

Making the railway system
work better for society.

Annex 2 : Impact Assessment

Light Impact Assessment *Revision of the RINF Decision*

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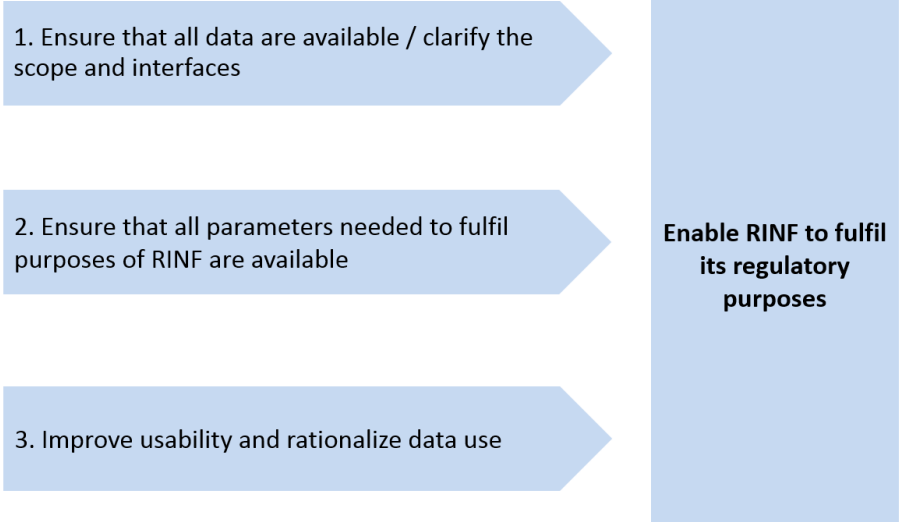
Document History

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1. Context and problem definition

<p>1.1. Problem and problem drivers</p>	<p>The extent to which the current RINF can be used for checking the technical compatibility between vehicle and network (purpose of the RINF, according to Art. 49(2) of the Interoperability Directive), and the route compatibility (as defined in the RINF Decision) is limited.</p> <p>This is due to the absence of some parameters necessary for accomplishing the compatibility check on one hand, and to the current state of implementation of the RINF by Members States (62% of the expected data in May 2018).</p> <p>Besides, the lack of clarify on the scope of the application (such as private sidings) leads to uneven network coverage across the Member States, which hampers the fulfilment of use cases foreseen in the Annex of the RINF decision in force.</p> <p>In addition, the user interface does not sufficiently facilitate the fulfilment of the RINF purposes, including the compatibility check.</p> 
<p>1.2. Main assumptions</p>	<p>The implementation, notably the provision of data into the RINF, will be enforced by the EC, thus eliminating the data gap problem undermining the fulfilment of the RINF purposes.</p> <p>The non-mandatory use cases identified by the railway sector and the Agency, requiring a more significant changes to RINF, are not privileged in this revision. They should be subject to a specific cost benefit analysis first, before being proposed for the integration in RINF.</p> <p>Although the RINF is a register in the first place, as per legal definitions, some of the purposes cannot be effectively fulfilled without a more sophisticated user interface user interface functionalities, more common to databases. Therefore, the RINF is not considered as a register stricto sensu, but rather as a database from the business point of view.</p>

<p>1.3. Stakeholders affected</p>	<p>The prospective users of RINF data, mainly RUs, vehicle keepers and manufacturers, who rely on reliable data when using the RINF for their administrative and business purposes.</p> <p>The National Registering Entities (NREs) responsible for the RINF implementation and national coordination.</p> <p>The Infrastructure Managers (IMs) who are ultimate holders of the technical data on their network and who prepare them for import in RINF by the NRE at national level. They also need to assure the availability of parameters and data specified in the Annex to RINF Decision.</p> <p>Any public user, including business users such as RUs who have access to the database once registered.</p> <p>The Agency, maintaining the RINF database, introducing the changes and implementing new functionalities, managing also regular meetings of the network of NREs.</p> <table border="1" data-bbox="523 869 1422 1137"> <thead> <tr> <th><i>Category of stakeholder</i></th> <th><i>Importance of the problem*</i></th> </tr> </thead> <tbody> <tr> <td>MSs (NREs)</td> <td>3</td> </tr> <tr> <td>IMs</td> <td>4</td> </tr> <tr> <td>RUs</td> <td>5</td> </tr> <tr> <td>ERA</td> <td>2</td> </tr> </tbody> </table> <p style="text-align: right;"><i>*) Scale: 1-low to 5-very high</i></p>	<i>Category of stakeholder</i>	<i>Importance of the problem*</i>	MSs (NREs)	3	IMs	4	RUs	5	ERA	2
<i>Category of stakeholder</i>	<i>Importance of the problem*</i>										
MSs (NREs)	3										
IMs	4										
RUs	5										
ERA	2										
<p>1.4. Evidence and magnitude of the problem</p>	<p>Work carried out by the Agency with its Working Groups after the implementation of the Fourth railway package legislation led to the identification of a number of technical parameters that are currently absent in RINF, while needed for the route compatibility check. In total, 25 parameters are currently missing, while one current parameter needs amendment. If those parameters are not part of RINF specification, and there are no data available in RINF for them, than the fulfilment of the main purpose of RINF is hampered.</p> <p>According to the data provided by NREs and retrieved at ERA, the implementation of the RINF has incurred one-off costs of about 21 M€. The annual recurring costs are then estimated at 3 M€. Due to a partial and delayed implementation, only a limited amount of benefits can be assumed. The efficiency of the RINF, at this moment, is therefore not present.</p>										
<p>1.5. Baseline scenario</p>	<p>The RINF is filled with data for all mandatory parameters (as per Annex to RINF Decision in force), by all NREs, so that the data are available for all MS.</p>										
<p>1.6. Subsidiarity and proportionality</p>	<p>Since more than half of all freight transport in the EU is international and the share of international passenger services among all passenger services is not negligible (51% for freight and 6% for passenger traffic¹), it is much more efficient for relevant organizations (notably RUs), to rely on an EU-wide</p>										

¹ Fifth report on monitoring developments of the rail market ([COM\(2016\) 780 final](#))

	<p>infrastructure register, with common parameters, which provide support to their administrative and business needs.</p> <p>A centralized register also assures a full transparency of the technical characteristics of the railway network, thus supporting the development of the single market within the Union (also through a level playing field for competition between railway transport providers).</p> <p>Due to economies of scale, the effort required by implementing the EU-wide solution should be lower, compared to the implementation through national vehicle registers.</p>
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2. Objectives

<p>2.1. Strategic and specific objectives</p>	<p>To enable the RINF to fulfil its regulatory purpose and effectively serve the needs of its users.</p> <p>This is also in line with the following strategic objective(s) of the Agency:</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"/> Optimizing the Agency’s capabilities <input checked="" 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 specific objectives of this initiative are then the followings:</p> <div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>1. Ensure that all data are available / clarify the scope and interfaces</p> <p>2. Ensure that all parameters needed to fulfil purposes of RINF are available</p> <p>3. Improve usability and rationalize data use</p> </div> <div style="flex: 0.5; border-left: 1px solid black; border-right: 1px solid black; background-color: #d9e1f2; padding: 10px; text-align: center;"> <p>Enable RINF to fulfil its regulatory purposes</p> </div> </div>
<p>2.2. Link with Railway Indicators</p>	<p>Completeness of data in the registers maintained by the Agency</p> <p>Usefulness and usability of the registers maintained by the Agency</p>

3. Options

<p>3.1. List of options</p>	<p>Baseline: No change to RINF, but data are made available for all MSs, in line with the current Decision.</p> <p>Option 1: RINF parameters revised. (Only parameters to assure fulfilment of RINF regulatory purpose and the revised legal framework (4RP and revised TSIs) are amended.)</p> <p>Option 2: RINF parameters revised, basic functionalities added. (The same parameters as above and new basic functionalities to the RINF user interface).</p> <p>Option 3: RINF parameters revised, advanced functionalities added to satisfy non-mandatory use cases.</p>
<p>3.2. Description of options</p>	<p>Baseline: No changes are introduced in a short/mid-term as a preference is given to populating RINF with data.</p> <p><u>Option 1 (32 new parameters):</u> Only changes strictly required by the 4RP legislation are implemented. Specifically, the new parameters needed to enable the route compatibility check are introduced (25) and four new parameters introduced for a better description of ERTMS/GSMR, two new parameters are introduced allowing to notify the technical rules of strictly local nature. A new parameter corresponding to the “quieter” route is introduced, reflecting the revision of TSI NOI. Some of the current parameters are removed, modified or replaced by the new parameters, following a thorough assessment. The user interface is upgraded to enable:</p> <ul style="list-style-type: none"> - identification and the export of SoLs and OPs that are part of the route (as defined by the user and export the corresponding characteristics); - delivery of certificate for exported characteristics. <p><u>Option 2 (35 new parameters):</u> In addition to Option 1, a few additional technical parameters are introduced to streamline MSs reporting obligations (e.g. reporting to TEN-tec database) and to inform about the existence of the documents on tunnels clearance gauge when it exist or to provide a specific information on the section of line. The provision of two parameters related to intermodal transport is now made mandatory for the TEN network. The user interface (CUI) is upgraded to enable:</p> <ul style="list-style-type: none"> - visual representation of thematic network maps; - Implementation of the Application Programming Interface (API). <p><u>Option 3 (36 new parameters):</u> In addition to Option 2, connectivity parameters are introduced for operational points (OPs) to enable route planning between non-adjacent OPs.</p> <p>The user interface (CUI) is upgraded to enable:</p> <ul style="list-style-type: none"> - the visual representation of routes, including the real GIS geometry of section of lines (SoL).

3.3. Uncertainties/risks	<p>The list of parameters needed for the route compatibility check may be incomplete, or evolve in the future. This should, however, have a limited impact on the quantitative assessment performed in this IA.</p> <p>The impact of changes proposed in Option 3 in addition to Option 2 are not sufficiently understood yet and their implementation may require relatively high resources (financial and timewise), in particular at ERA.</p>
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4. Impacts of the options

4.1. Impacts of the options (qualitative analysis)	<i>Category of stakeholder</i>		<i>Option 1</i>	
	MSs (NREs)	Positive impacts	Higher transparency supporting the market opening and efficient train services	
		Negative impacts	Administrative costs to implement new parameters and functionalities	
	IMs	Positive impacts	List of parameters defined and harmonized with other IMs	
		Negative impacts	Costs to implement and maintain data for the new technical parameters; Costs of data collection, provision and maintenance for new parameters	
	RUs	Positive impacts	Route compatibility check enabled, including quieter routes and specific rules	
		Negative impacts	None	
	ERA	Positive impacts	None	
		Negative impacts	Costs of register update	
	Overall assessment (input for section 5.1)	Positive impacts	Positive impacts exist for all stakeholders affected (except ERA)	
		Negative impacts	Only limited negative impacts for MSs and IMs	
	<i>Category of stakeholder</i>		<i>Option 2</i>	
	MSs (NREs)	Positive impacts	Higher transparency supporting the market opening and efficient train services	
		Negative impacts	Administrative costs to implement new parameters and functionalities	
IMs	Positive impacts	List of parameters defined and harmonized with other IMs Facilitation of reporting obligations		
	Negative impacts	Costs to implement and maintain data for the new technical parameters; Costs of data collection,		

			provision and maintenance for new parameters	
	RUs	Positive impacts	Route compatibility check enabled and supported	
		Negative impacts	None	
	ERA	Positive impacts	More detailed information available for additional statistics and analysis	
		Negative impacts	Costs of register update (parameters and user interface, including its functionalities)	
	Overall assessment <i>(input for section 5.1)</i>	Positive impacts	Positive impacts exist for all stakeholders affected	
		Negative impacts	Only limited negative impacts for MSs and IMs	
	<i>Category of stakeholder</i>	<i>Option 3</i>		
	MSs (NREs)	Positive impacts	Higher transparency supporting the market opening and efficient train services	
		Negative impacts	Administrative costs to implement new parameters and functionalities	
	IMs	Positive impacts	List of parameters defined and harmonized with other IMs Facilitation of reporting obligations	
		Negative impacts	Costs to implement and maintain data for the new technical parameters; Costs of data collection, provision and maintenance for new parameters	
	RUs	Positive impacts	Route compatibility check enabled and supported. Route planning enabled and supported	
		Negative impacts	None	
	ERA	Positive impacts	More detailed information available for additional statistics and analysis	
		Negative impacts	Costs of register update (parameters and user interface, including its functionalities)	
	Overall assessment <i>(input for section 5.1)</i>	Positive impacts	Positive impacts exist for all stakeholders affected	
		Negative impacts	Only limited negative impacts for MSs and IMs	
	4.2. Impacts of the options (quantitative analysis)	<p>The benefits of the RINF implementation are taken from the IA for the RINF (EE-IA-RINF-V10) from 2010, where the following annual benefits were estimated: Benefits in the framework of vehicle circulation/business planning: 2 M€; Benefits in the framework of vehicle type management: 25 M€; Benefits in the framework of new vehicle designs: 10 M€; Benefits in the framework of route compatibility checks: 50 M€. This leads to total benefits of 87 M€ per year in case of the full</p>		

and complete implementation. All other benefits (e.g. to ERA) are not considered here as being comparatively too marginal.

The **costs** of the RINF implementation by MSs are estimated from the reported costs of implementation (cost survey of NREs in early 2018) and established as follows: One-off costs: 30 M€ (ITS: 20 M€, Data collection in Member States: 10 M€). Recurring costs for Member States: 5 M€ (ITS: 3 M€, Data collection: 2 M€). The costs borne by the Agency to implement the RINF were estimated as 0.6 M€ (one-off) and the yearly maintenance costs about 0.4 M€ (recurring costs).

The **newly incurred costs** are estimated based on the real cost of implantation of RINF so far, by extrapolating the single parameter and single average RINF functionality costs, as follows:

For MSs:

Introduction of N new parameters: one-off (T and data) and recurring (only data).

Costs to MSs	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
One-off	2.5 M€	2.7 M€	3 M€
Recurring	0.5 M€	0.55 M€	0.6 M€

For the Agency:

Update of the IT system and Implementation of the new functions in user interface:

Costs to ERA	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
One-off	0.1 M€	0.15 M€	0.3-1 M€

Additional benefits (to baseline) are partly taken from the original IA, partly estimated for the new user interface functionalities.

The benefits to RUs from functioning compatibility check is directly taken from the original IA and assumed to be 50 M€ p.a..

The benefits to RUs from newly added parameters (on top of those strictly required by compatibility check) are assumed to be 0.5 M€ p.a..

The benefits to RUs from direction data at OPs, allowing to determine paths, are estimated at 5 M€ p.a.. They are estimated assumed annual savings of 7 k€ per RU.

Minor benefits are assumed for IMs in streamlining their data exports to various regulatory databases and in the network statement. A unit value of 4 k€ per IM is assumed leading to annual benefits of 0.1 M€.

Benefits to:	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
RUs	50 M€	50.5 M€	55 M€
IMs	0	0.1 M€	0.1 M€

These costs and benefits are then re-calculated as annual costs over the 20 years.

<i>Category of stakeholder</i>		<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
RUs	Benefits (M€ p.a.)	37	87	87.5	92
	Costs (M€ p.a.)	0	0	0	0
MSs/NREs	Benefits (M€ p.a.)	0	0	0.10	0.10
	Costs (M€ p.a.)	6.19	6.79	6.84	6.90
ERA	Benefits (M€ p.a.)	0	0	0	0
	Costs (M€ p.a.)	0.41	0.41	0.42	0.42-0.46
Overall	Benefits (M€ p.a.)	37.0	87.0	87.6	92.1
	Costs (M€ p.a.)	6.60	7.20	7.26	7.33-7.37

Based on the cost/benefit estimates above, the **Net Present Value (NPV)** and the **Benefit/Cost (B/C) ratio** is calculated for a 20 year forecast, with a discount rate of 5%.

	<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
NPV (M€)	381	1 014	1 021	1 077
B/C ratio	5.1	11.0	11.0	11.4-11.3

5. Comparison of options and preferred option

5.1. Effectiveness criterion (options' response to specific objectives)		<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
	<i>Ensure data completeness</i>	1	5	5	5
	<i>Ensure presence of all necessary technical parameters</i>	1	2	4	5
	<i>Improve usability and rationalize data use</i>	1	1	4	5
	Overall score	1	2.7	4.7	5

Scale: 1-very low response to 5-very high response

5.2. Efficiency (NPV and B/C ratio) criterion		<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
	<i>Efficiency</i>	3	5	5	5
5.3. Summary of the comparison		<i>Option 0 (baseline)</i>	<i>Option 1</i>	<i>Option 2</i>	<i>Option 3</i>
	<i>Effectiveness</i>	1	2.7	4.7	5
	<i>Efficiency</i>	3	5	5	5
	<i>Overall rating</i>	2	3.9	4.9	5
5.4. Preferred option(s)	<p>All options analysed have a high efficiency, while option 2 and 3 have relatively higher effectiveness. Therefore Option 2 and Option 3 can be recommended by this impact assessment.</p> <p>Since the options are backwards compatible, they can be implemented incrementally.</p> <p>As the impact of changes proposed in Option 3 in addition to Option 2 are not sufficiently understood yet and their implementation may require relatively high resources, in particular at ERA, it may be appropriate to defer its implementation.</p>				
5.5. Further work required	<p>Any new options for the RINF future development will have to defined and scoped more precisely and the assessment run for the new options. This is however outside of the scope of this revision.</p>				

6. Monitoring and evaluation

6.1. Monitoring indicators	<p>Completeness of data in RINF (network and parameter values) – at least quarterly.</p> <p>Usefulness and usability of RINF data for the users (RUs) – annual survey.</p>
6.2. Future evaluations	<p>No ex post evaluations of this initiative is envisaged.</p> <p>New evaluations will be needed when preparing future revision of the RINF decision.</p>