

# Task Force on Migration & Transition

## Final Report

December 2021

## Introduction

The Task Force on Migration and Transition (TF M&T) was set up in 2020 by the Economic Steering Group (ESG) and was recognised as a topical working group (TWG) for the TSI 2022 revision. The TF's objectives were to:

### *For Migration:*

- › Set up a coherent framework to assess the new/updated optional and mandatory vehicle requirements
- › Recommend a balancing framework in case of unbalanced distributions of costs and benefits within the different concerned railway stakeholders
- › Analyse if and how a balancing framework can be legally binding so that it provides sufficient guarantees for investors

### *For Transition:*

- › Propose a coherent single framework for the transition phase for all vehicle related TSIs

This report informs the ESG on the work and achievements of the TF.

## Migration

The TF's subgroup on migration convened three times. It discussed innovations or TSI requirements where a cost imbalance between different railway stakeholders (e.g. railway undertaking and infrastructure manager) would impede or delay the uptake. This was thought to negatively impact the competitiveness of the railway sector. Cost balancing mechanisms (CBMs) were believed to mitigate this issue.

The subgroup commenced with analysing how CBMs are used in other modes of transport. Several examples are provided in the table.

Mode	Examples
<b>Road</b>	Regulation (EU) 2019/631 defines a bonus-malus system; an excess emissions premium for car manufacturers, while offering the possibility to offset penalties through eco-innovations.
<b>Aviation</b>	Airports impose surcharges on noisy airplanes while airplanes (incl. retrofits) equipped with noise abatement technology receive a discount per landing.
<b>Maritime</b>	Port tariff discounts are commonplace to support green innovations. e.g. Port of Rotterdam provides 15% discount to tankers with Green Award Certificate.
<b>Inland Waterway</b>	The 'Reserve fund' ((EC) 718/1999) created to reduce European fleet capacity was amended ((EC) 546/2014) so that funds can be used to promote innovation uptake.

The subgroup members then identified existing CBMs in railways and discussed several upcoming TSI changes<sup>1</sup> that could be implemented faster by using such mechanisms.

In railways the possibilities to introduce CBMs seem more restrictive. Notable exceptions concern differentiated track access charges (TAC) for vehicles equipped with ETCS or silent brake blocks (see (EU) 2015/429). The uptake of differentiated TAC is limited, however. Countries that wish to promote ERTMS and silent rail freight more frequently do so through direct subsidies, within the boundaries set by the guidelines on State aid for railway undertakings (2008/C 184/07).

Nevertheless, there are some particular CBMs worth mentioning. A first CBM concerns a differentiated TAC system for trains equipped with low track force bogies ([details here](#)) in the UK. While the cost of the equipment is covered by the railway undertakings (RU), it does reduce rolling contact fatigue that affects not only wheels, but also rails. The differentiated TAC enables the public infrastructure manager (IM) to compensate private RUs for the costs made that reduce infrastructure maintenance costs. Hence, the CBM leads to overall lower costs for the railway system.

A second UK example concerns a CBM as set out in the network code ([details here in Part G](#)). It defines the rules for RUs to be compensated for network changes that *inter alia* have a material effect on the trains operated on the network. Detailed examples on how IM-RU disputes are financially resolved can be retrieved from the Network Rail website ([here](#)).

On top of these CBMs, it was noted that some countries provided incentives for Energy Measurement Systems through billing conditions ([as described here](#)).

Notwithstanding the above, the subgroup agreed that the extent to which CBMs are used in the railway sector remains limited.

Starting from this understanding, the subgroup assessed 1) whether other CBMs would be possible and/or desirable, 2) which innovations could be promoted through them, 3) and whether changes should be made to the legal framework to facilitate them.

<sup>1</sup> Extracted from the Change Requests database ClearQuest

The subgroup quickly identified that the TSIs offer limited possibilities to mandate the usage of an existing CBM, nor do the TSIs allow for the development of new CBM. The subgroup's scope for developing and/or propagating CBM was therefore limited. Moreover, questions were raised on the legal restrictions imposed by the current State aid framework that would limit the introduction of new CBMs.

Therefore, the subgroup aimed to highlight potential use cases for CBMs and make their relevance clearer to various stakeholders.

In Q2 2021 the subgroup went through all change requests (CR) being considered for the TSI 2022 Revision. A number of CRs were identified for which a cost imbalance would likely occur and where a CBM could lead to a faster uptake of an innovation. Annex 1 provides an extract of this analysis.

Subsequently, DG MOVE unit C3 was informed on the subgroup's findings and was asked to look into the legal framework around Track Access Charges to consider a review, so that the instrument can be used to promote a larger array of TSI changes than is the case today.

Likewise, several subgroup members appealed to the Commission to embrace other CBMs as well, including network code and billing provisions as those mentioned before. Again, it was found that this may require changes to the State Aid framework.

As no further actions were within the remit of the subgroup, its activities were ceased. The final recommendations were to:

- *Acknowledge the relevance of CBMs to promote the uptake of innovations and the TSIs in particular*
- *Review the legislation on track access charges to widen its scope*
- *Continue any discussions on CBMs with stakeholders from the Commission (C3 / C4 / DG COMP) as the remit of the Agency in this field is too limited*

## Transition

### *Vehicle – transition framework*

A total of 11 subgroup meetings on transition took place. The main aim was to come to a single coherent framework for transition in TSI LOC&PAS, WAG, PRM, NOI, and CCS.

Various proposals were discussed by the subgroup, culminating in a framework that categorizes three types of TSI changes, each with different transition regimes. The proposed framework is shown in the table below.

TSI Change Category	Transition regime (stage at which a project/vehicle is when the revised TSI enters into force)			
	Design phase not yet started	Design phase	Production phase	Vehicle in operation
<b>C1</b>	Applicable	Directly applicable with no impact on existing projects.	Not concerned	Not concerned
<b>C2</b>	Applicable	Applicable <b>7 years after entry into force of TSI</b>	Not concerned	Not concerned
<b>C3</b>	To define: possible to delay the application of a C3 change after the entry into force of the TSI	To define: possible to require application of a C3 change to projects at design phase earlier than the generic application	To define: possible to require application of a C3 change to all new rolling stock delivered after a certain date	To define: possible to require the upgrade/renewal of existing rolling stock according to the C3 change under certain conditions

**TSI change C1:** a change is categorised C1 when it concerns a TSI clause or requirement for which the conformity with the previous version of that TSI ensures in all cases the conformity with the new version. For changes of category C1, there is no transition period from a version of a TSI to the next version.

**TSI change C2:** a change is categorised C2 when it concerns a TSI clause or requirement for which the conformity with the previous version of that TSI does not lead to conformity with the new version. For changes of category C2, a generic transition regime from a version of a TSI to the next version is defined in each TSI.

**TSI change C3:** a change is categorised C3 when it concerns a TSI clause or requirement for which the conformity with the previous version of that TSI does not ensure the conformity with the new version and for which a specific transition regime is defined in order to promote a swift implementation.

For each change of category C3, a specific transition regime is defined and needs to be duly justified by substantive criteria established along the CCM process.

A change shall be C3 where:

- › It fixes a critical issue in the TSI concerning safety or technical compatibility
- › It addresses a policy objective in a proportionate manner

Unlike the TSI changes C1 and C2, TSI changes C3 can affect rolling stock during their complete lifecycle. In practice, a C2 change implies a generic transition regime whereas a C3 change imposes a specific transition regime for a single TSI change.

The transition framework itself reflects a project view considering the lifecycle of the vehicle. It can cover the development of a new type and new rolling stock or the modification of rolling stock in operation or of an existing rolling stock type.

The following phases are defined for a project:

**Design phase:** the design phase is the period starting once a notified body, which is responsible for EC verification, is contracted by the applicant and ending when the EC type or design examination certificate is issued.

A design phase can cover a type and one or several type variant(s) and type version(s).

**Production phase:** the production phase is the period during which rolling stock subsystems may be placed on the market on the basis of an EC declaration of verification referring to a valid EC type or design examination certificate.

**Rolling stock in operation:** Rolling stock is in operation when it is registered with 'Valid' registration code '00', in the National Vehicle Register in accordance with Commission Decision 2007/756/EC or in the European Vehicle Register in accordance with Commission Implementing Decision (EU) 2018/1614 and maintained in a safe state of running in accordance with Commission Implementing Regulation (EU) 2019/779.

On top of the change in the transition framework, the subgroup introduced that:

- › The EC type or design examination certificate for the subsystem remains valid unless it is required to be revised according to the specific transition regime of a TSI change.
- › The same logic applies for the certificate at IC level. The certificate remains valid unless it is required to be revised according to the specific transition regime of a TSI change.
- › All variants and versions of a type can use the same initial assessment framework as for the main type.

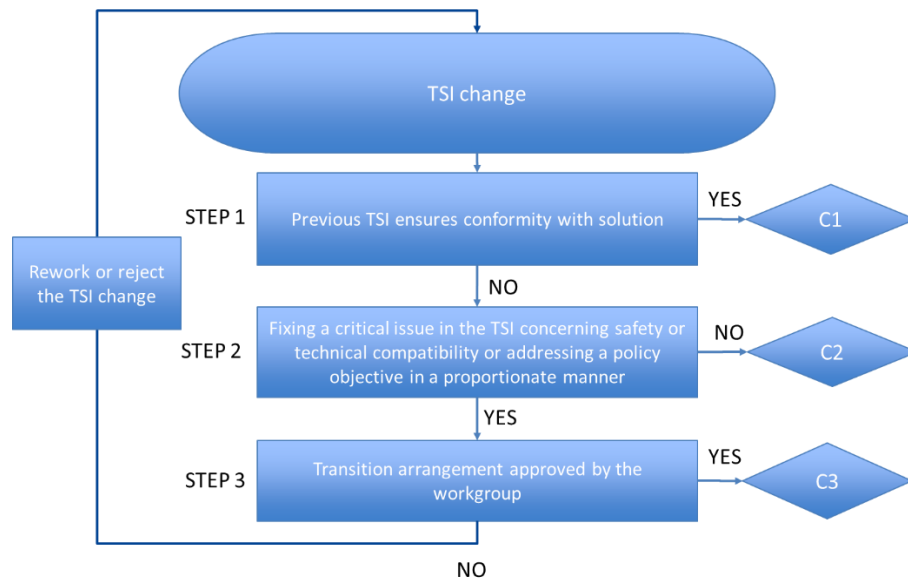
The subgroup reviewed all transition clauses within the TSIs and updated the text to be aligned with the new transition framework. The final results of the work can be found here:

- [LOC&PAS](#)
- [WAG](#)
- [PRM](#)
- [NOI](#)

### *CCM procedure*

The proposed amendments to the CCM procedure make that the transition categorisation shall be discussed as an integral part of a CR. On multiple levels and stages, sector stakeholders shall be involved in the categorisation of the change category and, when required, a full impact assessment shall be conducted on those CRs that would have substantial impacts on the railway sector.

The CCM procedure also provides guidance to submitters of a CR and Topical Workgroup (TWG) members to assign a TSI Change Category to a CR, as depicted below.



Some subgroup members asked that the criteria for introducing a specific transition regime (i.e. a C3 change) are defined in the TSI itself. ERA emphasized on multiple occasions that such additions on process go beyond the scope of the TSI.

A main discussion point in the subgroup whether there are sufficient checks and balances put in place to ensure that C3 changes are rare and only accepted after broad and careful deliberation. The reason being that C3 changes can impact rolling stock in operation, potentially leading to costly retrofit actions. The subgroup, in conjunction with the TSI Revision Working Party worked on an adaptation of the Change Control Management (CCM) procedure to address those concerns. Moreover, the subgroup was reminded that in the transition framework that exists to date, there was already the possibility to introduce 'C3 changes' (e.g. TSI LOC&PAS 7.1.3.1 (7)) without the provisions that are mentioned in this document.

The CCM document as discussed by the TSI Revision Working Party can be found on the Extranet ([HERE](#)). It shall be reviewed by the end of 2022 to take the return on experience into account.

### *Specificities for the CCS subsystem*

The subgroup had several discussions on the application of the framework as presented above to TSI CSS. In line with the TF's objective, the aim is to align the transition framework between CCS and the other vehicle related TSIs to the largest extend possible. This will be the case, while a few CCS specific points are taken into consideration. Notably:

- *Rather than assigning change categories to a specific CR, they are assigned to clusters of changes (e.g. ETCS/GSM-R/ATO/On-board modularity).*
- *The TF concluded that for ETCS trackside, only requirements concerning notification need to be specified. There is no need to cluster changes and assign them to the trackside life cycle phases.*
- *ERA explained how the transition framework will be considered in the CCS CCM procedure. Moreover, ERA indicated that there will be one unique CCM procedure for all changes (applicable to all TSIs) in which the transition framework will be reflected, including on the categorization of changes and the link with impact assessments.*
- *The discussion on how to categorise error corrections is still ongoing.*

### *Conclusion*

While writing this report, the final proposal for the CCS subsystem was not completed yet. At the same time, it is clear that the transition framework as developed by the TF shall apply to CCS. As such, the objective to come to a coherent single framework for the transition phase for all vehicle related TSIs has been achieved.

At this point the TWGs that are responsible for managing the CRs are now actively applying the framework to assign change categories to the upcoming TSI changes.

The subgroup on Transition shall be inactive until the Application Guide will be updated. In case the TSI Revision WP or CCS WP files a specific request to reflect on the transition framework, the subgroup may reconvene earlier.



**Annex 1 – Unbalanced costs and benefits from proposed CRs in the CCS subsystem - examples**

Change request	Expected short/mid-term business case					Cost balance assessment	Cost balancing mechanism Incl. benefactor and beneficiary
	IM	RU	Keeper	Energy	Other		
<b>Compatible changes (New maintenance release)</b>	Further analysis needed	Negative	Negative	NA	NA	Benefit for IM to correct a system error with the next maintenance of all OBUs concerned on their area of use. Cost on IM if the new Maintenance Release require a modification on the trackside (in 90% of the case, it is not affecting IMs) Benefit on safety does not create a positive business case for RUs - need to be put in perspective of safety event related to ETCS or GSM-R compared to the overall safety events. Benefit on operation may induce an indirect reduction of charge for RUs with less delayed trains.	Concerned IM to set up cost balancing mechanism with MS funding for RUs according to area of use.
<b>ATO (GoA2)</b>	Further analysis needed	Further analysis needed	Negative	Positive	NA	Probably no or low short/mid-term benefits due to multi-annual introduction phase, however, long-term benefits for all groups. The cost of the installation of the ATO equipment will have a negative impact on business case for RU and IM. Positive business case is expected from respect of the timetable and energy consumption reduction.	The benefit of ATO would be on highly used lines requiring capacity use increasing (robustness of timetable) Temporary ATO DTAC including bonus for early birds could be used, while acknowledging its limitations.
<b>L3</b>	Further analysis needed	Negative	Negative	Positive	-	Implementation with multi-annual introduction phase and gradual decommissioning of trackside equipment. In the long-term benefits for all groups. Requirement for capacity allocation process.	Temporary L3 DTAC including bonus for early birds could be used, while acknowledging its limitations.
<b>FRMCS</b>	Negative	Negative	Negative	Neutral	-	No short/mid-term benefits due to multi-annual introduction phase, however, long-term benefits for all groups. Obsolescence. Legacy system probably fully depreciated. BC depending on availability and roll-out of new equipment. Risk is on shorter life cycle of telecommunication technologies for the long run. Political battleground expected due 5G discussions in several MS. Target: Around 10 years duration of the migration phase.	Temporary FRMCS DTAC including bonus for early birds could be used, while acknowledging its limitations.

## Annex 1 - Unbalanced costs and benefits from proposed CRs in the Rolling stock subsystem - examples

Change request	Expected short/mid-term business case					Cost balance assessment	Cost balancing mechanism Incl. benefactor and beneficiary
	IM	RU	Keeper	Energy	Other		
<b>CR164: derailment detection function</b>	Positive	Negative	Negative	NA	Overall safety benefit to all	Benefits for IM follow from fewer derailment related delays / damage. Benefits for RU because of fewer derailment related delays / damage as well. However, costs mostly for RU/Keeper due to device related costs.	Several CBMs possible.
<b>CR165: DAC</b>	Further analysis needed	Further analysis needed	Further analysis needed	NA	NA	A complex range of benefits and costs fall upon IM, RU and Keepers. It is likely that benefits and costs will be unbalanced.	Several CBMs possible.
<b>CR173: Automatic brake application function</b>	Positive	Further analysis needed	NA	NA	NA	Device enables higher speeds – especially under winter conditions in northern European countries. Also improves capacity. Costs are on RU side, which could legitimise cost balancing mechanism. Disadvantages for keepers because of greater wear of wheel sets. It is not clear how it enables the higher speed.	Under discussion
<b>CR261: train detection systems</b>	Negative	Negative	NA	NA	NA	For RUs, there are only benefits <i>on the long-term</i> .  As long as class B train detection systems exist, the business case is negative for the RU.  CBMs should consider this long-term horizon.	It could be a negative impact also for IM as long as class B systems have to exist. No benefits in short and midterm. The interface document doesn't have any impact at the moment – should be checked by respective experts of TDC WG. CBMs could be considered if capable to bridge long term cost imbalances.
<b>CR350: Battery charging for traction purpose</b>	Further analysis needed	Further analysis needed	Further analysis needed	Further analysis needed	NA	Charging battery trains at standstill via the OCL using TSIs existing current values would require energy investments. To be assessed by mean of a CBA.	Short term investments from IM needed, but in long or midterm they could have positive impact. Under discussion.