PROPOSED PROGRAMME FOR STANDARDISATION IN THE FIELD OF URBAN RAIL UNDER MANDATE M/486 PHASE A

(Additional information can be downloaded through the hyperlinks provided in this document. It requires an Internet connection)

This document takes into account the comments made by the CEN and CENELEC BT members on the file version dated 12 July 2012

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1 INTRODUCTION

This document is based on mandate M/486 with its scope and expectations for voluntary standardisation in the field of Urban Rail. It provides the Urban Rail needs which had to be identified according to the mandate during the programming "phase A". The document presents the final recommendations from the Urban Rail Survey Group (URSG) taking into account the decisions taken by the relevant Technical Committees of the European Standardisation Organisations (ESOs) and by the Joint Programming Committee for Rail (JPCR). The "Mandate M/486 for programming and standardisation in the field of Urban Rail" was addressed on 04/02/2011 to the European standardisation bodies concerned and approved by CEN/CENELEC and ETSI on 10/05/2011:

M486_Standardisation_Mandate_Urban_Rail

2 METHODOLOGY OF WORKS

2.1 Urban Rail Survey Group

As the first step of the phase A of the mandate, CEN-CENELEC and ETSI established in December 2010 the "Urban Rail Survey Group" (URSG) in cooperation with the Urban Rail Platform (URP) and the Joint Programming Committee for Railways (JPCR) gathering the rail representative associations and the ESOs. The URSG consisted of experts with experience in the field of Urban Rail and who were appointed among others by NSBs (National Standardisation Bodies, also called "National Committees"), UITP (the International Association of Public Transport) and UNIFE (the Association of the European Rail Industry). The convenor of the URSG chosen by the group was Yves Amsler from UITP. See the list of experts at: URSG_Experts_List_22_January_2012

2.2 Fundamental Requirements

A document called "Fundamental Requirements for Urban Rail Systems, Design, Construction, Manufacture, Operations & Maintenance" provided by the Urban Rail Platform was used as a basic reference for execution of this part of the mandate and in particular when identifying the Urban Rail needs. This document defines beside the fundamental requirements the different categories of Urban Rail systems and subsystems to be taken into account.

This document prepared by UITP and UNIFE through their joint Urban Rail Platform has been sent officially on the 7th of November 2011 with a cover letter by UITP and UNIFE to the European Commission (EC). The European Commission acknowledged receipt of this document on the 24th of November 2011.

Following an exchange with the two 'Railway Applications' TCs (CENELEC/TC 9X and CEN/TC 256), the two TCs shall propose to initiate the UAP[1] on the 'Urban rail Fundamental Requirements' document under mode 5 (Common EN under the 45xxxx series) CENELEC lead without supporting structure at this stage.

[1] UAP: Unique Approval Process (yes or no).

The letters and the document, in English, French and German, can be downloaded at:

URP_Letter_to_EC_Fundamental_Requirements_7_Nov_2011.pdf

URP_Fundamental_Requirements_EN.pdf

URP_Fundamental_Requirements_FR.pdf

URP_Fundamental_Requirements_DE.pdf

EC_reply_to_URP_Letter_Fundamental_Requirements.pdf

2.3 Organisation of URSG works into Task Forces

According to the structure of the "Fundamental Requirements" and of the Technical Committees (TCs) of CEN and CENELEC the work of URSG was structured into different task forces:

- System and Operations
- Guideway and Stations
- Rolling stock (mechanical)
- Rolling stock (electrical)
- Traction Power Supply
- Signalling, Train Control System, Operations Control System

The various Task Forces and/or the URSG met 11 times (24 days + home-work) in CEN-CENELEC office in Brussels: the kick-off meeting was held on 13-14 December 2010; meetings were organised in 2011 on 20-21 January, 17-18 February, 28-29 March, 25-26-27 May, 21-22 June, 29-30 August, 12-13 September, 18-19 and 27-28 October, 14-15 November, and in 2012 on 9 January.

2.4 Gap Analysis

As requested by the mandate, the first task of URSG has been to conduct a gap analysis of CEN, CENELEC and ETSI standards as well as ISO and IEC standards, existing or under development, including those currently assessed for revision. The applicability of each standard in the Urban Rail sector has been checked with regard to the defined Urban Rail categories:

- Tram and Light Rail,
- Metro,
- Other Urban Rail systems (see Appendix 2 for clarification).

The gap analysis has screened all available information and quoted each standard existing or under development with the following key regarding the scope:

- 0 applicable to heavy rail only (High Speed and Conventional Rail)
- 1 or 1G directly applicable to Urban Rail systems (1General is not limited to rail)
- 2 applicable with adaptations to all or some categories of Urban Rail systems
- 3 developed for Urban Rail systems only
- 4 not suitable or not important for Urban Rail systems

Furthermore, existing national legal technical rules applicable to the various categories of Urban Rail systems have been identified and listed as far as there was an input provided by the knowledge of participating members.

2.5 Urban Rail needs

In a second step each task force drafted "fiches of needs" for Urban Rail systems. Each fiche of Urban Rail needs is referenced either against a specific existing standard to be modified or to be extended or against a request for a new standard, in order to close identified gaps by taking into account the expected benefits for the Urban Rail sector as addressed by the mandate and the "Fundamental Requirements".

Additional references to existing rules and recommendations used in Member States have been provided, and priorities for standardisation have been defined.

Because the mandate asks for standards for voluntary use, the question was raised if it would be sufficient for the Urban Rail Sector to modify or to extend existing standards which are already standards with presumption of conformity in the field of interoperability or which might get this status later ("Harmonised standards"). An alternative approach that avoids this problem would be to develop standards specific to Urban Rail with a broader scope covering a group of addressed Urban Rail needs (example standard "Stations for Urban Rail", "Guideway Urban Rail"). Such an approach would fulfil in the best way the request for "*developing a coherent minimum set of standards for voluntary use in the field of Urban Rail"* given by the mandate.

Each fiche was reviewed by the relevant task force and subsequently by the plenary of Urban Rail Survey Group. Then, a consultation of the two 'Railway Applications' Technical Committees (CEN/TC 256 and CENELEC/TC 9X) took place in order particularly to assess the potential human resources available to carry on the work during the standardisation phase. Finally, the JPC Rail gave a final blessing from the Railway Industry strategic perspective and fine-tuned the information when missing.

2.6 Documentation of Results

The results of the work under mandate M/486 Phase A ("Programming") are the following:

- Urban Rail needs as identified by the URSG and assessed by CEN/TC 256 and CENELEC/TC 9X for adaptation of existing standards or for developing new standards in their standardisation work are listed in Table 1 of this report (clause 4.3).
- Appendix 1 provides the detailed content of the proposals ("Fiches of needs").
- Appendix 2 provides an explanation of the "category IV" systems, which are neither Tram nor Light Rail nor Metro.
- Appendix 3 provides for information a list of rail standards that are by judgement of URSG not applicable to Urban Rail systems or not important for Urban Rail.
- Appendix 4 provides for information a list of rail standards that are by judgement of URSG directly applicable to Urban Rail systems.
- Appendix 5 provides, for information only, a list (recognised to be incomplete) of national rules applicable to Urban Rail systems. The available information covers France, Germany, Italy (Rolling Stock only), the Netherlands and United Kingdom with their scope of application (Metro, Tram/Light Rail...). Such information was used where relevant in the various fiches of needs.
- Appendix 6 provides, also for information, the "Master" EXCEL file summarizing all the information gathered from the Urban Rail Platform and from the Urban Rail

Survey Group as an input to this report. It includes different sheets for CEN and CENELEC standards as well as for the national legal and technical rules applicable to the various categories of Urban Rail systems, which have been provided by URSG participating members.

3 STRATEGIC ASPECTS AND BENEFITS OF STANDARDISATION

The strategic aspects and benefits of standardisation are described extensively in the first clause of mandate M/486. However, while drafting standards it must be carefully observed that the technical requirements are adequate for the prevailing operating conditions based on the type of Urban Rail System and are proportionate with their aims. Any standardisation that increases costs endangers the economic and competitive strength in comparison to other modes of transport and will therefore also threaten the success that Urban Rail already has or is expected to achieve. Mandate M/486 offers thankfully the opportunity to address the lack of standards appropriate to Urban Rail applications.

Figure 1 below shows the field of Urban Rail flanked by the Interoperability domain on the right and the other modes of transport on the left. The "other modes of transport" – e.g. private car or buses - are strong competitors of Urban Rail with lower capital cost for implementation of their infrastructure and vehicles, lower costs for operations as well as for approval and acceptance.

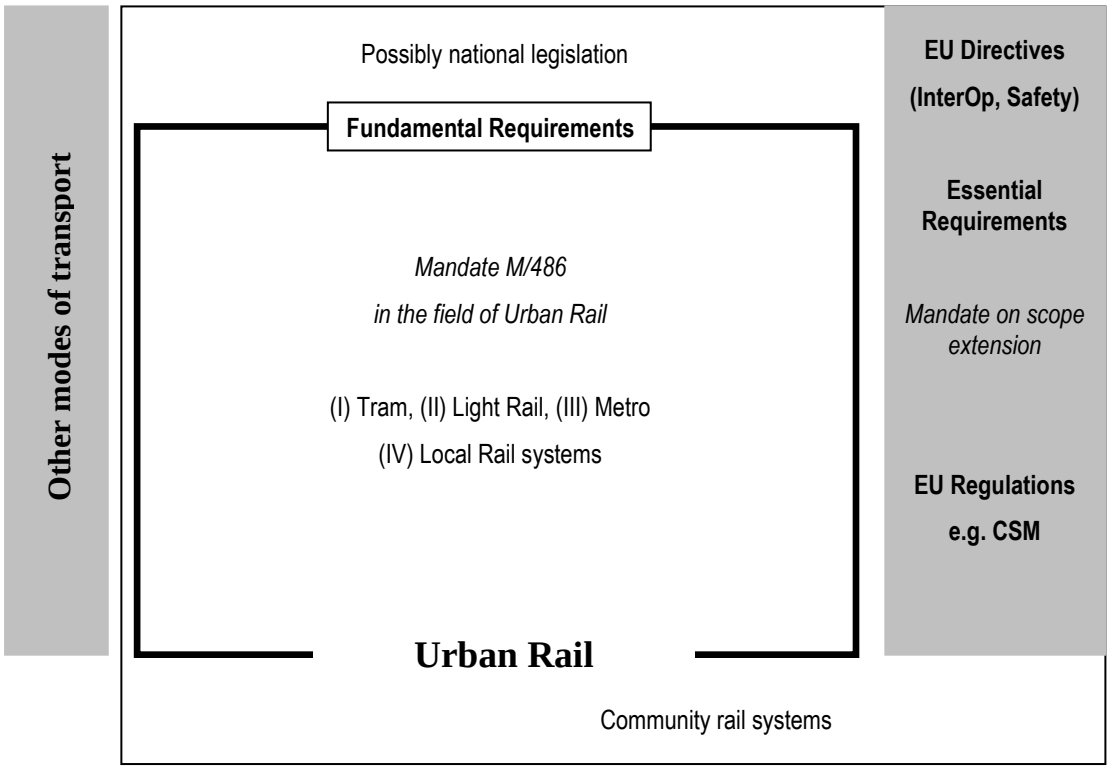

Figure 1: Field of Urban Rail covered by Mandate M/486

Standardisation in the field of Urban Rail intends to cover the whole bandwidth from tram systems up to highly integrated unattended metro systems as well as local railway systems with a range of operational characteristics. All these applications have their specific particular needs based on operations principles, which are mostly not present in the interoperability field.

The developed standards will become broadly accepted as "state of the art" for voluntary use. By encouraging the adoption of these standards in support of national legislation this should lead to expected benefits of harmonisation in terms of both cost and process.

As an external input, the Urban Rail Platform identified seven main priorities and cost drivers for the field of Urban Rail. It has to be noted that they are all based on the 'Urban Rail fundamental requirements'; and all for voluntary use; based on a system view:

1. ***Approval & Acceptance***
   - ***Cross acceptance***
   - ***Generic hazard analysis***
2. ***Clear/ clarification of scope and content of standards***
3. ***Clarification of operational conditions***
4. ***Clear functional requirement specifications***
5. ***Interfaces between subsystems (e.g. Platform-vehicle interface);***
   - ***Interdependencies based on preferred performance values***
   - ***Technical interface specifications***
6. ***Basic documentation for maintenance, operation and safety***
7. ***Calculation principles, methods and assumptions***

These identified "top cost drivers and priorities" should be considered by the National Standardisation Bodies and CEN-CENELEC-ETSI:

- ***in the proposed programme for standardisation in the field of Urban Rail as worked out by URSG and***
- ***in phase B of the mandate.***

4 NEEDS FOR STANDARDISATION IN THE FIELD OF URBAN RAIL

4.1 CEN-CENELEC

The identified Urban Rail needs for standardisation are described in so-called "fiches of needs". As a whole, **54** fiches are produced.

One of these fiches, defined at the "***System***" level, intends to provide generic hazard analysis on system level and assignment of possible safeguards and recommendations for the application of the life-cycle process for Urban Rail.

One fiche, proposed at the "***Sub-system***" ***Signalling*** level, intends, in order to support operations, to specify functional requirements for signalling and other safety systems, for Trams and Light Rail systems (non-metro) as well as for category IV of railway applications.

All other **52** fiches are proposed at the "***component***" level:

Rolling Stock (Mechanical) covers **37** fiches addressing components including, but not limited to, brakes, wheelsets & bogies, electrical lighting, test for acceptance of Rolling Stock characteristics, air conditioning, under-run protector and obstacle deflector for tram and Light Rail.... **Three** other fiches are shared with Guideway and Stations: on acoustics, on rules for calculating gauges and on similarities with bus.

Apart from the three fiches shared with Rolling Stock (Mechanical), the Task Force Guideway and Stations produced **11** fiches focusing on track standardisation (including one on acceptance of works for non-ballasted tracks), and the Traction Power Supply Task Force produced **one** fiche on electric traction overhead contact lines for trams, Light Rail and metros systems...

Table 1 presented below in clause 4.3 summarizes the proposed topics for standardisation agreed at URSG level. It includes:

- the Task Force(s) producing the proposal
- the proposed title of the future standard
- the proposed scope
- the systems covered (Metro/Tram/Light Rail/Other Urban Rail)
- the priority (High: start the standardisation works as soon as possible; Medium: start within the next two years; Low: start at the occasion of a revision of the standard)
- the reference of the "Fiche of needs". The column "reference of the Fiche of needs" includes:
    - the file name, mentioning the reference of the standard to be modified except when a "NEW" indicates that no existing standard addresses the topic;
    - the proposed CEN-CENELEC Working Group for developing the standard

Table 1 is also available as EXCEL file[2] through the following link:

Table_1_Standardisation_Needs_September_2012.xls

All "fiches of needs" are presented in Appendix 1: each specific "fiche" of Urban Rail need includes the following items (when relevant):

- reference to the requirements of the document "Fundamental Requirements"
- reference to the existing standards
- reference to the relevant national legal or technical rules across Europe
- the standardisation body concerned
- a proposed title for the standard
- a proposed scope for the standard
- justifications of the need

[2] Table 1 as an EXCEL file has a slightly different presentation from the Table presented in clause 4.3: the EXCEL file allows for various sorts, and a first column presents the "starting point" either as a "new fiche" or as a number of an existing standard (EN, prEN, ISO, IEC and so on). The order of presentation starts with the new fiches, followed by the other fiches ranked according to an increasing standard number. This ordering by increasing standard number is also used in the EXCEL files presented in Appendices. Note that only one EXCEL sheet is provided in Table 1 for both CEN and CENELEC, while there is one sheet for CEN and one for CENELEC in each of the EXCEL files presented in Appendices.

4.2 ETSI

The action for investigating the needs of technical harmonisation in the field of telecommunications started with the Urban Rail sector before the mandate M/486 was delivered, after the achievement of a European FP6 Research action (MODURBAN). It was then agreed that it would be justified that the sector develops an initiative targeting the allocation of a radio frequency spectrum in the 5.9 GHz for safety-related applications dedicated to Urban Rail. This initiative was not only supported by 19 members of UITP who signed a "Memorandum of Understanding", but also fully supported by UNIFE.

The objective of such an initiative was twofold:

- investigating the interest of allocating specific frequencies in the 5.9 GHz band, as prepared by a UITP working group, namely the "Spectrum User Group",
- supporting relevant requests to the European Commission.

This Working Group prepared a "System Reference Document" – SRDoc - in March 2012. This document was accepted by ETSI TC RT in April and transmitted as ERM(12)47_072 to ETSI TC ERM. Work is currently ongoing at this stage.

The standards in radio communications as derived from the "Urban Rail Fundamental Requirements" document require the definition of the frequency ranges allocated to this type of operation. Therefore, the efforts have currently been directed at addressing the available and potential additional frequency ranges, and in particular the 5.9 GHz band. If later approved by ETSI and the Electronic Communications Committee of the CEPT[3], working in radio spectrum and telecommunications numbering, the document may lead to new relevant European standards. As indicated, the scope of these standards is strongly related to the frequency availability and cannot be defined at this stage. This has to be addressed when this initial phase is completed.

[3] CEPT: European Conference of Postal and Telecommunications Administrations.

4.3 Table 1: LISTE OF NEEDS FOR STANDARDISATION IN THE FIELD OF URBAN RAIL ACCORDING TO MANDATE M/486 AS SUPPORTED BY THE JPC-Rail (Sector Forum Rail) IN JUNE 2012 AND ORGANISED PER TASK FORCE & PRIORITY

TF: Task Force **SYS**: Systems & Operations **SIG**: Signalling **RSMech**: Rolling Stock Mechanical **G&S**: Guideway & Stations **TPS**: Traction Power supply		**Systems covered** **M**: Metro **T**: Tram **LR**: Light Rail **O**: Other Urban Rail		**Priority** **H**: High, start as soon as possible **M**: Medium, start within the next 2 years **L**: Low, start at the occasion of the review Note: • **H/M/L:** in bold, priority of the Urban Rail Survey Group • *H/M/L* : in italic the view of the responsible TC (Date between bracket = potential date of the initiation of the relevant TC WG work)	
TF	**Proposed title**	**Proposed scope**	**Systems covered**	**Priority H/M/L** *H/M/L*	**Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)**
SYS	**Safety Requirements for Urban Rail**	Generic hazard analysis on system level and assignment of possible safeguards and recommendations for the application of the life-cycle process according to EN 50126 for Urban Rail	**M/T/LR/O**	**H** *M*	**NEW:** URSG_SystemSafety_SYS_111117_V05.doc **for Joint Working Group Urban Rail Systems** *Jan 2015: need to clarify the scope and take into account MODSafe deliverables.* *Note: CLC/TC9X decision D46/04: With respect to the urban rail fiche related to system safety, TC9X decides to postpone its decision until the work carried out by WG 14 on EN 50126 series of standards is achieved.*
SIG	**Signalling and other safety systems for trams, light rail and other non-metro Urban Rail systems**	Specify functional requirements for signalling and other safety systems for Trams and Light Rail systems as well as category IV of railway applications to support train operations	**T/LR/O**	**H** *M*	**NEW:** URSG_Signalling (non-metro)_TF_SIG_ 111117_V05.doc **for TC9X SC A** *(Jan 2015).* *Note CLC/TC 9X decision: "CLC/TC9X decision D46/03: With respect to the urban rail fiche related to signalling (non metro), TC9X decides to circulate a questionnaire to seek approval from national committees either not to carry out any work, to start work now or to set up a survey group to refine the scope of the future standard."*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
RSMech	**Under-run Protector for Trams/Light Rail**	Specify functional requirements for a device which deflects pedestrians away from the front of a tram and prevents them from being drawn into the gap between the tram body and the road surface/embedded track.	**T/LR**	**H**	**NEW:** URSG_underrun-protector_TF_RSMECH_120109_V04.doc **for SC 3 WG2** *(Jan 2014)*
RSMech	**Obstacle Deflector/Lifeguard for Trams/Light Rail**	Definition of minimum functional requirements for an obstacle deflector/lifeguard device in addition to the Under-run Protector	**T/LR**	**H**	**NEW:** URSG_obstacle_deflector_lifeguard_TF_RSMECH_120109_V04.doc **for SC 3 WG2** *(Jan 2014)*
RSMech	**Wheelsets and bogies – Non Powered axles - Design method**	Include axle boxes with internally mounted axle boxes and axle box bearings for independent wheels	**M/T/LR**	**H**	URSG_EN_13103_TF_RSMech_111107_V07.doc **for SC 2 WG11** *(Apr 2014); start after the current revision of the standard.*
RSMech	**Wheelsets and bogies – Powered axles - Design method**	Include axle boxes with internally mounted axle boxes and axle box bearings for independent wheels	**M/T/LR**	**H**	URSG_EN_13104_TF_RSMech_111107_V05.doc **for SC 2 WG11** *(Apr 2014); start after the current revision of the standard.*
RSMech	**Braking - Mass transit brake systems - Part 1: Performance requirements**	Complement the existing standard	**M/T/LR**	**H**	URSG_ EN 13452-1_TF_RSMech_111107_V03.doc **for SC 3 WG47** *(Jan 2014); start after publication of the current revision of the standard.*
RSMech	**Braking - Mass transit brake systems - Part 2: Methods of test**	Complement the existing standard	**M/T/LR**	**H**	URSG_ EN 13452-2_TF_RSMech_111107_V04.doc **for SC 3 WG47** *(Jan 2014); start after publication of the current revision of the standard.*
RSMech	**Braking - Wheel slide protection**	Describe requirements for tram, light rail and metros and include wheel slide protection systems for hydraulic brake systems	**M/T/LR**	**H** *M*	URSG_EN 15595_TF-RSMECH_111107_V03.doc **for SC 3 WG47** *(Jan 2015)*
RSMech	**Rescue coupler – Safety requirements**	Define all the safety and testing requirements in case adaptor coupler is required for rescue operation by urban rail systems	**M/T/LR/O**	**H** *L*	URSG_ EN 15020_TF_RSMech_111107_V04.doc **for SC 2 WG33** *(Oct 2013)*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
RSMech	**Driver's cab for urban rail vehicles- Visibility, layout, access**	Design rules for Driver's cab for metro, tram and light rail	**M/T/LR**	**H** *M*	URSG_prEN 16186-1_TF-RSMECH_111107_V05.doc **for SC 3 WG37** *(Jan 2015); start after publication of EN16186-1*
RSMech	**Axle boxes - Rolling Bearings**	Include axle boxes and bearings for vehicles/bogies with independent wheels	**M/T/LR**	**M**	URSG_EN 12080_TF_RSMech_111107_V05.doc **for SC 2 WG12** *(Oct 2013)*
RSMech	**Axle boxes - Lubricating Greases**	Include axle boxes and bearings for vehicles/bogies with independent wheels	**M/T/LR**	**M**	URSG_EN 12081_TF_RSMech_111107_V05.doc **for SC 2 WG12** *(Oct 2013)*
RSMech	**Axle boxes - Performance testing**	Include axle boxes with internally mounted axle boxes and axle box bearings for independent wheels	**M/T/LR**	**M**	URSG_EN 12082_TF_RSMech_111107_V06.doc **for SC 2 WG12** *(Oct 2013)*
RSMech	**Wheelsets and bogies - Wheelsets - Product requirements**	Include wheelsets with internally mounted axle boxes and/or brake disks mounted on the end of the axle	**M/T/LR**	**M**	URSG_EN 13260_TF_RSMech_111107_V05.doc **for SC 2 WG11** *(Apr 2014)*
RSMech	**Wheelsets and bogies - Axles- Product requirements**	Include wheelsets with internally mounted axle boxes and/or brake disks mounted on the end of the axle	**M/T/LR**	**M**	URSG_EN 13261_TF_RSMech_111107_V04.doc **for SC 2 WG11** *(Apr 2014)*
RSMech	**Wheelsets and bogies - Wheels - Product requirements**	Include wheels for urban applications, especially resilient wheels	**M/T/LR**	**M**	URSG_EN 13262_TF_RSMech_111107_V04.doc **for SC 2 WG11** *(Apr 2014)*
RSMech	**Electrical lighting for rolling stock in urban rail applications**	Clarify the scope and add a new chapter or a new standard for external lighting	**M/T/LR/O**	**M**	URSG_EN 13272_TF_RSMech_120905_V04.doc **for SC 3 WG9** *(Apr 2015)*
RSMech	**Wheelsets and bogies - Monobloc wheels - Technical approval procedure - Part 3: Resilient wheels**	Include approval procedures associated with resilient wheels and the requirements for the use of noise mitigation measures	**M/T/LR**	**M**	URSG_EN 13979-1_TF_RSMech_111107_V04.doc **for SC 2 WG11** *(Apr 2014)*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
RSMech	**Testing for the acceptance of running characteristics of railway vehicles - Testing of running behaviour and stationary tests**	Cover the testing for acceptance of the running characteristics of metros, trams and light rail	**M/T/LR**	**M** *L*	URSG_EN 14363_TF_RSMEch_111107_V4.doc **for WG10** *(Apr 2017 – could be anticipated if appropriate experts made available)*
RSMech	**Front windscreen for tram and metro application**	Adapt performance requirements and test conditions for metro and tram. Compare with bus	**M/T/LR**	**M**	URSG_EN 15152_TF_RSMech_120905_V03.doc **for SC 3 / WG2 WG37** *(Jan 2015)* *Link with EN 15152, the revision of which is underway*
RSMech	**Side windows (for tram and metro application)**	Include performance requirements for side windows making reference to existing requirements for safety glass used in the automotive industry	**M/T/LR**	**M**	URSG_EN 15152_side-windows_TF-RSMech_120905_V04.doc **for SC 3 / WG2 WG37** *(Jan 2015)*
RSMech	**External visible and audible warning devices for urban rail applications**	Adapt Head, marker and tail lamps and audible warning devices for metro and tram. Compare with bus for tram	**M/T/LR/O**	**M**	URSG_pr EN 15153_TF_RSMech_111107_V03.doc **for SC 3 WG9** *(Jan 2015 – after publication of current revised version)*
RSMech	**Wheelsets and bogies – maintenance of resilient wheels**	Jointly focus on the standardization of maintenance of wheelsets and independent wheels equipped with resilient wheels used on metro, tram and light rail	**M/T/LR**	**M**	URSG_EN 15313_TF_RSMech_111107_V04.doc **for SC 2 WG11** *(Apr 2014 – after publication of current revised version)*
RSMech	**Passenger Alarm System - System requirements** Note: title changed according to that of EN16334.	The scope should cover Urban Rail systems and their needs Note: URSG reference was EN15327-1 which shall be repealed by EN16334 (see updated fiche).	**M/T/LR**	**M** *L*	URSG_EN 15327-1_&_EN 16334_TF_RSMech_120905_V05 **for SC 3 WG36** *(Jan 2018 – after publication of EN 16334)*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
RSMech	**Emergency call - Functional requirements**	Take into account the operational characteristics of tramways and metros, especially automatic metros.	**M/T/LR/O**	**M** *L*	URSG_WI00256579_call-for-aid_TF-RSMech_1111107_V03.doc **for SC 3 WG36** *(Jan 2018 – after publication of current version)*
RSMech	**Acoustics - Measurement of noise inside railbound vehicles**	Influence of the internal vehicle characteristics in the noise levels	**M/T/LR**	**L**	URSG_EN_ISO 3381_TF_RSMech_111107_V03.doc **for WG3 -** *On going*
RSMech	**Ride comfort for passengers - Measurement and evaluation**	Revision of the ride comfort levels characterization levels according to the category of vehicle or exposed people (passengers, driver…)	**M/T/LR**	**L**	URSG_EN 12299_TF_RSMech_111107_V03.doc **for WG7** *(Jan 2015)*
RSMech	**Wheelsets and bogies - Wheels – Tread profile**	Jointly focus on the standardization of the wheel profile and possibly the rail profile	**M/T/LR**	**L**	URSG_EN 13715_TF_RSMech_111107_V04.doc **for SC 2 WG11 (***Apr 2014)*
RSMech	**Brakes - Methods for calculation of stopping distances, slowing distances and immobilization braking - Part 1: General algorithms**	Clarify applicability for urban rail Check back-to-back consistency between EN 14531 and EN 13452	**M/T/LR/O**	**L**	URSG_ EN 14531-1_TF_RSMech_111107_V02.doc **for SC 3 WG47** *(Jan 2018 – after publication of current version)*
RSMech	**Brakes - Methods for calculation of stopping and slowing distances and immobilization braking - Part 2: Step by Step calculation for train sets or single vehicles**	Clarify applicability for urban rail Check back-to-back consistency between EN 14531 and EN 13453	**M/T/LR/O**	**L**	URSG_ EN 14531-6 (2)_TF_RSMech_111107_V03.doc **for SC 3 WG47** *(Jan 2018 – after publication of current version)*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
RSMech	**Air conditioning for urban and suburban rolling stock - Part 1: Comfort parameters**	Introduce a separation of the existing "category B" into two distinct ones, separating metro from tram/light rail and compare with bus	**M/T/LR/O**	**L**	URSG_ EN 14750-1_TF_RSMech_111107_V06.doc **for SC 3 WG8** *(Jan 2014)*
RSMech	**Air conditioning for urban and suburban rolling stock - Part 2: Type tests**	Introduce a separation of the existing "category B" into two distinct ones, separating metro from tram/light rail and compare with bus	**M/T/LR/O**	**L**	URSG_ EN 14750-2_TF_RSMech_111107_V05.doc **for SC 3 WG8** *(Jan 2014)*
RSMech	**Axlebox lubricating greases - Part 1: Method to test the ability to lubricate**	Clarify the real applicability of the current standard to the various categories of urban rail systems	**M/T/LR**	**L**	URSG_ EN 14865-1_TF_RSMech_111107_V05.doc **for SC 2 WG12** *(Oct 2013)*
RSMech	**Axlebox lubricating greases - Part 2: Method to test the mechanical stability to cover vehicle speeds up to 200 km/h**	Clarify the real applicability of the current standard to the various categories of urban rail systems	**M/T/LR**	**L**	URSG_ EN 14865-2_TF_RSMech_111107_V05.doc **for SC 2 WG12** *(Oct 2013)*
RSMech	**Braking - Brake pads**	Include requirements for brake pads typical in size and geometry for urban rail systems and adapt performance requirements and test conditions	**M/T/LR/O**	**L**	URSG_pr EN 15328_TF_RSMech_111107_V03.doc **for SC 3 WG47** *(Jan 2018 – after publication of current draft)*
RSMech	**Requirements for bogies and running gears**	Extend the scope to urban guided transit after adaptation of other relevant standards	**M/T/LR**	**L**	URSG_EN 15827_TF_RSMech_111107_V04.doc f**or SC 2 (WG13)** *(Oct 2013)*
RSMech	**Noise Emission - Measurement of noise inside driver's cabs**	Add a paragraph, annex or new part for metro, light rail and tramway and adapt test requirements	**M/T/LR**	**L**	URSG_ EN 15892_TF-RSMECH_111107_V02.doc **for WG3** *(Jan 2015)*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
RSMech	**Bonding for railway applications**	Requirements for the bonding process with regard to railway specifics	**M/T/LR/O**	**L**	**NEW:** URSG_Bonding_TF-RSMECH_111107_V04.doc **for a Working Group to be defined** *(Jan 2016)*
RSMech & G&S	**Gauges** **New part: Rules for Calculating Gauges for Urban rail infrastructure and rolling stock**	Define a calculation method for the gauge of urban rail systems considering a dynamic gauge for the rolling stock independent of the infrastructure and introducing a gauge for the fixed obstacles built from the dynamic gauge and from margins depending of the type of infrastructure and of the location of the obstacle (in tunnel, in a station, etc.). Draft a guide of the broad/main principles used in the determination of gauges	**M/T/LR**	**H**	URSG_EN_15273-1_TF_RSMech_&_G&S_120109_V05.doc **for WG32 –** *Ongoing (huge technical work – scope to be reviewed)*
RSMech & G&S	**Recommendations regarding technical harmonization between bus and tram/Light Rail**	Address elements facilitating at least compatibility between bus and tram/Light Rail. Check functional requirements of the Bus directive and analyse their transferability for tram and Light Rail. Analyse the potential need for a new standard on stations and stopping places design applicable to both bus and tram/Light Rail systems with different values for the various modes. Special attention should be given to the requirements for technical devices facilitating PRM access	**T/LR**	**H** *L*	**NEW:** URSG_Similarities_with_bus_TF_G&S_&_RSMech_120109_V03.doc **for a Working Group to be defined** *Need further clarification from UITP (particularly in the Bus domain field of expertise)*
RSMech & G&S	**Acoustics -** **Measurement of noise emitted** **by railbound vehicles**	Influence of the track characteristics in the noise levels	**M/T/LR**	**L**	URSG_prEN_ISO 3095_TF_RSMech+G&S_111107_V04.doc **for WG3 –** *Realised*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
G&S	**Track - Switches and Crossings**	Check relevance of technical boundaries for tram/LRT and metro systems and applicability to other rail than vignole, consider introduction of sub-categories...	**M/T/LR**	**H**	URSG_ EN_13232-parts1to9_TF_G&S_111027_V02.doc **for SC 1 WG18** *(Jan 2013)*
G&S	**Track alignment design parameters - Track gauges 1435 mm and wider**	Extend the scope to narrow gauges, low speed, low axle load, small curve radius.	**M/T/LR/O**	**H** *M*	URSG_ EN_13803-parts1&2_TF_G&S_111027_V04.doc **for SC 1 WG15** (*Apr 2017 – could be anticipated if appropriate experts available)*
G&S	**Track - Track geometry quality**	Extend the scope to narrow gauges, low speed, low axle load, small curve radius. Analyse further the relationship between speed, axle load and curve radius. Check applicability to open track and maintenance depot	**M/T/LR/O**	**H**	URSG_ EN_13848-parts1to5_&new_part6_TF_G&S_111027_V04.doc **for SC 1 WG28** *(June 2013)*
G&S	**Track - Test methods for fastening systems**	Consider smaller axle load. Check the lateral forces on tighter curves. Possibly new part for enlarging the scope to embedded rail and to continuously supported rail. Consider the potential for twist where rails are fixed in embedment…	**M/T/LR/O**	**L**	URSG_ EN_13146-parts-1to9_TF_G&S_111027_V03.doc **for SC 1 WG17** *(Apr 2015)*
G&S	**Track - Concrete sleepers and bearers**	Check the real applicability of the standard to urban rail	**M/T/LR/O**	**L**	URSG_ EN_13230-parts-1to5_TF_G&S_111027_V02.doc **for SC 1 WG16** *(June 2013)*
G&S	**Track - Acceptance of works – Part 1: Works on ballasted track - Plain line, switches and crossings**	Extend the scope to ballasted tracks with narrow gauge, smaller speed, smaller chord length. Consider the geometric design limits of the vehicle with regard to the track geometry Develop new standard for non-ballasted track.	**M/T/LR**	**L**	URSG_ EN_13231-parts-1&2_TF_G&S_120109_V03.doc **for SC 1 WG21** *(Apr 2015)*

TF	Proposed title	Proposed scope	Systems covered	Priority H/M/L *H/M/L*	Reference of the "Fiche of needs" (NEW: no existing standard) & Proposed CEN-CENELEC Working Group (from TC256 if no other assignment)
G&S	**Track - Acceptance of works - Part 3 (prEN): Acceptance of reprofiling - Part 3 (EN): Acceptance of rail grinding, milling & planning work in track**	Extend the scope to other rail than vignole. Consider lighter rail than 40kg/m. Develop acceptance criteria for urban rail systems	**M/T/LR**	**L**	URSG_ EN_13231-3_TF_G&S_111027_V03.doc **for SC 1 WG21** *(Apr 2015)*
G&S	**Track - Performance requirements for fastening systems**	Extend the scope of limiting parameters (minimum radius, axle load, twist), extend to other rail than vignole (parts 2 to 5) and to embedded and continuously supported rail	**M/T/LR/O**	**L**	URSG_ EN_13481-parts1to7_TF_G&S_111018_V03.doc **for SC 1 WG17** *(Apr 2015)*
G&S	**Track - Flash butt welding of rails**	Extend the scope to cover grooved rail, considering profile standard/hardness, of EN 14811 dedicated to grooved rail	**T/LR**	**L**	URSG_ EN_14587-parts1to3_TF_G&S_111027_V03.doc **for SC 1 WG4** *(end 2012 after publication of current draft)*
G&S	**Track - Aluminothermic welding of rails**	Extend the scope to cover grooved rail, considering profile standard/hardness of EN 14811 dedicated to grooved rail	**T/LR**	**L**	URSG_ EN_14730-parts1&2_TF_G&S_111027_V04.doc **for SC 1 WG4** *(end 2012 after publication of current draft)*
G&S	**Track - Restoration of rails by electric arc welding**	Extend scope in order to cover grooved rail, considering profile standard/hardness of EN 14811 and rail profiles defined in EN 13674	**M/T/LR/O**	**L**	URSG_ EN_15594_TF_G&S_111027_V02.doc for SC 1 WG4 *(Jan 2017)*
TPS	**Fixed installations - Electric traction overhead contact lines**	Consider using overhead conductor rail Consider covering Light Rail operation with multiple LRVs with more than one operating pantograph and speed lower than 100km/h Consider building fixings, insulators GRP (Glass Reinforced Plastic), loop insulators…	**M/T/LR**	**M**	URSG_ EN50119_TF_TPS_120109_V02.doc **for (TC9X) SC9XC WG C13** *(Jan 2015 – start revision of EN 50119 after publication of the Amendment to EN50119 and finalisation of IEC 60913)*

5 NEXT STEPS AND USEFUL CONTACTS

5.1 Next steps

The next steps are as follows:

- The current report is presented during summer by CCMC to both BTs (CEN and CENELEC) with information of ETSI/CS.
- The reply to the Programming Phase of Mandate M/486 is officially submitted to the EC by CCMC/JPCR in September 2012.
- The standardization phase is expected to start once the programme is approved by the EC (January 2013?).

5.2 Useful contacts

The following hyperlinks lead to useful contacts (especially with National Committees):

- Website of CEN-CENELEC: www.cencenelec.eu
- Website of ETSI: www.etsi.eu
- List of CEN TC256 National Committees contact points:

  CEN_TC256_NSB_Contacts_list.xls
- List of CENELEC TC9X National Committees contact points:

  CENELEC_TC9X_NC_Contacts_list.xls

APPENDIX 1 - FICHES OF NEEDS FOR URBAN RAIL STANDARDISATION

The attached zip file presents the detailed "fiches of needs":

1_Appendix_Fiches_September_2012.zip

APPENDIX 2 – CLARIFICATION OF URBAN RAIL CATEGORY IV

Urban Rail Category IV is not part of "Urban Guided Transport" – UGT - covering metro, tram and light rail systems. The document "Fundamental Requirements" has defined a "Category IV" of Urban Rail systems as follows:

(IV) Local rail systems which by national decision complying with Article 1.3 (a) or (b) of directive 2008/57/EC may be excluded from the European Community Rail System.

However, due to the unclear boundaries of this category, it has been agreed that it may not be possible to address specific aspects during the programming phase under mandate M/486.

This appendix intends clarifying the systems covered by this category as an input for the phase B when considering possible systems or sub-systems within this category.

In order to address possible specific needs to be covered by standardisation, the following local rail systems, operated as local rail systems outside the Metro, Tram or Light Rail categories can be defined as follows (it has to be considered that this definition is only defined as a guideline to support standardisation in the field of the category IV):

Category IV could include the following examples of Local Rail systems (non-exclusive list, other examples could be found):

- ***High capacity Urban and Regional Rail Systems,*** which are designed for high capacity mass transit operated on a network functionally separated from other modes of rail transport. Operations of such systems can be considered as similar to metros.
- ***Low capacity Regional Tram Systems,*** which are designed for low capacity operated usually on a network initially designed for railway operations, which is exempted by national decision from the field of interoperability.
- ***Low capacity Regional Rail Systems,*** which are designed for low capacity to be used in mostly rural areas and operated usually on a network initially designed for railway operations exempted by national decision from the field of interoperability with low capacity needs.

Category IV includes Local Rail sub-systems or components as follows:

- Rolling Stock that may run for short distances on an interoperable infrastructure following national agreements between competent authorities
- wayside equipment designed for local use and which is implemented on dedicated sections of community rail infrastructure and which is exempted by national decision from the field of interoperability.

This category may lead to specific needs, which are different from that of category I to III (Metro, Tram and Light Rail) and from interoperability needs of conventional and high-speed rail, because they follow local public service requirements and support the competitiveness of rail against other modes of transport where interoperable requirements are neither necessary nor appropriate.

APPENDIX 3 - LIST OF RAIL STANDARDS NOT APPLICABLE TO URBAN RAIL SYSTEMS

These standards are either applicable only to main line (e.g. for freight or high-speed) - in such a case there is a “0” is the column of scope -, or they are regarded as not suitable or not important for Urban Rail systems – in such a case they have a “4” in the column of scope.

In some cases, the scope does not cover all Urban Rail Systems. Other quotation in the relevant column – Tram/Light Rail, Metro or Other Urban Rail – may then appear:

- 1 or 1G directly applicable (1G is not limited to rail)
- 2 applicable with adaptations for a given category of Urban Rail systems
- 3 developed for Urban Rail systems only

The translation of the standard title into English or French is most generally available, in hidden columns.

The file below provides the relevant information:

3_APPENDIX_Standards_not_for_Urban_Rail_Jan_2012.xls

APPENDIX 4 - LIST OF RAIL STANDARDS DIRECTLY APPLICABLE TO URBAN RAIL SYSTEMS

These standards are directly applicable to all rail systems - in such a case there is a "1" in the column of scope or a "1G" when the standard's scope is not limited to rail, or a "3" when the standard has been developed for Urban Rail.

In some cases, the scope does not cover all Urban Rail Systems. Other quotation in the relevant column – Tram/Light Rail, Metro or Other Urban Rail – may then appear:

- 0 applicable to heavy rail only (High Speed and Conventional Rail)
- 2 applicable with adaptations to all or some categories of Urban Rail systems
- 3 developed for Urban Rail systems only
- 4 not suitable or not important for Urban Rail systems

The translation of the standard title into English or French is most generally available, in hidden columns.

The file below provides the relevant information:

4_APPENDIX_Standards_applicable_to_Urban_Rail_Jan_2012.xls

APPENDIX 5 - NATIONAL RULES APPLICABLE TO URBAN RAIL

Existing national legal technical rules applicable to the various categories of Urban Rail systems presented hereinafter have been identified and listed as far as there was an input ***provided by the knowledge of participating members***.

They cover France, Germany, Italy (Rolling Stock only), The Netherlands, and United Kingdom with their scope of application (Tram, Light Rail, Metro & other Urban Rail systems)

The file below provides the relevant information:

5_APPENDIX_National_Rules_available_Jan_2012.xls

APPENDIX 6 - "MASTER" EXCEL FILE

The Urban Rail Survey Group has produced a "Master" EXCEL file summarizing all the information gathered from the Urban Rail Platform and from the Urban Rail Survey Group as an input to this report, which is presented hereinafter:

6_APPENDIX_Master_ Standards_V09_September_2012_.xls