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guide for the application of the Uniform Technical Prescription concerning the subsystem: "Rolling stock – NOISE" (UTP NOI)

*This document is the guide for the application of the UTP NOI, therefore it does not contain any legal requirements. The content of this document is solely for information purposes. For the applicable requirements, see UTP NOI.*

## 0. DOCUMENT INFORMATION

The basis of this document is the ERA guide for the application of the NOI TSI, with reference ERA/GUI/NOI TSI/2019, version 1.0 dated 16 May 2019.

The blue rectangles in this document, such as the one this text is written in, contain information relevant to the application of the OTIF UTP relating to the subsystem rolling stock - noise, which is in force as of 1.4.2021 and which is further referred to as UTP NOI. Because the NOI TSI and UTP NOI are equivalent in the meaning of Article 13 § 4 letter b of the APTU UR, much of the information in the TSI application guide is also relevant to application of the UTP.

All original OTIF texts in this application guide are in blue rectangles. All other texts are unaltered texts copied from the ERA application guide.

As a general principle, where the guide refers to TSI, this can also be taken to cover the UTP. Where the guide uses the term Member State, this corresponds to the term Contracting State in the meaning of COTIF. Where this is not the case, this is pointed out specifically. The term *Unique section ID*, as used in the template table annexed to Appendix D to NOI TSI, is referred to as *Line identification* in the UTP NOI and in this guide.

The OTIF reference

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## 1. SCOPE OF THIS GUIDE

This document provides information on the application of Commission Regulation (EU) No 1304/2014 of 26 November 2014 on the technical specification for interoperability relating to the subsystem ‘rolling stock — noise’ amending Decision 2008/232/EC and repealing Decision 2011/229/EU as amended by Commission Implementing Regulation (EU) 2019/774 (hereinafter referred to as the ‘NOI TSI’).

The guide should be read and used only in conjunction with the NOI TSI. It is intended to facilitate its application, but does not replace it.

The information in this guide relates equally to the application of the UTP NOI. The NOI TSI application guide is published on the website of the European Union Agency for Railways:

[https://www.era.europa.eu/sites/default/files/activities/docs/application\\_guide\\_noi\\_tsi\\_en.pdf](https://www.era.europa.eu/sites/default/files/activities/docs/application_guide_noi_tsi_en.pdf)

Health and safety conditions have not been taken over from the NOI TSI, as the APTU and ATMF Uniform Rules do not cover health and safety aspects. However, Contracting States may have similar legislation in place, either through national or regional (e.g. EU) law, to ensure compliance with lower exposure action values for drivers' cabins.

### 1.1 Content of the guide

In the following chapters of this document, extracts of the text of the NOI TSI are provided, in shaded text boxes, which are followed by a text that gives guidance.

Guidance is not provided for clauses where the NOI TSI requires no further explanation.

Guidance is of voluntary application. It does not mandate any requirement in addition to those set out in the NOI TSI.

Guidance is given by means of further explanatory text and, where relevant, by reference to standards that demonstrate compliance with the NOI TSI. Relevant standards are listed in appendix 1 of this document, and their purpose is indicated in the column ‘Purpose’ of the table.

### 1.2 Document reference/s

*Table 1. Document reference/s*

DOCUMENT REFERENCE	TITLE	LAST ISSUE
(EU) 2016/796	Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways and repealing Regulation (EC) No 881/2004	L 138, 26.5.2016, p. 1-43
(EU) 2016/797	Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union	L 138, 26.5.2016, p. 44-101
(EU) 2016/798	Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety	L 138, 26.5.2016, p. 102-149
2012/34/EU	Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area	L 343, 14.12.2012, p.32-77
2010/713/EU	Commission Decision 2010/713/EU of 9 November 2010 on modules for the procedures for assessment of conformity, suitability for use and EC verification to be used in the technical specifications for interoperability adopted under Directive 2008/57/EC of the European Parliament and of the Council	L 319, 4.12.2010, p. 1-52

DOCUMENT REFERENCE	TITLE	LAST ISSUE
768/2008/EC	Decision 768/2008/EC of the European Parliament and of the Council of 9 July 2008 on a common framework for the marketing of products, and repealing Council Decision 93/465/EEC	L 218, 13.8.2008, p. 82-128
(EC) 765/2008	Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93	L 218, 13.8.2008, p. 30-47
(EU) No 1304/2014	Commission Regulation (EU) No 1304/2014 of 26 November 2014 on the technical specification for interoperability relating to the subsystem 'rolling stock — noise' amending Decision 2008/232/EC and repealing Decision 2011/229/EU	L 356, 12.12.2014, p. 421-437
(EU) 2019/774	Commission Implementing Regulation (EU) 2019/774 of 16 May 2019 amending Regulation (EU) No 1304/2014 as regards application of the technical specification for interoperability relating to the subsystem 'rolling stock — noise' to the existing freight wagons	L 139 I, 27.5.2019, p. 89-102
2011/229/EU	Commission Decision of 4 April 2011 concerning the technical specifications of interoperability relating to the subsystem 'rolling stock – noise' of the trans-European conventional rail system	L 99, 13.4.2011, p. 1-39
2006/66/EC	Commission Decision of 23 December 2005 concerning the technical specification for interoperability relating to the subsystem 'rolling stock — noise' of the trans-European conventional rail system	L 37, 8.2.2006, p. 1-49
2002/49/EC	Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise	L 189, 18.7.2002, p. 12-25
2003/10/EC	Directive 2003/10/EC of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) (Seventeenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)	L 42, 15.2.2003, p. 38-44

### 1.3 Definitions and abbreviations

*Table 2: Definitions*

TERM	DEFINITION/ SOURCE
Acts issued by the Agency	Are those listed in Article 4 of Regulation (EU) 2016/796 of the European Parliament and of the Council (Agency Regulation)
Basic parameter	Any regulatory, technical or operational condition which is critical to interoperability and is specified in the relevant TSIs (Article 2(12) of Directive (EU) 2016/797)
Conformity assessment	Process demonstrating whether specified requirements relating to a product, process, service, subsystem, person or body have been fulfilled (Article 2(41) of Directive (EU) 2016/797)
Conformity assessment body	Body that has been notified or designated to be responsible for conformity assessment activities, including calibration, testing, certification and inspection; a conformity assessment body is classified as a 'notified body' following notification by a Member State; a conformity assessment body is classified as a 'designated body' following designation by a Member State (Article 2(42) of Directive (EU) 2016/797)
Contracting entity	Public or private entity which orders the design and/or construction or the renewal or upgrading of a subsystem (Article 2(20) of Directive (EU) 2016/797)

TERM	DEFINITION/ SOURCE
European Register of Authorised Types of Vehicles (ERATV)	Register of types of vehicles authorised by the Member States for placing in service. It contains the technical characteristics of vehicles' types as defined in the relevant TSIs, the manufacturer's name, dates, references and Member States granting authorisations, restrictions and withdrawals (Article 48 of Directive (EU) 2016/797)
Existing rail system	Infrastructure composed of lines and fixed installations of the existing, rail network as well as the vehicles of all categories and origin travelling on that infrastructure (Article 2(16) of Directive (EU) 2016/797)
Harmonised standard	European standard adopted on the basis of a request made by the Commission for the application of Union harmonising legislation (Article 2(1)(c) of Regulation (EU) No 1025/2012)
Infrastructure Manager	Anybody 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 framework of its general policy on development and financing of infrastructure (Article 3(2) of Directive 2012/34/EU)
Non-application of a TSI	Certain circumstance, by which projects can be exempted from having to comply with all or part of a TSI or TSIs (Article 7 of Directive (EU) 2016/797)
Open point	Certain technical aspect corresponding to the essential requirements, which cannot be explicitly covered in a TSI (Article 4(6) of Directive (EU) 2016/797)
Placing in service	All the operations by which a subsystem is put into its operational service (Article 2(19) of Directive (EU) 2016/797)
Placing on the market	First making available on the Union's market of an interoperability constituent, subsystem or vehicle ready to function in its design operating state (Article 2(35) of Directive (EU) 2016/797)
Project at an advanced stage of development	Any project the planning or construction stage of which has reached a point where a change in the technical specifications may compromise the viability of the project as planned (Article 2(23) of Directive (EU) 2016/797)
Railway Undertaking	Railway undertaking as defined in point (1) of Article 3 of Directive 2012/34/EU, and any other public or private undertaking, the activity of which is to provide transport of goods and/or passengers by rail on the basis that the undertaking is to ensure traction; this also includes undertakings which provide traction only (Article 2(45) of Directive (EU) 2016/797)
Register of infrastructure (RINF)	Register of infrastructure indicates the main features of fixed installations, covered by the subsystems: infrastructure, energy and parts of control-command and signalling. It publishes performance and technical characteristics mainly related to interfaces with rolling stock and operation (Article 49 of Directive (EU) 2016/797)
Renewal	Any major substitution work on a subsystem or part of it, which does not change the overall performance of the subsystem (Article 2(15) of Directive (EU) 2016/797)
Specific case	Any part of the rail system which needs special provisions in the TSIs, either permanent, because of geographical, topographical or urban environment constraints or those affecting compatibility with the existing system, in particular railway lines and networks isolated from the rest of the Union, the loading gauge, the track gauge or space between the tracks and vehicles strictly intended for local, regional or historical use, as well as vehicles originating from or destined for third countries (Article 2(13) of Directive (EU) 2016/797)
Substitution in the framework of maintenance	Any replacement of components by parts of identical function and performance in the framework of preventive or corrective maintenance (Article 2(17) of Directive (EU) 2016/797)
Upgrading	Any major modification work on a subsystem or part of it which results in a change in the technical file accompanying the 'EC' declaration of verification, if that technical file exists, and which improves the overall performance of the subsystem (Article 2(14) of Directive (EU) 2016/797)

Table 3: Abbreviations

<b>ABBREVIATION</b>	<b>FULL TEXT</b>
AC	Alternating Current
CCS	Command Control and Signalling
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
CEPT	European Conference of Postal and Telecommunications Administrations (Conférence européenne des administrations des postes et des télécommunications)
CER	The Community of European Railway and infrastructure companies
COST	(European Cooperation in the field of Scientific and Technical Research) (Coopération européenne dans le domaine de la recherche Scientifique et Technique)
CR	Conventional Rail
DC	Direct Current
DeBo	Designated Body
DMI	Driver-Machine Interface
EC	European Commission
EEA	European Economic Area
EEC	European Economic Community
EEIG	European Economic Interest Group
EIM	European Rail Infrastructure Managers
EIRENE	European Integrated Radio Enhanced Network
EMC	Electro Magnetic Compatibility
EN	European standard
ERA	European Union Agency for Railways also called “the Agency”
ERADIS	Interoperability and Safety database managed by the European Union Agency for railways
ERATV	European Register of Authorised Types of Vehicles
ERTMS	European Rail Traffic Management System
ESO	European Standardisation Organisation
ETCS	European Train Control System
ETS	European Telecommunications Standard
ETSI	European Telecommunications Standards Institute
EU	European Union
FFFIS	form fit functional interface specification
FFFS	form fit functional specification
FIS	functional interface specification
GSM-R	Global System for Mobile communications - Railway
HD	Harmonisation Document
IC	Interoperability Constituent
IEC	International Electrotechnical Commission

IM	Infrastructure Manager
INF	Infrastructure
ISO	International Organisation for Standardisation
ISV	Intermediate Statement Verification
JPC	Joint Programming Committee of CEN/CENELEC/ETSI
JPCR	Joint Programming Committee Rail
JWG	Joint Working Group
MS	EU or EEA Member State
NoBo	Notified Body
NB-Rail	Coordination group of notified bodies for railway products and systems
NNTR	Notified National Technical Rule
NSA	National Safety Authority
NSR	National Safety Rule
NTR	National Technical Rule
OJ	Official Journal of the European Union
PRM	Person with Disabilities or Person with Reduced Mobility
QMS	Quality Management System
RAMS	Reliability, Availability, Maintainability and Safety
RFU	Recommendation for Use
RINF	Register of Infrastructure
RISC	Railway Interoperability and Safety Committee
RR	Revision Request
RRA	Revision Request Author
RS	Rolling Stock
RU	Railway Undertaking
SC	Standard Committee
SRT	Safety in Railway Tunnels
STM	Specific Transmission Module
TC	Technical Committee
TR	Technical Report
TS	Technical Specification
TSI	Technical Specification for Interoperability
UIC	International Union of Railways (Union Internationale des Chemins de Fer)
UIP	International Union of Private Wagons Owners (Union Internationale d'associations de Propriétaires de wagons de particuliers)
UIRR	International Union of Combined Road–Rail Transport Companies (Union Internationale des opérateurs de transport combiné Rail-Route)
UITP	International Association of Public Transport (Union Internationale des Transports Publics)
UNIFE	Union of the European Railway Industries (Union des Industries Ferroviaires Européennes)



UNISIG	Union Industry of Signalling (working party within UNIFE): steering committee involved in the development and implementation of ERTMS
WG	Working Group
WP	Working Party

The definitions and abbreviations, within the meaning of COTIF, are provided in Article 2 of the APTU UR (Appendix G to COTIF) and Article 2 of the ATMF UR (Appendix G to COTIF), as well as in other UTPs referred to throughout this application guide.

## 2. GUIDANCE ON THE APPLICATION OF THE NOI TSI

### UTP Section 0: Equivalence and transitional provisions

The UTP NOI is equivalent to the EU NOI TSI in the meaning of Article 13 § 4 letter b of the APTU UR (version of the NOI TSI indicated in section 0 of the UTP). Equivalence means that a vehicle complying with the technical requirements of the UTP should be considered as also complying with the technical requirements of the TSI and vice versa.

Article 6a of the ATMF UR states that *“If a requirement or a provision has been declared as equivalent in accordance with Article 13 of the APTU Uniform Rules related assessments and tests which have already been carried out and documented shall not be repeated.”*

This means that the evidence (such as drawings, calculations, simulations, test reports, etc.) and the assessment of conformity on the basis of the evidence, should not generally be called into question. Contracting States should not therefore require reassessment of conformity of parameters that have been assessed according to either the TSI or the UTP for the purpose of accepting a vehicle for international traffic on their territory. These principles do not affect the rights and obligations of Contracting States to perform supervision and to investigate cases where the credibility of evidence or assessment results are called into question.

### 2.1 Introduction

#### *Point 1.1.1: Scope related to rolling stock*

*‘This TSI applies to all rolling stock within the scope of Regulation (EU) No 1302/2014 (LOC&PAS TSI) and Regulation (EU) No 321/2013 (WAG TSI);’*

The OTIF rules equivalent to the LOC&PAS TSI and WAG TSI are the UTP LOC&PAS and the UTP WAG.

The NOI TSI does not apply to wagons designed to operate only on the 1 520 mm network and the application of the NOI TSI for mobile railway infrastructure construction and maintenance equipment as defined in chapter 2 bullet (c) of the NOI TSI is voluntary.

#### *Section 1.2 – Geographical scope*

*‘The geographical scope of this TSI corresponds to the scopes defined in Section 1.2 of Regulation (EU) No 1302/2014 and in Section 1.2 of Regulation (EU) No 321/2013, each for their rolling stock (RST) concerned.’*

The geographical scope of the NOI TSI includes the entire European Union's rail system as set out in Annex I of Directive (EU) 2016/797. The reference to the LOC&PAS TSI and the WAG TSI makes sure that the same restrictions affecting the rolling stock are taken over by the NOI TSI.

COTIF applies to international rail traffic only. Therefore, only rolling stock used in international traffic on the territory of states that apply the ATMF UR falls within the scope of the UTP. COTIF does not therefore stipulate binding requirements for the purpose of authorising vehicles for domestic traffic or for other traffic that does not fall within the scope of COTIF or the UTP.

Rolling stock that existed before the first UTP NOI applied does not, in principle, have to comply with the noise emission requirements. However, the use of such rolling stock may be restricted on certain lines designated as "quieter routes" according to point 7.2.2 of the UTP.

## 2.2 Essential requirements

*'All basic parameters set out in this TSI shall be linked to at least one of the essential requirements as set out in Annex III of Directive (EU) 2016/797. Table 1 indicates the allocation.'*

The basic parameters harmonised in TSIs must be critical to interoperability and linked with at least one of the essential requirements set out in Annex III of Directive (EU) 2016/797. The basic parameters of the NOI TSI are all linked with the essential requirement 1.4.4.

Additional rolling stock measures are not needed in order to comply with neither Directive 2002/49/EC nor Directive 2003/10/EC.

The COTIF provisions equivalent to Annex III of Directive (EU) 2016/797 are set out in the UTP GEN-A.

## 2.3 Characterisation of the subsystem

### Point 4.2.3 – Limits for pass-by noise

*'Measurements at speeds higher than or equal to 250 km/h shall also be made at the 'additional measurement position' with a height of 3,5 m above top of rail in accordance with Chapter 6 of EN ISO 3095:2013 and assessed against the applicable limit values of Table 4.'*

The distance from the centre of the track of the 'additional measurement position' is 7,5 m.

Table 4: Limit values for pass-by noise

Category of the rolling stock subsystem	$L_{pAeq, Tp}$ (80 km/h) [dB]	$L_{pAeq, Tp}$ (250 km/h) [dB]
Wagons (normalised to $APL=0,225$ )*	83	n.a.

The pass-by noise limit values set out in the NOI TSI assume certain conditions to guarantee that the noise emitted by the rolling stock under assessment is higher than the noise emitted by the track (e.g. roughness of the wheel, roughness of the rail, vertical and lateral track decay rates of the track). Considering the track, these conditions are not always found in daily operation. Therefore, it may be that e.g. wagons compliant with the pass-by noise requirements of the TSI (new or retrofitted with composite brake blocks) slightly exceed the pass-by noise limit values set out in the TSI in operation.

### Section 4.4: Operating rules

*‘Requirements concerning the operating rules for the subsystem rolling stock are set out in section 4.4 of the Annex of Regulation (EU) No 1302/2014 and in section 4.4 of the Annex of Regulation (EU) No 321/2013.’*

The applicant has the obligation to add in the technical file operating rules and requirements which ensure that during operation the noise emission remains within the permitted range of limit values of the NOI TSI under the conditions in which these limit values were assessed.

Operating rules are generally outside the scope of COTIF. However, some high level responsibilities relevant to international traffic have been included in COTIF. Examples are Article 6 § 2 and Article 15 of the ATMF UR, which define responsibilities for railway undertakings for the operation of trains. In addition, the UTP concerning train composition and route compatibility checks (UTP TCRC) applies, which, from 1.1.2022, superseded the former Appendix K to the UTP LOC&PAS and Appendix I to the UTP WAG. The UTP TCRS also requires that compatibility with quieter routes be checked.

“Quieter routes” are lines where rail freight noise should be reduced and where specific rules apply to the operation of wagons on these routes. According to Appendix D of this UTP NOI, the Contracting States should provide information in advance on whether and where they have designated “quieter routes” on their territory. UTP NOI further prescribes that if quieter routes exist, *“the infrastructure manager shall make available to any rail transport undertaking operating on its network information concerning the location of quieter routes”*.

#### **Section 4.5: Maintenance rules**

*‘Requirements concerning the maintenance rules for the subsystem rolling stock are set out in section 4.5 of the Annex of Regulation (EU) No 1302/2014 and in section 4.5 of the Annex of Regulation (EU) No 321/2013.’*

The OTIF regulations equivalent to LOC&PAS TSI and WAG TSI are the UTP LOC&PAS and UTP WAG, where the same clauses apply.

The applicant has the obligation to add in the technical file maintenance rules and requirements which ensure that the noise emission remains within the permitted range of limit values of the NOI TSI throughout the life cycle of the rolling stock under the conditions in which these limit values were assessed.

It is not required to repeat the assessment procedure as set out in chapter 6 of this TSI as part of the maintenance rules.

## **2.4 Conformity assessment and EC verification**

The COTIF and EU provisions concerning conformity assessment have been harmonised. The objective is to ensure that assessments according to the TSI or the UTP are equally robust and that compliance with the technical requirements of one means technical compliance with both.

### **Point 6.2.2.1: Stationary noise**

*‘For the assessment of the main air compressor noise at the nearest measuring position  $i$ , the  $L_{pAeq,T}$  indicator shall be used with  $T$  representative of one operating cycle as defined in Section 5.7 of EN ISO 3095:2013. Only the train systems that are required for the air compressor to run under*

*normal operating conditions shall be used for this. The train systems which are not needed for the operation of the compressor may be switched off to prevent contribution to the noise measurement. The demonstration of conformity with the limit values shall be carried out under the conditions solely necessary for operation of the main air compressor at the lowest rpm.'*

During this assessment process it is not mandatory to switch on any system powered by the compressor (e.g. toilet, secondary suspension, pneumatic door step, intercirculation pneumatic doors).

The cycle as defined in the last paragraph of section 5.7 of the EN ISO 3095:2013 does not include the silent period between the shut-down of the compressor and the successive start-up.

When measuring the noise emitted by the main air compressor and the exhaust valve of the air dryer the 'nearest position' of the mesh set out in clause 5.5.1.1 of EN ISO 3095:2013 is assumed to be the noisiest one. In case of doubt it may be necessary to measure more than one position in the mesh e.g. on both sides of the rolling stock.

#### **Point 6.2.2.2: Starting noise**

*'In addition the noise shall be measured at a distance of 7,5 m from the centre of the track and a height of 1,2 m above top of rail. The 'averaged level method' and the 'maximum level method' in accordance with Section 7.6 and 7.5 respectively of EN ISO 3095:2013 shall apply and the train shall accelerate from standstill up to 40 km/h and then maintain the speed. The measured values are not assessed against any limit value and shall be recorded in the technical file and communicated to the Agency.'*

The positions alongside the vehicle should be those set out in point 7.5 of EN ISO 3095 for both the 'averaged level method' and the 'maximum level method'.

The non-EU Contracting States have to communicate these values to the OTIF Secretary General, who informs ERA, in accordance with the Administrative Arrangements between the OTIF Secretariat, DG MOVE and ERA.

#### **Point 6.2.2.3.2: Procedure**

*'The tests shall be carried out in accordance with the provision in Sections 6.1, 6.3, 6.4, 6.5, 6.6 and 6.7 (without 6.7.2) of EN ISO 3095:2013.'*

If the unit under assessment is a locomotive, it is allowed to carry out the measurements at all test speeds with a tractive effort equal to at least two thirds of the maximum available value at maximum speed. This value can be deduced from calculated tractive effort versus speed curves.

#### **Point 6.2.3: Simplified evaluation**

*'Instead of the test procedures as set out in point 6.2.2, it is permitted to substitute some or all of the tests by a simplified evaluation. The simplified evaluation consists of acoustically comparing the unit under assessment to an existing type (further referred to as the reference type) with documented noise characteristics.'*

Before the simplified evaluation method can be applied, it should be established that the unit under assessment and the reference type are comparable in terms of design, operation and acoustic behaviour.

'Documented noise characteristics' means that the total sound emission as well as the acoustic behaviour of the single components that are contributing to it should be known and listed.

It should be explicitly declared whether a modification of one component has an impact on other noise sources.

*'The simplified evaluation may be used for each of the applicable basic parameters 'stationary noise', 'starting noise', 'pass-by noise' and 'driver's cab interior noise' autonomously and shall consist of providing evidence that the effects of the differences of the unit under assessment do not result in exceeding the limit values set out in Section 4.2.*

*For the units under simplified evaluation, the proof of conformity shall include a detailed description of the noise relevant changes compared to the reference type. From this description, a simplified evaluation shall be performed. The estimated noise values shall include the uncertainties of the applied evaluation method. The simplified evaluation can either be a calculation and/or simplified measurement.'*

Evidence should be robust and verifiable. The analysis should be repeatable with equal results. Calculations should be described in detail to enable the notified body to assess the quality of the calculation process. Assumptions should be made conservatively.

Additional guidance on the application of simplified evaluation methods is available in the deliverable 1.1 of the EU project ACOUTRAIN (contract n° FP7 – 284877) 'Clarification of the simplified method in the partial revision of the TSI' (ref. ACT-WP1-D-SNC-004-04 dated 10/10/2012). This document covers the following aspects:

- Certified tools/calculation of uncertainties
- Validation strategy
- Definition of representative operating conditions (ROC)
- Additional guidance to apply modifications related to:
  - Number of axles
  - Unit maximum speed
  - Type of the wheels
  - Braking system (that does not influence anything else, but the acoustic roughness of the wheel)
  - Composition of the unit (stationary noise case)
  - Composition of the unit (pass-by noise case)
  - Selection of the noisiest configuration of different single vehicles
  - Equipment configuration on board the vehicle (stationary/pass-by/starting noise cases)

*'In case of a wagon whose parameters remain, compared to the reference type, within the permitted range of Table 7 it is deemed without further verification that the unit complies with the limit values on pass-by noise as set out in point 4.2.3.'*

If e.g. a wagon under assessment is equipped with brake blocks listed in appendix G of the WAG TSI, it is assumed without further verification that such blocks do not result in higher pass-by noise emissions.

## 2.5 Implementation

***Point 7.2.2: Additional provisions for the application of this TSI to existing wagons***

*'The restriction of the operation set out in Article 5a of this Regulation shall not apply to wagons mostly operated on lines with a gradient of more than 40 ‰, wagons with a maximum operating speed higher than 120 km/h, wagons with a maximum axle load higher than 22,5 t, wagons exclusively operated for infrastructure works and wagons used in rescue trains.'*

The text quoted from the NOI TSI is not identical to the text in the UTP; the UTP reads:

*"Unless indicated otherwise in a particular implementing rule in section 7.4, from 8 December 2024, wagons within the scope of UTP WAG which are not covered by point 7.2.2.2 of this UTP shall not be operated on the quieter routes. However, this shall not apply to wagons mostly operated on lines with a gradient of more than 40 ‰, wagons with a maximum operating speed higher than 120 km/h, wagons with a maximum axle load higher than 22.5 t, wagons exclusively operated for infrastructure works and wagons used in rescue trains".*

Wagons exclusively operated for infrastructure works may refer to freight wagons or any hauled vehicle, part of an on-track machine or not, exclusively operated for infrastructure works.

#### **Point 7.2.2.1: Quieter brake blocks**

*'A quieter brake block is a brake block belonging to one of the following categories:  
— Brake block listed in Appendix G of Regulation (EU) No 321/2013;'*

Brake blocks listed in appendix G of the WAG TSI should be used taking into consideration the 'Usage guidelines for composite (LL) brake blocks' (available on [https://uic.org/IMG/pdf/rili\\_ll\\_10\\_edition2017\\_en.pdf](https://uic.org/IMG/pdf/rili_ll_10_edition2017_en.pdf)) and 'Design rules for composite brake blocks (K)' (available on [https://uic.org/IMG/pdf/rili\\_k\\_9\\_ausgabe\\_en.pdf](https://uic.org/IMG/pdf/rili_k_9_ausgabe_en.pdf)).

*"Usage guidelines for composite (LL) brake blocks"* and  
*"Design rules for composite brake blocks (K)"* are available from UIC (<https://uic.org>).

## **2.6 Appendices of the NOI TSI**

### **Appendix C: Assessment of the rolling stock subsystem**

The table in Appendix C 'Assessment of the rolling stock subsystem' is to be understood as follows: During the application of the assessment procedures of point 6.2.2 only the type test shall be carried out. If the simplified evaluation in point 6.2.3 is applied the design review has to be done based on a type test of the reference unit.

### **Appendix D: Quieter routes**

*'In accordance with Article 5c (1) of this Regulation the Member States shall provide the European Union Agency for Railways ('the Agency') with a list of quieter routes in a format allowing further processing by the users with IT-tools. The list shall contain at least the following information:*

- Start and end points of the quieter routes and their corresponding sections, using geographical code location as defined in the register set out in Commission Implementing*

*Decision 2014/880/EU<sup>1</sup> (RINF). If one of these points is at the border of the Member State, it shall be reflected.*

- *Identification of the sections making up the quieter route'*

*The list shall be provided using the template below:*

Quieter route	Sections in the route	Unique section ID	Quieter route starts/finishes at the border of the Member State
Point A - Point E	Point A - Point B	201	Yes POINT E (Country Y)
	Point B - Point C	202	
	Point C - Point D	203	
	Point D - Point E	204	
Point F - Point I	Point F - Point G	501	No
	Point G - Point H	502	
	Point H - Point I	503	

The text quoted from the NOI TSI is not identical to the text in the UTP; the UTP reads:

*“Contracting States may designate some or all lines open to international traffic as quieter routes in the meaning of this UTP in accordance with the rules applicable in the state concerned.*

*In case all lines open to international traffic are designated as quieter routes this shall be indicated as a particular implementing rule in chapter 7.4 of this UTP, which shall indicate whether the rule is permanent or temporary and from which date it will apply. For any temporary rule it shall be indicated when it will cease to apply.*

*If only a part of the network open to international traffic is designated as quieter routes, the Contracting State shall ensure that a precise list of quieter routes open for international traffic is publicly available.*

*The list shall contain at least the start and end points of the quieter routes and their corresponding sections. If one of these points is at the border, it shall be reflected.*

*The list shall be provided using the template below: [...]”.*

It is advised that Member States ask the infrastructure managers to make the first draft of the list and/or maps. The lines as drafted by the infrastructure manager should be taken into account for preparing the lists and illustrative maps depicting the quieter routes by the Member States.

All freight trains passing a certain point on the considered route should be taken into account regardless of direction of travel. It is allowed to combine sections of different lines which are side by side for the application of the threshold of 12 freight trains during night time.

The information on the average number of freight trains during night could be provided too on a voluntary basis so that the template looks like this:

<sup>1</sup> Commission Implementing Decision 2014/880/EU of 26 November 2014 on the common specifications of the register of railway infrastructure and repealing Implementing Decision 2011/633/EU (OJ L 356 12.12.2014, p. 489).

Quieter route	Sections in the route	Unique section ID	Average number of freight trains during night	Quieter route starts/finishes at the border of the Member State
Point A — Point E	Point A — Point B	201	45	Yes POINT E (Country Y)
	Point B — Point C	202	45	
	Point C — Point D	203	20	
	Point D — Point E	204	19	
Point F — Point I	Point F — Point G	501	13	No
	Point G — Point H	502	40	
	Point H — Point I	503	15	

*'In addition, the Member States may provide maps illustrating the quieter routes on a voluntary basis.'*

If the Member States choose to additionally provide a map, then the following guidelines should be applied. The maps should:

- Clearly identify whether a section is quieter or not
- Be scalable so that after sufficiently zooming in a map remains legible and the individual sections distinguishable, by using a scalable format such as e.g. vector graphics
- Contain section IDs
- Contain names of the stations and/or operational points
- Be provided in a generic file format

The UTP NOI permits (non-EU) Contracting States to designate quieter routes on their networks, or not, depending on their national noise policy. These quieter routes may include all or some lines open to international traffic. It is also permitted to have no quieter routes at all.

The UTP requires Contracting States to notify the Secretary General of OTIF of the precise list of quieter routes open to international traffic. The notification is required even if the Contracting State has not designated quieter routes. Contracting States that do not notify quieter routes are presumed to continue to accept (noisy) wagons, which do not meet the modern noise emission requirements.

Following the Contracting State's notification, the Secretary General of OTIF is required to publish the lists of quieter routes and maps (if any) on OTIF's website.

### 3. APPLICABLE SPECIFICATIONS AND STANDARDS



**APPENDIX 1: VOLUNTARY STANDARDS**

<i>Reference in the NOI TSI</i>		<i>Voluntary Standard</i>	
<i>Element of the subsystem</i>	<i>Point</i>	<i>Standard reference</i>	<i>Purpose</i>
Stationary noise	4.2.1		
Starting noise	4.2.2		
Pass-by noise	4.2.3		
Driver's cab interior noise	4.2.4		