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Full Impact Assessment

Revision of the Commission Regulation (EU) No 445/2011 of 10 May on a system of certification of entities in charge of maintenance for freight wagons and amending Regulation (EC) No 653/2007

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Document History

<i>Version</i>	<i>Date</i>	<i>Comments</i>
0.1	19/09/2017	Preliminary version of the FIA report covering Sections 1, 2 and 3 (partially)
0.2	06/10/2017	Updated version of IA report covering Sections 1, 2 and 3
1.0	21/12/2017	First complete draft of IA report covering all sections, Review OG.

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1. Context and problem definition

<p>1.1. Problem and problem drivers</p>	<p>Main problem: sub-optimal framework for managing maintenance risks, particularly in the case of other vehicles than freight wagons. Safety issues deriving from deficient maintenance are <u>not in scope</u>, as the main objective of ECM certification was to prompt market development whilst maintaining adequate safety levels and not to address possible safety issues.</p> <p>Problem drivers:</p> <p>Set A. related to the fact that current ECM regulation <u>only covers wagons</u> and not locomotives, passenger coaches, DMUs/EMUs, other vehicles:</p> <ul style="list-style-type: none"> › Inefficient, complex and resource-intensive processes for RUs to make sure that maintenance of vehicles fulfils their responsibility for safe operation. This is particular the case when using third party ECMs / maintenance providers as well as for technical advanced rolling stock. › Multiple/duplicative customer certification requests to ECMs and maintenance workshops resulting in additional costs for such entities and difficulty for entering new market segments <p>Set B. related to the <u>clarity and application of the current ECM regulation</u>:</p> <ul style="list-style-type: none"> › Diversity of how requirements and methods are applied due to diverging interpretation in Member States (potentially leading to misinterpretation) of the current provisions on ECM certification › Lack of clarity in the definition and allocation of responsibilities among keepers, ECMs and RUs operating vehicles resulting in uncertainty among the concerned stakeholders and possibly additional costs
<p>1.2. Main assumptions</p>	<p>The Safety Directive (Article 14.7) provides for that: ‘By 16 June 2018, the Agency shall evaluate the system of certification of the entity in charge of maintenance for freight wagons, consider the expediency of extending that system to all vehicles and the mandatory certification of maintenance workshops and submit its report to the Commission’.</p> <p>The impact assessment is incorporating available information sources in order to underpin the assumptions concerning costs and benefits:</p> <ul style="list-style-type: none"> › The Agency’s Ex-Post report on the implementation of the Regulation 445/2011 (February 2015) presenting key-results on the costs and benefits of the certification scheme for ECMs, maintenance providers and maintenance workshops regarding freight wagons. › An Agency Early Assessment Report (June 2015) providing a base for the present impact assessment work, by indicating a basic set of options for the project and elaborating on the main potential benefits and costs of each of those options.

1.3. Stakeholders affected	<i>Category of stakeholder</i>	<i>Importance of the problem</i>
	RUs	5
	IMs	3
	ECMs	5
	Maintenance workshops	5
	Keepers	4
	Manufacturers	3
	RST leasing companies	4
	Certification bodies (CB)	4
	NSAs	4
	Some stakeholders do not consider the extension of the scope as an urgent need. It is also suggested by some of those stakeholders that, when the management of maintenance is clearly defined and controlled, there may be no evidence that an actual problem needing solution exists. As such these views need to be considered thoroughly in the impact assessment.	
1.4. Evidence and magnitude of the problem	<p>(I) Agency's Ex-Post report on the implementation of the Regulation 445/2011 (February 2015) highlighted the following:</p> <ul style="list-style-type: none"> › Since 2012 the sector and a number of NSAs demonstrated interest for the extension of scope to all vehicles <ul style="list-style-type: none"> › in 2015 a certification service to ECMs for locomotives and passenger coaches was proposed at least by one company, which was already active in the certification of ECMs for freight wagons › one NSA also started a process for defining a national ECM certification scheme for locomotives and passenger coaches. Other countries are expected to follow, thereby potentially resulting in increased diversity of management and delivery of maintenance for railway vehicles. › A guideline for development of a voluntary certification scheme had been proposed by the Agency in 2014 to the Freight Focus Group. However, the Freight Focus Group clearly indicated <u>that the guideline (as a non-legally binding instrument) was not enough</u> but it could be the basis for the extension of scope of the Regulation. › The results of a comprehensive questionnaire (with 200+ respondents) launched by the Agency in 2014 reinforced the perception that the sector and several NSAs are strongly in favour of the extension of scope, for reasons such as: <ul style="list-style-type: none"> › need for a comprehensive (harmonised) certification scheme for all vehicles thereby resulting in reduced administrative burden › many ECMs do not currently provide a service for freight wagons only 	

	<ul style="list-style-type: none"> › advantage of a clear standardisation of rules for maintenance for all vehicles. › The cost of certification for other vehicles would be of the same order of magnitude as the cost for initial certification of ECMs maintaining freight wagons. This cost (up to 50.000€ on average) appears to be negligible when compared to the purchase value of a locomotive or a coach. Currently, a voluntary ECM certification system for other vehicles is implemented in one MS. The costs of this system are similar to those of certification of freight wagons and have decreased by up to 15%, compared to the costs of implementing previous national regulations. › The specific business models for passenger transport should be considered, as they are different from those related to freight transport for which the current Regulation applies to freight wagons. These differences may necessitate adjustments to the provisions in the Regulation. › Extension of scope may be beneficial for RUs wishing to concentrate their resources in transport activities because it would release them from the duty of putting in place internal maintenance services or assess and choose external maintenance services. <p>(II) Agency Early Assessment Report on extension of ECM certification (June 2015) highlighted the following:</p> <ul style="list-style-type: none"> › There is strong sector support for the scope extension, although RST leasing companies and small maintenance providers are less in favour. › The order of magnitude of the problem depends on the specific context of each stakeholder: <ul style="list-style-type: none"> › For RUs currently carrying out the maintenance of their vehicles in-house, the issue of the sub-optimal control of maintenance risks is relatively limited depending on the complexity of the concerned rolling stock. › The growing complexity of technical systems and the decrease in public budgets for incumbent RUs may lead to them totally or partially subcontracting the maintenance of their fleet. › Differently, for RUs already having outsourced maintenance activities this problem could be more substantial. › For ECMs, maintenance providers and maintenance workshops, the extent of the issue resulting from the need to retain several maintenance management systems (to fulfil different customer requirements) will be determined by whether their business focus is on a single customer and in one type of vehicle types or not, i.e. on multiple customers involving different types of vehicles. › The ECMs providing maintenance services for freight wagons only are not affected. › Considering the expected increase of outsourcing of maintenance of locomotives and coaches, together with the need for a reliable and
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competitive maintenance service market, the relevance of the identified issue may increase in future. Thus, a flexible solution that fits with the needs of different stakeholders.

(III) Inputs and reflection from ECM Regulation Working party:

- › Following the 1st and 2nd WP meetings in May and in October 2017 it appears that the strong support from the sector to the extension of scope of the Regulation to all vehicles is somewhat less clear-cut.
- › Some key aspects need to be taken into account:
 - › not only the technical complexity of the subsystems forming the vehicles, but also the costs deriving from certification schemes on a wider basis throughout the lifetime of vehicles.
 - › intended use foreseen for the vehicles and possible specificities in the management of maintenance by RUs operating passenger trains
 - › the influence that a possible scope extension may have on the competitiveness of small maintenance workshops and RUs.
- › Moreover, the positions expressed by the WP members do not necessarily coincide on whether scope extension may involve all vehicles or not and whether it should be voluntary (favoured by the sector organizations) or mandatory (favoured by NSAs).
- › There are still references to harmonisation and transparency purposes, which could help companies searching abroad for workshops as regards the significant diversity of national rules.
- › Some WP members believe that further efforts are needed in the implementation of Regulation 402/2013 in the area of maintenance, whereas stronger transparency in procedures and a closer collaboration between the involved parties would also be of advantage.
- › Another concern was the extent of harmonisation of assessment criteria applied in practice by CBs.
- › It was noted that no dramatic increase of costs is expected in case of mandatory certification, if organisations comply with the requirements of the RSD. However, there was no consensus on this.

(IV) Considerations on the certification of maintenance workshops:

- › At present the certification of maintenance workshops is voluntary according to the ECM Regulation (Regulation 445/2011). The lack of identification of a set of certifiable common operations carried out by workshops certification is seen as an issue and may result in higher costs for RUs when assessing the ability of maintenance workshops to manage maintenance activities and to deliver their operational functions.
- › Another perspective sees the decision of concluding contracts with non-certified maintenance workshops as discretionary for the ECMs.

	<ul style="list-style-type: none"> › Additional specific arrangements, including adequate monitoring and surveillance measures of workshops, could be included in a contract, if an ECM decides to conclude one.
<p>1.5. Baseline scenario</p>	<p>Baseline scenario: continuation of the current legal framework, i.e. the application of the certification scheme of ECMs, maintenance providers and maintenance workshops to freight wagons only.</p> <p>This may lead to persistent problem drivers:</p> <ul style="list-style-type: none"> - from Set A - section 1.1: <ul style="list-style-type: none"> › RUs searching for external maintenance services may find the selection of an ECM corresponding to their needs challenging (this could be especially serious for new entrant RUs, for which in-house maintenance is not an option) › RUs could find it challenging to obtain assurance that the maintenance externally provided to locomotives and coaches is adequate so that risks are controlled and operations are safe › For external ECMs and maintenance workshops providing services to locomotives and/or coaches, the existence of different requests for specific customer certifications or of different monitoring and control systems at national level, including certification schemes, is potentially also a disadvantage › Lack of recognition of voluntarily certified ECMs for maintenance of other vehicles, which feel the need to re-assess and “re-certify” each other. - from Set B – section 1.1: <ul style="list-style-type: none"> › none of the issues regarding the current ECM Regulation would be addressed (e.g. the lack of clarity in the definition and allocation of responsibilities between keepers, ECMs and RUs operating wagons also not address any issues). <p>As a result, the baseline would imply that management of maintenance risks could continue at a sub-optimal level, including difficulties for smaller maintenance providers when wishing to enter new markets.</p>
<p>1.6. Subsidiarity and proportionality</p>	<p>The concept of ECM itself was introduced through EU legislation (the RSD) thereby addressing the issue of subsidiarity. This was one of the elements considered to contribute to ensure safety in the process of restructuring the European railway sector, with new actors being made responsible for functions previously assigned to incumbent operators. The options considered for scope extension adopt an incremental approach in line with the proportionality principle. Thus EU action is justified on this matter, as it had already been the case with the Regulation regarding freight wagons.</p>

2. Objectives

<p>2.1. Strategic and specific objectives</p>	<p>Strategic objective(s) of the Agency with which this initiative is coherent:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Europe becoming the world leader in railway safety <input checked="" type="checkbox"/> Promoting rail transport to enhance its market share <input checked="" type="checkbox"/> Improving the efficiency and coherence of the railway legal framework <input type="checkbox"/> Optimising the Agency’s capabilities <input type="checkbox"/> Transparency, monitoring and evaluation <input checked="" type="checkbox"/> Improve economic efficiency and societal benefits in railways <input type="checkbox"/> Fostering the Agency’s reputation in the world <p>The project’s general objective: to contribute to optimising the management of maintenance risks in the railway sector.</p> <p>Specific objectives:</p> <ol style="list-style-type: none"> 1. Increase the efficiency for RUs to make sure that maintenance of vehicles fulfils their responsibility for safe operation 2. Reduce presence of multiple / duplicative customer certification requests to ECMs and maintenance workshops 3. Reduce diversity of requirements and methods applied in relation to the certification of ECMs and maintenance workshops 4. Enhance clarity in the definition and allocation responsibilities among keepers, ECMs and RUs operating vehicles
<p>2.2. Link with Railway Indicators</p>	<p>The project’s results are linked to the following Railway Indicator: RI 1.3 – Improvement of safety maturity level of the railway sector</p>

3. Options

<p>3.1. List of options</p>	<p>The following options are under consideration:</p> <ul style="list-style-type: none"> › Option 0 (do-nothing) › Option 1: Revision of current Regulation and scope extension to locomotives as a voluntary certification scheme. › Option 2: Revision of current Regulation and scope extension to all vehicles (incl. locomotives and coaches) as a voluntary certification scheme. › Option 3: Revision of current Regulation and scope extension to locomotives as a mandatory certification scheme with voluntary certification for other vehicles. › Option 4: Revision of current Regulation and scope extension to all vehicles (incl. locomotives and coaches) as a mandatory certification scheme. › Option 5 (incremental from Option 4): Revision of current Regulation introducing mandatory certification of maintenance workshops for all vehicles. Additional sub-options may be introduced in order to examine further particular issues re. certification of maintenance workshops reflecting differences in scope. 																																			
<p>3.2. Description of options</p>	<table border="1"> <thead> <tr> <th></th> <th>Option 0</th> <th>Option 1</th> <th>Option 2</th> <th>Option 3</th> <th>Option 4</th> <th>Option 5</th> </tr> </thead> <tbody> <tr> <td>Revision of current legal text</td> <td>No</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Scope extension</td> <td>No</td> <td>Locos</td> <td>All vehicles</td> <td>All vehicles</td> <td>All vehicles</td> <td>All vehicles</td> </tr> <tr> <td>Regime of certification</td> <td>-</td> <td>Voluntary</td> <td>Voluntary</td> <td>Mandatory for locos Voluntary for the rest</td> <td>Mandatory</td> <td>Mandatory</td> </tr> <tr> <td>Stakeholders certified</td> <td>-</td> <td>ECMs</td> <td>ECMs</td> <td>ECMs</td> <td>ECMs</td> <td>ECMs and MWs</td> </tr> </tbody> </table>		Option 0	Option 1	Option 2	Option 3	Option 4	Option 5	Revision of current legal text	No	Yes	Yes	Yes	Yes	Yes	Scope extension	No	Locos	All vehicles	All vehicles	All vehicles	All vehicles	Regime of certification	-	Voluntary	Voluntary	Mandatory for locos Voluntary for the rest	Mandatory	Mandatory	Stakeholders certified	-	ECMs	ECMs	ECMs	ECMs	ECMs and MWs
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Stakeholders certified	-	ECMs	ECMs	ECMs	ECMs	ECMs and MWs																														
<p>3.3. Uncertainties/risks</p>	<ul style="list-style-type: none"> › Scope extension of the Regulation to other vehicles may be challenging given the differences between freight and passenger transportation regarding business models › Impacts of scope extension are influenced by broader maintenance market trends including the extent to which RUs are outsourcing maintenance to external parties and the extent to which maintenance providers / ECMs tend to specialise in terms of the types of vehicles covered. 																																			

4. Impacts of the options

<p>4.1. Impacts of the options (qualitative analysis)</p>			
	<i>Category of stakeholder</i>		<i>Option 0 (baseline)</i>
	ECMs and Workshops	Positive impacts	No changes
		Negative impacts	No changes
	RUs	Positive impacts	No changes
		Negative impacts	No changes
	Keepers	Positive impacts	No changes
		Negative impacts	No changes
	RST leasing companies	Positive impacts	No changes
		Negative impacts	No changes
	ECM Certification Bodies	Positive impacts	No changes
		Negative impacts	No changes
	National Safety Authorities	Positive impacts	No changes
		Negative impacts	No changes
	Overall assessment (input for section 5.1)	Positive impacts	No changes
		Negative impacts	No changes
	<i>Category of stakeholder</i>		<i>Option 1 – Voluntary scope extension to locomotives</i>
	ECMs and Workshops	Positive impacts	Only ECMs having a commercial net-advantage of certification would opt for this scheme. No significant implications for MWs
		Negative impacts	For ECMs additional certification costs, though likely to be somewhat mitigated by elimination of other customer certification requests. No significant implications for MWs Given the limited scope of this certification scheme the business case may be relative modest.
RUs	Positive impacts	Similar level of assurance regarding the maintenance for locomotives as for freight wagons.	
	Negative impacts	Given the limited scope of the certification scheme the efficiency gains for RUs are modest compared to the baseline.	

	Keepers	Positive impacts	For keepers being ECMs see above under ECMs. In general, positive impacts could relate to more efficient basis to assure to RUs that vehicles (locomotives) provided meet consistently safety requirements.
		Negative impacts	For keepers being ECMs see above under ECMs.
	RST leasing companies	Positive impacts	-
		Negative impacts	Voluntary scheme with scope limited to locomotives is not perceived to generate added-value for RST leasing companies in terms of reducing resources
	ECM Certification Bodies	Positive impacts	Certification scheme may support market opportunities for CBs for certification of ECMs for other vehicles (locomotives)
		Negative impacts	Cost impacts to obtain accreditation / recognition may be a barrier for CBs given the limited scope of the certification scheme
	National Safety Authorities	Positive impacts	In those cases where the NSA is also the ECM CB there could be limited impact.
		Negative impacts	
	Overall assessment <i>(input for section 5.1)</i>	Positive impacts	Voluntary based certification scheme would imply that ECMs would only apply if there is a business case Harmonisation benefits for RUs, though relative modest Limited scope would reduce any adverse cost impacts
		Negative impacts	Identified problem drivers are likely not to be sufficiently addressed under this option
	<i>Category of stakeholder</i>		<i>Option 2 – Scope extension all vehicles (voluntary)</i>
	ECMs and Workshops	Positive impacts	Voluntary framework for scope extension should ensure that only ECMs having a commercial net-advantage of certification would opt for this scheme. The risk of duplicative certification requests for all vehicles may be reduced. The option could also bring advantages by clarifying the responsibilities between ECM / RU and Keeper for other vehicles No significant implications for MWs
		Negative impacts	For ECMs additional certification costs, though likely to be mitigated

			by elimination of other customer certification requests No significant implications for MWs
RUs	Positive impacts		Similar level of assurance regarding the maintenance for other vehicles as currently for freight wagons. Clarity of responsibilities between RU / ECM / Keeper.
	Negative impacts		Given the voluntary status of the certification scheme the efficiency gains will depend on take-up of the certification system by ECMs and the extent of trust by RUs
Keepers	Positive impacts		For keepers being ECMs see above under ECMs. More efficient basis to assure to RUs that vehicles provided meet consistently safety requirements. Advantages from clarity of responsibilities between RU / ECM / Keeper
	Negative impacts		For keepers being ECMs see above under ECMs. Compared to the current situation (baseline) limited direct changes for keepers not being ECMs.
RST leasing companies	Positive impacts		-
	Negative impacts		Voluntary scheme is not perceived to generate added-value for RST leasing companies in terms of reducing resources
ECM Certification Bodies	Positive impacts		Certification scheme may support market opportunities for CBs for certification of ECMs for other vehicles.
	Negative impacts		No significant issues for CBs. Any cost / resource implications would normally be covered through revenue from certification activities.
National Safety Authorities	Positive impacts		In those cases where the NSA is also the ECM CB there could be limited impact. NSAs may in general obtain advantages by simplifying their assessment of safety certificate applications as well as targeting supervision tasks with respect to RUs.
	Negative impacts		-
Overall assessment	Positive impacts		Potential for efficiency gains for RUs and cost savings for ECMs through reduced duplicative /

	<i>(input for section 5.1)</i>		overlapping customer certification request. Advantages through reduced diversity re. requirements and methods applied in relation to the certification of ECMs as well as progress on clarity of responsibilities
		Negative impacts	Costs impacts notably for ECMs in relation to the certification. However, given that it is a voluntary scheme this issue should in fact have limited implications. Furthermore, it should be noted that in general the direct costs involved for scope extension are relatively low.
	<i>Category of stakeholder</i>		<i>Option 3 – Scope extension all vehicles (mandatory for locomotives; voluntary for other vehicles)</i>
	ECMs and Workshops	Positive impacts	The risk of duplicative certification requests for all vehicles will be reduced although the extent of this advantage is limited by the certification scheme being partly voluntary. Clarify to a certain extent the responsibilities between ECM / RU and Keeper for other vehicles. No significant implications for MWs
		Negative impacts	For ECMs additional certification costs, though likely to be somewhat mitigated by elimination of other customer certification requests. Differentiating between locomotives and other vehicles may limit the extent of reduction in duplicative certification. No significant implications for MWs
	RUs	Positive impacts	RUs would obtain similar level of assurance regarding the maintenance for locomotives as currently for freight wagons. RUs will also benefit from some improvements regarding the clarity of responsibilities between RU / ECM / Keeper.
		Negative impacts	Given the voluntary status of the certification scheme with respect to other vehicles than locomotives the efficiency gains will depend on take-up of the certification system

			by ECMs and the extent of trust in the system by RUs
	Keepers	Positive impacts	For keepers being ECMs see above under ECMs. Relative more efficient basis to assure to RUs that vehicles provided meet consistently safety requirements. Some advantages from clarity of responsibilities between RU / ECM / Keeper.
		Negative impacts	For keepers being ECMs see above under ECMs. Compared to the current situation (baseline) limited direct changes for keepers not being ECMs, although any adverse cost implications would need to be carefully monitored. The dual system for locomotives / wagons and other vehicles may limit the advantages.
	RST leasing companies	Positive impacts	Facilitating the management of maintenance by contractors resulting in reduced costs, as regards locomotives. In the case of other vehicles the implications need to be considered carefully given the particularities of maintenance management of RUs operating passenger trains. However, cost implications would be mitigated by the voluntary status.
		Negative impacts	Possible impacts on costs would need to be examined taking into account the life cycle costs of rolling stock particularly in the case of locomotives.
	ECM Certification Bodies	Positive impacts	Certification scheme could support market opportunities for CBs for certification of ECMs for other vehicles.
		Negative impacts	No significant issues for CBs. The positive impacts could be uncertain given the voluntary status of the certification scheme for other vehicles than locomotives.
	National Safety Authorities	Positive impacts	In those cases where the NSA is also the ECM CB there could be limited impact. Moreover, NSAs may in general obtain advantages by simplifying their assessment of safety certificate applications as well as targeting supervision tasks with respect to RUs. However, these advantages would for other

			vehicles than locomotives and wagons depend on the extent of take-up of the certification scheme by ECMs and the trust placed in the scheme by RUs
		Negative impacts	In those cases where the NSA is also the ECM CB there could be limited impact
	Overall assessment <i>(input for section 5.1)</i>	Positive impacts	Potential for efficiency gains for RUs and cost savings for ECMs through reduced duplicative / overlapping customer certification request. Reduced diversity re. requirements and methods applied in relation to the certification of ECMs as well as progress on clarity of responsibilities.
		Negative impacts	Costs impacts notably for ECMs in relation to the certification with particular reference to locomotives. However, it should be noted that in general the direct costs involved for scope extension are relatively low. Advantages may be lowered due to the dual systems in place for locomotives / wagons and other vehicles
	<i>Category of stakeholder</i>		<i>Option 4 – Scope extension all vehicles (mandatory)</i>
	ECMs and Workshops	Positive impacts	Duplicative certification requests for all vehicles will be reduced. Clarifying the responsibilities between ECM / RU and Keeper for other vehicles. No significant implications for MWs
		Negative impacts	For ECMs additional certification costs, though likely to be mitigated by elimination of other customer certification requests. Moreover, the costs involved are relatively low. Specific issues for small ECMs would need to be taken into account. No significant implications for MWs
	RUs	Positive impacts	RUs would obtain similar level of assurance regarding the maintenance for other vehicles as currently for freight wagons. RUs will also benefit from clarity of responsibilities between RU / ECM / Keeper.
		Negative impacts	For negative impacts in case the RU is an ECM see analysis above for ECM. In other cases it is likely that

			negative impacts would be relatively limited.
Keepers	Positive impacts		For keepers being ECMs see above under ECMs. A more efficient basis to assure to RUs that vehicles provided meet consistently safety requirements. Clarity of responsibilities between RU / ECM / Keeper.
	Negative impacts		For keepers being ECMs see above under ECMs. Compared to the current situation (baseline) limited direct changes for keepers not being ECMs, although any adverse cost implications would need to be carefully monitored.
RST leasing companies	Positive impacts		Facilitating the management of maintenance by contractors resulting in reduced costs, as regards locomotives. In the case of other vehicles the implications need to be considered carefully given the particularities of maintenance management of RUs operating passenger trains.
	Negative impacts		Possible impacts on costs would need to be examined taking into account the life cycle costs of rolling stock.
ECM Certification Bodies	Positive impacts		Certification scheme could support market opportunities for CBs for certification of ECMs for other vehicles.
	Negative impacts		No significant issues for CBs. Any cost / resource implications would normally be covered through revenue from certification activities.
National Safety Authorities	Positive impacts		In those cases where the NSA is also the ECM CB there would be limited impact. Moreover, NSAs would in general obtain advantages by simplifying their assessment of safety certificate applications as well as targeting supervision tasks with respect to RUs.
	Negative impacts		In those cases where the NSA is also the ECM CB there would be limited impact
	Overall assessment (input for section 5.1)	Positive impacts	Efficiency gains for RUs and cost savings for ECMs through reduced duplicative / overlapping customer certification request. Advantages through reduced diversity requirements and methods applied

		in relation to the certification of ECMs as well as progress on clarity of responsibilities
	Negative impacts	Costs impacts notably for ECMs in relation to the certification. It should be noted that in general the direct costs involved for scope extension are relatively low. Attention should be given to the issue of small ECMs incl. possible maintenance market implications.
<i>Option 5 – Combined with Option 4 + mandatory certification of maintenance workshops</i>		
<i>Category of stakeholder</i>		
ECMs and Workshops	Positive impacts	See description for Option 4 for ECMs. There could be harmonisation benefits for MWs
	Negative impacts	Cost impacts for certification of MWs. In particular, this could be a concern for small MWs / ECMs.
RUs	Positive impacts	See description for Option 4
	Negative impacts	Efficiency gains may be somewhat lower due additional costs from additional certification for MWs
Keepers	Positive impacts	See description for Option 4
	Negative impacts	Cost implications from MW certification without significant additional benefits
RST leasing companies	Positive impacts	See description for Option 4
	Negative impacts	Cost implications from MW certification without significant additional benefits
ECM Certification Bodies	Positive impacts	See description for Option 4
	Negative impacts	See description for Option 4
National Safety Authorities	Positive impacts	See description for Option 4
	Negative impacts	See description for Option 4
Overall assessment (input for section 5.1)	Positive impacts	The only change compared to Option 4 is the addition of mandatory certification for maintenance workshops. It follows that this option contributes well to the achievement of the established specific objectives although the level of achievement is somewhat lower compared to Option 5 due to the interactions with two certification schemes.
	Negative impacts	Cost impacts on maintenance workshops which could increase

			<p>the overall costs of certification without bringing any additional benefits compared to option 4. There could be a risk of over-certification overlapping with the requirements for ECMs.</p>					
<p>4.2. Impacts of the options (quantitative analysis)</p>	<p>The quantitative analysis (the specific assumptions on parameter values are set out in Annex EcoEv 1) includes in particular:</p> <ul style="list-style-type: none"> › Cost impact for ECMs and Maintenance Workshops: <ul style="list-style-type: none"> ○ one-off costs for initial certification under ECM ○ recurring costs per annum for surveillance activities by certification body as well as renewal of ECM certification › Cost savings (benefits) for ECMs and RUs due to reduced duplicative certification system and increased harmonisation <ul style="list-style-type: none"> ○ one-off cost savings are assumed insignificant ○ recurring costs savings (per annum) - the main cost changes concern any savings generated per annum by having reduced number of audits <p>Notes:</p> <ul style="list-style-type: none"> › For all categories the estimated quantitative impacts measure the change in mill. Euros relative to the baseline (Option 0 or Do-Nothing). › In the case of one-off impacts the values are assumed to be incurred in a single year only (Year 0 in the CBA calculation). › For recurring impacts the values shown are incurred each year over the assumed lifetime (20 years). › Cost and benefit values given for stakeholder groups are expressed per entity. Therefore, in order to determine the total impact these values would need to be multiplied by the number of entities affected. › Cost figures for ECMs and maintenance workshops include both internal and external items <p>These are estimates based on the input collected from the NSAs and the sector, grounded on assumptions and can therefore not be considered as being accurate measurements.</p>							
	<p><i>Category of stakeholder</i></p>		<p><i>Option 0 (baseline)</i></p>	<p><i>Option 1</i></p>	<p><i>Option 2</i></p>	<p><i>Option 3</i></p>	<p><i>Option 4</i></p>	<p><i>Option 5</i></p>
<p>ECM / MWs</p>	<p>Benefits (euro)</p>	<p>0.00</p>	<p>0.015</p>	<p>0.018</p>	<p>0.016</p>	<p>0.018</p>	<p>0.018</p>	<p>0.016</p>
	<p>One-off costs (euro)</p>	<p>0.00</p>	<p>0.04</p>	<p>0.04</p>	<p>0.04</p>	<p>0.04</p>	<p>0.04</p>	<p>0.06</p>
	<p>Recurring costs (euro)</p>	<p>0.00</p>	<p>0.02</p>	<p>0.02</p>	<p>0.02</p>	<p>0.02</p>	<p>0.02</p>	<p>0.03</p>
<p>RUs</p>	<p>Benefits (euro)</p>	<p>0.00</p>	<p>0.015</p>	<p>0.018</p>	<p>0.016</p>	<p>0.018</p>	<p>0.018</p>	<p>0.016</p>
	<p>Costs (euro)</p>	<p>0.00</p>	<p>0.00</p>	<p>0.00</p>	<p>0.00</p>	<p>0.00</p>	<p>0.00</p>	<p>0.00</p>
<p>Overall</p>	<p>Benefits (euro)</p>	<p>0.00</p>	<p>2.7</p>	<p>6.7</p>	<p>9.0</p>	<p>13.4</p>	<p>12.5</p>	

	One-off costs (euro)	0.00	3.8	7.6	11.4	15.2	21.3
	Recurring costs (euro)	0.00	2.2	4.4	6.6	8.7	12.5
<p>The NPV and B/C figures are calculated using a 4% discount rate (in accordance with the EC Better Regulation Guidelines, 2017).</p>							
	<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>	<i>Option 5</i>	
NPV <i>(input for section 5.2)</i>	0.0	0.6	11.5	8.8	23.0	-21.7	
B/C ratio <i>(input for section 5.2)</i>	N/A	1.1	1.4	1.2	1.4	0.8	

Further details of the quantitative modelling of impacts are provided in **Annex EcoEv 2**.

5. Comparison of options and preferred option

<p>5.1. Effectiveness criterion (options' response to specific objectives)</p>	<p>On the basis of the findings from section 4.1 the extent to which the various options respond to the specific objectives have been assessed, using a scale from 1-very low response to 5-very high response. Subsequently, the individual scores for each option are added together and the average score per option is calculated (effectiveness).</p> <table border="1" data-bbox="564 512 1466 1274"> <thead> <tr> <th></th> <th><i>Option 0 (baseline)</i></th> <th><i>Option 1</i></th> <th><i>Option 2</i></th> <th><i>Option 3</i></th> <th><i>Option 4</i></th> <th><i>Option 5</i></th> </tr> </thead> <tbody> <tr> <td><i>Increase the efficiency for RUs assurance of maintenance</i></td> <td>1</td> <td>2</td> <td>4</td> <td>3</td> <td>5</td> <td>4</td> </tr> <tr> <td><i>Reduced duplicative customer certification</i></td> <td>1</td> <td>2</td> <td>4</td> <td>4</td> <td>5</td> <td>4</td> </tr> <tr> <td><i>Reduced diversity of requirements and methods applied by CBs</i></td> <td>1</td> <td>2</td> <td>4</td> <td>3</td> <td>5</td> <td>4</td> </tr> <tr> <td><i>Enhanced clarity in the definition / allocation responsibilities</i></td> <td>1</td> <td>2</td> <td>4</td> <td>3</td> <td>5</td> <td>4</td> </tr> <tr> <td>Overall score</td> <td>4</td> <td>8</td> <td>16</td> <td>14</td> <td>20</td> <td>16</td> </tr> <tr> <td>Effectiveness (average score)</td> <td>1</td> <td>2</td> <td>4</td> <td>3.5</td> <td>5</td> <td>4</td> </tr> </tbody> </table>		<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>	<i>Option 5</i>	<i>Increase the efficiency for RUs assurance of maintenance</i>	1	2	4	3	5	4	<i>Reduced duplicative customer certification</i>	1	2	4	4	5	4	<i>Reduced diversity of requirements and methods applied by CBs</i>	1	2	4	3	5	4	<i>Enhanced clarity in the definition / allocation responsibilities</i>	1	2	4	3	5	4	Overall score	4	8	16	14	20	16	Effectiveness (average score)	1	2	4	3.5	5	4
	<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>	<i>Option 5</i>																																												
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<p>5.2. Efficiency (NPV and B/C ratio) criterion</p>	<p>On the basis of the findings from section 4.2, the overall efficiency of the various options is rated as follows. The following principle for the scoring is adopted:</p> <ul style="list-style-type: none"> › 1 if B/C ratio <1 or NPV <=0 › 5 if B/C ratio >1 and NPV >0 <table border="1" data-bbox="564 1554 1447 1682"> <thead> <tr> <th></th> <th><i>Option 0 (baseline)</i></th> <th><i>Option 1</i></th> <th><i>Option 2</i></th> <th><i>Option 3</i></th> <th><i>Option 4</i></th> <th><i>Option 5</i></th> </tr> </thead> <tbody> <tr> <td>Efficiency</td> <td>1</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>1</td> </tr> </tbody> </table>		<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>	<i>Option 5</i>	Efficiency	1	5	5	5	5	1																																			
	<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>	<i>Option 5</i>																																												
Efficiency	1	5	5	5	5	1																																												
<p>5.3. Summary of the comparison</p>	<p>In the following table the comparison of options is summarized taking into account both the effectiveness and efficiency dimensions.</p> <table border="1" data-bbox="564 1756 1466 2011"> <thead> <tr> <th></th> <th><i>Option 0 (baseline)</i></th> <th><i>Option 1</i></th> <th><i>Option 2</i></th> <th><i>Option 3</i></th> <th><i>Option 4</i></th> <th><i>Option 5</i></th> </tr> </thead> <tbody> <tr> <td><i>Effectiveness</i></td> <td>1</td> <td>2</td> <td>4</td> <td>3.5</td> <td>5</td> <td>4</td> </tr> <tr> <td><i>Efficiency</i></td> <td>1</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>1</td> </tr> <tr> <td>Overall rating</td> <td>1</td> <td>3.5</td> <td>4.5</td> <td>4.3</td> <td>5</td> <td>2.5</td> </tr> </tbody> </table>		<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>	<i>Option 5</i>	<i>Effectiveness</i>	1	2	4	3.5	5	4	<i>Efficiency</i>	1	5	5	5	5	1	Overall rating	1	3.5	4.5	4.3	5	2.5																					
	<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>	<i>Option 4</i>	<i>Option 5</i>																																												
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<i>Efficiency</i>	1	5	5	5	5	1																																												
Overall rating	1	3.5	4.5	4.3	5	2.5																																												
<p>5.4. Preferred</p>	<p>The following options are the two top ranked:</p>																																																	

<p>option(s)</p>	<ul style="list-style-type: none"> › Option 4 (mandatory scope extension to all vehicles) has the highest effectiveness (5) and the highest NPV (23 mill.euro) › Option 2 (voluntary scope extension to all vehicles) has a relatively lower effectiveness (4) and a relatively lower NPV (11,5 mill.euro) <p>It should be emphasised that although both options have positive net-benefits the order of magnitude for both benefits and costs are higher for Option 4 compared to Option 2. This has two implications: 1) the overall gains are higher for Option 4; 2) the costs involved would also be higher making this option more vulnerable.</p> <p>These aspects should be further investigated in the Impact Assessment.</p>
<p>5.5. Further work required</p>	<p>Following consultation with stakeholders (starting December 2017) the impact assessment will be updated and a new document will be issued by May 2018.</p>

6. Monitoring and evaluation

<p>6.1. Monitoring indicators</p>	<p>Preliminary proposal for headline indicators:</p> <ul style="list-style-type: none"> › Overall level of correct implementation of the Regulation › Number of identified major non-compliances with the certification requirements per country and per application › Number of new, amended and renewed ECM certificates › Number of revoked ECM certificates <p>Preliminary proposal for in-depth information requirements:</p> <ul style="list-style-type: none"> › Overall perceptions and experiences of ECM certification by stakeholders (CBs, NSAs, ECMs, keepers, maintenance workshops, RUs/IMs, leasing companies) › Views on the implementation of specific elements of the Regulation (detected issues and advantages, non-anticipated results, etc.) › Actual implementation costs (focusing on obtaining practical information about costs incurred by the different parties) › Perceptions among ECMs on whether there are changes in resources used for applying for ECM certification and for preparing for the annual surveillance activities (with specific examples) › Perceptions among CBs on whether there are changes in resources used for assessing ECM certification applications and for carrying out surveillance activities (with specific examples) › Opinions from RUs/IMs and other stakeholders on the system established by ECMs to monitor their performance and the performance of their outsourcing partners › Views from ECMs, RUs/IMs and other stakeholders on the effectiveness of the communication arrangements for requesting information on the maintenance/operation of vehicles › Opinions from ECMs and maintenance workshops on the effectiveness of the exchange of views between NSAs and CBs to avoid duplication of assessments › Practical examples of the Regulation having positively influenced the opening of the market for maintenance services and/or interoperability in the EU. <p>Key data sources may include:</p> <ul style="list-style-type: none"> › Annual reporting by NSAs on ECM certification and supervision › Monitoring of NSAs' activities by the Agency › Annual ECM reporting to CBs › Cooperation among CBs by the Agency › Dedicated interviews/surveys issued through the NSA Network and the Cooperation Bodies WP, as required. <p>The Agency is also monitoring the following railway indicator which has link to this project: RI 1.3 – Improvement of safety maturity level of the railway sector</p>
<p>6.2. Future evaluations</p>	<p>Based on the monitoring indicators and other relevant information, future <i>ex post</i> evaluations of this initiative may be considered, as required.</p>

Annex EcoEv 1

Parameters used in the assessment of costs and benefits	Value	Unit
ECM initial certification costs (external)	20000	€
ECM Annual costs (external)	11500	€
Maintenance Workshop Initial certification costs (external)	8000	€
Maintenance Workshop yearly costs	5000	€
Coefficient for additional internal costs for preparation for audits	1	
Assumed savings potential through reduced duplication	35	%
Number of ECMs affected by scope extension	760	
Proportion of identified ECMs likely not to be MW	50	%

Annex EcoEv 2

Quantitative assessment of retained options

ECM CBA - Output Sheet		(Figures are in mln Euros)																					
Lifetime		20																					
Discount factor		0.04																					
Option 1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Costs	3.80	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	33.49 €
Benefits	0.00	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73	37.12 €
Net-benefits	-3.80	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	
Break-even period	7.0																						
NPV	0.63 €		B/C Ratio	1.11																			
Option 2	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Costs	7.60	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	66.99 €
Benefits	0.00	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	6.72	91.37 €
Net-benefits	-7.60	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	
Break-even period	3.2																						
NPV	11.49 €		B/C Ratio	1.36																			
Option 3	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Costs	11.40	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	100.48 €
Benefits	0.00	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	122.88 €
Net-benefits	-11.40	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	
Break-even period	4.6																						
NPV	8.77 €		B/C Ratio	1.2																			
Option 4	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Costs	15.20	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	8.74	133.98 €
Benefits	0.00	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	13.45	182.74 €
Net-benefits	-15.20	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	
Break-even period	3.2																						
NPV	22.97 €		B/C Ratio	1.36																			
Option 5	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Costs	21.28	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	12.54	122.99 €
Benefits	0.00	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	101.27 €
Net-benefits	-21.28	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	
Break-even period	N/A																						
NPV	-21.72 €		B/C Ratio	0.82																			