.3.7, 1.2.1.1.2.7): Each track or subset with common characteristics may have details on GSM-R roaming to public networks that is a character string. This error is due to having more than one publicNetworkRoamingDetails value or having a value that is not a string.

Additional Information

General explanation:

List if any GSM-R functionality is not available when roaming to a public network (e.g. REC, Functional Addressing, Group Calls).
Please also add if there is any operational restriction for vehicles that cannot roam into any of the available public networks.

No GSMR coverage DP

Indication if there is no GSMR coverage

IRI: *http://data.europa.eu/949/gsmRNoCoverage*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.3.8
1.2.1.1.2.8

Deadline:

1 January 2021
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group

TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation

Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable
GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.

Validation Rules:
Gsm Rno Coverage
Comment: Indication if there is no GSMR coverage.
Message: gsmRNoCoverage (1.1.1.3.3.8, 1.2.1.1.2.8): Each track or subset with common characteristics may define the indication of existence of GSMR coverage. This error is due to having more than one value or having a value that is not Y/N (boolean).
Gsm Rno Coverage Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: gsmRNoCoverage (1.1.1.3.3.8, 1.2.1.1.2.8):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the gsmRNoCoverage parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
If GSM-R is not installed, this parameter should not be used.
This parameter is mainly to capture the case of Radio Hole functionality (lack of GSM-R coverage), that is foreseen in the ETCS specifications as packet 68.
Another possible use is the declaration of a temporary situation where, although the area is in principle covered by GSM-R, there is a long-term outage or a project for replacement of the radio (i.e. a section that will not be covered with GSM-R for half a year or longer).

Radio system compatibility voice OP

Radio requirements used for demonstrating technical compatibility voice.

IRI: *http://data.europa.eu/949/voiceRadioCompatible*

Parameter of
Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.3.9
1.2.1.1.2.9

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group

TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Radio System Compatibilities Voice

Values :

Code	Value	Explanation
10	Not Defined	Not available
20	RSC-EU-0	Not available
30	RSC-ES-01-V	Not available
40	RSC-ES-02-V	Not available
50	RSC-ES-03-V	Not available
60	RSC-ES-04-V	Not available
70	RSC-SE-01-V	Not available
80	RSC-FR-01-V	Not available
100	RSC-AT-01-V	Not available
110	RSC-BE-01-V	Not available
120	RSC-RO-01-V	Not available
130	RSC-ES-05-V	Not available
140	RSC-DE-01-V	Not available
150	RSC-LU-01-V	Not available
160	RSC-CH-01-V	Not available
170	RSC-PT-01-V	Not available
171	RSC-PT-02-V	Not available
180	RSC-PT-02-V	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable.
In case of RSC-EU-0 or None, no other values are allowed.

Validation Rules:

Voice Radio Compatible Skos
Comment: Radio requirements used for demonstrating technical compatibility voice.
Message: voiceRadioCompatible (1.1.1.3.3.9, 1.2.1.1.2.9): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/radio-system-compatibilities-voice/RadioSystemCompatibilitiesVoice.
Voice Radio Compatible
Comment: Radio requirements used for demonstrating technical compatibility voice.
Message: voiceRadioCompatible (1.1.1.3.3.9, 1.2.1.1.2.9): The track or subset with common characteristics may have a radio system compatibility voice value that is an IRI. This error is due to having a value that is not an IRI.
Voice Radio Compatible Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: voiceRadioCompatible (1.1.1.3.3.9, 1.2.1.1.2.9):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the voiceRadioCompatible parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Information on RSC voice requirements per country is given in the referred document.

Vehicles are considered compatible with the infrastructure regarding this parameter, if any of the values declared matches.
In case the value “Not Defined” or “RSC-EU-0” is used, repetitions with additional values are not expected.

Radio system compatibility data OP

Radio requirements used for demonstrating technical compatibility data.

IRI: *http://data.europa.eu/949/dataRadioCompatible*

Parameter of

Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.3.10
1.2.1.1.2.10

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Vehicle type technical characteristic

Data Format

Data Presentation

Concept

Taxonomy Reference:

Radio System Compatibilities Data

Values :

Code	Value	Explanation
10	Not Defined	Not available
20	RSC-EU-0	Not available
30	RSC-ES-01-D	Not available
40	RSC-ES-02-D	Not available
50	RSC-ES-03-D	Not available
60	RSC-ES-04-D	Not available
61	RSC-ES-04.LAXAVA-D	Not available
62	RSC-ES-04.ORESAN-D	Not available
63	RSC-ES-04.ARAVIL-D	Not available
64	RSC-ES-04.GENERAL-D	Not available
70	RSC-SE-01-D	Not available
80	RSC-FR-01-D	Not available
90	RSC-AT-01-D	Not available
100	RSC-PL-01-D	Not available
110	RSC-ES-05-D	Not available
111	RSC-ES-05.LEOPOL-D	Not available
112	RSC-ES-05.PEDORE-D	Not available
113	RSC-ES-05.GENERAL-D	Not available
114	RSC-ES-03.GENERAL-D	Not available
115	RSC-ES-03.SPECIFIC-D	Not available
116	RSC-ES-04.GENERAL-D	Not available
117	RSC-ES-05.GENERAL-D	Not available
160	RSC-CH-01-D	Not available
501	RSC-ES-03.ALBALI-D	Not available
502	RSC-ES-03.ANTGRA-D	Not available
503	RSC-ES-03.CHATO-D	Not available
504	RSC-ES-03.BAFI-D	Not available
505	RSC-ES-03.CORMAL-D	Not available
506	RSC-ES-03.SAGTOL-D	Not available

Code	Value	Explanation
507	RSC-ES-03.MADBCN-D	Not available
508	RSC-ES-03.MADVLL-D	Not available
509	RSC-ES-03.MONMUR-D	Not available
510	RSC-ES-03.MOTVLCALB-D	Not available
511	RSC-ES-03.OLMPED-D	Not available
512	RSC-ES-05.PLACACBAD-D	Not available
513	RSC-ES-03.TORMOT-D	Not available
514	RSC-ES-03.VALLEOBUR-D	Not available
515	RSC-ES-03.VILTAR-D	Not available
516	RSC-ES-05.HOSMAT-D	Not available
517	RSC-ES-03.GENERAL-D	Not available
518	RSC-ES-03.SPECIFIC-D	Not available

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:

Data Radio Compatible Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: dataRadioCompatible (1.1.1.3.3.10, 1.2.1.1.2.10):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the dataRadioCompatible parameter applicable. This error is due to {$this} not having a value for such a parameter.
Data Radio Compatible Skos
Comment: Radio requirements used for demonstrating technical compatibility data.
Message: dataRadioCompatible (1.1.1.3.3.10, 1.2.1.1.2.10): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/radio-system-compatibilities-data/RadioSystemCompatibilitiesData.
Data Radio Compatible
Comment: Radio requirements used for demonstrating technical compatibility data.
Message: dataRadioCompatible (1.1.1.3.3.10, 1.2.1.1.2.10): The track or subset with common characteristics may have a radio system compatibility data value that is an IRI. This error is due to having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:

true

Additional Information

General explanation:
Information on RSC data requirements per country.

Vehicles are considered compatible with the infrastructure regarding this parameter, if any of the values declared matches.
In case the value “Not Defined” or “RSC-EU-0” is used, repetitions with additional values are not expected.

GSM-R network is configured to allow forced de-registration of a functional number by another driver DP

This feature will determine the applicable operational rules for drivers and signallers when dealing with cab radios registered under wrong numbers.

IRI: *http://data.europa.eu/949/gsmrForcedDeregistrationFunctionalNumber*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.11
1.2.1.1.2.11

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable.

Validation Rules:

Gsmr Forced Deregistration Functional Number
Comment: This feature will determine the applicable operational rules for drivers and signallers when dealing with cab radios registered under wrong numbers.
Message: gsmrForcedDeregistrationFunctionalNumber (1.1.1.3.3.11, 1.2.1.1.2.11): Each track or subset with common characteristics may define the existence of GSM-R network configured to allow forced de-registration of a functional number by another driver. This error is due to having more than one value or having a value that is not Y/N (boolean).
Gsmr Forced Deregistration Functional Number Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gsmrForcedDeregistrationFunctionalNumber (1.1.1.3.3.11, 1.2.1.1.2.11):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gsmrForcedDeregistrationFunctionalNumber parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:
See documents regarding Operational Harmonisation ETCS.

Radio Network ID DP

Unique identification of the GSM-R network the calling mobile station has to register with, as defined in the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/radioNetworkId*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.3.12
1.2.1.1.2.13

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)
Identifier

Data Format

Data Presentation
String

Format:
NNNNNN with N a decimal number (0 9).

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R must be installed for this parameter to be applicable.

Validation Rules:
Radio Network Id
Comment: Unique identification of the GSM-R network the calling mobile station has to register with, as defined in the specification referenced in TSI CCS.
Message: radioNetworkId (1.1.1.3.3.12, 1.2.1.1.2.13): The track or subset with common characteristics has a Radio Network ID that must be a string and follow the format [NNNNNN]. The error is due to the value not being a string or not following the pattern.
Radio Network Id Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) must be installed for this parameter to be applicable.
Message: radioNetworkId (1.1.1.3.3.12, 1.2.1.1.2.13):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined which makes the radioNetworkId parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.4

Additional Information

General explanation:
According to the specification referenced in TSI CCS.

Train detection systems defined based on frequency bands DP OP

General Information

Number:
1.1.1.3.4
1.2.1.1.3

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Existence of train detection system fully compliant with the TSI (1.1.1.3.4.1 | 1.2.1.1.3.1)
Frequency bands for detection (1.1.1.3.4.2 | 1.2.1.1.3.2)
Evaluation parameters if maximum interference current is not measured in the preferred bands (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
Maximum interference current (1.1.1.3.4.2.1 | 1.2.1.1.3.2.1)
Vehicle impedance (1.1.1.3.4.2.2 | 1.2.1.1.3.2.2)
Maximum magnetic field (1.1.1.3.4.2.3 | 1.2.1.1.3.2.3)

Existence of train detection system fully compliant with the TSI DP

Indication if there is any train detection system installed and fully compliant with the TSI CCS

IRI: *http://data.europa.eu/949/hasTSITrainDetection*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.4.1
1.2.1.1.3.1

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Tsitrain Detection
Comment: Indication if there is any train detection system installed and fully compliant with the TSI CCS (Annex I, Appendix A, Table A.2 -Index 77).
Message: hasTSITrainDetection (1.1.1.3.4.1, 1.2.1.1.3.1): Each track or subset with common characteristics may define the existence of train detection system fully compliant with the TSI. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
Verification of compliance with TSI includes application of notified national rules (when they exist).

See: (Annex I, Appendix A, Table A.2 -Index 77).

Frequency bands for detection OP

Bands of the frequency management of the train detection systems as defined in the TSI CCS, and in the specific cases or technical documents referred to in Article 13 of TSI CCS when they are available.

IRI: *http://data.europa.eu/949/frequencyBandsForDetection*

Parameter of

Train Detection System

General Information

Number:
1.1.1.3.4.2
1.2.1.1.3.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Frequency bands for detection, one collection for axle counters, one for track circuits.

Values :

Code	Value	Explanation
A0_TC	DC-operated Track Circuits	Not available
A1_AC	Band A1 for Axle Counters	Not available
A1_TC	Band A1 for Track Circuits	Not available
A2_AC	Band A2 for Axle Counters	Not available
A2_TC	Band A2 for Track Circuits	Not available
A3_AC	Band A3 for Axle Counters	Not available
A3_TC	Band A3 for Track Circuits	Not available
A4_TC	Band A4 for Track Circuits	Not available
A5_TC	Band A5 for Track Circuits	Not available
A6_TC	Band A6 for Track Circuits	Not available
A7_TC	Band A7 for Track Circuits	Not available
A8_TC	Band A8 for Track Circuits	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Frequency Bands For Detection
Comment: Bands of the frequency management of the train detection systems as defined in the TSI CCS (Annex I, Appendix A, Table A.2 -Index 77), and in the specific cases or technical documents referred to in Article 13 of TSI CCS when they are available.
Message: frequencyBandsForDetection (1.1.1.3.4.2.1, 1.2.1.1.3.2): The train detection system has a frequency band for detection that must be an IRI. This error may be due to having more than one value or having a value that is not a Document.
Frequency Bands For Detection Skos
Comment: Indication of the frequency band for detection of the train detection system
Message: Indication of the frequency band for detection of the train detection system (1.1.1.3.4.2, 1.2.1.1.3.2): The train detection system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection/FrequencyBandsForDetection.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Verification of compliance with TSI includes application of notified national rules (when they exist).

Multiple selection from a predefined list:
- Axle Counters: bands A1-A3
- Track circuits: bands A1-A8

Evaluation parameters if maximum interference current is not measured in the preferred bands DP

Maximum interference current limits allowed for track circuits for a defined frequency band.

IRI: *http://data.europa.eu/949/maximumInterferenceCurrentEvaluation*

Parameter of

Train Detection System

General Information

Number:
1.1.1.3.4.2.1
1.2.1.1.3.2.1

Deadline:
12 months after publication of Article 7 Guide

For train detection system compliant with TSIs: 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
String

Flags

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
If the preferred frequency bands are not used, (mandatory) description of the parameters for evaluation of compliance.
If the preferred frequency bands are used, this parameter is optional.

Validation Rules:
Maximum Interference Current Evaluation
Comment: If the preferred frequency bands are not used, (mandatory) description of the parameters for evaluation of compliance. If the preferred frequency bands are used, this parameter is optional.
Message: maximumInterferenceCurrentEvaluation (1.1.1.3.4.2.1, 1.2.1.1.3.2.1): Each TrainDetectionSystem may have a single value for maximumInterferenceCurrentEvaluation that is a character string. This error is due to having more than one maximumInterferenceCurrentEvaluation value or having a value that is not a string.

OPE TSI References

Part of RCC Algorithm:
true

Maximum interference current DP

Maximum interference current limits allowed for track circuits for a defined frequency band.

IRI: *http://data.europa.eu/949/maximumInterferenceCurrent*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.4.2.1
1.2.1.1.3.2.1

Deadline:
For train detection system compliant with TSIs: 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Double

Format:
NNN. An optional value could be filled in era:maximumInterferenceCurrentEvaluation

Unit of Measure:
Ampere per metre

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Evaluation parameters must be added if preferred bands are not used.

Validation Rules:
Maximum Interference Current
Comment: Maximum interference current limits allowed for track circuits for a defined frequency band (to be expressed in A/m).
Message: maximumInterferenceCurrent (1.1.1.3.4.2.1, 1.2.1.1.3.2.1): Each train detection system must define the maximum interference current in Amperes. This error may be due to having more than one value or having a value that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
To be expressed in A/m. Verification of compliance with TSI includes application of notified national rules (when they exist).

Evaluation parameters must be added if preferred bands are not used.

Vehicle impedance OP

Impedance as defined in the specification referenced in Appendix A-1, index [D]

IRI: *http://data.europa.eu/949/minVehicleImpedance*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.4.2.2
1.2.1.1.3.2.2

Deadline:
For train detection system compliant with TSIs, 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Minimum Vehicle Impedance

Format:
The values is an instance of era:MinVehicleImpedance class with its 2 properties. Per voltage : input Capacitance (Cin) and Input Impedance (Zin)

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory only for track circuits

Validation Rules:
Min Vehicle Impedance

Message: minVehicleImpedance (1.1.1.3.4.2.2): The train detection system has a minimum vehicle impedance reference that must be a minimum vehicle impedance. This error may be due to having more than one value or having a value that is not an instance of a MinVehicleImpedance.
Min Vehicle Impedance Applicability
Comment: The parameter minVehicleImpedance is applicable for track circuits.
Message: minVehicleImpedance (1.1.1.3.4.2.2):The Train Detection System {$this} ({? tdsLabel}), has a 'track circuit' type that makes the minVehicleImpedance parameter applicable. This error is due to not having a value for such a parameter.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Compatibility with track circuits. A track circuit is only able to detect rolling stock if the impedance between rails does not exceed a certain value.

Maximum magnetic field OP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band.
It should be provided in 3 directions.

IRI: *http://data.europa.eu/949/tdsMaximumMagneticField*

Parameter of

Train Detection System

General Information

Number:
1.1.1.3.4.2.3
1.2.1.1.3.2.3

Deadline:
12 months after publication of Article 7 Guide for OP tracks
For train detection system compliant with TSIs, 12 months after publication of Article 7 Guide.
For train detection system not TSI compliant: in relation to article 13 of TSI CCS

Belongs to parameters group
Train detection systems defined based on frequency bands (1.1.1.3.4 | 1.2.1.1.3)

Data Format

Data Presentation
Maximum magnetic field

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory for train detection systems based on axle counters

Validation Rules:
Tds Maximum Magnetic Field Applicability
Comment: Y, for parameter 1.1.1.3.7.1.1 "Axle Counters" only.
Message: tdsMaximumMagneticField (1.1.1.3.4.2.3, 1.2.1.1.3.2.3):The Train Detection System {$this} ({?clsLabel}), has an 'axle counters' type that makes the tdsMaximumMagneticField parameter applicable. This error is due to {$this} not having a value for such a parameter.
Tds Maximum Magnetic Field
Comment: Relates the Axle Counter TrainDetectionSystem with its MaximumMagneticField in (X,Y,Z). The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. It should be provided in 3 directions.
Message: tdsMaximumMagneticField (1.1.1.3.4.2.3, 1.2.1.1.3.2.3): The train detection system has a train detection system maximum magnetic field reference that must be a maximum magnetic field. This error may be due to having more than one value or having a value that is not an instance of a MaximumMagnaticField.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Relates the Axle Counter TrainDetectionSystem with its MaximumMagneticField in (X,Y,Z). Verification of compliance with TSI includes application of notified national rules (when they exist).

Train protection legacy systems OP

General Information

Number:
1.1.1.3.5
1.2.1.1.4

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Train protection legacy system (1.1.1.3.5.3 | 1.2.1.1.4.1)

Train protection legacy system OP

Indication of which class B system is installed.

IRI: *http://data.europa.eu/949/protectionLegacySystem*

Parameter of
Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.5.3
1.2.1.1.4.1

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
Train protection legacy systems (1.1.1.3.5 | 1.2.1.1.4)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Other Protection Control and Warnings

Values :

Code	Value	Explanation
01	ALSN	Not available
02	ASFA	Not available
04	ATB First generation	Not available
05	ATB new generation	Not available
07	ATC v2	Not available
09	ATC vR	Not available
10	ATP	Not available
11	ATP-VR/RHK	Not available
12	BACC	Not available
13	CAWS	Not available
14	Chiltern-ATP	Not available
15	Crocodile	Not available
16	DAAT	Not available
17	EBICAB 700 BU	Not available
18	EBICAB 700 PT (CONVEL)	Not available
19	EBICAB 900 ES	Not available
21	EuroSIGNUM	Not available
23	EuroZUB	Not available
25	EVM	Not available
26	GNT (Geschwindigkeitsüberwachung für NeiTech-Züge)	Not available
27	GW ATP	Not available
28	INDUSI I60	Not available
29	KCVB	Not available
30	KCVP	Not available
31	KVB	Not available
32	KVBP	Not available
33	LS	Not available
34	LZB (LZB L72, LZB L72 CE I	Not available

Code	Value	Explanation
	and LZB L72 CE II)	
35	LZB ES	Not available
36	Mechanical Trainstops	Not available
37	MEMOR II+	Not available
38	NEXTEO	Not available
39	PKP radio system with Radiostop function	Not available
40	PZB 90	Not available
41	RETB	Not available
42	RSDD/SCMT	Not available
43	SHP	Not available
44	SSC	Not available
45	TBL 1	Not available
46	TBL 2	Not available
47	TBL1+	Not available
48	TPWS/AWS	Not available
49	TVM 300	Not available
50	TVM 430	Not available
51	ZUB 123	Not available
100	None	Not available
scmt	SCMT	Not available
scmt-rsc	SCMT + RSC	Not available

Flags

Applicability Flags:

Y/N/NYA

Validation

Validation Rules:

Protection Legacy System Skos

Comment: Indication of which class B system is installed.

Message: Indication of the protectionLegacySystem (1.1.1.3.5.3): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-protection-legacy-systems/TrainProtectionLegacySystems.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The list is in line with ERA/TD/2011-09/INT (v1.13), Table 3, and is now in 3.3 of the annex II of TSI CCS.

Radio Legacy Systems OP

General Information

Number:
1.1.1.3.6
1.2.1.1.5

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)
Vehicle type technical characteristic

Related parameters
Other radio systems installed (Radio Legacy Systems) (1.1.1.3.6.1 | 1.2.1.1.5.1)

Other radio systems installed (Radio Legacy Systems) OP

Indication of radio legacy systems installed.

IRI: *http://data.europa.eu/949/legacyRadioSystem*

Parameter of
Running track
Subset with common characteristics
Vehicle Type

General Information

Number:
1.1.1.3.6.1
1.2.1.1.5.1

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
Radio Legacy Systems (1.1.1.3.6 | 1.2.1.1.5)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Legacy Radio Systems

Values :

Code	Value	Explanation
01	UIC Radio Chapter 1-4	Not available
02	UIC Radio Chapter 1-4+6	Not available
03	UIC Radio Chapter 1-4 + 6 (Irish system)	Not available
04	UIC Radio Chapter 1-4 (TTT radio system installed at Cascais line)	Not available
05	TTT radio system CP_N (RSC - Radio Solo-Comboio)	Not available
06	PKP radio system	Not available
07	LDZ radio system	Not available
08	CH — Greek Railways radio system (VHF)	Not available
09	UIC Radio Chapter Bulgaria	Not available
10	The Estonian radio system	Not available
11	The Lithuanian radio system	Not available
12	450 Mhz UIC (kanál C)	Not available
13	Analogue Radio Germany - UIC 751	Not available
14	BOSCH (160 MHz)	Not available
15	GSM-P	Not available
16	Multikom (160 MHz and 450 MHz)	Not available
17	OMEGA (160 MHz)	Not available
18	RDZ - in compliance with UIC 751-3	Not available
19	RETB (voice)	Not available
20	Radio Network of CFR	Not available
21	SRO (160 MHz)	Not available
22	Shunting Radio Communication System	Not available
23	Analogue railway radio system (RDU) - in compliance with UIC 751-3	Not available
24	SRD	Not available

Code	Value	Explanation
25	DMR	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Legacy Radio System
Comment: Indication of radio legacy systems installed.
Message: legacyRadioSystem (1.1.1.3.6.1, 1.2.1.1.5.1): The track or subset with common characteristics may have other radio systems installed (Radio Legacy Systems) value that is an IRI. This error is due to having a value that is not an IRI
Legacy Radio System Skos
Comment: Indication of radio legacy systems installed.
Message: legacyRadioSystem (1.1.1.3.6.1, 1.2.1.1.5.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/legacy-radio-systems/LegacyRadioSystems.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
3.1.7

Additional Information

General explanation:
The list is in line with ERA/TD/2011-09/INT, Table 4, and is now in 3.4 of the annex II of TSI CCS.

Other train detection systems OP

General Information

Number:
1.1.1.3.7
1.2.1.1.6

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Type of train detection system (1.1.1.3.7.1.1 | 1.2.1.1.3.1.1)
Type of track circuits or axle counters to which specific checks are needed (1.1.1.3.7.1.2 | 1.2.1.1.6.1)
Document with the procedure(s) related to the type of train detection systems declared in "Type of track circuits or axle counters to which specific checks are needed" (1.1.1.3.7.1.3 | 1.2.1.1.6.2)
Section with train detection limitation (1.1.1.3.7.1.4 | 1.2.1.1.6.3)

Type of train detection system OP

Indication of types of train detection systems installed.

IRI: *http://data.europa.eu/949/trainDetectionSystemType*

Parameter of

Train Detection System
Vehicle Type

General Information

Number:
1.1.1.3.7.1.1
1.2.1.1.3.1.1

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)
Vehicle type technical characteristic

Data Format

Data Presentation
Concept

Taxonomy Reference:
Train Detection Systems

Values :

Code	Value	Explanation
10	Track circuit	Not available
20	Wheel detector	Not available
30	Loop	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Not all parameters are applicable to all types of train detection systems; it depends on the applicability condition.

Validation Rules:

Train Detection System Type Skos
Comment: Indication of types of train detection system installed.
Message: Indication of types of train detection system installed (1.1.1.3.7.1.1, 1.2.1.1.3.1.1): The train detection system {$this} (label {?tdsLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection/TrainDetectionSystems.
Train Detection System Type
Comment: Indication of types of train detection system installed.
Message: trainDetectionSystemType (1.1.1.3.7.1.1, 1.2.1.1.3.1.1): The train detection system has a train detection system type that must be a single IRI. This error may be due to having more than one value or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
Verification of compliance with TSI includes application of notified national rules (when they exist).

Explanation on data presentation:
The option of "wheel detector" has to be also selected for: wheel sensor for axle counter, pedal or treadle.

If there is no train detection system (if this parameters is not applicable) it has an impact on parameters "Type of track circuits or axle counter to which specific checks are needed" and "Document with the procedure(s) related to the type of train detection systems declared in 1.1.1.3.7.1.2 (1.2.1.1.6.1, if in OP)", making them also not applicable.
Explanation on data presentation:
The option of "wheel detector" has to be also selected for: wheel sensor for axle counter, pedal or treadle.

Type of track circuits or axle counters to which specific checks are needed OP

Reference to the technical specification of train detection system, in accordance with the specification referenced in Appendix A-1, index [D]

IRI: *http://data.europa.eu/949/trainDetectionSystemSpecificCheck*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.7.1.2
1.2.1.1.6.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Train Detection Systems Specific Checks

Values :

Code	Value	Explanation
10	Direct current Track circuit	Not available
20	50Hz Track circuit	Not available
30	Zp30K / Zp30H	Not available
40	83.3 Hz Track circuit	Not available
50	125 Hz Track circuit	Not available
60	ZP 43 E (manufactured prior to 2015)	Not available
70	83.3 Hz and 125 Hz track circuits	Not available
80	83.3 Hz track circuit and ZP 43 E (manufactured prior to 2015)	Not available
90	125 Hz track circuit and ZP 43 E (manufactured prior to 2015)	Not available
100	83.3 Hz and 125 Hz track circuits and ZP 43 E (manufactured prior to 2015)	Not available
110	EBÜT 80: axle counter	Not available
120	WSSB: track circuit	Not available
130	Siemens 100Hz (106,7Hz) : track circuit	Not available
140	Thales 100Hz (106,7Hz) : track circuit	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
It is applicable only when parameter "Type of train detection system" is applicable

Validation Rules:

Train Detection System Specific Check Skos
Comment: Reference to the technical specification of train detection system.
Message: Indication of specific checks of train detection system installed (1.1.1.3.7.1.2, 1.2.1.1.6.1): The train detection system {$this} (label {?tdsLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection-specific-checks.
Train Detection System Specific Check Applicability
Comment: Only applicable, when 1.1.1.3.7.1.1 is applicable.
Message: trainDetectionSystemSpecificCheck (1.1.1.3.7.1.2, 1.2.1.1.6.1):The Train Detection System {$this} ({?clsLabel}), has a type that makes the trainDetectionSystemSpecificCheck parameter applicable. This error is due to {$this} not having a value for such a parameter.
Train Detection System Specific Check
Comment: Reference to the technical specification of train detection system.
Message: trainDetectionSystemSpecificCheck (1.1.1.3.7.1.2, 1.2.1.1.6.1): The train detection system has a train detection system specific check that must be a single IRI. This error may be due to having more than one value or having a value that is not an IRI.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
String containing the name of the TD system for which checks are mentioned in 1.1.1.3.7.1.3.

Document with the procedure(s) related to the type of train detection systems declared in "Type of track circuits or axle counters to which specific checks are needed" OP

Electronic document from the IM stored by the Agency with precise values in accordance with TSI CCS Article13 and the specification referenced in Appendix A-1, index [D], for the specific check to be performed for train detection systems identified in parameter "Type of track circuits or axle counters to which specific checks are needed".

IRI: *http://data.europa.eu/949/trainDetectionSystemSpecificCheckDocument*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.7.1.3
1.2.1.1.6.2

Deadline:
In accordance with TSI CCS Art. 13 and 12 months after publication of Article 7 Guide
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
It is applicable only when parameter "Type of train detection system" is applicable

Validation Rules:
Train Detection System Specific Check Document Applicability
Comment: Only applicable, when 1.1.1.3.7.1.1 is applicable.
Message: trainDetectionSystemSpecificCheckDocument (1.1.1.3.7.1.3, 1.2.1.1.6.2):The Train Detection System {$this} ({?clsLabel}), has a type that makes the trainDetectionSystemSpecificCheckDocument parameter applicable. This error is due to {$this} not having a value for such a parameter.
Train Detection System Specific Check Document
Comment: Electronic document available in two EU languages from the IM stored by the Agency with precise procedures for the specific check to be performed for train detection systems identified in 1.1.1.3.7.1.2.
Message: trainDetectionSystemSpecificCheckDocument (1.1.1.3.7.1.3, 1.2.1.1.6.2): The track defines the electronic document available in two EU languages value and it must be a Document. This error may be due to having more than one value or having a value that is not a Document.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Section with train detection limitation OP

Specific for route compatibility check on French network.

IRI: *http://data.europa.eu/949/tdsFrenchTrainDetectionSystemLimitation*

Parameter of
Train Detection System

General Information

Number:
1.1.1.3.7.1.4
1.2.1.1.6.3

Deadline:
12 months after publication of Article 7 Guide for OP tracks
16 January 2020

Belongs to parameters group
Other train detection systems (1.1.1.3.7 | 1.2.1.1.6)

Data Format

Data Presentation
Section with train detection limitation

Format:
The value of this parameter is an instance of the era:FrenchTrainDetectionSystemLimitation class with all its properties:
- true/false for the existence of a section with train detection limitation
- list of values from 1 to 8 defined in the taxonomy

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable on running tracks in France

Validation Rules:
Tds French Train Detection System Limitation
Comment: Relates the class train detection system with the class that represents the section with train detection limitation. Specific for route compatibility check on French network.
Message: tdsFrenchTrainDetectionSystemLimitation (1.1.1.3.7.1.4, 1.2.1.1.6.3): The train detection system has a tds french train detection system limitation reference that must be a french train detection system limitation. This error may be due to having more than one value or having a value that is not an instance of a FrenchTrainDetectionSystemLimitation

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

Relates the class train detection system with the class that represents the section with train detection limitation. Select the special condition as applicable through National Rule from the List.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, the data format is a character string with the following structure:
[Y/N]+[N]
where:
- [Y/N] - is the existence of section with train detection limitation
- [N] is a number from 1 to 8 referring to sections with:
[1] Tonnage circulated per track is inferior to 15000 tons/day/track
[2] Directional Interlocking
[3] 45-second delay for directional interlocking
[4] Installation with track circuit announcement
[5] Absence of a shunting assistance pedal in the normal direction of circulation for non-reversible double track lines
[6] Absence of a shunting assistance pedal regardless of the direction of traffic for single track lines and tracks for two way working
[7] Absence of a pedal announcement mechanism
[8] 45-second delay for specific announcement reset devices.

Transitions between systems DP OP

General Information

Number:
1.1.1.3.8
1.2.1.1.7

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Existence of switch over between different protection, control and warning systems while running (1.1.1.3.8.1 | 1.2.1.1.7.1)
Special conditions to switch over between different class B train protection, control and warning systems (1.1.1.3.8.1.1 | 1.2.1.1.7.1.1)
Existence of switch over between different radio systems (1.1.1.3.8.2 | 1.2.1.1.7.2)
Special instructions to switch over between different radio systems (1.1.1.3.8.2.1 | 1.2.1.1.7.2.1)
Special technical conditions required to switch over between ERTMS/ETCS and Class B systems (1.1.1.3.8.3 | 1.2.1.1.7.3)

Existence of switch over between different protection, control and warning systems while running DP

Indication whether a switch over between different systems whilst running exists.

IRI: *http://data.europa.eu/949/switchProtectControlWarning*

Parameter of

Subset with common characteristics
Track

General Information

Number:
1.1.1.3.8.1
1.2.1.1.7.1

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different protection, control and warning systems exist.

Validation Rules:
Switch Protect Control Warning
Comment: Indication whether a switch over between different systems whilst running exists.
Message: switchProtectControlWarning (1.2.1.1.7.1, 1.1.1.3.8.1): Each track or subset with common characteristics may define the existence of switch over between different protection, control and warning systems while running. This error is due to having more than one value or having a value that is not Y/N (boolean).
Switch Protect Control Warning Applicability
Comment: Applicable ('Y') when at least two different class of protection systems exist.
Message: switchProtectControlWarning (1.2.1.1.7.1, 1.1.1.3.8.1):The track or subset with common characteristics {$this} ({?label}), has more than one protection system defined which makes the switchProtectControlWarning parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.2

Additional Information

General explanation:
Switch over between different systems whilst running. Installation depends on local conditions.

Special conditions to switch over between different class B train protection, control and warning systems DP

Conditions to switch over between different class B train protection, control and warning systems.

IRI: *http://data.europa.eu/949/conditionsSwitchTrainProtectionSystems*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.8.1.1
1.2.1.1.7.1.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
String

Format:
NNN

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different protection, control and warning systems exist.

Validation Rules:
Conditions Switch Train Protection Systems
Comment: Conditions to switch over between different class B train protection, control and warning systems.
Message: conditionsSwitchTrainProtectionSystems (1.1.1.3.8.1.1, 1.2.1.1.7.1.1): The track or subset with common characteristics has a Special conditions to switch over between different class B train protection, control and warning systems value that must be a string and follow the format [NNN]. The error is due to having more than one value, having a value that is not a string, or it is due to the value not following the pattern.

OPE TSI References

Appendix D2 Index
3.4.2

Additional Information

General explanation:
Switch over between different systems whilst running. Installation depends on local conditions.

Existence of switch over between different radio systems DP

Indication whether a switch over between different radio systems and no communication system whilst running exists.

IRI: *http://data.europa.eu/949/switchRadioSystem*

Parameter of

Subset with common characteristics
Track

General Information

Number:
1.1.1.3.8.2
1.2.1.1.7.2

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different radio systems exist.

Validation Rules:
Switch Radio System
Comment: Indication whether a switch over between different radio systems and no communication system whilst running exists.
Message: switchRadioSystem (1.2.1.1.7.2, 1.1.1.3.8.2): Each track or subset with common characteristics may define the existence of switch over between different radio systems. This error is due to having more than one value or having a value that is not Y/N (boolean).

Switch Radio System Applicability
Comment: Applicable ('Y') when at least two different radio systems exist.
Message: switchRadioSystem (1.2.1.1.7.2, 1.1.1.3.8.2):The track or subset with common characteristics {$this} ({?label}), has more than one radio system defined which makes the switchRadioSystem parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.4

Additional Information

General explanation:
Switch over between different radio systems and no communication system whilst running. Installation depends on local conditions.

The "Indication if other radio systems in normal operation are installed line-side" is given in parameter 1.1.1.3.6.1 / SOL Track Parameter CRS_Installed

Special instructions to switch over between different radio systems OP

Name and/or reference of the document specifying the Special instructions to switch over between different radio systems.

IRI: *http://data.europa.eu/949/instructionsSwitchRadioSystems*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.8.2.1
1.2.1.1.7.2.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Applicable when at least two different radio systems exist.

Validation Rules:

Instructions Switch Radio Systems Applicability
Comment: Applicable ('Y') when at least two different radio systems exist.
Message: instructionsSwitchRadioSystems (1.1.1.3.8.2.1, 1.2.1.1.7.2.1):The track or subset with common characteristics {$this} ({?label}), has a more than one radio system defined which makes the instructionsSwitchRadioSystems parameter applicable. This error is due to {$this} not having a value for such a parameter.
Instructions Switch Radio Systems
Comment: Name and/or reference of the document specifying the Special instructions to switch over between different radio systems.
Message: instructionsSwitchRadioSystems (1.1.1.3.8.2.1, 1.2.1.1.7.2.1): The track or subset with common characteristics has Special instructions to switch over between different radio systems value that must be a Document.

OPE TSI References

Appendix D2 Index
3.4.4

Additional Information

General explanation:
The details of the conditions to switch radio systems must be published.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Special technical conditions required to switch over between ERTMS/ETCS and Class B systems OP

Name and/or reference of the document specifying the Special technical conditions required to switch over between ERTMS/ETCS and Class B systems.

IRI: *http://data.europa.eu/949/conditionsSwitchClassBSystems*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.8.3
1.2.1.1.7.3

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Transitions between systems (1.1.1.3.8 | 1.2.1.1.7)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Applicable when at least two different class of protection systems exist.

Validation Rules:
Conditions Switch Class Bsystems Applicability
Comment: Applicable ('Y') when at least two different class of protection systems exist.
Message: conditionsSwitchClassBSystems (1.1.1.3.8.3, 1.2.1.1.7.3):The track or subset with common characteristics {$this} ({?label}), has a more than one protection system defined which makes the conditionsSwitchClassBSystems parameter applicable. This error is due to {$this} not having a value for such a parameter.
Conditions Switch Class Bsystems
Comment: Name and/or reference of the document specifying the Special technical conditions required to switch over between ERTMS/ETCS and Class B systems.
Message: conditionsSwitchClassBSystems (1.1.1.3.8.3, 1.2.1.1.7.3): The track or subset with common characteristics has Special technical conditions required to switch over between ERTMS/ETCS and Class B systems value that must be a Document. This error is due to having more than one value or having a value that is not an instance of Document.

OPE TSI References

Appendix D2 Index
3.4.3

Additional Information

General explanation:
The details of the conditions to switch between Class B train protection systems must be published.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Parameters related to electromagnetic interferences

DP

General Information

Number:
1.1.1.3.9
1.2.1.1.8

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Existence and TSI compliance of rules for magnetic fields emitted by a vehicle (1.1.1.3.9.1 | 1.2.1.1.8.1)
Existence and TSI compliance of limits in harmonics in the traction current of vehicles (1.1.1.3.9.2 | 1.2.1.1.8.2)

Existence and TSI compliance of rules for magnetic fields emitted by a vehicle DP

Indication whether rules exist and are compliant with the TSI.

IRI: *http://data.europa.eu/949/tsiMagneticFields*

Parameter of
Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.9.1
1.2.1.1.8.1

Deadline:
12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:

Applicable (Y) only when for parameter 1.1.1.3.7.1 the selected option is wheel detector. The parameter is not applicable when the rules do not exist.

Validation Rules:

Tsi Magnetic Fields
Comment: Indication whether rules exist and are compliant with the TSI.
Message: tsiMagneticFields (1.1.1.3.9.1, 1.2.1.1.8.1): Each track or subset with common characteristics may define the existence and TSI compliance of rules for magnetic fields emitted by a vehicle. This error is due to having more than one value or having a value that is not Y/N (boolean).
Tsi Magnetic Fields Applicability
Comment: Applicable ('Y') only when for parameter 1.1.1.3.7.1.1 the selected option is 'wheel detector'.
Message: tsiMagneticFields (1.1.1.3.9.1, 1.2.1.1.8.1):The track or subset with common characteristics {$this} ({?label}), has a 'train detection system' type ('wheel detector') that makes the tsiMagneticFields parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

The electromagnetic fields generated by rolling stock can interfere with the operation of axle counters and wheel detectors.
'True' means the rules exist and are compliant with the frequency management specified in the TSI.
'False' means the rules exist and are not compliant with the frequency management specified in the TSI.

Verification of compliance with TSI includes application of notified national rules (when they exist) in case of part covered by open point.

Existence and TSI compliance of limits in harmonics in the traction current of vehicles DP

Indication whether rules exist and are compliant with the TSI.

IRI: *http://data.europa.eu/949/tsiTractionHarmonics*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.9.2
1.2.1.1.8.2

Deadline:

In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group

Parameters related to electromagnetic interferences (1.1.1.3.9 | 1.2.1.1.8)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Tsi Traction Harmonics Applicability
Comment: Applicable ('Y') only when for parameter 1.1.1.3.7.1.1 the selected option is 'wheel detector' or 'track circuit'.
Message: tsiTractionHarmonics (1.1.1.3.9.2, 1.2.1.1.8.2):The track or subset with common characteristics {$this} ({?label}), has a 'train detection system' type ('wheel detector' or 'track circuit') that makes the tsiTractionHarmonics parameter applicable. This error is due to {$this} not having a value for such a parameter.
Tsi Traction Harmonics
Comment: Indication whether rules exist and are compliant with the TSI.
Message: tsiTractionHarmonics (1.1.1.3.9.2, 1.2.1.1.8.2): Each track or subset with common characteristics may define the existence and TSI compliance of limits in harmonics in the traction current of vehicles. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
Compatibility with track circuits and wheel detectors of axle counters.

The harmonics in the traction current in the rails can interfere with the operation of track circuits. The DC current in the rails may saturate the detectors of the axle counters, preventing their operation.

'Y' means the rules exist and are compliant with the frequency management specified in the TSI.
'N' 'means the rules exist and are not compliant with the frequency management specified in the TSI.

Verification of compliance with TSI includes application of notified national rules (when they exist) in case of part covered by open point.
LOC&PAS TSI : Appendix J-2, index 1, clause 3.2.2

Line-side system for degraded situation OP

General Information

Number:
1.1.1.3.10
1.2.1.1.9

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters

ETCS level for degraded situation (1.1.1.3.10.1 | 1.2.1.1.9.1)
Other train protection, control and warning systems for degraded situation (1.1.1.3.10.2 | 1.2.1.1.9.2)

ETCS level for degraded situation OP

ERTMS / ETCS application level for degraded situation related to the track side equipment.

IRI: *http://data.europa.eu/949/etcsDegradedSituation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.10.1
1.2.1.1.9.1

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest 12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ETCS Level for Degraded Situations

Values :

Code	Value	Explanation
10	None	Not available
11	0	Not available
20	1	Not available
30	2	Not available
50	NTC	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:

Mandatory when ETCS is present.

Validation Rules:

Etcs Degraded Situation
Comment: ERTMS / ETCS application level for degraded situation related to the track side equipment.
Message: etcsDegradedSituation (1.1.1.3.10.1, 1.2.1.1.9.1): The track or subset with common characteristics must have an ETCS level for degraded situation value that is an IRI.
Etcs Degraded Situation Skos
Comment: ERTMS / ETCS application level for degraded situation related to The track or subset with common characteristics side equipment.
Message: etcsDegradedSituation (1.1.1.3.10.1, 1.2.1.1.9.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-situation/ETCSSituations.
Etcs Degraded Situation Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: etcsDegradedSituation (1.1.1.3.10.1, 1.2.1.1.9.1):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined that makes the etcsDegradedSituation parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.1

Additional Information

General explanation:
System for degraded situation.

In case of failure of the ETCS Level for normal operation, train movement can be supervised in another ETCS Level.

If parameter 1.1.1.3.2.1 is not used (no ETCS), no degradation is possible, so only "none" level is possible for degraded .
It assumed that the degraded level has to be lower than the actual operating level.
See also TSI OPE 4.2.3.6. Degraded operation.

Example:

```
Level 1 as a degraded mode for Level 2.
```

Other train protection, control and warning systems for degraded situation OP

Indication of existence of other system than ETCS for degraded situation.

IRI: *http://data.europa.eu/949/otherTrainProtection*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.10.2

1.2.1.1.9.2

Deadline:

12 months after publication of Article 7 Guide for OP tracks
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group

Line-side system for degraded situation (1.1.1.3.10 | 1.2.1.1.9)

Data Format

Data Presentation

Concept

Taxonomy Reference:

Other Protection Control and Warnings

Values :

Code	Value	Explanation
01	ALSN	Not available
02	ASFA	Not available
04	ATB First generation	Not available
05	ATB new generation	Not available
07	ATC v2	Not available
09	ATC vR	Not available
10	ATP	Not available
11	ATP-VR/RHK	Not available
12	BACC	Not available
13	CAWS	Not available
14	Chiltern-ATP	Not available
15	Crocodile	Not available
16	DAAT	Not available
17	EBICAB 700 BU	Not available
18	EBICAB 700 PT (CONVEL)	Not available
19	EBICAB 900 ES	Not available
21	EuroSIGNUM	Not available
23	EuroZUB	Not available
25	EVM	Not available
26	GNT (Geschwindigkeitsüberwachung für NeiTech-Züge)	Not available
27	GW ATP	Not available
28	INDUSI I60	Not available
29	KCVB	Not available
30	KCVP	Not available
31	KVB	Not available
32	KVBP	Not available
33	LS	Not available
34	LZB (LZB L72, LZB L72 CE I	Not available

Code	Value	Explanation
	and LZB L72 CE II)	
35	LZB ES	Not available
36	Mechanical Trainstops	Not available
37	MEMOR II+	Not available
38	NEXTEO	Not available
39	PKP radio system with Radiostop function	Not available
40	PZB 90	Not available
41	RETB	Not available
42	RSDD/SCMT	Not available
43	SHP	Not available
44	SSC	Not available
45	TBL 1	Not available
46	TBL 2	Not available
47	TBL1+	Not available
48	TPWS/AWS	Not available
49	TVM 300	Not available
50	TVM 430	Not available
51	ZUB 123	Not available
100	None	Not available
scmt	SCMT	Not available
scmt-rsc	SCMT + RSC	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Only applicable when for parameter 1.1.1.3.10.1 "none" was selected.

Validation Rules:

Other Train Protection Skos
Comment: Indication of existence of other system than ETCS for degraded situation.
Message: otherTrainProtection (1.1.1.3.10.2, 1.2.1.1.9.2): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/other-protection-control-warning/OtherProtectionControlWarnings.
Other Train Protection
Comment: Indication of existence of other system than ETCS for degraded situation.
Message: otherTrainProtection (1.1.1.3.10.2, 1.2.1.1.9.2): The track or subset with common characteristics may have other train protection, control and warning systems for degraded situation value that is an IRI. This error is due to having more than one value or having a value that is not an IRI.
Other Train Protection Applicability
Comment: Only applicable when selected value for 1.1.1.3.2.1 (ETCS present).
Message: otherTrainProtection (1.1.1.3.10.2, 1.2.1.1.9.2):The track or subset with common characteristics {$this} ({?label}), has an 'ETCS Level Type' defined which makes the otherTrainProtection parameter applicable. This error is due to {$this} not having a value for such a parameter.

OPE TSI References

Appendix D2 Index
3.4.1

Additional Information

General explanation:
Selected value shall answer the question whether any other system than ETCS exists on the respective track. The list of possible values is in line with ERA/TD/2011-09/INT, Table 3.

Brake related parameters DP OP

General Information

Number:
1.1.1.3.11

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Maximum braking distance requested (1.1.1.3.11.1)
Availability by the IM of additional information (1.1.1.3.11.2)
Documents available by the IM relating to braking performance (1.1.1.3.11.3)

Maximum braking distance requested DP

The maximum value of the braking distance [in metres] of a train shall be given for the maximum line speed.

IRI: *http://data.europa.eu/949/maximumBrakingDistance*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.11.1

XML Name:
CBP_MaxBrakeDist

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Brake related parameters (1.1.1.3.11)

Data Format

Data Presentation
Integer

Format:
NNNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Maximum Braking Distance
Comment: The maximum value of the braking distance [in metres] of a train shall be given for the maximum line speed.
Message: maximumBrakingDistance (1.1.1.3.11.1): The track or subset with common characteristics must define at most one value of the maximum value of the braking distance [in metres] of a train and it is an integer. This error may be due to the track having more than one value or to having a value that is not an integer.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
This distance corresponds to the smallest physical distance between signals of the section of line at V max, taking into account the effect of gradient, minus the value of the safety margin used by the IM.

The braking capability of a train allows it to respect this braking distance.

Note that the OPE TSI provides for an exchange of detailed information between the infrastructure manager and the railway undertaking to ensure safe operation.

See also:
- OPE TSI: 4.2.2.6
- CCS TSI: 4.2.2

Availability by the IM of additional information DP

Availability by the IM of additional information as defined in point (2) of point 4.2.2.6.2 of Regulation (EU) 2023/1693 - TSI OPE

IRI: *http://data.europa.eu/949/hasAdditionalBrakingInformation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.11.2

XML Name:
CBP_AddInfoAvailable

Deadline:
16 January 2020

Belongs to parameters group
Brake related parameters (1.1.1.3.11)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Additional Braking Information
Comment: Availability by the IM of additional information as defined in 4.2.2.6.2 (2) Regulation XXX-OPE TSI.
Message: hasAdditionalBrakingInformation (1.1.1.3.11.2): The track or subset with common characteristics must define at most one value of the availability by the IM of additional information and it is Y/N (boolean). This error may be due to the track having more than one value or to having a value that is not Y/N (boolean).

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:
[See TSI OPE 4.2.2.6.2 (2)]

Documents available by the IM relating to braking performance OP

Electronic document available in two EU languages from the IM stored by the Agency providing additional information as defined in point (2) of point 4.2.2.6.2 of TSI OPE.

IRI: *http://data.europa.eu/949/additionalBrakingInformationDocument*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.11.3

XML Name:
CBP_BrakePerfDocRef

Deadline:
16 January 2020

Belongs to parameters group
Brake related parameters (1.1.1.3.11)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Only applicable when for parameter 1.1.1.3.11.2 True is selected

Validation Rules:
Additional Braking Information Document
Comment: Documents available by the IM relating to braking performance.
Message: additionalBrakingInformationDocument (1.1.1.3.11.3): The track or subset with common characteristics defines the documents available by the IM relating to braking performance value and it must be a Document.
Additional Braking Information Document Applicability
Comment: Electronic document available in two EU languages from the IM stored by the Agency providing additional information as defined in point (2) of point 4.2.2.6.2 of TSI OPE.
Message: additionalBrakingInformationDocument (1.1.1.3.11.3): This error is due to the track or subset with common characteristics {?trackLabel} , violating the rule: Y in case of Y for 1.1.1.3.11.2.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

Automated Train Operation (ATO) OP

General Information

Number:

1.1.1.3.13
1.2.1.1.10

Belongs to parameters group

Control-command and signalling subsystem (1.1.1.3)

Related parameters

ATO Grade of Automation (1.1.1.3.13.1 | 1.2.1.1.10.1)
ATO System version (1.1.1.3.13.2 | 1.2.1.1.10.2)
ATO communication system (1.1.1.3.13.3 | 1.2.1.1.10.3)

ATO Grade of Automation OP

ATO grade of automation installed lineside.

IRI: *http://data.europa.eu/949/atoGradeAutomation*

Parameter of

Running track
Subset with common characteristics

General Information

Number:

1.1.1.3.13.1
1.2.1.1.10.1

Deadline:

12 months after publication of Article 7 Guide

Belongs to parameters group

Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)

Data Format

Data Presentation

Concept

Taxonomy Reference:
ATO Grade of Automation

Values :

Code	Value	Explanation
0	0	Not available
1	1	Not available
2	2	Not available
3	3	Not available
4	4	Not available
unknown	Unknown	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

Validation Rules:
Ato Grade Automation
Comment: ATO grade of automation installed lineside.
Message: atoGradeAutomation (1.1.1.3.13.1, 1.2.1.1.10.1): The track or subset with common characteristics must have a ATO grade of automation installed lineside value that is an IRI.
Ato Grade Automation Skos
Comment: ATO grade of automation installed lineside.
Message: atoGradeAutomation (1.1.1.3.13.1, 1.2.1.1.10.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ato-grades-automation/ATOGradeOfAutomation.

OPE TSI References

Appendix D2 Index
3.4.8

Additional Information

General explanation:
ATO is an optional function added in ETCS B4, only available under L2. See: TSI CCS, 4.2.4 & 4.2.19.

Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

ATO System version OP

ATO system version according to the specification referenced in Appendix A-1, index [C]

IRI: *http://data.europa.eu/949/atoSystemVersion*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.13.2
1.2.1.1.10.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ATO System Versions

Values :

Code	Value	Explanation
0	Non-harmonised	Not available
1	1.0	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Applicable when 'ATO Grade of Automation' is applicable

Validation Rules:
Ato System Version
Comment: ATO system version according to the specification referenced in TSI CCS (4.2.19).
Message: atoSystemVersion (1.1.1.3.13.1, 1.2.1.1.10.1): The track or subset with common characteristics must have a ATO system version value that is an IRI.
Ato System Version Skos
Comment: ATO system version according to the specification referenced in TSI CCS (4.2.19).
Message: atoSystemVersion (1.1.1.3.13.1, 1.2.1.1.10.1): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ato-s-versions/ATOSystemVersions.

OPE TSI References

Appendix D2 Index
3.4.8

Additional Information

General explanation:

ATO is an optional function added in ETCS B4, only available under L2. See: TSI CCS, 4.2.4 & 4.2.19.

Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

ATO communication system OP

Supported ATO communication systems from trackside.

IRI: *http://data.europa.eu/949/atoCommunicationSystem*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.3.13.3
1.2.1.1.10.3

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Automated Train Operation (ATO) (1.1.1.3.13 | 1.2.1.1.10)

Data Format

Data Presentation
Concept

Taxonomy Reference:
ATO Communication System

Values :

Code	Value	Explanation
gsmr	Gsmr	Not available
public	Public	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
Applicable when 'ATO Grade of Automation' is applicable

Validation Rules:
Ato Communication System Skos
Comment: Supported ATO communication systems from trackside.
Message: atoCommunicationSystem (1.1.1.3.13.3, 1.2.1.1.10.3): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/ato-commsys/ATOCommSystem.

Ato Communication System
Comment: Supported ATO communication systems from trackside.
Message: atoCommunicationSystem (1.1.1.3.13.3, 1.2.1.1.10.3): The track or subset with common characteristics must have a ATO communication system value that is an IRI.

OPE TSI References

Appendix D2 Index
3.4.9

Additional Information

General explanation:
ATO system communication system to the specification referenced in TSI CCS (4.2.4 & 4.2.19). Parameter only applicable when ETCS Baseline > 4 MR1 and ATO is implemented

Signal DP OP

General Information

Number:
1.1.1.3.14

Belongs to parameters group
Control-command and signalling subsystem (1.1.1.3)

Related parameters
Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)
Type of signal (1.1.1.3.14.2 | 1.2.1.0.8.2)
Signal orientation (1.1.1.3.14.3 | 1.2.1.0.8.3)
Relative distance of the danger point (1.1.1.3.14.4 | 1.2.1.0.8.4)
Kilometer number (1.2.0.0.0.6)

Name of signal DP

Identifier of signal.

IRI: *http://data.europa.eu/949/signalId*

Parameter of
Signal

General Information

Number:
1.1.1.3.14.1
1.2.1.0.8.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Signal (1.1.1.3.14)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Signal Id
Comment: Operational identifier of the signal (on the track or in OP), as in the operational and maintenance provisions.
Message: signalId (1.1.1.3.14.1, 1.2.1.0.8.1): A Signal may have at most one signal id and it must be represented as a String. This error may be due to having more than one value or having a value that is not a string

OPE TSI References

Appendix D2 Index
2.3.3

Additional Information

General explanation:
Operational identifier of the signal (on the track or in OP), as in the operational and maintenance provisions.

Type of signal OP

Signalling information for Route Book compilation. This list shall include fixed signals that protect danger points

IRI: *http://data.europa.eu/949/signalType*

Parameter of
Signal
Subset with common characteristics

General Information

Number:
1.1.1.3.14.2
1.2.1.0.8.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Signal (1.1.1.3.14)

Data Format

Data Presentation

Concept

Taxonomy Reference:
Types of Signals

Values :

Code	Value	Explanation
01	Home Signal	A main signal, intended for trains entering a station.
02	Intermediate Signal	A main signal that is intended for protecting routes inside of an OP
03	Group Intermediate Signal	Not available
04	Exit Signal	A main signal that is intended for trains leaving a station
05	Group Exit Signal	A main signal that is intended for trains leaving a station, which is combined with an auxiliary signal (often at shunting yard tracks), note that the signals are placed typically inside of the OP and give access to routes towards other tracks in the OP or the SoL.
06	Block Signal	A main signal, intended for trains on a SoL
07	Automatic Block Signal	An automatic block of main signal, intended for trains on a SoL
08	Protection Signal	Not available
09	Group Protection Signal	Not available
10	Fixed Speed Home Signal	A main signal, intended for trains entering a station with fixed speed.
11	Permissive Signal	A signal aspect or a signal identification, which enables a main signal to be passed at danger under special conditions, without specific permission from the signalman
12	Shunting Signal	A signal provided for shunting movements only. A fixed signal intended for shunting movements. In some cases Shunting signals at danger are valid also for train movements.

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Signal Type
Comment: Signalling information for Route Book compilation.
Message: signalType (1.1.1.3.14.2, 1.2.1.0.8.2): The signal type must be represented as an IRI. This error may be due to having a value that is not an IRI.

Signal Type Skos
Comment: Signalling information for Route Book compilation.
Message: Indication of the signalType (1.1.1.3.14.2, 1.2.1.0.8.2): The signal or common characteristics subset {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/signal-types/SignalTypes.

OPE TSI References

Appendix D2 Index
2.3.3

Additional Information

General explanation:
Indicates what function the signal (on the track or in OP) executes in relation to the track/switches.

Signal orientation OP

Relative position to the line of reference, given in km and indication if the signal refers to normal or opposite track direction

IRI: *http://data.europa.eu/949/signalOrientation*

Parameter of

Signal
Subset with common characteristics

General Information

Number:
1.1.1.3.14.3
1.2.1.0.8.3

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Signal (1.1.1.3.14)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Directions of the orientation of a railway element

Values :

Code	Value	Explanation
00	Normal	Not available
01	Opposite	Not available
02	Both	Not available

Flags

Applicability Flags:
Y/N/NYA

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Signal Orientation
Comment: Indication if the signal (on the track or in OP) is applicable for operation on normal, opposite track direction or if it contains bidirectionally valid information (radio-based system only).
Message: signalOrientation (1.1.1.3.14.3, 1.2.1.0.8.3): A Signal or a CommonCharacteristicsSubset may have an orientation and it must be represented as an IRI. This error may be due to having a value that is not an IRI.
Signal Orientation Skos
Comment: Indication if the signal (on the track or in OP) is applicable for operation on normal, opposite track direction or if it contains bidirectionally valid information (radio-based system only).
Message: Indication of the signalOrientation (1.1.1.3.14.3, 1.2.1.0.8.3): The Signal or CommonCharacteristicsSubset {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/track-running-directions/OrientationDirections.

OPE TSI References

Appendix D2 Index
2.2.3

Additional Information

General explanation:
Indication if the signal is applicable for operation on normal, opposite track direction or if it contains bidirectionally valid information (radio-based system only).

The position of the signal is given in relation to a line reference, using the era:netReference property. In general it represents the kilometric point on the main line where the signal is positioned, or a distance from an origin point, when there are no kilometric posts available on the tracks/sidings. See the example.

Example:

```
@prefix era: <http://era.europa.eu/949/> .

@prefix era-orient: <http://data.europa.eu/949/concepts/orientations/> .

@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .



era:signal1 a era:Signal ;

    #signal's position

    era:netReference [

        a era:NetPointReference ;

        era:hasLrsCoordinate [

            a era:LinearPositioningSystemCoordinate ;

            era:kmPost era:kp5 ;

            era:offsetFromKilometricPost 231;

            rdfs:label "5+231"@en ;

        ]

    ];

    #signal's orientation (Normal)

    era:signalOrientation era-orient:00.



era:kp5 a era:KilometricPost ;

    era:hasLRS [

        a era:LinearPositioningSystem ;

        era:lineId "National line 1"

    ] ;

    era:kmPostName "km 5" ;
```

```
    era:measuredDistance 4995 .
```

Relative distance of the danger point DP

Distance in meters to the danger point

IRI: *http://data.europa.eu/949/relativeDistanceDangerPoint*

Parameter of
Signal

General Information

Number:
1.1.1.3.14.4
1.2.1.0.8.4

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Signal (1.1.1.3.14)

Data Format

Data Presentation
Integer

Format:
NNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Relative Distance Danger Point
Comment: Distance in meters to the danger point.
Message: relativeDistanceDangerPoint (1.1.1.3.14.4, 1.2.1.0.8.4): The distance in meters to the danger point must be represented as an integer and follow the pattern [NNN].This error may be due to having a value that is not an integer or that does not follow the pattern.

OPE TSI References

Appendix D2 Index
2.2.3

Additional Information

General explanation:

Danger point is defined in ERTMS/ETCS - Glossary of Terms and Abbreviations - version 4.0.0 - date 05/07/2023. For installations without ERTMS, the signalling definition is equivalent.
See: TSI OPE Appendix D2 (2.3.3), the danger point relative distance from the signal itself.

Rules and restrictions DP OP

General Information

Number:
1.1.1.4
1.2.3

Belongs to parameters group
RINF Technical characteristic

Related parameters
Existence of rules and restrictions of a strictly local nature (1.1.1.4.1 | 1.2.3.1)
Documents regarding the rules or restrictions of a strictly local nature available by the IM (1.1.1.4.2 | 1.2.3.2)

Existence of rules and restrictions of a strictly local nature DP

Existence of rules and restrictions of a strictly local nature

IRI: *http://data.europa.eu/949/localRulesOrRestrictions*

Parameter of
Operational Point
Running track
Subset with common characteristics

General Information

Number:
1.1.1.4.1
1.2.3.1

XML Name:
RUL_LocalRulesOrRestrictions

Deadline:
1 January 2021

Belongs to parameters group
Rules and restrictions (1.1.1.4 | 1.2.3)

Data Format

Data Presentation
Boolean

Format:
Y/N

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Local Rules Or Restrictions
Comment: Existence of rules and restrictions of a strictly local nature.
Message: localRulesOrRestrictions (1.1.1.4.1, 1.2.3.1): Each track or subset with common characteristics or operational point may define the existence of rules and restrictions of a strictly local nature. This error is due to having more than one value or having a value that is not Y/N (boolean).

Additional Information

General explanation:
There is a general obligation for Member States to notify existing national rules but: Member States may decide not to notify rules and restrictions of a strictly local nature. In such cases, Member States shall mention those rules and restrictions in the registers of infrastructure.
In this eventuality, this parameter allows the IM accordingly to its Member State decision to declare the existence of such rules and to provide them with the parameter 'Documents regarding the rules or restrictions of a strictly local nature available by the IM'

Documents regarding the rules or restrictions of a strictly local nature available by the IM OP

Electronic document available from the IM stored by the Agency providing additional information.

IRI: *http://data.europa.eu/949/localRulesOrRestrictionsDoc*

Parameter of
Operational Point
Running track
Subset with common characteristics

General Information

Number:
1.1.1.4.2
1.2.3.2

XML Name:
RUL_LocalRulesOrRestrictionsDocRef

Deadline:
1 January 2021

Belongs to parameters group

Rules and restrictions (1.1.1.4 | 1.2.3)

Data Format

Data Presentation
ERA Document

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Dependencies:
Mandatory to provide at least a document if parameter "Existence of rules and restrictions of a strictly local nature" value is boolean "Yes"

Validation Rules:
Local Rules Or Restrictions Doc
Comment: Electronic document available from the IM stored by the Agency providing additional information.
Message: localRulesOrRestrictionsDoc (1.1.1.4.2, 1.2.3.2): The track or subset with common characteristics has a value of the document regarding the rules or restrictions of a strictly local nature available by the IM, that must be a Document.

Additional Information

General explanation:
The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

IOD: Notification of national rules Art 14. 11. Member States may decide not to notify rules and restrictions of a strictly local nature. In such cases, Member States shall mention those rules and restrictions in the registers of infrastructure referred to in Article 49

Vehicles for which Route compatibility is verified OP

General Information

Number:
1.1.1.5

Belongs to parameters group
RINF Technical characteristic

Related parameters
List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.1)

List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems (1.1.1.5.2)

List of vehicle types already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems OP

The infrastructure managers shall provide through RINF the information to the RU regarding list of vehicle types compatible with the route for which they have already verified compatibility for parameter Traffic load and load carrying capacity of infrastructure and train detection systems, where such information is available.

IRI: *http://data.europa.eu/949/vehicleTypesCompatibleTrafficLoad*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.5.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Vehicles for which Route compatibility is verified (1.1.1.5)

Data Format

Data Presentation
ERA Document
Vehicle Type

Flags

Applicability Flags:
Y/N/NYA

List of vehicles already identified as compatible with Traffic load and load carrying capacity of infrastructure and train detection systems OP

The infrastructure managers shall provide through RINF the information or a document to the RU regarding list of vehicles compatible with the route for which they have already verified compatibility for parameter Traffic load and load

carrying capacity of infrastructure and train detection systems, where such information is available.

IRI: *http://data.europa.eu/949/vehiclesCompatibleTrafficLoad*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.1.1.5.2

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Vehicles for which Route compatibility is verified (1.1.1.5)

Data Format

Data Presentation
ERA Document
Vehicle

Flags

Applicability Flags:
Y/N/NYA

Operational point generic information DP OP

General Information

Number:
1.2.0.0.0

Belongs to parameters group
RINF Technical characteristic

Related parameters
Name of operational point (1.2.0.0.0.1)
Unique OP ID (1.2.0.0.0.2)
Primary location (1.2.0.0.0.3)
Type of operational point (1.2.0.0.0.4)
Type of track gauge changeover facility (1.2.0.0.0.4.1)
Schematic overview of the operational point in digital form (1.2.0.0.0.7)
Schematic overview of the operational point (1.2.0.0.0.7.1)
Digital schematic overview (1.2.0.0.0.7.2)

Name of operational point DP

Name normally related to the town or village or to traffic control purpose.

IRI: *http://data.europa.eu/949/opName*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.1

XML Name:
OPName

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Lang String

Flags

Applicability Flags:
Y

Validation

Validation Rules:
Op Name
Comment: Name normally related to the town or village or to traffic control purpose.
Message: opName (1.2.0.0.0.1): Each Operational Point must have at least one name in English (@en). Additional multilingual names are allowed, but only one value per language tag is permitted. All values must be language-tagged string literals.

OPE TSI References

Appendix D2 Index
2.3.1

Additional Information

General explanation:
Name of OP may not always exist in common use. In such case IM should propose a name for OP.

Unique OP ID DP

Code composed of country code and alphanumeric operational point code.

IRI: *http://data.europa.eu/949/uopid*

Parameter of

Operational Point

General Information

Number:
1.2.0.0.0.2

XML Name:
UniqueOPID

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)
Identifier

Data Format

Data Presentation
String

Format:
CCAAAAAAAAAA
The first part CC is the country code in two-letter system of ISO.
The second part is alphanumeric OP code within the MS.
For example, an OP code could be current abbreviation of name used in route books.
In case of borders point, the code is to be selected in the corresponding list in annex 5.1

Flags

Applicability Flags:
Y

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Uopid P
Comment: Code composed of country code and alphanumeric OP code.
Message: uopid (1.2.0.0.0.2): This error is due to having more than one op id, not having an op id, having a value that is not a string, or having a value that does not follow the pattern where the first part 'AA' is the country code in two-letter system of ISO (or 'EU' for border points) and the second part is the alphanumeric OP code within the MS.
Border Point Valid Code And Coordinates

Border Point Uopid Prefix

Message: uopid (1.2.0.0.0.2-prefix): The OperationalPoint {$this} with name {?opName} is a border point but its uopid {?uopid} does not start with 'EU' as required.

OPE TSI References

Appendix D2 Index
2.2.2

Additional Information

General explanation:

Explanation on data presentation: The first two characters represent the country code in two-letter system of ISO.
The second part AAAAAAAAAA is maximum 10 Characters String corresponding to OP code within the MS.
'LUAB4' or 'LUAB46TH-G' or 'LUAB4/-_ERT7' are accepted by the validation process.
In case of borders point , the code is to be selected in the corresponding list in annex 5.1 (this first part AA is EU. The second part is AAAAAAAAAA). Any OP ID that is not referenced in the annex 5.1 will not be accepted by the validation process.
In case of domestic borders point , the code will be selected in the corresponding list in annex 5.2 that will be developed later.
Any OP ID that is not referenced in the annex 5.1 will not be accepted by the validation process.
The provided OP ID must be unique within each Member State. The validation has to be made nationally by NRE. The exceptions are Border point and domestic border point that must be referenced in annex 5.1.

Primary location OP

Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.

IRI: *http://data.europa.eu/949/primaryLocation*

Parameter of

Infrastructure element

General Information

Number:
1.2.0.0.0.3

XML Name:
OPTafTapCode

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Primary Location

Flags

Applicability Flags:
Y/N

Validation

Dependencies:
Applicable only in case when a primary location exists

Validation Rules:

Primary Location
Comment: Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.
Message: primaryLocation: The infrastructure element has a primaryLocation reference that must be an IRI that refers to an instance of PrimaryLocation.

OPE TSI References

Appendix D2 Index
2.2.2

Type of operational point OP

Type of facility in relation to the dominating operational functions.

IRI: *http://data.europa.eu/949/opType*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.4

XML Name:
OPType

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Operational Point Types

Values :

Code	Value	Explanation
10	Station	large or major railway node with several functions, important for international traffic, basic for national railway system
20	Small station	Multifunctional Operational Point not so big and not so important like station
30	Passenger terminal	station with dominating function of service for passenger traffic, serving as a central hub for passengers, often integrating rail operations with intermodal transport networks and large-scale passenger facilities, including ticketing, waiting areas, and other passenger services
40	Freight terminal	station dominantly serving for loading and unloading of freight trains
50	Depot or workshop	group of tracks used by depot or workshop for rolling stock maintenance
60	Train technical services	group of tracks for servicing trains (parking, washing, etc.)
70	Passenger stop	or halts - small operational point consisting of at least one platform, normally serving mostly for local passenger services, without routing, dispatching, or train management facilities
80	Junction	consists of at least one turnout, normally used mostly for changing direction of trains, with reduced or not existing other functions
90	Border point	located exactly in the point where a border between Member States meets a railway line.
100	Shunting yard	group of tracks used for shunting trains, mostly related to freight traffic
110	Technical change	To describe a change on CCS or a type of contact line or gauge changeover facility – fixed installation allowing a train to travel across a break of gauge where two railway networks with different track gauges meet.
120	Switch	consists of only one switch and the area around it delimited and protected by entry signals, normally used for changing direction of trains, with reduced or not existing other function
130	Private siding	Operational Point allowing to provide more information on the private siding and on the way its is linked to the main network. Its use is left to the discretion of each Member State.
140	Domestic border point	designated location on the main lines where the infrastructure responsibilities transition between IMs

Code	Value	Explanation
150	Over crossing	An over crossing describes a crossing, where something crosses over the railway line. From constructional point of view an over crossing can be a bridge or a tunnel.

Flags

Applicability Flags:

Y

Validation

Validation Rules:

Op Type P

Comment: Type of facility in relation to the dominating operational functions.Each existing case has to be approximated to the one of the above defined types by including size, importance and dominating functions. It is most important to recognize the most important role of specific OP in the network. That is why only one type for one OP is permitted.

Message: opType (1.2.0.0.0.4): Each Operational Point must have exactly one type. This error may be due to having an OP with no type or with more than one type, or its value is not an IRI.

Op Type Skos

Comment: Type of facility in relation to the dominating operational functions. Each existing case has to be approximated to the one of the above defined types by including size, importance and dominating functions. It is most important to recognize the most important role of specific OP in the network. That is why only one type for one OP is permitted.

Message: Type of operational point (1.2.0.0.0.4): The OP {$this} (label {?opLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/op-types/OperationalPointTypes.

OPE TSI References

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2.2.2

Additional Information

General explanation:

Each existing case has to be approximated to the one of the above defined types by including size, importance and dominating functions. It is most important to recognize the most important role of specific OP in the network. That is why only one type for one OP is permitted.

For purpose of RINF, there were defined the following types of OPs:
1. Station - large or major railway node with several functions, important for international traffic, basic for national railway system;
2. Passenger terminal - station with dominating function of service for passenger traffic, serving as a central hub for passengers, often integrating rail operations with intermodal transport networks and large-scale passenger facilities, including ticketing, waiting areas, and other passenger services;
3. Freight terminal - station dominantly serving for loading and unloading of freight trains;
4. Depot or workshop - group of tracks used by depot or workshop for RST maintenance;
5. Train technical services - group of tracks for servicing trains (parking, washing, etc.);
6. Passenger stop - or halts - small OP consisting of at least one platform, normally serving mostly for local passenger services, without routing, dispatching, or train management facilities;
7. Junction - OP consisting of at least one turnout, normally used mostly for changing direction of trains, with reduced or not existing other functions;
8. Border point - located in the point where a border between MSs meets a railway line;
9. Shunting yard - group of tracks used for shunting trains, mostly related to freight traffic;
10. Switch - OP consisting of only one switch and the area around it, delimited and protected by entry signals, normally used for changing direction of trains, with reduced or not existing other functions;
11. Domestic border point - designated location on the main lines where the infrastructure responsibilities transition between IMs.

Type of track gauge changeover facility DP

Type of track gauge changeover facility.

IRI: *http://data.europa.eu/949/opTypeGaugeChangeover*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.4.1

XML Name:
OPTypeGaugeChangeover

Deadline:
16 January 2020

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Op Type Gauge Changeover
Comment: Type of track gauge changeover facility.
Message: opTypeGaugeChangeover (1.2.0.0.0.4.1): The Operational Point must have at most one value of opTypeGaugeChangeover and its type must be a string.

OPE TSI References

Part of RCC Algorithm:
true

Kilometer number DP

Kilometer number of the kilometric post related to line identification defining the location of an infrastructure element.

IRI: *http://data.europa.eu/949/kilometer*

Parameter of

Kilometric Post

General Information

Number:
1.2.0.0.0.6

XML Name:
OPRailwayLocation

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)
Signal (1.1.1.3.14)

Data Format

Data Presentation
Double

Unit of Measure:
Kilometre

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:

Kilometer
Comment: Distance measured in kilometers from the origin of a national railway line/route.
Message: kilometer (1.1.1.1.8.12.1, 1.1.1.1.8.13.1, 1.1.1.3.14.3, 1.1.1.3.14.7, 1.2.0.0.0.6, 1.2.1.0.5.10.1, 1.2.1.0.5.11.1, 1.2.1.0.8.3, 1.2.2.0.5.10.1, 1.2.2.0.5.9.1): The kilometer must be represented as a double number.

OPE TSI References

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2.2.2

Additional Information

General explanation:
For walkways: Value provided in Kilometric point of the start of the walkway and the length in m. Repeatable values for each location.
For rescue points: Value provided in Kilometric point of the start of the point of evacuation and rescue point and the length in m. Repeatable values for each location.
For signals: Relative position to the line identified under parameter 1.1.0.0.0.2, given in km ([reference point, via era:referent] / [NNN.NNN]).

Schematic overview of the operational point in digital form DP

The existence of a schematic overview of the operational point in digital form.

IRI: *http://data.europa.eu/949/hasSchematicOverviewOPDigitalForm*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.7

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:

Has Schematic Overview Opdigital Form
Comment: The existence of a schematic overview of the operational point in digital form.
Message: hasSchematicOverviewOPDigitalForm (1.2.0.0.0.7): The Operational Point has a hasSchematicOverviewOPDigitalForm reference that must be a boolean.

OPE TSI References

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2.1

Schematic overview of the operational point DP

Document providing the schematic overview of the operational point

IRI: *http://data.europa.eu/949/schematicOverviewOP*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.7.1

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Any Uri

Flags

Applicability Flags:
Y/N/NYA

OPE TSI References

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2.1

Digital schematic overview DP

Diagrammatic representation of the operational point in Well Known Text polyline

IRI: *http://data.europa.eu/949/digitalSchematicOverview*

Parameter of
Operational Point

General Information

Number:
1.2.0.0.0.7.2

Deadline:
12 months after publication of Article 7 Guide for OP tracks

Belongs to parameters group
Operational point generic information (1.2.0.0.0)

Data Format

Data Presentation
Wkt Literal

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Digital Schematic Overview
Comment: Diagrammatic representation of the operational point in Well Known Text polyline
Message: digitalSchematicOverview (1.2.0.0.0.7.2): The Operational Point has a digitalSchematicOverview reference that must be a Well Known Text literal.

OPE TSI References

Appendix D2 Index
2.1

Diesel or other thermal traction allowed DP

Indication whether it is allowed to use diesel or other thermal traction in the tunnel

IRI: *http://data.europa.eu/949/dieselThermalAllowed*

Parameter of
Subset with common characteristics
Tunnel

General Information

Number:
1.2.1.0.5.9

XML Name:
ITU_DieselThermAllowed

Deadline:
1 January 2021

Belongs to parameters group
Tunnel (1.1.1.1.8 | 1.2.1.0.5 | 1.2.2.0.5)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Diesel Thermal Allowed
Comment: Indication whether it is allowed to use diesel or other thermal traction in the tunnel.
Message: dieselThermalAllowed (1.2.1.0.5.9): A Tunnel may have an indication about the permission of thermal traction. This error may be due to having a tunnel with more than one dieselThermalAllowed declaration or having a value type different than Y/N (boolean).

Platform DP OP

General Information

Number:
1.2.1.0.6

Belongs to parameters group
RINF Technical characteristic

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Identification of platform (1.2.1.0.6.2)
Usable length of platform (1.2.1.0.6.4)
Height of platform (1.2.1.0.6.5)
Existence of platform assistance for starting train (1.2.1.0.6.6)
Range of use of the platform boarding aid (1.2.1.0.6.7)
Curvature of the platform (1.2.1.0.6.8)

Identification of platform DP

Unique platform identification or unique platform number within an Operational Point.

IRI: *http://data.europa.eu/949/platformId*

Parameter of
Platform edge

General Information

Number:
1.2.1.0.6.2

XML Name:
OPTrackPlatformIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
No Repeated Platform Ids Op
Comment: Each platform shall have unique identification or number within the OP. This number cannot be used for naming any other platform in the same OP.
Message: platformId (1.2.1.0.6.2):: Each platform shall have unique identification or number within the OP. This number cannot be used for naming any other platform in the same OP. There is a problem with OP {$this} ({?opLabel}) and platforms {?platform1} ({?platform1Label}) and {?platform2} ({?platform2Label}), since they have the same identifier: {?value}.
Platform Id
Comment: Unique platform identification or unique platform number within OP.
Message: platformId (1.2.1.0.6.2): Each Platform must have exactly one platformId. This error may be due to having a platform without or with more than one platformId or it value is not a string.

OPE TSI References

Appendix D2 Index
2.3.5

Usable length of platform DP

The maximum continuous length (expressed in metres) of that part of platform in front of which a train is intended to remain stationary in normal operating conditions for passengers to board and alight from the train, making appropriate allowance for stopping tolerances.

IRI: *http://data.europa.eu/949/lengthOfPlatform*

Parameter of

Platform edge

General Information

Number:
1.2.1.0.6.4

XML Name:
IPL_Length

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)
Length

Data Format

Data Presentation
Double

Format:
NNNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Length P
Comment: The maximum continuous length (expressed in metres) of that part of platform in front of which a train is intended to remain stationary in normal operating conditions for passengers to board and alight from the train, making appropriate allowance for stopping tolerances.
Message: length (1.2.1.0.6.4): Each Platform must have at most one length. This error may be caused due to having a platform with more than one length or having a value that is not a Real number.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
2.3.6

Additional Information

General explanation:
Platform dimensions are always related to one neighbouring track at a time.
So, if two tracks are along a platform, this platform should be divided into two RINF platforms to have precise description of each.

Height of platform OP

Distance between the upper surface of platform and running surface of the neighbouring track. It is the nominal value expressed in millimetres.

IRI: *http://data.europa.eu/949/platformHeight*

Parameter of

Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.5

XML Name:
IPL_Height

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Concept

Taxonomy Reference:
Platform Heights

Values :

Code	Value	Explanation
10	250	Not available
20	280	Not available
30	550	Not available
40	760	Not available
50	300-380	Not available
60	200	Not available
70	580	Not available
80	680	Not available
90	685	Not available
100	730	Not available
110	840	Not available
120	900	Not available
130	915	Not available
140	920	Not available
150	960	Not available
160	1100	Not available
220	220	Not available
300	300	Not available
350	350	Not available
380	380	Not available

Flags

Applicability Flags:
Y/

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Platform Height P
Comment: Distance between the upper surface of platform and running surface of the neighbouring track. It is the nominal value expressed in millimetres.
Message: platformHeight (1.2.1.0.6.5): Each Platform must have at most one height. This error may be due to having a platform with more than one height, or having a value that is not an URI.

Platform Height Skos
Comment: Distance between the upper surface of platform and running surface of the neighbouring track. It is the nominal value expressed in millimetres.
Message: Platform height (1.2.1.0.6.5): The platform {$this} with label {?label} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/platform-heights/PlatformHeights.

OPE TSI References

Part of RCC Algorithm:
true

Appendix D2 Index
2.3.7

Additional Information

General explanation:
Values included in the list are taken from PRM and INF TSIs including Specific Cases. They are the values which are mandatory for the design of the platform at the respective part of the network. They are not real values measured at real platforms.
Platform dimensions are always related to one neighbouring track at a time.
So, if two tracks are along a platform, this platform should be divided into two or more 'RINF platforms' to have precise description of each.

Existence of platform assistance for starting train DP

Indication of existence of equipment or staff supporting the train crew in starting the train.

IRI: *http://data.europa.eu/949/assistanceStartingTrain*

Parameter of

Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.6

XML Name:
IPL_AssistanceStartingTrain

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Assistance Starting Train
Comment: Indication of existence of equipment or staff supporting the train crew in starting the train. Fixed equipment (for example mirrors or CCTV cameras) or station staff indicating to train crew or driver when to close doors and whether this has been done successfully.
Message: assistanceStartingTrain (1.2.1.0.6.6): Each Platform must have at most one assistanceStartingTrain declaration. This error may be caused due to having a platform with having more than one assistanceStartingTrain, or its value is not Y/N (boolean).

Range of use of the platform boarding aid DP

Information of the train access level for which the boarding aid can be used.

IRI: *http://data.europa.eu/949/areaBoardingAid*

Parameter of
Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.7

XML Name:
IPL_AreaBoardingAid

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Integer

Unit of Measure:
Millimetre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Area Boarding Aid
Comment: Information of the train access level for which the boarding aid can be used.
Message: areaBoardingAid (1.2.1.0.6.7): Each Platform must have at most one areaBoardingAid value. This error may be caused due to having a platform with multiple areaBoardingAid values or having a value that is not an integer.

Additional Information

General explanation:
Information of the train access level for which the boarding aid can be used. Data is presented as the vertical difference that is overcome by the platform boarding aid in millimetres. The value “0” means that the platform is not equipped with a platform boarding aid.

Curvature of the platform DP

Indication of the existence of the curvature of the platform.

IRI: *http://data.europa.eu/949/hasPlatformCurvature*

Parameter of

Platform edge
Subset with common characteristics

General Information

Number:
1.2.1.0.6.8

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
Platform (1.2.1.0.6)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Has Platform Curvature
Comment: Indication of the existence of the curvature of the platform.
Message: hasPlatformCurvature (1.2.1.0.6.8): Each Platform must have at most one hasPlatformCurvature value. This error may be caused due to having a platform with multiple hasPlatformCurvature values or having a value that is not a boolean.

OPE TSI References

Appendix D2 Index

2.3.8

Permission for charging electric energy storage for traction purposes at standstill DP

Point at which IM authorises charging of electric energy storage for traction purposes at standstill.

IRI:
http://data.europa.eu/949/permissionChargingElectricEnergyTractionStandstill

Parameter of
Contact Line System

General Information

Number:
1.2.1.0.7.1

Deadline:
Contrary to the Regulation, the deadline is not 30 June 2024 at the latest, but 12 months after publication of Article 7 Guide

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Permission Charging Electric Energy Traction Standstill
Comment: Indication if charging electric energy storage for traction purposes at standstill is permitted
Message: permissionChargingElectricEnergyTractionStandstill (1.2.1.0.7.1): The contact line system defines if charging electric energy storage for traction purposes at standstill is permitted. This error is due to having more than one value for this property or having a value that is not Y/N (boolean).

Permitted conditions for charging electric energy

storage for traction purposes at standstill DP

Conditions set by IMs according to a standardised document

IRI: *http://data.europa.eu/949/conditionsChargingElectricEnergyStorage*

Parameter of

Contact Line System

General Information

Number:
1.2.1.0.7.2

Deadline:
Contrary to the Regulation, the deadline is not 30 June 2024 at the latest, but 12 months after publication of Article 7 Guide

Belongs to parameters group
Contact line system (1.1.1.2.2)

Data Format

Data Presentation
Any Uri

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Conditions Charging Electric Energy Storage
Comment: Indication if charging electric energy storage for traction purposes at standstill is permitted
Message: conditionsChargingElectricEnergyStorage (1.2.1.0.7.2): The contact line system defines the permitted conditions for charging electric energy storage for traction purposes at standstill. This error is due to having more than one value for this property or having a value that is not an URI.

Specific constraints imposed by the GSM-R network operator on ETCS on-board units only able to operate in circuit-switch OP

These constraints, where applicable, are meant to manage the limited number of circuit-switched radio connections that can be handled simultaneously by a Radio Block Center.

IRI: *http://data.europa.eu/949/gsmrConstraintsOperateOnlyInCircuitSwitch*

Parameter of

Running track
Subset with common characteristics

General Information

Number:
1.2.1.1.2.12

Deadline:
12 months after publication of Article 7 Guide

Belongs to parameters group
TSI compliant radio (RMR) (1.1.1.3.3 | 1.2.1.1.2)

Data Format

Data Presentation
Concept

Taxonomy Reference:
GSM-R Constraints on CS-equiped trains

Values :

Code	Value	Explanation
00	Placeholder	Not available

Flags

Applicability Flags:
Y/N/NYA

Validation

Dependencies:
GSM-R and ETCS L2 must be installed for this parameter to be applicable. Multiple values are allowed.

Validation Rules:
Gsmr Constraints Operate Only In Circuit Switch Applicability
Comment: GSM-R (parameter 1.1.1.3.3.1) and ETCS L2 (parameter 1.1.1.3.2.1) must be installed for this parameter to be applicable.
Message: gsmrConstraintsOperateOnlyInCircuitSwitch (1.1.1.3.3.10, 1.2.1.1.2.10):The track or subset with common characteristics {$this} ({?label}), has a 'GSM-R version' defined and a 'ETCS level' type selected which makes the gsmrConstraintsOperateOnlyInCircuitSwitch parameter applicable. This error is due to {$this} not having a value for such a parameter.

Siding DP OP

General Information

Number:
1.2.2

Belongs to parameters group
RINF Technical characteristic

Related parameters
Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
TEN classification of track (1.1.1.1.2.1 | 1.2.1.0.2.1 | 1.2.1.0.6.3 | 1.2.2.0.0.3)
Minimum radius of horizontal curve (1.1.1.1.3.7 | 1.2.2.0.3.2)
Identification of siding (1.2.2.0.0.2)

Usable length of siding (1.2.2.0.2.1)
Gradient for stabling tracks (1.2.2.0.3.1)
Minimum radius of vertical curve (1.2.2.0.3.3)
Fixed installations for servicing trains (1.2.2.0.4)

Identification of siding DP

Unique siding identification or number within an Operational Point.

IRI: *http://data.europa.eu/949/sidingId*

Parameter of

Siding

General Information

Number:
1.2.2.0.0.2

XML Name:
OPSidingIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
No Repeated Siding Ids
Comment: Each siding shall have unique identification or number within the OP. This number cannot be used for naming any other siding in the same OP.
Message: sidingId (1.2.2.0.0.2):: Each siding shall have unique identification or number within the OP. This number cannot be used for naming any other siding in the same OP. There is a problem with the OP {$this} ({?opLabel}) and sidings {?siding1} ({?siding1Label}) and {?siding2} ({?siding2Label}), since they have the same identifier: {?value}.
Siding Id
Comment: Unique siding identification or unique siding number within OP
Message: sidingId (1.2.2.0.0.2): Each siding must have a unique siding identification that is a character string. This error is due to not having a sidingId value, having more than one sidingId value or having a value that is not a string.

OPE TSI References

Appendix D2 Index
2.2.1.4

Usable length of siding DP

Total length of the siding/stabling track expressed in metres where trains can be parked safely.

IRI: *http://data.europa.eu/949/lengthOfSiding*

Parameter of
Siding

General Information

Number:
1.2.2.0.2.1

XML Name:
IPP_Length

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)
Length

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Length S
Comment: Total length of the siding/stabling track expressed in meters where trains can be parked safely
Message: lengthOfSiding (1.2.2.0.2.1): Each siding may have a length in meters. This error is due to having more than one length value or having a length that is not a double (real) number or not following the pattern [NNNN].

OPE TSI References

Part of RCC Algorithm:

true

Appendix D2 Index
3.2.3

Gradient for stabling tracks DP

Maximum value of the gradient for stabling tracks expressed in millimetres per metre.

IRI: *http://data.europa.eu/949/gradient*

Parameter of
Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.3.1

XML Name:
ILL_Gradient

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)

Data Format

Data Presentation
Double

Unit of Measure:

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Gradient
Comment: Maximum value of the gradient expressed in millimeters per meter
Message: gradient (1.2.2.0.3.1): Each siding or subset with common characteristics may have a gradient in millimeters per meter. This error is due to having more than one gradient value or having a gradient that is not a double (real) number.

OPE TSI References

Part of RCC Algorithm:
true

Minimum radius of vertical curve OP

Radius of the smallest vertical curve expressed in metres.

IRI: *http://data.europa.eu/949/minimumVerticalRadius*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.3.3

XML Name:
ILL_MinRadVertCurve

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Siding (1.2.2)

Data Format

Data Presentation
Minimum radius of vertical curve

Format:
In RDF: the values points to an instance of era:MinimumVerticalRadius class with 2 properties for the crest and hollow values.
In XML: NNN+NNN

Unit of Measure:
Metre

Flags

Applicability Flags:
Y/N

Validation

Validation Rules:
Minimum Vertical Radius
Comment: Indication of types of appearance of track lineside distance indications.
Message: minimumVerticalRadius (1.2.2.0.3.3) : The siding or subset with common characteristics must have at most one value of minimum vertical radius that must be an instace of MinimumVerticalRadius. This error may be due to the track having more than one value or having a value that is not an instance of the class MinimumVerticalRadius.

OPE TSI References

Part of RCC Algorithm:
true

Additional Information

General explanation:

The radius of vertical curves (except for humps in marshalling yards) shall be at least 500 m on a crest or 900 m in a hollow.

Fixed installations for servicing trains DP

General Information

Number:
1.2.2.0.4

Belongs to parameters group
Siding (1.2.2)

Related parameters
Existence of toilet discharge (1.2.2.0.4.1)
Existence of external cleaning facilities (1.2.2.0.4.2)
Existence of water restocking (1.2.2.0.4.3)
Existence of refuelling (1.2.2.0.4.4)
Existence of sand restocking (1.2.2.0.4.5)
Existence of electric shore supply (1.2.2.0.4.6)

Existence of toilet discharge DP

Indication whether exists an installation of toilet discharge (fixed installation for servicing trains) as defined in TSI INF

IRI: *http://data.europa.eu/949/hasToiletDischarge*

Parameter of
Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.1

XML Name:
ITS_ToiletDischarge

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Toilet Discharge
Comment: Indication whether exists and installation for toilet discharge (fixed installation for servicing trains) as defined in INF TSIs
Message: hasToiletDischarge (1.2.2.0.4.1): Each siding or subset with common characteristics may define the existence of a toilet discharge. This error is due to having more than one has toilet discharge value or having a has has toilet discharge value that is not Y/N (boolean).

Existence of external cleaning facilities DP

Indication whether exists an installation of external cleaning facility (fixed installation for servicing trains) as defined in TSI INF

IRI: *http://data.europa.eu/949/hasExternalCleaning*

Parameter of
Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.2

XML Name:
ITS_ExternalCleaning

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:

Has External Cleaning
Comment: Indication whether exists and installation for external cleaning facility (fixed installation for servicing trains) as defined in INF TSIs
Message: hasExternalCleaning (1.2.2.0.4.2): Each siding or subset with common characteristics may define the existence of an external cleaning facility. This error is due to having more than one has external cleaning value or having a has external cleaning value that is not Y/N (boolean).

Existence of water restocking DP

Indication whether exists an installation of water restocking (fixed installation for servicing trains) as defined in TSI INF

IRI: *http://data.europa.eu/949/hasWaterRestocking*

Parameter of
Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.3

XML Name:
ITS_WaterRestocking

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Water Restocking
Comment: Indication whether exists and installation for water restocking (fixed installation for servicing trains) as defined in INF TSIs
Message: hasWaterRestocking (1.2.2.0.4.3): Each siding or subset with common characteristics may define the existence of a water restocking facility. This error is due to having more than one has water restocking value or having a has water restocking value that is not Y/N (boolean).

Existence of refuelling DP

Indication whether exists an installation of refuelling (fixed installation for servicing trains) as defined in TSI INF.

IRI: *http://data.europa.eu/949/hasRefuelling*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.4

XML Name:
ITS_Refuelling

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Refuelling
Comment: Indication whether exists and installation for refuelling (fixed installation for servicing trains) as defined in INF TSIs
Message: hasRefuelling (1.2.2.0.4.4): Each siding or subset with common characteristics may define the existence of a refuelling facility. This error is due to having more than one has refuelling value or having a has refuelling value that is not Y/N (boolean).

Existence of sand restocking DP

Indication whether an installation of sand restocking exists (fixed installation for servicing trains).

IRI: *http://data.europa.eu/949/hasSandRestocking*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.5

XML Name:
ITS_SandRestocking

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Sand Restocking
Comment: Indication whether an installation for sand restocking exists(fixed installation for servicing trains)
Message: hasSandRestocking (1.2.2.0.4.5): Each siding or subset with common characteristics may define the existence of a sand restocking facility. This error is due to having more than one has sand restocking value or having a has sand restocking value that is not Y/N (boolean).

Existence of electric shore supply DP

Indication whether exists an installation of electric shore supply (fixed installation for servicing trains).

IRI: *http://data.europa.eu/949/hasElectricShoreSupply*

Parameter of

Siding
Subset with common characteristics

General Information

Number:
1.2.2.0.4.6

XML Name:

ITS_ElectricShoreSupply

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Fixed installations for servicing trains (1.2.2.0.4)

Data Format

Data Presentation
Boolean

Flags

Applicability Flags:
Y/N

Has Characteristics:
Functional property (unique value)

Validation

Validation Rules:
Has Electric Shore Supply
Comment: Indication whether an installation for electric shore supply exists (fixed installation for servicing trains)
Message: hasElectricShoreSupply (1.2.2.0.4.6): Each siding or subset with common characteristics may define the existence of an electric shore supply facility. This error is due to having more than one has electric shore supply value or having a has electric shore supply value that is not Y/N (boolean).

RINF Technical characteristic DP OP

General Information

Related parameters
Section of line generic information (1.1.0.0.0)
Route book specific parameters (1.1.0.0.1)
Running track generic information (1.1.1.0.0)
Infrastructure subsystem (1.1.1.1)
Energy subsystem (1.1.1.2)
Control-command and signalling subsystem (1.1.1.3)
Rules and restrictions (1.1.1.4 | 1.2.3)
Vehicles for which Route compatibility is verified (1.1.1.5)
Operational point generic information (1.2.0.0.0)
Platform (1.2.1.0.6)
Siding (1.2.2)

Document with operating restrictions or conditions OP

Indication of the document where restrictions or conditions due to partial compliance with the TSI CCS are described.

IRI: *http://data.europa.eu/949/etcsRestrictionsConditionsDoc*

Parameter of

Subset with common characteristics
Track

General Information

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation

ERA Document

Flags

Applicability Flags:

Y/N/NYA

Has Characteristics:

Functional property (unique value)

Validation

Dependencies:

A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Etcs Restrictions Conditions Doc
Comment: Indication of the document where restrictions or conditions due to partial compliance with the TSI CCS are described.
Message: etcsRestrictionsConditionsDoc (1.1.1.3.2.6, 1.2.1.1.1.6): The track or subset with common characteristics has a document regarding the rules or restrictions of a strictly local nature available by the IM value that must be a Document.
Etcs Restrictions Conditions Doc Applicability
Comment: Only applicable when hasETCSRestricionsConditions is true.
Message: etcsRestrictionsConditionsDoc (1.1.1.3.2.6, 1.2.1.1.1.6):The track or subset with common characteristics {$this} ({?label}), has a 'has ETCS Restricions Condition' value 'true' which makes the etcsRestrictionsConditionsDoc parameter applicable. This error is due to {$this} not having a value for such a parameter.

Additional Information

General explanation:

If not `false` (property hasEtcsRestrictionsConditions), a link to the conditions must be provided. The RU has to contact the IM to be informed about these conditions.
These conditions and restrictions of use are considered in section 6.4 of the CCS TSI. They should be described using the template available on Agency website (Certification and deviations - Guidelines for using the ERA template) with the following link.

The value of this parameter should be either a reference to a file name or an external link to a document.
If a file name is provided, the Infrastructure Manager (IM) must upload a document with the same file name using the "Reference Documents Management" functionality in the RINF application. The document must be in electronic format and available in two official EU languages. In this case, the parameter value must be repeated for each document.
If an external link is provided, the IM must ensure that the document is available at the provided link.

ETCS national packet 44 application implemented OP

Indication whether data for national applications is transmitted between track and train.

IRI: *http://data.europa.eu/949/etcsNationalPacket44Function*

Parameter of

Subset with common characteristics
Track

General Information

Belongs to parameters group

TSI compliant train protection system (ETCS) (1.1.1.3.2 | 1.2.1.1.1)

Data Format

Data Presentation

Concept

Taxonomy Reference:

ETCS national packet 44 application function

Values :

Code	Value	Explanation
01	MMI Direct	Not available
02	SBB, Zub 121 migration in Switzerland Siemens	Not available
03	For ZSI 127 (train control system for narrow gauge applications in Switzerland, Spain), can be on lines with 3rd/4th rail, where ETCS equipped trains pass	Not available
04	DB-AG	Not available
05	For pantograph to third rail switching at Rheinbraun Mining Railway in Germany (telegram structure according to SRS 5A)	Not available
06	RFF Functions	Not available
07	Bombardier Transportation Rail Control Solutions	Not available
08	PSD session establishment information for ETCS over GPRS (Denmark)	Not available
09	RSBB (UK)	Not available
10	MAV (Hungarian State Railways)	Not available
11	Train borne fire alarm (Netherlands)	Not available
12	RENFE, Used in Zaragoza-Huesca ERTMS TRK-L1, for the Spanish National functions FN-36	Not available
13	SNCB (projects EURO-TBL1 & EURO-TBL2)	Not available
14	TRAINGUARD MT – Trainstop	Not available
15	TRAINGUARD MT – ITC mode	Not available
16	Door release function for Marmaray ERTMS project	Not available
17	CBTC balise message embedding for Marmaray ERTMS project	Not available

Code	Value	Explanation
18	SŽ/RU Functions	Not available
20	ÖBB	Not available
21	IZS	Not available
39	Italian Railway FS, used currently in Pkt44 with destination = SCMT NTC	Not available
44	Queensland Rail Packet 44 Applications	Not available
50	Thales ETCS OBS	Not available
97	Localisation NExTEO	Not available
98	Track conditions for RER and suburban trains in areas operated with level NTC in France	Not available
99	Track conditions for national systems in areas not fitted with ETCS in Belgium	Not available
100	Transition Coherence Control	Not available
101	SNCF Functions	Not available
102	NTC Systems Functions	Not available
103	Automatic Selective Door Operation (ASDO) for Transport for New South Wales (Australia)	Not available
150	Sweden (Banverket)	Not available
200	Correct Side Door Enable Function for Auckland Metropolitan Rail Network	Not available
210	Correct Side Door Enable Function for Department of Planning, Transport and Infrastructure Network	Not available

Flags

Applicability Flags:

Y/N/NYA

Validation

Dependencies:

A value has to be provided when ETCS is present (a value is provided on 1.1.1.3.2.1).

Validation Rules:

Etcs National Packet44function
Comment: Link to the implemented functions for national packet 44 applications that are transmitted between track and train.
Message: etcsNationalPacket44Function (1.1.1.3.2.5, 1.2.1.1.1.5): The track or subset with common characteristics must have a ETCS national packet 44 application implemented function value that is an IRI.
Etcs National Packet44function Skos
Comment: Link to the implemented functions for national packet 44 applications that are transmitted between track and train.
Message: etcsNationalPacket44Function (1.1.1.3.2.5, 1.2.1.1.1.5): The track or subset with common characteristics {$this} (label {?label}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/etcs-national-packet-444-functions/ETCSNationalPacket444Functions/.

Additional Information

General explanation:
Value can be `false` or a link to the implemented functions.

Packets 44 are the means to transmit data for national applications between train and track and vice versa, using the data transmission facilities included within the ETCS.
NID_XUSER values managed by ERA in a document about ETCS variables available on ERA website.

See: TSI CCS (7.4.3 & 6.2.4.2)

6. Auxiliary Properties for RINF Parameters

Aggregates OP

Specifies the linear elements aggregated by a non-linear element.

IRI: *http://data.europa.eu/949/aggregates*

Parameter of
Non-Linear Element

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
Aggregates
Comment: Specifies the linear elements aggregated by a non-linear element.
Message: aggregates: The non linear element may aggregate only linear elements. This error is due having a value that is not an instance of LinearElement.

Allocation company OP

The organisation in charge to allocate the code for the subsidiary location.

IRI: *http://data.europa.eu/949/allocationCompany*

Parameter of

Subsidiary location

Data Format

Data Presentation

Organisation Role

Validation

Validation Rules:

Allocation Company
Comment: The organisation in charge to allocate the code for the subsidiary location.
Message: allocationCompany: An instance of subsidiary location may have a value for allocation company. This error may be due to having a value that is not an IRI or that does not point to an instance of OrganisationRole.

Applies in both directions DP

Specifies if the section applies in both directions (optional).

IRI: *http://data.europa.eu/949/appliesInBothDirections*

Parameter of

Linear Element Section

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Applies In Both Directions
Comment: Specifies if the section applies in both directions (optional).
Message: appliesInBothDirections: The linear element section specifies if the section applies in both directions (optional). This error is due having a value that is not a boolean.

Applies to direction OP

The direction relative to the origin of the linear element towards the point reference applies.

IRI: *http://data.europa.eu/949/appliesToDirection*

Parameter of
Net Point Reference

Data Format

Data Presentation
Concept

Taxonomy Reference:
Directions of the orientation of a railway element

Values :

Code	Value	Explanation
00	Normal	Not available
01	Opposite	Not available
02	Both	Not available

Validation

Validation Rules:
Applies To Direction
Comment: The direction relative to the origin of the linear element towards the point reference applies.
Message: appliesToDirection: The net point reference must have an 'applies to direction' value that is an IRI.
Applies To Direction Skos
Comment: The direction relative to the origin of the linear element towards the point reference applies.
Message: appliesToDirection: The net point reference {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/orientations/Directions.

AsWKT DP

The WKT serialization of a geometry

IRI: *http://www.opengis.net/ont/geosparql#asWKT*

General Information

Number:
1.1.0.0.1.1
1.1.1.0.1.1
1.1.1.3.14.6
1.2.0.0.0.5
1.2.1.0.8.5

Deadline:
12 months after publication of Article 7 Guide

Flags

Applicability Flags:
Y/N/NYA

Validation

Validation Rules:
Border Point Valid Coordinates Via Net Reference
Comment: Coordinates of topology must match the referenced border point.
Message: Coordinates: The OperationalPoint {$this} with label {?opLabel} is a border point that references a ReferenceBorderPoint, but its topology's coordinates do not match those of the referenced point ('{?opWKT}' ≠ '{?refWKT}').
Border Point Valid Coordinates
Comment: Coordinates must match the referenced border point.
Message: Coordinates: The OperationalPoint {$this} with label {?opLabel} is a border point that references a ReferenceBorderPoint, but its coordinates do not match those of the referenced point ('{?opWKT}' ≠ '{?refWKT}').
As Wkt

Message: geosparql:Geometry. This error may be due to having a Geometry with no asWKT property, more than one asWKT property, a value that is not of type wktLiteral, or a value that does not begin with optional whitespace followed by one of: M, P, C, S, L, T (in upper- or lowercase), or <.

OPE TSI References

Appendix D2 Index
2.1.2

Belongs to OP

Indicates that an infrastructure element belongs to a certain subset that contains common characteristics.

IRI: *http://data.europa.eu/949/belongsTo*

Parameter of
Infrastructure element

Data Format

Data Presentation
Subset with common characteristics

Validation

Validation Rules:
Belongs To Unique Im
Comment: Each infrastructure element may belong to several common characteristics subsets, and each of them must point to the same infrastructure manager (same organisationCode in the class organisationRole).
Message: belongsTo, organisationCode, infrastructureElement: This error is due to {$this} belonging to several common characteristics subsets, {?subset1Label}, {?subset2Label} that do not point to the same infrastructure manager (different organisationCodes), {?orgCode1}, {?orgCode2}.

Belongs To
Comment: Relationship between an infratructure element and a common characteristics subset.
Message: belongsTo: The infratructure element may belong to a common characteristics subset, a reference that must be an instance of CommonCharacteristicsSubset. This error is due to having a value that is not an instance of CommonCharacteristicsSubset.

Border point identification DP

Border point identification in the list of reference border points in the RINF application guide.

IRI: *http://data.europa.eu/949/borderPointId*

Parameter of
Reference border point

General Information

Belongs to parameters group
Identifier

Data Format

Data Presentation
String

Validation

Validation Rules:
Border Point Id

Message: A ReferenceBorderPoint must have exactly one era:borderPointId, and it must be a string. This error is due to having more than one borderPointId, not having a borderPointId, having a value that is not a string, or having a value that does not follow the pattern where the first part is 'EU', and the second part is the alphanumeric OP code within the MS.

Carrier linear element OP

The carrier linear element in relation to which the orientation is based on

IRI: *http://data.europa.eu/949/carrierLinearElement*

Parameter of
Orientation

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:

Carrier Linear Element
Comment: The carrier linear element in relation to which the orientation is based on.
Message: carrierLinearElement: The Orientation may reference a LinearElement through carrierLinearElement. This error is due to the value either not being an IRI, or being an IRI that is not an instance of LinearElement.

Contact line system OP

System that is used to transmit electrical energy to road or rail vehicles.

IRI: *http://data.europa.eu/949/contactLineSystem*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

Contact Line System

Validation

Validation Rules:

Contact Line System
Comment: Contact line system present in the section of line.
Message: contactLineSystem (1.2.2.0.6.1, 1.1.1.2.2) : The track or subset with common characteristics may have a value of a contact line system that must be an instance of ContactLineSystem. This error may be due to having a value that is not an instance of the class ContactLineSystem.

Additional Information

General explanation:

It can be repeated as many times as the number of different contact line system types are present.

For RDF data provision:
The value of this property is an instance of the era:ContactLineSystem, which has as properties the parameters 1.1.1.2.2.1.2, 1.1.1.2.2.2, 1.1.1.2.2.4 and 1.1.1.2.5.1.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, this property is the equivalent of the "Set" attribute, grouping parameters 1.1.1.2.2.1.2, 1.1.1.2.2.2, 1.1.1.2.2.4 and 1.1.1.2.5.1.

Container handling flag DP

IRI: *http://data.europa.eu/949/containerHandlingFlag*

Parameter of
Primary Location

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Container Handling Flag
Comment: Container handling flag.
Message: containerHandlingFlag : The PrimaryLocation may have a containerHandlingFlag value that is a boolean. This error may be due to the Primary Location having a value that is not a boolean.

Contains OP

Indicates that a subset with common characteristics contains a certain infrastructure element.

IRI: *http://data.europa.eu/949/contains*

Parameter of
Subset with common characteristics

Data Format

Data Presentation
Infrastructure element

Validation

Validation Rules:
Contains
Comment: Relationship between a common characteristics subset and an infrastructure element (inverse of belongsTo).
Message: contains: The subset with common characteristics may contain an infrastructure element, a reference that must be an instance of InfrastructureElement. This error is due having a value that is not an instance of InfrastructureElement.

Direction OP

The direction of the orientation of a railway element, in relation to the carrier linear element

IRI: *http://data.europa.eu/949/direction*

Parameter of
Orientation

Data Format

Data Presentation
Concept

Taxonomy Reference:
Directions of the orientation of a railway element

Values :

Code	Value	Explanation
00	Normal	Not available
01	Opposite	Not available
02	Both	Not available

Validation

Validation Rules:
Direction Skos
Comment: The direction of the orientation of a railway element, in relation to the carrier linear element.
Message: direction: The Orientation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined OrientationDirections in the SKOS concept scheme http://data.europa.eu/949/concepts/orientations/OrientationDirections.
Direction
Comment: The direction of the orientation of a railway element, in relation to the carrier linear element.
Message: direction: The Orientation may reference a SKOS concept representing the direction in the form of an IRI. This error is due to the value not being an IRI.

Document URL DP

URL that is used to download a document, e.g. url for a reference document in RINF.

IRI: *http://data.europa.eu/949/documentUrl*

Parameter of
ERA Document

Data Format

Data Presentation
Any Uri

Validation

Validation Rules:
Document Url
Comment: URL that is used to download a document, e.g. url for a reference document in RINF.
Message: documentUrl: The value must be a valid URI (xsd:anyURI).

Element A OP

References the first topological element in an oriented relation.
For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at start.

IRI: *http://data.europa.eu/949/elementA*

Parameter of
Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
Element A
Comment: References the first topological element in an oriented relation. For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at start.
Message: elementA: The net relation references the first topological object that must be an instance of a linear element. This error is due having a value that is not an instance of LinearElement.

Element B OP

References the second topological linear element in an oriented relation.
For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at end.

IRI: *http://data.europa.eu/949/elementB*

Parameter of
Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
Element B
Comment: References the second topological linear element in an oriented relation. For example, it may indicate the object that corresponds to a section of line, an operational point or a track inside an operational point connected at end.
Message: elementB: The net relation references the second topological object that must be an instance of a linear element. This error is due having a value that is not an instance of LinearElement.

End offset from the origin DP

End offset of the section from the origin.

IRI: *http://data.europa.eu/949/endOffsetFromOrigin*

Parameter of
Linear Element Section

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
End Offset From Origin
Comment: End offset of the section from the origin.
Message: endOffsetFromOrigin: The linear element section specifies the end offset of the section from the origin. This error is due having a value that is not a positive integer or more than one value.

Ends at OP

Specifies the ending point of a linear reference.

IRI: *http://data.europa.eu/949/endsAt*

Parameter of
Net Linear Reference

Data Format

Data Presentation
Net Point Reference

Validation

Validation Rules:

Ends At

Comment: Specifies the ending point of a linear reference.

Message: endsAt: The net linear reference specifies an ending point that must be an instance of a NetPointReference. This error is due to not having a value, having more than one value or having a value that is not an instance of NetPointReference.

Freight flag DP

Freight possible flag attached to a Primary Location.

IRI: *http://data.europa.eu/949/freightFlag*

Parameter of

Primary Location

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Freight Flag

Comment: Freight flag.

Message: freightFlag : The PrimaryLocation may have a freightFlag value that is a boolean. This error may be due to the Primary Location having more than one value or having a value that is not a boolean.

Handover point flag DP

Handover point flag attached to a Primary location.

IRI: *http://data.europa.eu/949/handoverPointFlag*

Parameter of

Primary Location

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Handover Point Flag
Comment: Handover point flag.
Message: handoverPointFlag : The PrimaryLocation may have a handoverPointFlag value that is a boolean. This error may be due to the Primary Location having a value that is not a boolean.

Has Beginning OP

Beginning of a temporal entity

IRI: *http://www.w3.org/2006/time#hasBeginning*

Parameter of
Temporal entity

General Information

Belongs to parameters group
Has Time

Data Format

Data Presentation
Time instant

Validation

Validation Rules:
Has Beginning
Comment: Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable.
Message: hasBeginning: An instance of parameter applicability must have exactly one value of the beginning of the interval in which it is applicable. This error may be due to not having a value, having more than one value, having a value that is not an IRI or is not a time:Instant.

Has bridge DP

IRI: *http://data.europa.eu/949/hasBridge*

Parameter of
Running track

Data Format

Data Presentation
Boolean

Validation

Validation Rules:

Has Bridge
Comment: Whether or not a track is associated with a bridge.
Message: hasBridge: The track specifies if it is associated with a bridge and the value must be boolean. This error is due to the value not being Y/N (boolean)

Has End OP

End of a temporal entity.

IRI: *http://www.w3.org/2006/time#hasEnd*

Parameter of
Temporal entity

General Information

Belongs to parameters group
Has Time

Data Format

Data Presentation
Time instant

Validation

Validation Rules:
Has End
Comment: Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable.
Message: hasEnd: An instance of parameter applicability must have exactly one value of the end of the interval in which it is applicable. This error may be due to not having a value, having more than one value, having a value that is not an IRI or is not a time:Instant.

Has line referencing system coordinate OP

Specifies the LRS coordinate associated with a topological coordinate.

IRI: *http://data.europa.eu/949/hasLrsCoordinate*

Parameter of
Net Point Reference

Data Format

Data Presentation
Linear Positioning System Coordinate

Validation

Validation Rules:

Has Lrs Coordinate
Comment: Specifies the LRS coordinate associated with a topological coordinate.
Message: hasLrsCoordinate: The net point reference specifies an LRS coordinate that must be an instance of a LinearPositioningSystemCoordinate and that in turn references a LinearPositioningSystem. This error is due to having a value that is not a LinearPositioningSystemCoordinate that in turn references a LinearPositioningSystem.

Has linear referencing system OP

Specifies the linear referencing system to which the kilometre post is referenced. The linear referencing system is commonly the main railway line and it provides the framework for identifying the post's location along the railway line, using distance measurements rather than geographical coordinates.

IRI: *http://data.europa.eu/949/hasLRS*

Parameter of
Kilometric Post

Data Format

Data Presentation
Linear Positioning System

Validation

Validation Rules:
Has Lrs Coordinate
Comment: Specifies the LRS coordinate associated with a topological coordinate.
Message: hasLrsCoordinate: The net point reference specifies an LRS coordinate that must be an instance of a LinearPositioningSystemCoordinate and that in turn references a LinearPositioningSystem. This error is due to having a value that is not a LinearPositioningSystemCoordinate that in turn references a LinearPositioningSystem.

Has organisation role OP

Relates the Organisation role instance (the role played by an Organisation) with the specific role in the taxonomy of organisation roles.

IRI: *http://data.europa.eu/949/hasOrganisationRole*

Parameter of
Organisation Role

Data Format

Data Presentation
Concept

Taxonomy Reference:
Organisation roles

Values :

Code	Value	Explanation
Applicant	Applicant	A natural or legal person requesting an authorisation, be it a railway undertaking, an infrastructure manager or any other person or legal entity, such as a manufacturer, an owner or a keeper
EC	European Commission	The European Commission represents the common interests of the EU and is the EU's main executive body. It uses its 'right of initiative' to put forward proposals for new laws, which are scrutinised and adopted by the European Parliament and the Council of the European Union.
ECM	Entity in charge of maintenance	An entity in charge of the maintenance of a vehicle, and registered as such in a vehicle register referred to in Article 47 of Directive (EU) 2016/797
ECM-b	ECM outsourcing the function provided for in Article 14(3), point (b) of Directive (EU) 2016/798	Not available
ECM-c	ECM outsourcing the function defined in Article 14(3), point (c) of Directive (EU) 2016/798	Not available
ECM-d	ECM outsourcing the function defined in Article 14(3), point (d) of Directive (EU) 2016/798	Not available
ERA	European Union Agency for Railways	The objective of the Agency shall be to contribute to the further development and effective functioning of a single European railway area without frontiers, by guaranteeing a high level of railway safety and interoperability, while improving the competitive position of the railway sector.
EUBody	EU Body	In addition to the institutions, there are a number of bodies which play specialised roles in helping the EU to fulfil its tasks. Some bodies have the task of advising the institutions (the European Economic and Social Committee, the European Committee of the Regions); others ensure that the institutions comply with EU rules and procedures (the European Ombudsman, the European Data Protection Supervisor). The European External Action Service is an external policy body that supports the EU on foreign affairs matters.
IM	Infrastructure Manager	A body or firm responsible for the operation, maintenance and renewal of railway infrastructure on a network, as well as responsible for participating in its development as determined by the Member State within the

Code	Value	Explanation
		framework of its general policy on development and financing of infrastructure
IM-1	Infrastructure manager operating railway lines (including sidings and stations operations)	Not available
IM-2	Infrastructure manager operating terminals (including sidings and stations operations)	Not available
Keeper	Railway Vehicle Keeper	The natural or legal person that, being the owner of a vehicle or having the right to use it, exploits the vehicle as a means of transport and is registered as such in a vehicle register
Manufacturer	Manufacturer	Any natural or legal person who manufactures a product in the form of interoperability constituents, subsystems or vehicles, or has it designed or manufactured, and markets it under his name or trademark
MWS	Maintenance workshop	An entity in charge of the maintenance of a vehicle, and registered as such in a vehicle register referred to in Article 47 of Directive (EU) 2016/797
MWS-b	MWS performing the function defined in Article 14(3), points (b) of Directive (EU) 2016/798	Not available
MWS-c	MWS performing the function defined in Article 14(3), points (c) of Directive (EU) 2016/798	Not available
MWS-d	MWS performing the function defined in Article 14(3), points (d) of Directive (EU) 2016/798	Not available
NSA	National safety authority	(a) the national body entrusted with the tasks regarding railway safety in accordance with this Directive; (b) any body entrusted by several Member States with the tasks referred to in point (a) in order to ensure a unified safety regime; (c) any body entrusted by a Member State and a third country with the tasks referred to in point (a) in order to ensure a unified safety regime, provided that the Union has concluded an agreement to this effect with the third country concerned or that that Member State has concluded such agreement in accordance with an empowerment granted by the Union to that effect;

Code	Value	Explanation
Owner	Railway Vehicle Owner	The natural or legal person being the owner of a vehicle exploited as a means of transport and is registered as such in a vehicle register referred to in Article 47
RU	Railway Undertaking	Any public or private undertaking licensed according to this Directive, the principal business of which is to provide services for the transport of goods and/or passengers by rail with a requirement that the undertaking ensure traction; this also includes undertakings which provide traction only
RU-1	Railway Undertaking operating passenger trains	Not available
RU-2	Railway Undertaking operating high speed passenger trains	Not available
RU-3	Railway Undertaking operating freight trains	Not available
RU-4	Railway Undertaking operating dangerous goods freight trains	Not available
RU-5	Railway Undertaking operating terminals	Not available

Validation

Validation Rules:

Has Organisation Role
Comment: The role played in an n-ary relationship between a Body and a specific concept in the concept scheme of organisation roles.
Message: hasOrganisationRole: The organisation role must be represented as an IRI. This error may be due to not having a value, having more than one value, or having a value that is not an IRI.

Has Organisation Role Skos
Comment: The role played in an n-ary relationship between a Body and a specific concept in the concept scheme of organisation roles.
Message: Indication of the hasOrganisationRole: The OrganisationRole {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/organisation-roles/.

Has orientation OP

IRI: *http://data.europa.eu/949/hasOrientation*

Parameter of

Signal

Data Format

Data Presentation
Orientation

Has part OP

Indicates that an infrastructure element is composed of one or more other (distinct) infrastructure elements.
This property is used to represent part-whole relationships between infrastructure elements.
An element cannot be a part of itself.

IRI: *http://data.europa.eu/949/hasPart*

Parameter of
Infrastructure element

Data Format

Data Presentation
Infrastructure element

Validation

Validation Rules:
Has Part
Comment: Indicates that an infrastructure element is composed of one or more other (distinct) infrastructure elements.
Message: hasPart: The InfrastructureElement may have a hasPart reference that is an IRI that refers to an instance of InfrastructureElement. This error is due to having a value that is not an instance of InfrastructureElement.
Has Part Op
Comment: Reference from an aggregated element to a basic element.
Message: hasPart from an operational point : The Operational Point may have a hasPart reference that is a Track object (or the subclasses RunningTrack and Siding), or a KilometricPost object. This error may be due to a hasPart relationship from an operational point that is not a Track nor a KilometricPost.
Has Part So L
Comment: Indicates that a SectionOfLine hasPart at least one Track.
Message: hasPart: The SectionOfLine must have a hasPart reference that is an IRI that refers to an instance of Track. This error is due to not having a value or having a value that is not an instance of Track.

Has sequence OP

The ordered sequence of topological linear elements which create a linear net reference.

IRI: *http://data.europa.eu/949/hasSequence*

Parameter of
Net Linear Reference

Data Format

Data Presentation
List

Validation

Validation Rules:
Has Sequence
Comment: The ordered sequence of topological linear elements which create a linear net reference.
Message: hasSequence: The net linear reference specifies an ordered sequence of topological linear elements that must be an instance of an rdf:List. This error is due to having a value that is not an instance of rdf:List.

Has Serialization DP

IRI: *http://www.opengis.net/ont/geosparql#hasSerialization*

Has Time OP

Supports the association of a temporal entity (instant or interval) to any thing

IRI: *http://www.w3.org/2006/time#hasTime*

General Information

Related parameters
Has Beginning
Has End

Data Format

Data Presentation
Temporal entity

Has topological coordinate OP

Specifies the topological coordinate of a network point reference.

IRI: *http://data.europa.eu/949/hasTopoCoordinate*

Parameter of
Net Point Reference

Data Format

Data Presentation
Topological Coordinate

Validation

Validation Rules:
Has Topo Coordinate
Comment: Specifies the topological coordinate of a network point reference.
Message: hasTopoCoordinate: The net point reference specifies a topo coordinate that must be an instance of a TopologicalCoordinate. This error is due to having a value that is not an instance of TopologicalCoordinate.

HasGeometry OP

A spatial representation for a given feature.

IRI: *http://www.opengis.net/ont/geosparql#hasGeometry*

Parameter of
Feature

General Information

Number:
1.1.0.0.1.1
1.1.1.0.1.1
1.1.1.3.14.6
1.2.0.0.0.5
1.2.1.0.8.5

Related parameters
Start of tunnel location (1.1.1.1.8.3)
End of tunnel (1.1.1.1.8.4)

Data Format

Data Presentation
Geometry

Validation

Validation Rules:
Has Geometry
Comment: Geographical coordinates in decimal degrees normally given for the centre of the OP.
Message: hasGeometry (1.2.0.0.0.5): Each feature must have at most one location. This error may be due to having a feature with more than one location or having a value that is not a geosparql:Geometry.

OPE TSI References

Part of RCC Algorithm:
true

Hot axle box detector (HABD) OP

Link between the running track and the HABD, covering the RINF parameters 1.1.1.1.7.(5-9)

IRI: *http://data.europa.eu/949/tracksideHabd*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

Hot Axle Box Detector

Identifier DP

An unambiguous reference to the resource within a given context.

IRI: *http://purl.org/dc/terms/identifier*

General Information

Related parameters

Organisation code (1.1.0.0.0.1 | 1.1.1.1.8.1 | 1.2.1.0.0.1 | 1.2.1.0.5.1 | 1.2.1.0.6.1 | 1.2.2.0.0.1 | 1.2.2.0.5.1)
Line identifier (1.1.0.0.0.2)
Identification of track (1.1.1.0.0.1 | 1.2.1.0.0.2)
TEN geographic information system identity (GIS ID) (1.1.1.1.2.1.2)
Identification of trackside HABD (1.1.1.1.7.6)
Tunnel identification (1.1.1.1.8.2 | 1.2.1.0.5.2 | 1.2.2.0.5.2)
ID of ERTMS/ETCS Radio Block Center (1.1.1.3.2.17 | 1.2.1.1.1.17)
Radio Network ID (1.1.1.3.3.12 | 1.2.1.1.2.13)
Name of signal (1.1.1.3.14.1 | 1.2.1.0.8.1)
Unique OP ID (1.2.0.0.0.2)
Primary location code (1.2.0.0.0.3)
Identification of platform (1.2.1.0.6.2)
Identification of siding (1.2.2.0.0.2)
Border point identification

Data Format

Data Presentation

Literal

Additional Information

Example:

```
Examples include International Standard Book Number (ISBN),
Digital Object Identifier (DOI), and Uniform Resource Name (URN).
```

Identifier DP

Gives an identifier, such as a company registration number, that can be used to used to uniquely identify the organization. Many different national and international identier schemes are available. The org ontology is neutral to which schemes are used. The particular identifier scheme should be indicated by the datatype of the identifier value. Using datatypes to distinguish the notation scheme used is consistent with recommended best practice for `skos:notation` of which this property is a specialization.

IRI: *http://www.w3.org/ns/org#identifier*

Parameter of

Organization

General Information

Belongs to parameters group

Notation

In country OP

Indicates the country in which an entity resides.

IRI: *http://data.europa.eu/949/inCountry*

Parameter of

Infrastructure element
Subset with common characteristics

Data Format

Data Presentation

Concept

Validation

Validation Rules:

In Country
Comment: Indicates the country to which the infrastructure element belongs
Message: inCountry: Each infrastructure element and common characteristics subset must have exactly one country. This error may be due to having an infrast or a subset without or with more than one country or it value is not a Concept.
In Country Skos
Comment: Indicates the country to which the infrastructure element belongs
Message: The infrastructure element or common characteristic subset {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://publications.europa.eu/resource/authority/country.

In NUTS-3 OP

Reference to NUTS-3 place or city

IRI: *http://data.europa.eu/949/inNUTS3*

Parameter of
Primary Location

Data Format

Data Presentation
Concept

Validation

Validation Rules:
In Nuts3skos
Comment: Reference to NUTS-3 place or city
Message: inNUTS3: The PrimaryLocation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: https://publications.europa.eu/resource/authority/nuts.
In Nuts3
Comment: Reference to NUTS-3 place or city
Message: inNUTS3: Each PrimaryLocation may have at most one value for nuts3 which must be an IRI. This error is due to having more than one values, or a value that is not an IRI.

Includes list of linear references OP

List of linear references included in an network area reference.

IRI: *http://data.europa.eu/949/includes*

Parameter of
Net Area Reference

Data Format

Data Presentation
List

Validation

Validation Rules:
Includes
Comment: List of linear references included in an network area reference.
Message: includes: The net area reference specifies a list of linear references that must be an instance of an rdf:List. This error is due to having a value that is not an instance of rdf:List.

Infrastructure manager OP

Relates a subset with common characteristics with its IM, represented by an instance of organisation role that points to the "infrastructure manager" concept in the taxonomy.

IRI: *http://data.europa.eu/949/infrastructureManager*

Parameter of

Infrastructure element
Subset with common characteristics

Data Format

Data Presentation

Organisation Role

Validation

Validation Rules:

Infrastructure Manager Skosvalue
Comment: Each infrastructure element can only be submitted by one infrastructure manager, represented by a four-digit code.
Message: imCode (1.2.1.0.6.1): Each infrastructure element {$this} with label {?label} refers to a network (subset with common characteristics), that in turn refers to an instance of an OrganisationRole. This instance must have an era:organisationRole pointing to the value era-organisation-roles:IM in the orgRoles SKOS concept scheme. The error is due to a {?value} different from

Is on origin of element A DP

Determines if the position of the topological element A in a relation is the origin of element A.

IRI: *http://data.europa.eu/949/isOnOriginOfElementA*

Parameter of

Net Relation

General Information

Number:

1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Is On Origin Of Element A
Comment: Determines if the position of the topological element A in a relation is the origin of element A.
Message: isOnOriginOfElementA: The net relation specifies if the position of the topological element A in a relation is the origin of element A. This error is due having a value that is not a boolean.

Is on origin of element B DP

Determines if the position of the topological element B in a relation is the origin of element B.

IRI: *http://data.europa.eu/949/isOnOriginOfElementB*

Parameter of
Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Is On Origin Of Element B
Comment: Determines if the position of the topological element B in a relation is the origin of element B.
Message: isOnOriginOfElementB: The net relation specifies if the position of the topological element B in a relation is the origin of element B. This error is due having a value that is not a boolean.

Is part of OP

Indicates that an infrastructure element is a part of another (distinct) infrastructure element.
An element cannot be part of itself.
This property is the inverse of era:hasPart and represents the partial or whole-part relationship between infrastructure elements.

IRI: *http://data.europa.eu/949/isPartOf*

Parameter of
Infrastructure element

Data Format

Data Presentation
Infrastructure element

Validation

Validation Rules:
Is Part Of
Comment: Indicates that an infrastructure element is a part of another (distinct) infrastructure element.
Message: isPartOf: The InfrastructureElement may have a isPartOf reference that is an IRI that refers to an instance of InfrastructureElement. This error is due to having a value that is not an instance of InfrastructureElement.

Kilometric post name DP

Name of the kilometric post (optional).

IRI: *http://data.europa.eu/949/kmPostName*

Parameter of
Kilometric Post

Data Format

Data Presentation
String

Validation

Validation Rules:
Km Post Name
Comment: Name of the kilometric post (optional).
Message: kmPostName: The kilometer post name must be represented as a string of characters.

Km post for reference OP

The closest kilometric post on the line, used as a reference by the LRS coordinate.

IRI: *http://data.europa.eu/949/kmPost*

Parameter of
Linear Positioning System Coordinate

Data Format

Data Presentation
Kilometric Post

Validation

Validation Rules:

Km Post

Comment: The closest kilometric post on the line, used as a reference by the LRS coordinate.

Message: kmPost: The LinearPositioningSystemCoordinate may reference a KilometricPost through kmPost. This error is due to the value either not being an IRI, or being an IRI that is not an instance of KilometricPost.

Length DP

Generic super-property for different types of length

IRI: *http://data.europa.eu/949/length*

General Information

Related parameters

Length of section of line (1.1.0.0.0.5)
Length of tunnel (1.1.1.1.8.7 | 1.2.1.0.5.5 | 1.2.2.0.5.5)
Usable length of platform (1.2.1.0.6.4)
Usable length of siding (1.2.2.0.2.1)
Length of net linear element
Vehicle length

OPE TSI References

Part of RCC Algorithm:

true

Additional Information

General explanation:

Position of the start of the walkway: [integer] m (from the same origin point of the kilometer post.)
Lenght of the walkway: [integer] m
The length can be
- a section of line (For operational length, use era:lengthOfSectionOfLine),
- a tunnel (For operational length, use era:lengthOfTunnel),
- a platform (For its usable length, use era:lengthOfPlatform),
- a siding (For its usable length, use era:lengthOfSiding), and
- length of other areas such as
- a non-stopping area (accuracy +- 10m),
- a walkway,
- an evacuation and rescue point.
- a vehicle length.

Length of net linear element DP

Length of a topological linear element.

IRI: *http://data.europa.eu/949/lengthOfNetLinearElement*

Parameter of

Linear Element

General Information

Belongs to parameters group
Length

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Length Of Net Linear Element
Comment: Length of a linear element.
Message: lengthOfNetLinearElement: The linear element has at most one value of length and it is a double number. This error is due to having more than one value or that the value is not a double number.

Line identifier DP

Unique line identification or unique line number within Member State.

IRI: *http://data.europa.eu/949/lineId*

Parameter of
Linear Positioning System

General Information

Number:
1.1.0.0.0.2

XML Name:
SOLLineIdentification

Deadline:
In accordance with Implementing Decision 2014/880/EU and by 16 March 2019 at the latest

Belongs to parameters group
Identifier

Data Format

Data Presentation
String

Flags

Applicability Flags:
Y

Validation

Validation Rules:

Line Id
Comment: Unique line identification or unique line number within Member State.
Message: lineId: The line identification is unique and must be a string. This error is due to having more than one value or having a value that is not a string of characters

OPE TSI References

Appendix D2 Index
2.2.1.1

Lineside distance indication appearance OP

Indication of types of appearance of track lineside distance indications.

IRI: *http://data.europa.eu/949/linesideDistanceIndicationAppearance*

Parameter of
Lineside indications of distance

Data Format

Data Presentation
Concept

Taxonomy Reference:
Lineside distance indication appearance

Values :

Code	Value	Explanation
00	Left	Not available
01	Right	Not available
02	Left and right	Not available

Validation

Validation Rules:
Lineside Distance Indication Appearance
Comment: Indication of types of appearance of track lineside distance indications.
Message: linesideDistanceIndicationAppearance: The track must have at most one value of the lineside distance indication appearance. This error may be due to the track having no value, more than one value or to having a value that is not an IRI.
Lineside Distance Indication Appearance Skos
Comment: Indication of types of appearance of track lineside distance indications.
Message: Indication of the linesideDistanceIndicationAppearance: The track or subset with common characteristics {$this} has a LinesideDistanceIndication {?linesideDistanceIndication} that has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lineside-distance-indication-appearance/LinesideDistanceIndicationAppearance.

Lineside distance indication frequency DP

Frequency of track lineside distance indications.

IRI: *http://data.europa.eu/949/linesideDistanceIndicationFrequency*

Parameter of
Lineside indications of distance

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
Lineside Distance Indication Frequency
Comment: Frequency of track lineside distance indications..
Message: linesideDistanceIndicationFrequency: The track must have at most one value of the lineside distance indication frequency. This error may be due to the track having a LineDistanceIndication with no value, more than one value or to having a value that is not an integer.

Lineside distance indication positioning OP

Indication of the side along the track where the lineside indication is positioned (left or right, or both sides).

IRI: *http://data.europa.eu/949/linesideDistanceIndicationPositioning*

Parameter of
Lineside indications of distance

Data Format

Data Presentation
Concept

Format:
A selection between 3 possible selectable values:
- Left, or
- Right, or
- Left and Right

Validation

Validation Rules:

Lineside Distance Indication Positioning
Comment: Indication of the side along the track where the lineside indication is positioned (left or right).
Message: LinesideDistanceIndicationPositioning: The track must have at most one value of the lineside distance indication positioning. This error may be due to the track having no value, more than one value or to having a value that is not an IRI.
Lineside Distance Indication Positioning Skos
Comment: Indication of the side along the track where the lineside indication is positioned (left or right).
Message: Indication of the linesideDistanceIndicationPositioning: The track or subset with common characteristics {$this} has a LinesideDistanceIndication {?linesideDistanceIndication} with a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lineside-distance-indication-positioning/LinesideDistanceIndicationPositioning.

Linked to primary location OP

Relates a subsidiary location with a primary location.

IRI: *http://data.europa.eu/949/linkedToPrimaryLocation*

Parameter of
Subsidiary location

Data Format

Data Presentation
Primary Location

Validation

Validation Rules:
Linked To Primary Location
Comment: Linked to primary location.
Message: linkedToPrimaryLocation: An instance of subsidiary location may have a value for linkedToPrimaryLocation. This error may be due to having a value that is not an IRI or that does not point to an instance of PrimaryLocation.

Load capability line category OP

Part of the load capability of a track that corresponds to the line category of the load model. The load capability is a value selected from the list of load models representing the line category which is amended by value of speed [km/h] permitted for a specific load model. The list of values may also be Route Availability which is amended by value of speed [miles/h] permitted for a specific load model.

IRI: *http://data.europa.eu/949/loadCapabilityLineCategory*

Parameter of
Load capability

Data Format

Data Presentation

Concept

Taxonomy Reference:

Load capability line categories

Values :

Code	Value	Explanation
10	A	Not available
20	B1	Not available
30	B2	Not available
40	C2	Not available
50	C3	Not available
60	C4	Not available
70	D2	Not available
80	D3	Not available
90	D4	Not available
100	D4xL	Not available
110	E4	Not available
120	E5	Not available
130	RA1	Not available
140	RA2	Not available
150	RA3	Not available
160	RA4	Not available
170	RA5	Not available
180	RA6	Not available
190	RA7	Not available
200	RA8	Not available
210	RA9	Not available
220	RA10	Not available
230	HS17	Applicable for trains falling under axle load category HS17

Validation

Validation Rules:

Load Capability Line Category

Comment: Load capability is a combination of the line category and speed at the weakest point of the track.

Message: loadCapabilityLineCategory (1.1.1.1.2.4): The track or subset with common characteristics must have a load capability with a value of line category that is an URI. This error may be due to having an instance of Load capability with no value of a line category, more than one value of a line category, or a value that is not an IRI.

Load Capability Line Category Skos

Comment: Load capability is a combination of the line category and speed at the weakest point of the track.

Message: Indication of the load capability line category (1.1.1.1.2.4):): The track or subset with common characteristics {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/load-capability-line-categories/LoadCapabilityLineCategories.

Load capability speed DP

Part of the load capability of a track that corresponds to the speed of the load model

IRI: *http://data.europa.eu/949/loadCapabilitySpeed*

Parameter of

Load capability

Data Format

Data Presentation

Integer

Unit of Measure:

Kilometre per Hour

Validation

Validation Rules:

Load Capability Speed

Comment: Load capability is a combination of the line category and speed at the weakest point of the track.

Message: loadCapabilitySpeed (1.1.1.1.2.4): The track or subset with common characteristics must have a load capability with a value of speed that is an integer. This error may be due to having an instance of LoadCapability with no value of speed, more than one value of speed, or that the value is not an integer.

Maximum magnetic field direction X DP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction X.

IRI: *http://data.europa.eu/949/maximumMagneticFieldDirectionX*

Parameter of

Maximum magnetic field

Data Format

Data Presentation

Integer

Validation

Validation Rules:

Maximum Magnetic Field Direction X

Comment: The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction X.

Message: maximumMagneticFieldDirectionX : Each MaximumMagneticField may have a single value for maximum magnetic field direction X that is an integer. This error is due to not having a value, having more than one value or having a value that is not an integer.

Additional Information

General explanation:

The maximumMagneticFieldDirectionX parameter is only applicable for axle counters.

Maximum magnetic field direction Y DP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Y.

IRI: *http://data.europa.eu/949/maximumMagneticFieldDirectionY*

Parameter of

Maximum magnetic field

Data Format

Data Presentation

Integer

Validation

Validation Rules:

Maximum Magnetic Field Direction Y

Comment: The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Y.

Message: maximumMagneticFieldDirectionY : Each MaximumMagneticField may have a single value for maximum magnetic field direction Y that is an integer. This error is due to not having a value, having more than one value or having a value that is not an integer.

Additional Information

General explanation:

The maximumMagneticFieldDirectionY parameter is only applicable for axle counters.

Maximum magnetic field direction Z DP

The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Z.

IRI: *http://data.europa.eu/949/maximumMagneticFieldDirectionZ*

Parameter of
Maximum magnetic field

Data Format

Data Presentation
Integer

Validation

Validation Rules:
Maximum Magnetic Field Direction Z
Comment: The maximum magnetic field limits allowed for axle counters (in dB µA/m) for a defined frequency band. Direction Z.
Message: maximumMagneticFieldDirectionZ : Each MaximumMagneticField may have a single value for maximum magnetic field direction Z that is an integer. This error is due to not having a value, having more than one value or having a value that is not an integer.

Additional Information

General explanation:
The maximumMagneticFieldDirectionZ parameter is applicable for axle counters.

Measured distance DP

Measured distance from the origin of the LRS.

IRI: *http://data.europa.eu/949/measuredDistance*

Parameter of
Kilometric Post

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:

Measured Distance
Comment: Measured distance from the origin of the LRS.
Message: measuredDistance: The kilometer post measured distance must be represented as a double number.

Minimal vehicle input capacitance DP

IRI: *http://data.europa.eu/949/minVehicleInputCapacitance*

Parameter of
Minimum Vehicle Impedance

Data Format

Data Presentation
Double

Format:
For the selected DC voltage: [CCCC], as input capacitance [CCCC](Cin)

Unit of Measure:
Nanofarad

Validation

Validation Rules:
Min Vehicle Input Capacitance Applicability
Comment: The parameter minVehicleInputCapacitance is applicable for track circuits.
Message: minVehicleInputCapacitance (1.1.1.3.4.2.2, 1.2.1.1.3.2.2):The Train Detection System {$this} ({?clsLabel}), has a 'track circuit' type that makes the minVehicleInputCapacitance parameter applicable. This error is due to {? minVehicleImpedance} not having a value for such a parameter.
Min Vehicle Input Capacitance
Comment: For the selected DC voltage: [CCCC], as input capacitance [CCCC](Cin).
Message: minVehicleInputCapacitance: Each MinVehicleImpedance must define the minVehicleInputCapacitance. This error may be due to not having a value, having more than one value or having a value that is not a double (real) number.

Minimal vehicle input impedance DP

IRI: *http://data.europa.eu/949/minVehicleInputImpedance*

Parameter of
Minimum Vehicle Impedance

Data Format

Data Presentation
Double

Format:
For the selected DC voltage: [ZZZZ], as input impedance [ZZZZ](Zin)

Unit of Measure:
Millihenry

Validation

Validation Rules:

Min Vehicle Input Impedance
Comment: For the selected DC voltage: [ZZZZ], as input impedance [ZZZZ](Zin).
Message: minVehicleInputImpedance: Each MinVehicleImpedance must define the minVehicleInputImpedance. This error may be due to not having a value, having more than one value or having a value that is not a double (real) number.
Min Vehicle Input Impedance Applicability
Comment: The parameter minVehicleInputImpedance is applicable for track circuits.
Message: minVehicleInputImpedance (1.1.1.3.4.2.2, 1.2.1.1.3.2.2):The Train Detection System {$this} ({?clsLabel}), has a 'track circuit' type that makes the minVehicleInputImpedance parameter applicable. This error is due to {?minVehicleImpedance} not having a value for such a parameter.

Minimum radius of vertical curve crest DP

Part of the minimum radius of vertical curve that indicates the crest

IRI: *http://data.europa.eu/949/minimumVerticalRadiusCrest*

Parameter of

Minimum radius of vertical curve

Data Format

Data Presentation

Integer

Unit of Measure:

Metre

Validation

Validation Rules:

Minimum Vertical Radius Crest
Comment: Radius of the smallest vertical curve expressed in meters, part that indicates the crest
Message: minimumVerticalRadiusCrest : Each siding may have a minimumVerticalRadiusCrest in meters. This error is due to having no value, having more than one value or having a value that is not an integer number.

Minimum radius of vertical curve hollow DP

Part of the minimum radius of vertical curve that indicates the hollow

IRI: *http://data.europa.eu/949/minimumVerticalRadiusHollow*

Parameter of

Minimum radius of vertical curve

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
Minimum Vertical Radius Hollow
Comment: Radius of the smallest vertical curve expressed in meters, part that indicates the hollow
Message: minimumVerticalRadiusHollow: Each siding may have a minimumVerticalRadiusHollow in meters. This error is due to having no value, having more than one value or having a a value that is not an integer number.

Minimum Vehicle Impedance (Voltage applicable) OP

IRI: *http://data.europa.eu/949/minVehicleImpedanceVoltages*

Parameter of
Minimum Vehicle Impedance

Data Format

Data Presentation
Concept

Taxonomy Reference:
Energy Supply Systems

Values :

Code	Value	Explanation
AC10	AC 25kV-50Hz	Not available
AC20	AC 15kV-16.7Hz	Not available
DC30	DC 3kV	Not available
DC40	DC 1.5kV	Not available
DC60	DC 750V	Not available
DC70	DC 650V	Not available
DC80	DC 600 V	Not available
DC90	DC 850V	Not available

Validation

Validation Rules:

Min Vehicle Impedance Voltages Skos
Comment: Indication of the voltage system valid for the minimal impedance value (track circuits).
Message: minVehicleImpedanceVoltages: The minVehicleImpedance {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/energy-supply-systems/EnergySupplySystems.
Min Vehicle Impedance Voltages
Comment: Indication of the voltage system valid for the minimal impedance value (track circuits).
Message: minVehicleImpedanceVoltages: The MinVehicleImpedance has a minVehicleImpedanceVoltage that must be an IRI. This error may be due to not having a value, having more than one value or having a value that is not an IRI.
Min Vehicle Impedance Voltages Applicability
Comment: The parameter minVehicleImpedanceVoltages is applicable for track circuits.
Message: minVehicleImpedanceVoltages (1.1.1.3.4.2.2, 1.2.1.1.3.2.2):The Train Detection System {$this} ({?clsLabel}), has a 'track circuit' type that makes the minVehicleImpedanceVoltages parameter applicable. This error is due to {?minVehicleImpedance} not having a value for such a parameter.

Name DP

A name for some thing.

IRI: *http://xmlns.com/foaf/0.1/name*

Parameter of
Thing

Data Format

Data Presentation
Literal

Name of a subset with common characteristics DP

A subset of elements with common characteristics could be identified with a unique name/id.

IRI: *http://data.europa.eu/949/subsetName*

Parameter of
Subset with common characteristics

Data Format

Data Presentation
Lang String

Validation

Validation Rules:

Subset Name
Comment: A subset of elements with common characteristics could be identified with a unique name/id.
Message: subsetName: Each Common Characteristics Subset may have a name. If it does, there should be at least one name in English (@en). Additional multilingual names are allowed, but only one value per language tag is permitted. All values must be language-tagged string literals.

Additional Information

Example:

```
Example: "ETCSbaseline2": describes all ETCS National values
(1.1.1.3.2.16 group)
```

Navigability OP

Indicates the navigation possibilities between two related topological linear elements.

IRI: *http://data.europa.eu/949/navigability*

Parameter of

Net Relation

General Information

Number:
1.1.1.0.1.2
1.2.4.1

Data Format

Data Presentation
Concept

Taxonomy Reference:
Navigabilities

Values :

Code	Value	Explanation
AB	AB	Navigation is only possible from element A to element B
BA	BA	Navigation is only possible from element B to element A
Both	Both	Navigation between elements A and B is possible in both directions
None	None	No navigation possible between elements A and B

Validation

Validation Rules:

Navigability Skos
Comment: Indicates the navigation possibilities between two related topological linear elements.
Message: era:navigability: The net relation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/navigabilities/Navigabilities.
Navigability
Comment: Indicates the navigation possibilities between two related topological linear elements.
Message: navigability: The net relation must have a navigability value that is an IRI.

Additional Information

General explanation:

- AB: Trains can move from element A to element B.
- BA: Trains can move from element B to element A.
- Both: Movement is bidirectional.
- None: No movement is allowed between the two elements.

Net reference OP

The reference that a physical infrastructure element has it on the topology. It may be used to define the positioning or a representation as a point, line or area

IRI: *http://data.europa.eu/949/netReference*

Parameter of

Infrastructure element
Linear Positioning System

Data Format

Data Presentation

Net Basic Reference

Validation

Validation Rules:

Net Reference Op
Comment: The reference that an OperationalPoint has on the topology. It must point to an instance of NetBasicReference.
Message: netReference: Each OperationalPoint must have at least one netReference pointing to an instance of NetBasicReference. This error is due to not having a value or having a value that is not a NetBasicReference.
Net Reference
Comment: The reference that a physical insfrastructure element has it on the topology. It may be used to define the positioning or a representation as a point. line or area.
Message: netReference: The infratructure element and LinearPositioningSystem may have a net reference that points to an instance of NetBasicReference. This error is due to having a value that is not an instance of NetBasicReference.
Net Reference Sol
Comment: The reference that a SectionOfLine has on the topology. It must point to an instance of NetBasicReference.
Message: netReference: Each SectionOfLine must have at least one netReference pointing to an instance of NetBasicReference. This error is due to not having a value or having a value that is not a NetBasicReference.

Not applicable OP

Reference to a property that is not applicable.

IRI: *http://data.europa.eu/949/notApplicable*

Validation

Validation Rules:

Not Applicable
Comment: Reference to a property that is not applicable.
Message: The value of this property is a reference to an ontology property that is not provided and it must be an IRI. The error may be due to the property not belonging to the ERA ontology or the property not being an IRI.
Not Applicable Shape

Not provided OP

Reference to a property that is not provided.

IRI: *http://data.europa.eu/949/notYetAvailable*

Validation

Validation Rules:

Not Yet Available
Comment: Reference to a property that is not provided.
Message: The value of this property is a reference to an ontology property that is not provided and it must be an IRI. The error may be due to the property not belonging to the ERA ontology or the property not being an IRI.
Not Yet Available Shape

Notation DP

IRI: *http://www.w3.org/2004/02/skos/core#notation*

General Information

Related parameters

Identifier

Of parameter OP

Indicates the parameter (object or datatype property) for which an applicability is being defined.

IRI: *http://data.europa.eu/949/ofParameter*

Parameter of

Parameter applicability

Validation

Validation Rules:

Of Parameter

Comment: Applicability interval defines the date interval in which a characteristic of an infrastructure element is applicable. The characteristic to which it applies is the ofParameter property.

Message: ofParameter: An instance of parameter applicability must have exactly one value of the characteristic (ofParameter) to which it applies to. This error may be due to not having a value, having more than one value, having a value that is not an IRI or is not an object or datatype property in the ontology.

Offset DP

Relative distance from a reference kilometric post

IRI: *http://data.europa.eu/949/offsetFromKilometricPost*

Parameter of

Linear Positioning System Coordinate

Data Format

Data Presentation

Double

Unit of Measure:

Metre

Validation

Validation Rules:

Offset From Kilometric Post

Comment: Relative distance from a reference kilometric post.

Message: offsetFromKilometricPost: The offset from kilometric post must be represented as a double number.

Offset from origin DP

Offset from the origin in a topological coordinate.

IRI: *http://data.europa.eu/949/offsetFromOrigin*

Parameter of
Topological Coordinate

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Offset From Origin
Comment: Offset from the origin in a topological coordinate.
Message: offsetFromOrigin: The offset from the origin in a topological coordinate must be represented as a double or more than one value.

On element OP

Specifies the linear element a section belongs to.

IRI: *http://data.europa.eu/949/onElement*

Parameter of
Linear Element Section

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
On Element
Comment: Specifies the linear element a section belongs to.
Message: onElement: The linear element section specifies the linear element it belongs to. This error is due having a value that is not an instance of LinearElement.

On linear element OP

Specifies the linear element a coordinate is associated with.

IRI: *http://data.europa.eu/949/onLinearElement*

Parameter of
Topological Coordinate

Data Format

Data Presentation
Linear Element

Validation

Validation Rules:
On Linear Element
Comment: Specifies the linear element a coordinate is associated with.
Message: onLinearElement: The topological coordinate specifies the linear element it belongs to. This error is due having a value that is not an instance of LinearElement.

On side OP

Indication of the position of the signal in relation to the track in the running direction from the origin of the referencing system (e.g., direction of the main line)

IRI: *http://data.europa.eu/949/side*

Parameter of
Orientation

Data Format

Data Presentation
Concept

Taxonomy Reference:
Sides

Values :

Code	Value	Explanation
Above	Above the track	Not available
InBetween	Between tracks	Not available
Left	Left Side of Track	Not available
Right	Right Side of Track	Not available

Validation

Validation Rules:
Side
Comment: Indication of the position of the signal in relation to the track in the running direction from the origin of the referencing system (e.g., direction of the main line).
Message: side: The Orientation may reference a SKOS concept representing the side in the form of an IRI. This error is due to the value not being an IRI.

Side Skos
Comment: Indication of the position of the signal in relation to the track in the running direction from the origin of the referencing system.
Message: side: The Orientation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined Sides in the SKOS concept scheme http://data.europa.eu/949/concepts/orientations/Sides.

Orientation OP

The orientation of the object in relation to the carrier linear element. Possible values: Normal, Opposite, Both

IRI: *http://data.europa.eu/949/orientation*

Parameter of
Orientation

Data Format

Data Presentation
Concept

Taxonomy Reference:
Directions of the orientation of a railway element

Values :

Code	Value	Explanation
00	Normal	Not available
01	Opposite	Not available
02	Both	Not available

Validation

Validation Rules:
Orientation Skos
Comment: The orientation of the object in relation to the carrier linear element. Possible values: Normal, Opposite, Both.
Message: orientation: The Orientation {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined OrientationDirections in the SKOS concept scheme http://data.europa.eu/949/concepts/orientations/OrientationDirections.
Orientation
Comment: The orientation of the object in relation to the carrier linear element. Possible values: Normal, Opposite, Both.
Message: orientation: The Orientation may reference a SKOS concept representing the orientation in the form of an IRI. This error is due to the value not being an IRI.

Other train detection systems DP

General Information

Number:
1.1.1.3.7
1.2.1.1.6

Belongs to parameters group
Vehicle type technical characteristic

Related parameters
Minimum permitted width of the rim

Parameter applicability OP

Relates an infrastructure element or a common characteristics subset with the applicability of a certain parameter.

IRI: *http://data.europa.eu/949/parameterApplicability*

Parameter of

Infrastructure element
Subset with common characteristics

Data Format

Data Presentation
Parameter applicability

Validation

Validation Rules:
Parameter Applicability
Comment: Applicability interval that defines the date interval in which a characteristic of an infrastructure element is applicable. This interval can be applied for any of the technical characteristics or general information of infrastructure elements. This helps identifying planned changes applied to technical parameters over time.
Message: parameterApplicability: The infratructure element may have a parameterApplicability reference that must be an instance of ParameterApplicability. This error is due to having having a value that is not an instance of ParameterApplicability.

Parameter value DP

This property is used to link an applicability to the precise value of the parameter

IRI: *http://data.europa.eu/949/parameterValue*

Parameter of

Parameter applicability

Data Format

Data Presentation
Literal

Validation

Validation Rules:
Parameter Value
Comment: This property is used to link an applicability to the precise value of the parameter
Message: parameterValue: An instance of parameter applicability must have exactly one value of the parameter value. This error may be due to not having a value or having more than one value.

Parameter value type OP

In the case of a change in the value of a parameter, there needs to be an information on the type of the new value. The “Value type” will have different possible options: “nominal”, “planned temporary restriction”, “permanent restriction”, “planned temporary closure”.

IRI: *http://data.europa.eu/949/parameterValueType*

Parameter of
Parameter applicability

Data Format

Data Presentation
Concept

Taxonomy Reference:
Applicability types

Values :

Code	Value	Explanation
NMN	Nominal	Not available
PRN	Permanent restriction	Not available
PTC	Planned temporary closure	Not available
PTR	Planned temporary restriction	Not available

Validation

Validation Rules:

Parameter Value Type
Comment: In the case of a change in the value of a parameter, there needs to be an information on the type of the new value. The "Value type" will have different possible options: "nominal", "planned temporary restriction", "permanent restriction", "planned temporary closure.
Message: parameterValueType: An instance of parameter applicability must have exactly one value of the parameter value type. This error may be due to not having a value, having more than one value, having a value that is not an IRI.
Parameter Value Type Skos
Comment: In the case of a change in the value of a parameter, there needs to be an information on the type of the new value. The "Value type" will have different possible options: "nominal", "planned temporary restriction", "permanent restriction", "planned temporary closure.
Message: parameterValueType: The parameter applicability {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/parameterApplicability/ValueTypes.

Passenger flag DP

Passenger possible flag attached to a Primary Location

IRI: *http://data.europa.eu/949/passengerFlag*

Parameter of
Primary Location

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Passenger Flag
Comment: Passenger possible flag.
Message: passengerFlag : The PrimaryLocation may have a passengerFlag value that is a boolean. This error may be due to the Primary Location having a value that is not a boolean or more than one value for this property.

Phase info distance type DP

Part of the phase info of a track that corresponds to the single selection of 'MIN=minimum' or 'MAX=maximum' to show whether the length is a minimum distance between the inner contact strips of the pantographs or a maximum distance between the outer contact strips of the pantographs. Multiple strings for this parameter are accepted.

IRI: *http://data.europa.eu/949/phaseInfoDistanceType*

Parameter of
Phase info

Data Format

Data Presentation
String

Validation

Validation Rules:
Phase Info Distance Type
Comment: Indication of existence of phase separation and required information.
Message: Phase info distance type : The track has a phase info with the single selection of 'MIN=minimum' or 'MAX=maximum' to show whether the length is a minimum distance between the inner contact strips of the pantographs or a maximum distance between the outer contact strips of the pantographs, that must be the string MIN or MAX. This error may be due to the track having a PhaseInfo with no value of distancetype, more than one value of distance type, or having a value that is not one of the strings MIN or MAX.

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Phase info Km DP

Part of the phase info of a track that indicates the location from the start of the line where the new value is valid.

IRI: *http://data.europa.eu/949/phaseInfoKm*

Parameter of
Phase info

Data Format

Data Presentation
Double

Validation

Validation Rules:
Phase Info Km
Comment: Indication of existence of phase separation and required information.
Message: Phase info km : The track has a phase info with the location from the start of the line value (km), that must be a double. This error may be due to the track having a PhaseInfo with no value of km, more than one value of km, or a value that is not a double (real) number.

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Phase info length DP

Part of the phase info of a track that corresponds to the length of the phase separation in metres.

IRI: *http://data.europa.eu/949/phaseInfoLength*

Parameter of

Phase info

Data Format

Data Presentation

Integer

Unit of Measure:

Metre

Validation

Validation Rules:

Phase Info Length

Comment: Indication of existence of phase separation and required information.
Message: Phase infolength (): The track has a phase info with the length of the phase separation value (length), that must be an integer. This error may be due to the track having a PhaseInfo with no value of length, more than one value of length, or having a value that is not an integer.

Additional Information

General explanation:

The phase info is the indication of required several information on phase separation.

Phase info pantograph lowered DP

Part of the phase info of a track that shows whether a pantograph has to be lowered.

IRI: *http://data.europa.eu/949/phaseInfoPantographLowered*

Parameter of

Phase info

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

Phase Info Pantograph Lowered
Comment: Indication of existence of phase separation and required information.
Message: Phase info (1.1.1.2.4.1.2): The track has the phase info with the indication whether the pantograph is lowered value, that must be Y/N (boolean). This error may be due to the track having a PhaseInfo with no value of phaseInfoPantographLowered, more than one value of phaseInfoPantographLowered, or having a value that is not Y/N (boolean).

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Phase info switch off breaker DP

Part of the phase info of a track that shows whether the breaker has to be switched off.

IRI: *http://data.europa.eu/949/phaseInfoSwitchOffBreaker*

Parameter of

Phase info

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
Phase Info Switch Off Breaker
Comment: Indication of existence of phase separation and required information.
Message: Phase info switchOffBreaker : The track has the phase info with the indication whether the breaker may be switched off value, that must be Y/N (boolean). This error may be due to the track having a PhaseInfo with no value of phaseInfoSwitchOffBreaker, more than one value of phaseInfoSwitchOffBreaker, or having a value that is not Y/N (boolean).

Additional Information

General explanation:
The phase info is the indication of required several information on phase separation.

Primary location code DP

Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.

IRI: *http://data.europa.eu/949/primaryLocationCode*

Parameter of

Primary Location

General Information

Number:
1.2.0.0.0.3

XML Name:
OPTafTapCode

Belongs to parameters group
Identifier

Data Format

Data Presentation
String

Validation

Validation Rules:
Primary Location Code
Comment: Primary location code developed for information exchange in accordance with the TSIs relating to the telematics applications subsystem.
Message: primaryLocationCode (1.2.0.0.0.3): The primary location code must be represented as a String and follow the pattern [AANNNNN]. It should be unique.

OPE TSI References

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Primary location name DP

IRI: *http://data.europa.eu/949/primaryLocationName*

Parameter of
Primary Location

Data Format

Data Presentation
Lang String

Validation

Validation Rules:
Primary Location Name
Comment: Primary location name.
Message: primaryLocationName : The PrimaryLocation may have one primaryLocationName per language tag. If it does, there should be at least one name in English (@en). This error may be due to the Primary Location having a value that is not conform per language tag.

Raised pantographs speed DP

Indication of maximum number of raised pantographs per train allowed and minimum spacing centre line to centre line of adjacent pantograph heads, expressed in metres, at the given speed.

IRI: *http://data.europa.eu/949/raisedPantographsSpeed*

Parameter of

Requirements for number of raised pantographs and spacing between them, at the given speed

Data Format

Data Presentation
Integer

Unit of Measure:
Kilometre per Hour

Validation

Validation Rules:
Raised Pantographs Speed
Comment: Indication of maximum number of raised pantographs per train allowed and minumum spacing centre line to centre line of adjacent pantograph heads, expressed in meters, at the given speed.
Message: raised pantographs speed (1.1.1.2.3.3): The track or subset with common characteristics must have a raised pantographs distance and speed with a value of speed that is an integer. This error is due to having a RaisedPantographDistanceAndSpeed with no value of speed, more than one value of speed or having a value that is not an integer.

Reference border point OP

Relates an operational point that is a border point with an instance of the list of reference border points that are specified in the RINF Application Guide.

IRI: *http://data.europa.eu/949/referenceBorderPoint*

Parameter of

Operational Point

Data Format

Data Presentation
Reference border point

Validation

Validation Rules:

Reference Border Point
Comment: Relates an operational point that is a border point with an instance of the list of reference border points that are specified in the RINF Application Guide.
Message: referenceBorderPoint : The Operational Point may have a reference border point that is a ReferenceBorderPoint object. This error may be due to having more than one value of a reference border point, or having a value that is not a ReferenceBorderPoint instance.

Requirements for number of raised pantographs, at the given speed DP

Part of the raised pantographs distance and speed of a track that corresponds to the number of pantographs.

IRI: *http://data.europa.eu/949/raisedPantographsNumber*

Parameter of

Requirements for number of raised pantographs and spacing between them, at the given speed

Data Format

Data Presentation

Integer

Validation

Validation Rules:

Raised Pantographs Number
Comment: Indication of maximum number of raised pantographs per train allowed and minumum spacing centre line to centre line of adjacent pantograph heads, expressed in meters, at the given speed.
Message: Raised pantographs number (1.1.1.2.3.3): The track or subset with common characteristics must have a raised pantographs distance and number with a value of number that is an integer. This error is due to having a RaisedPantographDistanceAndSpeed with no value of number, more than one value of number or having a value that is not an integer.

Requirements for spacing between raised pantographs, at the given speed DP

Part of the raised pantographs distance and speed of a track that corresponds to the minimum distance between pantographs, in metres.

IRI: *http://data.europa.eu/949/raisedPantographsDistance*

Parameter of

Requirements for number of raised pantographs and spacing between them, at the given speed

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:
Raised Pantographs Distance
Comment: Indication of maximum number of raised pantographs per train allowed and minumum spacing centre line to centre line of adjacent pantograph heads, expressed in meters, at the given speed.
Message: Raised pantographs distance (1.1.1.2.3.3): The track or subset with common characteristics must have a raised pantographs distance and speed with a value of distance that is an integer. This error is due to the track having a RaisedPantographDistanceAndSpeed with no value of distance, more than one value of distance or having a value that is not an integer.

Role OP

Indicates the relationship of a Body to the organisation roles that it can play.

IRI: *http://data.europa.eu/949/role*

Parameter of
Body

Data Format

Data Presentation
Organisation Role

Validation

Validation Rules:
Role
Comment: Indicates the relationship of a Body to the organisation roles that it can play.
Message: role: Each instance of a Body must have at least one role. This error mae be due to having no value or having a value that is not an instance of OrganisationRole.

Role of OP

Indicates the corresponding Body that plays a certain organisation role.

IRI: *http://data.europa.eu/949/roleOf*

Parameter of
Organisation Role

Data Format

Data Presentation
Body

Validation

Validation Rules:
Role Of
Comment: Indicates the corresponding Body that plays a certain organisation role.
Message: roleOf: Each instance of Organization Role points thorugh roleOf to exactly one instance of Body. This error mae be due to having no value, having more than one value or having a value that is not an instance of Body.

Section with train detection limitation DP

Part of the section with train detection limitation that indicates if it is applicable. Only for the French network.

IRI: *http://data.europa.eu/949/frenchTrainDetectionSystemLimitationApplicable*

Parameter of
Section with train detection limitation

General Information

XML Name:
CTD_TCLimitation

Data Format

Data Presentation
Boolean

Validation

Validation Rules:
French Train Detection System Limitation Applicable
Comment: Part of the section with train detection limitation that indicates if it is applicable. Only for the French network.
Message: frenchTrainDetectionSystemLimitationApplicable : The train detection system has a french train detection limitation applicable value that must be a boolean. This error may be due to not having a value, having more than one value or having a value that is not a boolean.

OPE TSI References

Part of RCC Algorithm:
true

Section with train detection limitation number, only for French network OP

Part of the section with train detection limitation that indicates the type of train detection limitation.

Specific for route compatibility check on French network.

Sections with:
[1] Tonnage circulated per track is inferior to 15000 tons/day/track
[2] Directional Interlocking
[3] 45-second delay for directional interlocking
[4] Installation with track circuit announcement
[5] Absence of a shunting assistance pedal in the normal direction of circulation for non-reversible double track lines
[6] Absence of a shunting assistance pedal regardless of the direction of traffic for single track lines and tracks for two way working
[7] Absence of a pedal announcement mechanism
[8] 45-second delay for specific announcement reset devices

IRI: *http://data.europa.eu/949/frenchTrainDetectionSystemLimitationNumber*

Parameter of

Section with train detection limitation

Data Format

Data Presentation

Concept

Taxonomy Reference:

French Train Detection System Limitation Numbers

Values :

Code	Value	Explanation
1	Sections with tonnage circulated per track is inferior to 15000 tons/day/track	Not available
2	Sections with directional Interlocking	Not available
3	Sections with 45-second delay for directional interlocking	Not available
4	Sections with Installation with track circuit announcement	Not available
5	Sections with absence of a shunting assistance pedal in the normal direction of circulation for non-reversible double track lines	Not available
6	Sections with absence of a shunting assistance pedal regardless of the direction of traffic for single track lines and tracks for two way working	Not available
7	Sections with absence of a pedal announcement mechanism	Not available
8	Sections with 45-second delay for specific announcement reset devices	Not available

Validation

Validation Rules:

French Train Detection System Limitation Number Skos
Comment: Part of the section with train detection limitation that indicates the type of train detection limitation. Only for the French network
Message: Indication of the frenchTrainDetectionSystemLimitationNumber: The train detection system {$this} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/train-detection-numbers/FrenchTrainDetectionSystemLimitationNumbers.
French Train Detection System Limitation Number
Comment: Part of the section with train detection limitation that indicates the type of train detection limitation. Only for the French network
Message: frenchTrainDetectionSystemLimitationNumber : The train detection system has a french train detection limitation number that must be an IRI. This error may be due to not having a value, having more than one value or having a value that is not an IRI.

Special area type OP

Indicates the special area or location types such as safe areas and restricted area types.

IRI: *http://data.europa.eu/949/specialAreaType*

Parameter of

Special area

General Information

Number:
1.1.0.0.1.1

Data Format

Data Presentation
Concept

Taxonomy Reference:
Types of Special Areas

Values :

Code	Value	Explanation
AirTightnessArea	Air tightness area	Not available
ChangingTractionSystem	Changing the traction system	Not available
IndustrialRiskArea	Industrial risk areas	Not available
InhibitionTypeBrake	Inhibition of brake	Not available
NonStoppingArea	Non stopping Area	Not available
PantographLowered	Powerless section with pantograph to be lowered	Not available
PowerSwitchOff	Powerless section with main power switch to be switched off	Not available
RadioHole	Radio hole	Not available
SoundingHorn	Sounding the horn	Not available
TunnelArea	Tunnel stopping area	Not available

OPE TSI References

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Special tunnel area OP

Relates a tunnel with a special area or location.

IRI: *http://data.europa.eu/949/specialTunnelArea*

Parameter of
Tunnel

Data Format

Data Presentation
Special tunnel area

OPE TSI References

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3.2.3

Start offset from origin DP

Start offset of the section from the origin.

IRI: *http://data.europa.eu/949/startOffsetFromOrigin*

Parameter of
Linear Element Section

Data Format

Data Presentation
Double

Unit of Measure:
Metre

Validation

Validation Rules:
Start Offset From Origin
Comment: Start offset of the section from the origin.
Message: startOffsetFromOrigin: The start offset of the section from the origin must be represented as a double or more than one value.

Starts at OP

Specifies the starting point of a linear reference.

IRI: *http://data.europa.eu/949/startsAt*

Parameter of
Net Linear Reference

Data Format

Data Presentation
Net Point Reference

Validation

Validation Rules:
Starts At
Comment: Specifies the starting point of a linear reference.
Message: startsAt: The net linear reference specifies a starting point that must be an instance of a NetPointReference. This error is due to not having a value, having more than one value or having a value that is not an instance of NetPointReference.

Subset of OP

Relates a subset with common characteristics with another subset with common characteristics.

IRI: *http://data.europa.eu/949/subsetOf*

Parameter of
Subset with common characteristics

Data Format

Data Presentation
Subset with common characteristics

Validation

Validation Rules:
Subset Of
Comment: Relates a subset with common chatacteristics with another subset with common characteristics.
Message: subsetOf: The common characteristics subset must have a subsetOf reference that is an IRI that refers to an instance of another common characteristics subset. This error is due to having a value that is not an instance of CommonCharacteristicsSubset.

Additional Information

General explanation:

Whenever a subset (A) is a subset of another subset (B), then the subset (A) inherits all the common characteristics of subset (B), which is that all the infrastructure elements belonging to subset (A) will have as common characteristics the union of parameters (A) and (B).

Subsidiary location code DP

The numeric code for the subsidiary location

IRI: *http://data.europa.eu/949/subsidiaryLocationCode*

Parameter of
Subsidiary location

Data Format

Data Presentation
String

Validation

Validation Rules:
Subsidiary Location Code
Comment: Subsidiary location code.
Message: subsidiaryLocationCode: An instance of subsidiary location may have a value for subsidiary location code. This error may be due to having more than one value or a length grather than 10

Subsidiary location name DP

The common name given to the subsidiary location

IRI: *http://data.europa.eu/949/subsidiaryLocationName*

Parameter of
Subsidiary location

Data Format

Data Presentation
Lang String

Validation

Validation Rules:
Subsidiary Location Name
Comment: The common name given to the subsidiary location
Message: subsidiaryLocationName: Each Subsidiary Location may have a name. If it does, there should be at least one name in English (@en). Additional multilingual names are allowed, but only one value per language tag is permitted. All values must be language-tagged string literals.

Subsidiary location type OP

Indicates the subsidiary location type that belongs to a taxonomy.

IRI: *http://data.europa.eu/949/subsidiaryLocationType*

Parameter of

Subsidiary location

Data Format

Data Presentation

Concept

Taxonomy Reference:

Subsidiary location types

Values :

Code	Value	Explanation
00	Not Defined	Not available
04	Sorting Code	Destination station of the single wagon forwarding has a code in order to provide shunting technology.
05	Vehicle Parking Points	Place for parking rail vehicles.
06	Public Loading Places	Public sidings consist of one or more publicly accessible installation of loading tracks, possibly Private sidings consist of one or more installations of rail infrastructure and loading facilities whose access is generally restricted to the owner. They often belong to industrial, commercial,
07	Private sidings	Private sidings consist of one or more installations of rail infrastructure and loading facilities whose access is generally restricted to the owner. They often belong to industrial, commercial, military or other types of premises connected to the public rail network. The layout configuration depends on the individual requirements of the respective user. Sometimes several private sidings are connected to a feeder track, which in turn is connected to the public network (e.g. in ports). (Sub type to Freight terminal)
09	Depot	Place for overhaul or maintenance of the rolling stock
25	Underpass	Undercrossing or underground
28	Sign and board	Static equipment to inform the board staff for train traffic and shunting or the passengers in a station
29	Phase break	Border of the power supply systems
36	Freight yard	A production location which can be used as an origin, intermediate or destination station of a freight train
37	Loading point	A usage of a physical location. Each loading point is assigned to a DIUM station. Loading point is a customer siding (public or private) used in communication with RUs
39	Reservation code	Attribute of the location that can be start or end point of traveling with
40	Metastation	A location that forms the link between different stations that are
41	Company specific Identifier	Similar code as primary location code. used as key to legacy location coding.

Code	Value	Explanation
42	DIUM	DIUM stations - Places of acceptance/delivery/handover Commercial Station open into international traffic of goods (tariff point or contract station included in DIUM) – consignment acceptance/delivery station (loading points are excluded and covered by TypeCode 37). Could be a location to handover wagons.
43	Passengers cars loading	A place of physical location on the open access network where passengers can load/unload their car
45	Sewage dump	A place for cleaning purposes - disposal of the waste.
46	Refuelling	Location where refuelling takes
47	Mains Supply	Location where energy supply can be provided for the rolling stock e.g. preheating.
48	Water Supply	Location where water supply can be
50	Indoor cleaning platform	Place for interior cleaning
51	Car-wash	Place for outdoor cleaning
52	Short dry- cleaning track	Place for special cleaning
54	Sand-filling station	Location where sand is filled.
56	Signal box	A building containing signalling equipment and staff.
57	Intermodal Terminal	Intermodal Terminal is a location which provides the space, equipment and operational environment under which the transfer of loading units (freight containers, swap bodies,
58	OSJD system	Location code used within OSJD.
59	Train Service Substitute Stop	Place outside of railway station or railway stop, where passengers board or leave bus or any other transport mean as substitution of
60	Multifunction al rail terminal	Facilities for conventional and/or intermodal rail/road transshipment principally open for public use and for all types of cargo. This kind of
61	Relief facility	Facilities providing equipment and infrastructure used to overcome a disruption (derailment, collision or other accidents).
70	Network Border	Network border between two neighboring IM's; first or last Primary Location on a network.
71	State border	Political border between two

Code	Value	Explanation
72	Administrative border	Border point inside a member state to define federal structures or
74	Operational handover	Location where the responsibility for operation changes or can change between two involved IMs.
75	Planning handover	Location where the responsibility for timetable planning and path allocation changes or can change between two involved IMs
76	Stopping	This SLC defines a point along a track
99	Relation to Station	An indicator used to show that this location is a subsidiary of another

Validation

Validation Rules:

Subsidiary Location Type Skos
Comment: Subsidiary location type.
Message: subsidiaryLocationType: The Subsidiary Location {$this} (label {?slLabel}) has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/subsidiary-location-types/SubsidiaryLocationTypes.
Subsidiary Location Type
Comment: Subsidiary location type.
Message: subsidiaryLocationType: An instance of subsidiary location may have a value for subsidiary location type. This error may be due to having a value that is not an IRI.

System separation info pantograph lowered DP

Part of the system separation info of a track that shows whether the pantograph has to be lowered.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoPantographLowered*

Parameter of

System separation info

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

System Separation Info Pantograph Lowered
Comment: Indication of required several information on system separation.
Message: System separation info pantograph lowered: The track has the system separation info with the indication whether the pantograph is lowered value, that must be Y/N (boolean). This error may be due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not Y/N (boolean).

System separation info Km DP

Part of the system separation info of a track. Indicates the location from the start of the line where the new value is valid.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoKm*

Parameter of
System separation info

Data Format

Data Presentation
Double

Validation

Validation Rules:
System Separation Info Km
Comment: Indication of required several information on system separation.
Message: System separation info km : The track has a system separation info with the location from the start of the line value (km), that must be a double.This error may be due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not a double (real) number.

System separation info length DP

Part of the system separation info of a track that shows the length of the system separation in metres.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoLength*

Parameter of
System separation info

Data Format

Data Presentation
Integer

Unit of Measure:
Metre

Validation

Validation Rules:

System Separation Info Length
Comment: Indication of required several information on system separation.
Message: System separation info length: The track has a system separatione info with the length of the system separation value (length), that must be an integer. This error may be due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not an integer.

System separation info switch off breaker DP

Part of the system separation info of a track that shows whether the breaker has to be switched off.
The system separation info is the Indication of required several information on system separation.

IRI: *http://data.europa.eu/949/systemSeparationInfoSwitchOffBreaker*

Parameter of

System separation info

Data Format

Data Presentation

Boolean

Validation

Validation Rules:

System Separation Info Switch Off Breaker
Comment: Indication of required several information on system separation.
Message: System separation info switchOffBreaker : The track has the system separation info with the indication whther the breaker may be switched off value, that must be Y/N (boolean). This error is due to the track having a SystemSeparationInfo with no value, more than one value, or a value that is not Y/N (boolean).

Train detection system OP

Technical characteristics of the train detection systems installed in the section of line.

IRI: *http://data.europa.eu/949/trainDetectionSystem*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

Train Detection System

Validation

Validation Rules:

Train Detection System
Comment: Train detection systems installed in the section of line.
Message: trainDetectionSystem (1.1.1.3.4) : The track or subset with common characteristics may have a value of a train detection system that must be an instance of TrainDetectionSystem. This error may be due to the track or subset with common characteristics having a value that is not an instance of the class TrainDetectionSystem.

Additional Information

General explanation:

It can be repeated as many times as the number of different train detection systems are present.
Not all parameters are applicable to all types of train detection systems; it depends on the applicability condition.
For RDF data provision:
The value of this property is an instance of the era:TrainDetectionsystem, which has as properties the parameters with indices 1.1.1.3.7.x.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, this property is the equivalent of the "Set" attribute, grouping parameters 1.1.1.3.7.x.

TSI compliant train protection system (ETCS) OP

European Train Control System (ETCS) application level supported by the track side equipment.

IRI: *http://data.europa.eu/949/etcs*

Parameter of

Running track
Subset with common characteristics

Data Format

Data Presentation

ETCS

Validation

Validation Rules:

Etcs
Comment: European Train Control System (ETCS) application level supported by the track side equipment.
Message: etcs (1.1.1.3.2) : The track or subset with common characteristics may have a value of a European Train Control System (ETCS) that must be an instance of ETCS. This error may be due to the track having a value that is not an instance of the class ETCS.

Additional Information

General explanation:

It can be repeated as many times as the number of different ETCS levels are present.

For RDF data provision:
The value of this property is an instance of the era:ETCS, which has as properties the parameters 1.1.1.3.2.1 and 1.1.1.3.2.2.

For RINF XML data sets:
As long as the data provision through XML data sets is allowed, this property is the equivalent of the "Set" attribute, grouping parameters 1.1.1.3.2.1 and 1.1.1.3.2.2.

Type of line referencing system OP

The preferred line referencing system.

IRI: *http://data.europa.eu/949/lrsMethod*

Parameter of

Linear Positioning System

Data Format

Data Presentation

Concept

Taxonomy Reference:

Line reference systems

Values :

Code	Value	Explanation
00	Line, Track, Kilometre, Distance	Not available
01	Track, Reference, Distance	Not available
02	Track, Distance from Track origin	Not available
03	Trail, Distance from trail origin	Not available
04	Trail, intrinsic coordinate	Not available
05	Path - Odometry	Not available

Validation

Validation Rules:

Lrs Method
Comment: The preferred line referencing system.
Message: lrsMethod: The linear positioning system must have an 'lrsMethod' value that is an IRI.

Lrs Method Skos
Comment: The preferred line referencing system.
Message: lrsMethod: The linear positionung system {$this} with label {?thisLabel} has a value {?concept} that is not one of the predefined values and cannot be converted into a SKOS concept on this list: http://data.europa.eu/949/concepts/lines/ReferenceSystems.

Validity [OP]

Relates a feature with a temporal feature to indicate a validity period.

IRI: *http://data.europa.eu/949/validity*

Parameter of
ERA Feature

Data Format

Data Presentation
Temporal Feature

Validation

Validation Rules:
Validity
Comment: Relates a feature with a temporal feature to indicate a validity period.
Message: validity: The feature has a validity value that points to an instance of TemporalFeature. This error is due to having a value that is not an instance of TemporalFeature.

[c]: Classes
[op]: Object Properties
[op]: Data Properties
[ep]: External Properties