CEN – European Committee for Standardization
CENELEC – European Committee for Electrotechnical Standardization

Harmonised standards in the Rail sector:

Clarification of the definition, fundamental question to handle and way to proceed when drafting the Annex ZA/ZZ

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This document provides rules and guidelines on how to draft correctly the Annex ZA/ZZ of Rail harmonised standards (non – mandatory part). It aims in clarifying core concepts of harmonised standards in the Rail sector.

By following this guidance it is anticipated that during the drafting stage of the standard, a closer alignment between the requirements of the TSI and the standard will be achieved leading to positive assessments by the HAS consultant.

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Please note that this document is an explanation document, it does not pretend to provide, when following the explanations, a guarantee of citation in the OJEU of the harmonised standard, which is the remit of the European Commission. Nevertheless, the rules of drafting expressed are compulsory and the non-respect of it will lead to either comments of the CCMC editor in charge of the standard and/or remark of the HAS Consultant in their assessment.

A) Clarification on the core concepts of rail harmonised standards

In order to understand how to correctly draft an Annex ZA/ZZ, it is crucial to first understand the framework of harmonised standards. Therefore, here are some reminders of the main concepts:

Standard means a technical specification, adopted by a recognised standardisation body, for repeated or continuous application, with which compliance is not compulsory – except when referenced in a Technical Specification for Interoperability.

Referenced standard means a standard or a part of a standard, referenced in a Technical Specification for Interoperability (TSI), changing the nature of the referenced/relevant requirements from voluntary to mandatory. A summary of these Referenced standards is usually detailed in an Annex in the TSI.

Harmonised standard means a European standard published on the basis of a request made by the Commission and supporting the application of Union harmonisation legislation (in our case: Interoperability Directive (EU) 2016/797). Its application can be mandatory (referenced standard) or voluntary (standard listed in the OJEU).

The presumption of conformity is a concept that is widely used in the context of the European "New Approach" for better regulation. The presumption of conformity means that a manufacturer who has complied

with a harmonised standard listed in the OJEU can legally assume he has met the requirements of the directive (or TSI) covered by that standard, as described in its Annex ZA/ZZ.

The listing of a European standard in the OJEU is the remit of the European Commission and requires a formal Commission decision. Furthermore, it is required that the listed standard contains an **Annex ZA/ZZ** detailing to which requirements of the directive (or TSI[1]) it provides presumption of conformity.

For clarity: the TSIs are also "accompanied" by **application guides (AGs)**, written and published by the European Union Agency for Railways (ERA). These AGs provide guidance on how to fulfil the requirements listed in the TSI in detail. In order to achieve this, the AGs clarify which harmonised standards can be used to provide Presumption of Conformity, and how. Such references in the ERA AGs do, however, not have any legal effect. The legal certainty provided by the Presumption of Conformity comes from the combination of Annex ZA/ZZ AND the listing in the OJEU, hence their importance.

The application of a **TSI-referenced standard** (or part of the TSI-referenced standard when only clauses of the standard are referenced in the TSI) remains **mandatory** even though a revised version of the same standard might be listed in the OJEU as harmonised standard. For fulfilling the requirements of the TSI, there is currently no free choice of the version of the standards in this respect.

The possibility to use also revised versions of referenced standards is foreseen to be achieved by future amendments of the TSI. These amendments will only concern the TSI Annex with the referenced standards. The amendment will be designed in a way that will leave the applicant the choice between the older or the newer version of the standard, provided the older version is still considered to fulfil the needs of the Directive or related TSI.

B) Fundamental questions to ask when dealing with rail harmonised standards

As stated above, the decision as to whether a standard can be referenced in a TSI or listed in the OJEU is a remit of the European Commission, supported in its technical analysis by ERA and the HAS consultants. In case of doubts in relation with the questions below, it is thus strongly recommended to seek advice from the HAS consultant (through the formal HAS process) or ERA (at any time).

These questions should be answered as early as possible in the drafting process of the standard.

There are 3 fundamental questions a Working Group must answer when dealing with a Work Item for which there is potential relation with the EU Rail Legislation. **Depending on the answer** to these questions, **the way to proceed** will be different:

1) Does this standard have a necessity to be destined for harmonisation? (Q1) More precisely: is there any **specific sense AND added value** to consider this standard **as a needed AND appropriate support to a specific part of the legislation**?

[1] Section 4.1.1 of the Blue Guide: "(…) The essential requirements are set out in relevant sections or annexes of a given piece of Union harmonisation legislation. Although no detailed manufacturing specifications are included in the essential requirements, the degree of detailed wording differs between different Union harmonisation acts152. (…)"
Footnote 152: "According to the Directive 2008/57/EC on the interoperability of the rail system **each sub-system is covered by a Technical Specification of Inter-operability (TSI), which specifies the essential requirements**."

- This first question is crucial and must be the first one to answer before going on, whatever the next step.
- Once the new Commission Standardisation Request (currently under preparation) will be available, it will in principle, list all standards that should be harmonised and indicate which TSI requirements the standard should provide (presumption of) conformity to.
- In case a standard is not included in the standardisation request, but you think it should be harmonised, or in case of doubts about the TSI requirements the standard should cover, check with ERA / HAS consultant via your TC/SC Secretary.
- If the answer is **yes, proceed to questions 2) and 3).**
- If the answer is no, do not proceed to the next questions.

2) Does the standard require an Annex ZA/ZZ?

- Whether the standard (or parts of it) requires **a compulsory application** and should thus be directly integrated in the legislation itself (Q2), or whether (parts of) it should **stay voluntary** but with the capacity, by its citation in the OJEU, to provide a Presumption of Conformity (Q3) is the remit of the Commission[2].
- In principle, it should be indicated in the new Commission Standardisation Request. If it is not or you have doubts or objections, check with ERA / HAS consultant via your TC/SC Secretary.
- An Annex ZA/ZZ is **only needed for the parts** of the standard (if any) that should stay voluntary but with the capacity, by their citation in the OJEU, to provide a presumption of conformity. Those parts of standards which are Referenced standards do not require listing ion an Annex ZA/ZZ (see 3 **The Note of the Table** below).

3) In case the standard needs an Annex ZA/ZZ, how to **draft correctly an Annex ZA/ZZ**?
   - Proceed to C)

C) <u>Guidelines for drafting correctly Annex ZA/ZZ for Rail standards</u>

This guideline explains how to proceed when drafting the Annex ZA/ZZ. It provides a methodology with steps to follow and criteria to check for each of the different components of the Annex ZA/ZZ:

- The European Foreword (1)
- The Title of the Table (2)
- The NOTE of the Table (3)
- The Columns of the Table (4)

Please note that some part of the Annex ZA/ZZ are composed of generic text but **even** for these parts, a **careful check** is important.

[2] A review of the issue of mandatory vs voluntary standards is however included in the work programme of the ERA Topical Working Group on Standardisation, which gathers experts from ERA, the standardisation organisations and rail sector organisations.

1) The European foreword

The **European Foreword** of the Rail harmonised standard is composed based on **a generic text** managed by the CCMC editor.

2) The Title of the Table

The **Title of the Table** must always focus on the correct **current applicable legislation** that **the standard wish to support**, through its Annex ZA/ZZ. When drafting the title of the table, it is fundamental to:

- Identify the **adequate** TSI
- Indicate the **correct full code and name** of the legislation

3) The Note of the Table

Because of the specificity of the regime of harmonised standards in the Rail sector, where a standard can be compulsory for some clauses AND simultaneously voluntary and claiming for a Presumption of Conformity for other clauses, it is crucial to **always include** the following **generic NOTE** between the Title of the Table and the Table itself:

"*NOTE: The technical specification for interoperability (TSI) may refer to other clauses of this standard making the application of those clauses mandatory. Possible references to such clauses are found in the [Appendix xx to the TSI].*" (see Table 1 below)

4) The Columns of the Table

The First **Column** of the table is dedicated to the targeted Essential Requirements of Directive (EU) 2016/797.

This column is **always** drafted **with a generic text**; Except for the CCS TSI for which it is not yet present. It is the intention to have it also in the CCS TSI in the 2022 revision:

"*Section 3 of the Annex to the TSI indicates the correspondence between the TSI clauses and the essential requirements of Directive (EU) 2016/797*"

When drafting this first column it is fundamental to use the above generic text.

The **Second Column** of the table is dedicated to the targeted clauses of the Annex[3] to the Technical Specification for Interoperability (TSI).

When drafting this second **column** it is fundamental to:

- Only indicated clauses of the Annex to the TSI that can be **covered effectively** by a clause of the standard. More precisely, one must only indicate clauses of the Annex of the TSI for which the core

[3] A TSI published in the OJEU is always composed of a legal text, corpus of the legal act, and a technical Annex that contain the essential requirements that the standards will aim to support.

obligation can effectively be supported by the requirement formulated inside the clause of the standard.

- Indicate **directly in one line** the specific clause of the TSI
- Example of **correctly drafted** clause of the Annex to the TSI

Clauses of the Annex to the Technical Specification for Interoperability (TSI)
4.2.2.2. Strength of the unit

- Example of **Incorrectly drafted** clause

Clauses of the Annex to the Technical Specification for Interoperability (TSI)
4.Characterisation of the subsystem 4.2. Functional and technical specifications of the subsystem 4.2.2. Structures and mechanical parts 4.2.2.2. Strength of the unit

The **Third Column** of the table is dedicated to the clause/subclause of the standard.

When drafting this **third column** it is **fundamental to**:

- **Never** mention "whole standard"

- **Only** indicate a clause of the standard for which the content gathers **all the following points**:
    - Is a requirement (the targeted clause cannot be informative)
    - Is coherent and precise in its formulation
    - Is **directly linked AND relevant** with the core subject in the clause of the Annex of the TSI indicated in the second column of the table
    - Brings a clear manifestation of how the technical requirement of the clause allows a fulfilment of the core purpose of the obligation expressed in the clause of the Annex of the TSI for which you want to establish a link.

Things to **absolutely avoid** when drafting the content of the **Third column**:

- Clause indicated as a "whole standard"
- Clause linked to the subject but with no added value to express how a Clause of the Annex of the TSI can be fulfilled by the standard clause.

The **Fourth Column** of the table is dedicated to the comments for clarification.

In principle, avoid inserting comments that create confusion.

It could possibly be used to indicate elements of the Annex of the TSI, which are not covered by the clauses within the standard.

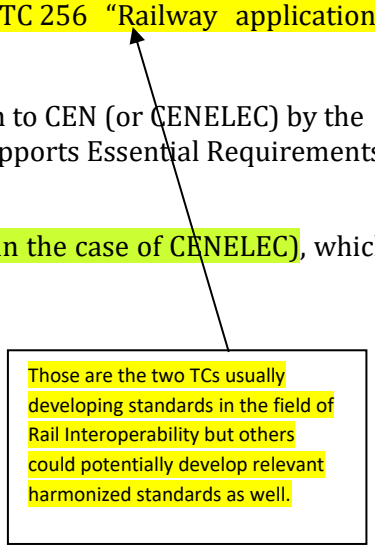
D) **Annex ZA/ZZ Commented template**

European foreword

This document has been prepared by Technical Committee CEN/TC 256 "Railway applications" (or CENELEC/TC 9X), the secretariat of which is held by DIN (by AFNOR).

This document has been prepared under a standardization request given to CEN (or CENELEC) by the European Commission and the European Free Trade Association, and supports Essential Requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA (or ZZ in the case of CENELEC), which is an integral part of this document.



Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive (EU) 2016/797 aimed to be covered

This European Standard has been prepared under a Commission's standardisation request "M/483 Mandate to CEN and CENELEC for Standardisation in the field of interoperability of the rail system" to provide one voluntary means of conforming to (parts of) Essential Requirements of Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on interoperability of the rail system (recast) as specified in the relevant technical specifications for interoperability (TSI).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in [Table ZA.1 for freight wagons] [, and Table ZA.2 for locomotive and passenger RST, and .....] confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive as specified in the technical specifications for interoperability (TSI), and associated EFTA regulations.

The Annex Z will contain one or more table(s) defining the links between the related TSI clauses and the clause(s) of the standard. 1 table per relevant TSI.

The order in which the relevant TSIs are listed is left to the appreciation of the WG.

The relevant reference to the Appendix needs to be taken from Table 1 column (b) based on the entry selected in Table 1 column (a)

The title header of each table to be chosen from the list of Table 1 column (a)

Table ZA.1 — Correspondence between this European Standard, Commission Regulation (EU) N° 321/2013 concerning the Technical Specification for Interoperability (TSI) relating to the subsystem 'rolling stock – freight wagons' of the rail system in the European Union* and Directive (EU) 2016/797

NOTE: The Technical Specification for Interoperability (TSI) may refer to other clauses of this standard making the application of those clauses mandatory. Possible references to such clauses are found in the Appendix D to the TSI.

Essential Requirements of Directive (EU) 2016/797	Clauses of the Annex to the Technical Specification for Interoperability (TSI)	Clause/ subclauses of this European Standard	Comments
Section 3 of the Annex to the TSI indicates the correspondence between the TSI clauses and the Essential Requirements of Directive (EU) 2016/797			
ER x.y …	No presumption of conformity to a specific clause of the TSI. Or Not explicitly covered by the TSI.		

As the link between the TSI clauses and the 2016/797 is reproduced in Section 3 of each TSI, it is not necessary with this new template to list the ERs

In exceptional circumstances and after consultation with EC and ERA, a link between clauses of a standard and an ER may be established.

*** As amended by Commission Regulation (EU) No 1236/2013, Commission Regulation (EU) 2015/924, Commission Implementing Regulation (EU) 2019/776 and Commission Implementing Regulation (EU) 2020/387**

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the products falling within the scope of this standard.

The relevant reference to the Amendment to the TSIs need to be taken in Table 1 column (c) based on the entry selected in Table 1 column (a)

TSI reference (a)	Appendix of the TSI containing the clauses of the standards made mandatory (b)	Amendments to the TSI (c)
N° 321/2013 concerning the technical specification for interoperability (TSI) relating to the subsystem 'rolling stock — freight wagons' of the rail system in the European Union* and…	D	As amended by Commission Regulation (EU) No 1236/2013, Commission Regulation (EU) 2015/924, Commission Implementing Regulation (EU) 2019/776 and Commission Implementing Regulation (EU) 2020/387
N° 1299/2014 concerning the technical specifications for interoperability relating to the 'infrastructure' subsystem of the rail system in the European Union* and…	T	As amended by Commission Implementing Regulation (EU) 2019/776
N° 1300/2014 concerning the technical specifications for interoperability relating to accessibility of the Union's rail system for persons with disabilities and persons with reduced mobility* and…	A	As amended by Commission Implementing Regulation (EU) 2019/772
N° 1301/2014 concerning the technical specifications for interoperability relating to the 'energy' subsystem of the rail system in the Union* and…	E	As amended by Commission Implementing Regulation (EU) 2018/868 and Commission Implementing Regulation (EU) 2019/776
N° 1302/2014 concerning the technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem of the rail system in the European Union* and…	J	As amended by Commission Regulation (EU) 2016/919, Commission Implementing Regulation (EU) 2018/868,Commission Implementing Regulation (EU) 2019/776 and Commission Implementing Regulation (EU) 2020/387
N° 1303/2014 concerning the technical specification for interoperability relating to 'safety in railway tunnels' of the rail system of the European Union* and…	A	As amended by Commission Regulation (EU) 2016/912, and Commission Implementing Regulation (EU) 2019/776

N° 1304/2014 concerning the technical specification for interoperability relating to the subsystem 'rolling stock — noise' amending Decision 2008/232/EC and repealing Decision 2011/229/EU* and …	B	As amended by Commission Implementing Regulation (EU) 2019/774
2016/919 concerning the technical specification for interoperability relating to the 'control-command and signalling' subsystems of the rail system in the European Union* and…	Tables A.3 and A.4 of Annex A	As amended by Commission Implementing Regulation (EU) 2019/776, Commission Implementing Regulation (EU) 2020/387 and Commission Implementing Regulation (EU) 2020/420
2019/773 concerning the technical specification for interoperability relating to the operation and traffic management subsystem of the rail system within the European Union and repealing Decision 2012/757/EU* and…	-	-
N° 1305/2014 concerning the technical specification for interoperability relating to the telematics applications for freight subsystem of the rail system in the European Union and repealing the Regulation (EC) No 62/2006* and…	-	As amended by Commission Implementing Regulation (EU) 2018/278 and Commission Implementing Regulation (EU) 2019/778
N° 454/2011 concerning the technical specification for interoperability relating to the subsystem 'telematics applications for passenger services' of the trans-European rail system* and…	-	As amended by Commission Regulation (EU) 665/2012, Commission Regulation (EU) 1273/2013, Commission Regulation (EU) 2015/302, Commission Regulation (EU) 2016/527 and Commission Implementing Regulation (EU) 2019/775

Table 1 (revised on 2020-06-22 TL)

Maintenance and update of this table under responsibility of CCMC SDS Mobility team based on inputs from EC and ERA.

TC/SC Secretary and CCMC editor to check that the latest set of references is used when editing a document.

E) FAQ

1) Does a standard normatively referenced in a harmonised standard need to be harmonised?

No.

Let us assume, chapter 6 of EN standard 1 is providing Presumption of Conformity to clause 4.2 of a TSI. However, chapter 6 of EN standard 1 is requiring the use of a testing method that is defined in chapter 4 of EN standard 2 (dated normative chain), in order to make sure that the requirement defined in its chapter 6 is fulfilled.

In that case:

- EN standard 1 shall be harmonised, and provided with an Annex ZA/ZZ, indicating that it provides Presumption of Conformity to clause 4.2 of the TSI;

- EN standard 2 shall not be harmonised and does not need an Annex ZA/ZZ (at least, for this specific relation with the TSI).

This principle shall be applied more generally to any such normative reference (not only for testing), as soon as the normative chain is clear, dated and unambiguous.

2) Could we use a clause describing a methodology for claiming presumption of conformity to a TSI clause requiring to meet a precise value?

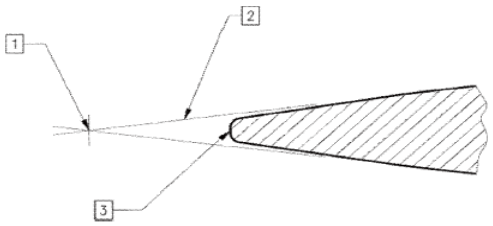
In the example illustrated below:

- Infrastructure TSI 4.2.8.6 (1) (a) Maximum free wheel passage: Defines the value of max 1 380 mm
- EN 13232-3, Cl. 8.2.1: details the methodology, but does not set the value.

4.2.8.6. The immediate action limits for switches and crossings

Figure 2

Point retraction in fixed common crossings



1 Intersection point (IP)
2 Theoretical reference line
3 Actual point (RP)

(1) The technical characteristics of switches and crossings shall comply with the following in-service values:

(a) Maximum value of free wheel passage in switches: 1 380 mm.

This value can be increased if the infrastructure manager demonstrates that the actuation and locking system of the switch is able to resist the lateral impact forces of a wheelset.

- If it is self-evident that the methodology is there to verify the legal limit value (set in legislation mentioned in 1st column) and the methodology does not even mention this limit value because that value is for legislator to set (and could be, in some cases, changed in the future),
- then we can consider that the standard provides presumption of conformity and we can include the following line in the Annex ZA/ZZ:

TSI clause	EN clause	Comment
4.2.8.6 (1) (a) Maximum free wheel passage	8.2.1	

3) Do we need to date all the normative references (even if the clause is not directly linked to a clause supporting one or several ER or TSI requirement)?

Yes, in the majority of the cases, **ALL** the normative references should be dated.

However, if a clause containing a normative reference is not at all supporting any of the clauses claiming presumption of conformity and if the clause does not refer to a particular clause of the normative reference then the normative reference should not be dated.

F) Examples

A number of cases were examined by a group composed of TC officers and WG Convenors, the HAS consultant in charge of the project, EC, ERA and CCMC.

This enabled the development of a methodology (see clause xx) on how to draft efficiently an Annex ZA or ZZ.

The first example: Amendment (including a review of an Annex ZA) of **EN 16334:2014**

Railway applications — Passenger Alarm System — Part 1: System requirements for mainline rail

The first thing which was done was to ask what were the relevant TSIs. The initial reply was LOC& PAS and SRT. However; when we took a closer look at the SRT, we realized that it was referring back for the related SRT TSI requirements, to the LOC&PAS TSI. Therefore, it was decided that a single table would be established for the LOC&PAS TSI only.

The next question to ask was what kind of standard do we have in front of us? Are there Mandatory clauses (i.e. clauses referred in a TSI (LOC&PAS in this case)? It is not the case at this stage. Before starting the work on the Annex ZA/ZZ, it is also good to ask ourselves if this standard needs to be harmonised in the sense of being listed in the OJEU.

The present case lead to a positive reply as the standard described a sub-system defining the installation necessary for emergency call.

To start with, the WG decided to create an XLS table where it listed the TSI requirements with the highest granularity possible. It is only at later stage that the WG could decide if it could simplify to the source clause (without sub-clauses).

When the XLS table is established, it is recommended to transfer it into the Annex ZA/ZZ and an indicative assessment requested on the draft standard or Amendment (note that a lot of Annex ZA/ZZ will need to be issued in order to update the current set of Annex ZA/ZZ).

The following pages shows the evolution from an old type Annex ZA/ZZ layout to what is expected:

NB: It is planned to provide other good examples in future editions of this guide.

Initial old style layout (NOT TO BE FOLLOWED ANYMORE !)

Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of EU Directive 2016/797/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/483 to provide one voluntary means of conforming to the essential requirements of the Directive 2016/797/EC on the interoperability of the rail system (recast) and with the associated TSIs.

Once this standard is cited in the Official Journal of the European Union under that Directive 2016/797/EC, compliance with the normative clauses of this standard given in Table ZA.1 for the TSI LOC&PAS and in Table ZA.2 for the TSI SRT confers within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations and with the TSI requirements.

Table ZA.1 — Correspondence between Directive 2016/797/EC, the Commission regulation n°1302/2014 of 18 November 2014 concerning the technical specification for interoperability relating to the 'rolling stock - locomotives and passenger rolling stock' of the rail system in the European Union (published in the Official Journal L 356, 12.12.2014, p.228) and this European Standard

Essential Requirements of Directive 2016/797/EC	Chapter/§/annexes of the TSI	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex III, Essential requirements 1 General requirements 1.1 Safety Clauses 1.1.1 1.5 Technical compatibility 2 Requirements specific to each subsystem 2.4 Rolling stock 2.4.1 Safety §5, §8, §10 2.4.2 Reliability and availability 2.4.3 Technical compatibility §3	4.2 Functional and technical specification 4.2.5.3 Passenger alarm §4.2.5.3.1 General §4.2.5.3.2 Requirements for information interfaces §4.2.5.3.3 Requirements for activation of the brake by the passenger alarm §4.2.5.3.4 Criteria for a train departing from a platform §4.2.5.3.5 Safety requirements §4.2.5.3.6 Degraded mode	The whole standard applies	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Table ZA.2 — Correspondence between Directive 2016/797/EC, the Commission regulation n°1303/2014 of 18 November 2014 concerning the technical specification for interoperability relating to 'safety in railway tunnels' of the rail system of the European Union (published in the Official Journal L 356, 12.12.201, p. 394) and this European Standard

Essential Requirements of Directive 2016/797/EC	Chapter/§/annexes of the TSI	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex III, Essential requirements 1 General requirements 1.2 Safety Clauses 1.1.1 1.5 Technical compatibility 2 Requirements specific to each subsystem 2.4 Rolling stock 2.4.1 Safety §5, §8, §10 2.4.2 Reliability and availability 2.4.3 Technical compatibility §3	4.2 Functional and technical specifications of the subsystems 4.2.3 Subsystem rolling stock 4.2.3.3 Requirements related to emergencies 4.2.3.3.3 Passenger alarm and communication means	The whole standard applies	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Table of Matching

LOC&PAS TSI	Chapter	Title	Text	EN16334-1	Summary by TSI Chapter	Annex ZA
	4.2.5.3.1	**General**	(1) This clause is applicable to all units designed to carry passengers and units designed to haul passenger trains.	1	**1, 6.1 6.2, 6.5, 6.6, 6.7, 6.8, 7, 9, 10.1, 10.2, Annex F (?)**	**1, 6.1 6.2, 6.5, 6.6, 6.7, 6.8, 7, 9, 10.1, 10.2, Annex F (?)**
			(2) The passenger alarm function **gives to anyone in the train the opportunity to advise the driver of a potential danger**, and has consequences at operating level when activated (e.g. braking initiation in absence of reaction from the driver); it is a safety related function, for which the requirements, including safety aspects, are set out in this clause.	1, 6.1, 6.2, 10.1, 10.2, Annex F		
			(2) The passenger alarm function gives to anyone in the train the opportunity to advise the driver of a potential danger, **and has consequences at operating level when activated (e.g. braking initiation in absence of reaction from the driver)**; it is a safety related function, for which the requirements, including safety aspects, are set out in this clause.	1, 6.1, 6.5, 6.6, 6.7, 6.8, 7		
			(2) The passenger alarm function gives to anyone in the train the opportunity to advise the driver of a potential danger, and has consequences at operating level when activated (e.g. braking initiation in absence of reaction from the driver); **it is a safety related function, for which the requirements, including safety aspects, are set out in this clause.**	1, 9		
	4.2.5.3.2	**Requirements for information interfaces**	(1) With the exception of toilets and gangways, each compartment, each entrance vestibule and all other separated areas intended for passengers shall be equipped with at least one clearly visible and indicated alarm device to inform the driver of a potential danger.	10.1 except 10.1.4, 10.2.2 to 10.2.6	**6.2.2, 6.2.3, 6.2.4, 6.2.5 ?, 6.2.6, 6.3.2, 6.4.1, 6.4.2, 6.10.2, 6.10.3 (?), 6.12.1, 6.12.2, 10.1 except 10.1.4, 10.2.2 to 10.2.6, Annex A**	**6.2, 6.3, 6.4, 6.10, 6.12, 10.1, 10.2, Annex A**
			(2) The alarm device shall be designed so that once activated it cannot be cancelled by passengers.	6.12.1		
			(3) At the triggering of the passenger alarm, both visual and acoustic signs shall indicate to the driver that one or more passenger alarms have been activated.	6.2.2, 6.2.3, 6.2.4, 6.2.5 ?, Annex A		
			(4) **A device in the cab shall allow the driver to acknowledge his awareness of the alarm**. The driver's acknowledgement shall be perceivable at the place where the passenger alarm was triggered and shall stop the acoustic signal in the cab.	6.10.2, 6.10.3 (?)		
			(4) A device in the cab shall allow the driver to acknowledge his awareness of the alarm. **The driver's acknowledgement shall be perceivable at the place where the passenger alarm was triggered** and shall stop the acoustic signal in the cab.	6.3.2		

			(4) A device in the cab shall allow the driver to acknowledge his awareness of the alarm. The driver's acknowledgement shall be perceivable at the place where the passenger alarm was triggered and **shall stop the acoustic signal in the cab.**	6.2.6		
			(5) **On the driver's initiative, the system shall allow a communication link to be established between the driver's cab and the place where the alarm(s) was/were triggered for units designed for operation without staff on-board (other than driver)**.For units designed for operation with staff on-board (other than driver), it is permitted to have this communication link established between the driver's cab and the staff on-board. The system shall allow the driver to cancel this communication link on his initiative.	6.4.1, 6.4.2,		
			(5) On the driver's initiative, the system shall allow a communication link to be established between the driver's cab and the place where the alarm(s) was/were triggered for units designed for operation without staff on-board (other than driver).**For units designed for operation with staff on-board (other than driver), it is permitted to have this communication link established between the driver's cab and the staff on-board.** The system shall allow the driver to cancel this communication link on his initiative.	6.3.2, 6.4.1	By Amendement A1	
			(5) On the driver's initiative, the system shall allow a communication link to be established between the driver's cab and the place where the alarm(s) was/were triggered for units designed for operation without staff on-board (other than driver).For units designed for operation with staff on-board (other than driver), it is permitted to have this communication link established between the driver's cab and the staff on-board. **The system shall allow the driver to cancel this communication link on his initiative.**	6.4.1		
			(6) A device shall enable the crew to reset the passenger alarm.	6.12.1, 6.12.2		
	4.2.5.3.3	**Requirements for activation of the brake by the passenger alarm**	(1) **When the train is stopped at a platform or departing from a platform, activation of a passenger alarm shall lead to a direct application of the service brake or the emergency brake, resulting in a complete stop**. In this case, only after the train has come to a complete stop, a system shall allow the driver to cancel any automatic braking action initiated by the passenger alarm;	6.7 a), 6.8.1	**6.7 a), 6.7 b), 6.8.1, 6.8.2, Annex A, Annex B**	
			(1) When the train is stopped at a platform or departing from a platform, activation of a passenger alarm shall lead to a direct application of the service brake or the emergency brake, resulting in a complete stop. **In this case, only after the train has come to a complete stop, a system shall allow the driver to cancel any automatic braking action initiated by the passenger alarm;**	6.8.2, Annex A, Annex B		

			(2)**In other situations, 10 +/-1 seconds after activation of the (first) passenger alarm, at least an automatic service brake shall be initiated unless the passenger alarm is acknowledged by the driver within this time.** The system shall allow the driver to override at any time an automatic braking action initiated by the passenger alarm.	6.7 b), Annex A, Annex B		
			(2)In other situations, 10 +/-1 seconds after activation of the (first) passenger alarm, at least an automatic service brake shall be initiated unless the passenger alarm is acknowledged by the driver within this time. **The system shall allow the driver to override at any time an automatic braking action initiated by the passenger alarm.**			
	4.2.5.3.4	**Criteria for a train departing from a platform**	(1) A train is deemed to be departing from a platform during the period of time elapsing between the moment when door status is changed from 'released' to 'closed and locked' and the moment when the train has partly left the platform.	6.5.1, 6.5.2	**6.5 except 6.5.3**	
			(2) This moment shall be detected on-board (function allowing physical detection of the platform or based on speed or distance criteria, or any alternative criteria).	6.5.4		
			(3) For units intended to operate on lines that are fitted with the ETCS track side system for control-command and signalling (including 'passenger door' information as described in Annex A Index 7 of TSI CCS), this on-board device shall be able to receive from the ETCS system the information related to platform.	6.5.5		
	4.2.5.3.5	**Safety requirements**	(1) For the scenario 'failure in the passenger alarm system leading to the impossibility for a passenger to initiate the activation of brake in order to stop the train when train departs from a platform', it shall be demonstrated that the risk is controlled to an acceptable level considering that the functional failure has typical credible potential to lead directly to 'single fatality and/or severe injury'.	**9**	**9**	
			(2) For the scenario 'failure in the passenger alarm system leading to no information given to the driver in case of activation of a passenger alarm', it shall be demonstrated that the risk is controlled to an acceptable level considering that the functional failure has typical credible potential to lead directly to 'single fatality and/or severe injury'.	9	9	
			(3) The demonstration of conformity (conformity assessment procedure) is described in clause 6.2.3.5 of this TSI.	9	9	
	4.2.5.3.6	**Degraded mode**	(1) Units fitted with a driver's cab shall be fitted with a device which allows authorised staff to isolate the passenger alarm system.	8.1.1	**8.1.1, 8.1.3, 8.1.4, 8.2**	
			(2) **If the passenger alarm system is not functioning, either after intentional isolation by staff, due to a technical failure, or by coupling the unit with a non-compatible unit, this shall be permanently indicated to the driver in the active driver's cab,** and application of the passenger alarm shall result in a direct application of brakes.	8.1.3, 8.2		

			(2) If the passenger alarm system is not functioning, either after intentional isolation by staff, due to a technical failure, or by coupling the unit with a non-compatible unit, this shall be permanently indicated to the driver in the active driver's cab, **and application of the passenger alarm shall result in a direct application of brakes.**	8.1.4		
			(3) A train with an isolated passenger alarm system does not meet the minimum requirements for safety and interoperability as defined in this TSI and shall therefore be regarded to as being in degraded mode.	Not applicable		
	4.2.5.3.7	**Applicability to units intended for general operation**	(1) Only functionalities that are relevant to the design characteristics of the unit (e.g. presence of a cab, of a crew interface system,…) shall be considered.	Not applicable		
			(2) The signals transmission required between the unit and the other coupled unit(s) in a train for the passenger alarm system to be available at train level shall be implemented and documented, taking into account functional aspects described above in this clause.	Not applicable		
			(3) This TSI does not impose any technical solution regarding physical interfaces between units.	Not applicable		

SRT TSI	Chapter	Title	Text	EN16334-1	Summary by TSI Chapter	Annex ZA
	4.2.3.3.3.	Passenger alarm and communication means	Requirements are set out in the LOC&PAS TSI clause 4.2.10.4.3.			
LOC&PAS TSI		**Passenger alarm and communication means**	Requirements are specified in clauses 4.2.5.2**, 4.2.5.3** and 4.2.5.4 of the present TSI.	**Applicable for 4.2.5.3 only**		
	4.2.5.2.	**Audible communication system**	(5) Provisions for passengers to contact train crew are prescribed in clause 4.2.5.3 (passenger alarm) and in clause 4.2.5.4 (communication devices for passengers)			
	4.2.5.4.	**Communication devices for passengers**	See EN 16683 Railway Applications — Call for Aid and Communication device — Requirements			

Annex ZA/ZZ better matching the TSI clauses to the Standard Clauses

Annex ZA

(informative)

Relationship between this European Standard and the essential requirements of EU Directive 2016/797/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/483 to provide one voluntary means of conforming to the essential requirements of the Directive 2016/797/EC on the interoperability of the rail system (recast) and with the associated TSIs.

Once this standard is cited in the Official Journal of the European Union under that Directive 2016/797/EC, compliance with the normative clauses of this standard given in Table ZA.1 for the TSI LOC&PAS confers within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations and with the TSI requirements.

Table ZA.1 — Correspondence between Directive 2016/797/EC, the Commission regulation n°1302/2014 of 18 November 2014 concerning the technical specification for interoperability relating to the 'rolling stock - locomotives and passenger rolling stock' of the rail system in the European Union (published in the Official Journal L 356, 12.12.2014, p.228) and this European Standard

Essential Requirements of Directive 2016/797/EC	Chapter/§/annexes of the TSI	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex III, Essential requirements 1 General requirements 1.3 Safety Clauses 1.1.1 1.5 Technical compatibility 2 Requirements specific to each subsystem 2.4 Rolling stock 2.4.1 Safety §5, §8, §10 2.4.2 Reliability and availability 2.4.3 Technical compatibility §3	§4.2.5.3.1 General §4.2.5.3.2 Requirements for information interfaces §4.2.5.3.3 Requirements for activation of the brake by the passenger alarm §4.2.5.3.4 Criteria for a train departing from a platform §4.2.5.3.5 Safety requirements §4.2.5.3.6 Degraded mode	1, 6.1, 6.2, 6.5, 6.6, 6.7, 6.8, 7, 9, 10.1, 10.2, Annex A, Annex B 6.2, 6.3, 6.4, 6.10, 6.12, 7.1, 10.1, Annex A 6.7, 6.8, 7.2, Annex B 6.5 9 8.1, 8.2	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Annex ZA/ZZ as per layout agreed by both BTs (Aug 2020)

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2016/797/EU aimed to be covered

This European Standard has been prepared under a Commission's standardisation request "M/483 Mandate to CEN and CENELEC for Standardisation in the field of interoperability of the rail system" to provide one voluntary means of conforming to (parts of) Essential Requirements of Directive 2016/797/EU of the European Parliament and of the Council of 11 May 2016 on interoperability of the rail system (recast) as specified in the relevant technical specifications for interoperability (TSI).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 for the TSI LOC&PAS confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive as specified in the technical specifications for interoperability (TSI), and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard, Commission Regulation (EU) N° 1302/2014 concerning the technical specification for interoperability relating to the 'rolling stock — locomotives and passenger rolling stock' subsystem of the rail system in the European Union* and Directive (EU) 2016/797

NOTE: The Technical Specification for Interoperability (TSI) may refer to other clauses of this standard making the application of those clauses mandatory. Possible references to such clauses are found in the Appendix J to the TSI.

Essential Requirements of Directive (EU) 2016/797	Clauses of the Annex to the Technical Specification for Interoperability (TSI)	Clause/ subclauses of this European Standard	Comments
Section 3 of the Annex to the TSI indicates the correspondence between the TSI clauses and the Essential Requirements of Directive (EU) 2016/797	§4.2.5.3.1 General	1, 6.1 6.2, 6.5, 6.6, 6.7, 6.8, 7, 9, 10.1, 10.2, Annex A, Annex B	
	§4.2.5.3.2 Requirements for information interfaces	6.2, 6.3, 6.4, 6.10, 6.12, 7.1, 10.1, Annex A	
	§4.2.5.3.3 Requirements for activation of the brake by the passenger alarm	6.7, 6.8, 7.2, Annex B	
	§4.2.5.3.4 Criteria for a train departing from a platform	6.5	
	§4.2.5.3.5 Safety requirements	9	
	§4.2.5.3.6 Degraded mode	8.1, 8.2	

*** As amended by Commission Regulation (EU) No 1236/2013, Commission Regulation (EU) 2015/924, Commission Implementing Regulation (EU) 2019/776 and Commission Implementing Regulation (EU) 2020/387**

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the products falling within the scope of this standard.