EUROPEAN
COMMISSION

Brussels, 2.6.2021
SWD(2021) 134 final

PART 1/5

COMMISSION STAFF WORKING DOCUMENT

EVALUATION

of

Regulation (EU) No 913/2010

concerning a European rail network for competitive freight

{SWD(2021) 135 final}

Table of contents

1 Introduction 6
1.1 Purpose of the evaluation 6
1.2 Scope of the evaluation 7
2 Background to the intervention 7
2.1 Wider policy context 7
2.2 Description of the intervention and its objectives 9
2.3 Baseline and points of comparison 16
3 Implementation / state of Play 21
3.1 Description of the current situation 21
3.2 Relevant changes in the EU legal framework 23
4 Method 23
4.1 Short description of methodology 23
4.2 Limitations and robustness of findings 25
5 Analysis and answers to the evaluation questions 26
5.1 Relevance 26
5.2 Effectiveness 32
5.3 Efficiency 70
5.4 Coherence 77
5.5 EU added value 83
6 Conclusions 86
Annex I Procedural information 92
1 Lead DG, Decide Planning/CWP references 92
2 Organisation and timing 92
3 Exceptions to the better regulation guidelines 92
4 Consultation of the RSB (if applicable) 93
5 Evidence, sources and quality 93
Annex II Stakeholder consultation 95
Annex III Methods and analytical models 100
Annex IV Intervention logic 102
Annex V Evaluation questions 103

Annex VI Costs and EU funding for the rail freight corridors for the period 2012-2020 106

Annex VII Supporting material 109

1 (General) objectives adopted by the governance structures of the corridors 109

2 Governance structure 113

3 Performance of rail freight services 123

4 Maps of International rail freight traffic on the EU Rail Network 127

5 Management of disruptions and the designation of 'diversionary lines' 138

6 Overview of activities carried out at network level 144

7 Measures to implement the provisions on traffic management (Articles 16 and 17 of the Regulation) 146

8 Roles, functions and tasks carried out at network level 150

9 Pre-arrangement of the infrastructure capacity offer 153

10 Estimating the impact of shorter travel times facilitated by pre-arranged train paths on rail freight traffic 155

11 Intermodal transport services involving rail freight: players, processes and interfaces involved 158

12 Situation of international rail freight traffic during the covid-19 pandemic 163

13 Relevance analysis of investment planning, coordination of works and designation of corridors 166

14 Coherence analysis of investment planning, coordination of works and the framework of capacity allocation 169

15 Analysis of the coherence of the Rail Freight Corridors Regulation with other legal acts 171

16 Dwelling times of freight trains at RFC border crossings 178

Annex VIII Overview of costs – benefits identified in the evaluation 184

Glossary

Term or acronym	Meaning or definition
CEF	Connecting Europe Facility
CEF Regulation	Regulation (EU) No 1316/2013
CID	Corridor information document
CIP	RailNetEurope's Customer Information Platform
CNC(s)	Core network corridor(s)
Combined Transport Directive	Directive 92/106/EEC
ECCO	Efficient Cross Corridor Organisation
ERA	European Union Agency for Railways
ERTMS	European Rail Traffic Management System
GHG	Greenhouse gases
GIS	Geographic information system
Governance Directive	Directive (EU) 2016/2370
ICM	International Contingency Management
IM(s)	Rail infrastructure manager(s)
INEA	Innovation and Networks Executive Agency
ISSG	Inter-service steering group
KPI(s)	Key performance indicator(s)

Term or acronym	Meaning or definition
OPC	Open public consultation
PaP(s)	Pre-arranged train path(s)
PMO	Permanent management office
PRIME	Platform of Rail Infrastructure Managers in Europe
Railway Interoperability Directive	Directive (EU) 2016/797
RAG(s)	Advisory group(s) made up of railway undertakings interested in the use of a rail freight corridor
Recast Directive (see also Single European Railway Area Directive)	Directive 2012/34/EU
RFC(s)	Rail freight corridor(s)
RMMS	Rail market monitoring
RNE	RailNetEurope
RU(s)	Railway undertaking(s)
SERAC	Single European Railway Area Committee
Single European Railway Area Directive (see also Recast Directive)	Directive 2012/34/EU
TAG(s)	Advisory group(s) made up of the managers and owners of the terminals of a rail freight corridor
TEN-T	Trans-European Transport Network

Term or acronym	Meaning or definition
TEN-T Guidelines	Regulation (EU) No 1315/2013
TIS	RailNetEurope's Train Information System
tkm	See tonne-kilometre.
Tonne-kilometre	A unit of measure of freight transport which represents the transport of one tonne of goods (including packaging and tare weights of intermodal transport units) by a given transport mode (road, rail, air, sea, inland waterways, pipeline etc.) over a distance of one kilometre.
TTR	Timetable redesign project

1 INTRODUCTION

1.1 Purpose of the evaluation

This evaluation aims to establish if Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight[1] (hereafter 'the Rail Freight Corridors Regulation' or 'the Regulation') is still fit for its purpose, that is making rail freight more competitive with other modes of transport via the establishment and organisation of international rail corridors.

The evaluation assesses if the requirements of the Regulation were adequate for achieving its intended effects and if the Regulation was implemented to the fullest extent. To this end, it identifies in qualitative and quantitative terms direct and side effects of the establishment and the organisation of the rail freight corridors, as well as the costs and benefits for the stakeholders.

The evaluation relies on the data and analysis provided by an evaluation support study carried out in the course of 2019 and 2020[2] (hereafter 'the evaluation support study'). It takes a broader look at the challenges rail freight is facing, in order to put into context the results of the measures envisaged by the Regulation.

Increasing the attractiveness of rail freight service and shifting inland freight from road to rail is an essential component of the EU's efforts to make the transport system more resilient, clean and sustainable, as outlined in the 2001[3] and the 2011[4] White Papers on transport - Roadmap to a Single European Transport Area.

The Commission reaffirmed this objective in its 2019 European Green Deal Communication[5] that provides its vision on how to transform EU's economy and society to put it on a more sustainable path. The Commission also set out a 90% reduction in transport emissions by 2050 and put forward the sustainable and smart mobility strategy to achieve this target.

---

1 OJ L 276, 20.10.2010, p. 22.

2 Ricardo, TRT, MFive, MC Mobility Consultants and TEPR, *Evaluation of Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight*, Evaluation support study, 2020.

3 COM(2001) 370 final of 12 September 2001.

4 COM(2011) 144 final of 28 March 2011. The Commission is also evaluating the 2011 White Paper.

5 COM(2019) 640 final of 11 December 2019.

Since the entry into force of the Regulation, the Commission's services have regularly monitored the progress in achieving its goals.

In 2016, the European Court of Auditors published a report on the implementation of the Regulation, which concluded that 'the performance of rail freight transport in the EU remains unsatisfactory'[6].

The 2018 Commission report on the application of the Regulation[7] indicated that despite some positive developments, limited progress was made on core issues such as rail capacity allocation for freight. In February 2019, the Commission published a Roadmap[8] outlining its plan for this evaluation.

1.2 Scope of the evaluation

The evaluation considers the period from the establishment of the first rail freight corridors under the Regulation in 2013 until 2019, and in some cases includes analysis based on developments in 2020. It covers all established rail freight corridors[9], i.e. all Member States involved in the rail freight corridors, namely all except for Ireland, Cyprus and Malta. For parts of the evaluation information on third countries involved in the rail freight corridors (Norway, Serbia, Switzerland and the United Kingdom) was also analysed.

The evaluation covers all provisions of the Regulation.

It elaborates on the five evaluation criteria required by the European Commission's Better regulation guidelines[10], namely relevance, effectiveness, efficiency, coherence and EU added value.

2 BACKGROUND TO THE INTERVENTION

2.1 Wider policy context

Transport of goods by rail encountered difficulties for decades for many reasons, both external and internal to the sector: changes in industrial structure, the development of

[6] European Court of Auditors, *Rail freight transport in the EU: still not on the right track*, Special Report No 8, Luxembourg, Publications Office of the European Union, 2016.

[7] COM(2018) 189 final of 16 April 2018.

[8] EU rail freight network – evaluation (2010-19) (https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/2118-Evaluation-of-the-rail-freight-network)

[9] The Rhine-Danube rail freight corridor was just established in November 2020.

[10] Chapter VI Guidelines on evaluation (including fitness checks) (https://ec.europa.eu/info/sites/info/files/better-regulation-guidelines-evaluation-fitness-checks.pdf)

alternative and efficient modes of transport, new logistic requirements on the part of companies, lack of interoperability of rail and lack of access for freight trains to rail infrastructure.

The Commission pursued an active policy for the revitalisation of rail transport based on the progressive opening up of transport services to competition (effective for all freight since 1 January 2007) and the development of the interoperability of rail systems.

The launch of the Lisbon strategy[11] and its environmental dimension raised the importance of the environment, climate change and energy policy. In addition, EU's Strategy for Sustainable Development stressed the need for a modal shift from road to rail[12].

In 2001 the Commission came forward with a White Paper on Transport[13] and reviewed its mid-term results in 2006[14]. The Commission proposed the creation of a clean and efficient transport system and to concentrate on the development of 'co-modality', that is the optimal use of all modes of transport, in combination or otherwise.

In 2009, after decades of decline, the market share of rail freight transport reached a record low of 15.7% of total land transport[15]. The economic crisis triggered by the financial collapse in 2007-2008 hit rail freight harder than any other mode of transport.

During the following 11 years (2009-2019), rail freight modal share in EU 27 land transport slightly increased and has been rather stable around 18% while road modal share increased to over 75%[16], with significant differences across countries and along rail corridors.

In the meantime, the territory of the EU grew considerably following the enlargement of 2004 and 2007, thus further increasing the potential role of rail freight for the Union's transport policy, as it is generally more economically feasible to transport goods on rail over distances above 300 km.

Prior to the adoption of the Regulation, Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certi-

[11] COM(2010) 2020 final of 3 March 2010.

[12] COM(2001) 264 final of 15 May 2001.

[13] COM(2001) 370 final of 12 September 2001.

[14] COM(2006) 314 final, 22 June 2006.

[15] Statistical pocketbook – EU transport in figures, 2012.

[16] See Statistical pocketbook – EU transport in figures, 2019. For 2017, rail accounted for 16.5% of freight transport on land.

fication[17] laid down rules on cooperation between national infrastructure managers in view of facilitating international transport[18] of goods by rail.

Against this background, in 2008, the Commission proposed a regulation concerning a European rail network for competitive freight[19].

The original impact assessment[20] tested three options:

– 1 – Keep the status quo;

– 2 – Expand the ERTMS[21] initiative to other corridors by disseminating best practices, systematically verify the application of existing legislation (concerning international cooperation and the establishment of performance regimes, in particular); encourage Member States and infrastructure managers to cooperate more and to create corridors on a voluntary basis;

– 3 – Propose a new legislative act.

The Commission proposed an intervention at EU level in the form of a regulation (option 3). The proposal underwent considerable amendments during the legislative process and the Regulation was finally adopted in 2010.

2.2 Description of the intervention and its objectives

Most recently in the European Green Deal, as reconfirmed in last year's sustainable and smart mobility strategy[22], EU transport policy set the objective of shifting freight from road to more sustainable modes of transport. For this to happen **rail needed to become**

[17] OJ L 75, 15.3.2001, p. 29.

[18] Throughout this document the terms 'international transport', 'international traffic', etc., refer to freight trains crossing at least one border, be it between two EU Member States or between a Member State and a third country.

[19] COM(2008) 852 final of 11 December 2008.

[20] SEC(2008) 3028 of 11 December 2008 and SEC(2008) 3029 of 11 December 2008.

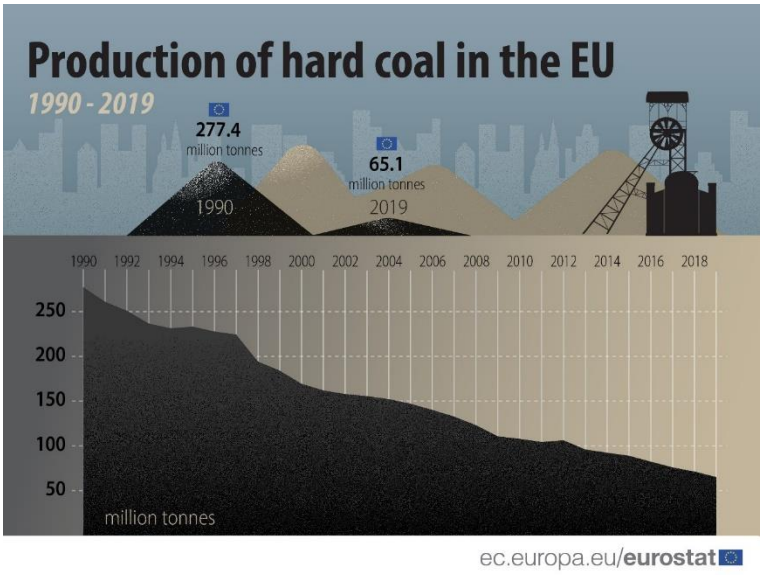
[21] ERTMS is a safety system that enforces compliance by the train with speed restrictions and signalling status. Due to its nature and the required functions, it is a system that has to be partly installed beside the track and partly installed on board trains. In 2009 the Commission adopted a European Deployment Plan for ERTMS which provides for the progressive deployment of ERTMS along the main European rail routes. This will reduce running costs and improve the system's efficiency on long cross-border distances.

[22] COM (2020) 789 final of ,9 December 2020 notes that 'The European Green Deal calls for a substantial part of the 75% of inland freight carried today by road to shift to rail and inland waterways. Short-sea shipping and efficient zero-emission vehicles can also contribute to greening freight transport in Europe.'

more competitive, i.e. it had to increase its productivity and improve its performance by becoming more regular, more punctual and faster[23].

Rail faced and is still facing a changing freight market. Freight transport in the EU increased by 10% between 2011 and 2017. While road freight grew, rail freight stagnated between 2011 (422 billion tonne-kilometres) and 2017 (421 billion tkm). The main reason is the decline of bulk cargo (a traditional rail commodity). For instance, the transport of coal and refined petrol decreased by 12% on average in the EU for that period and the effect was even more pronounced in coal-producing Member States. This trend follows the steep decline of coal production and the more moderate reduction of petroleum products consumption in the EU (see Figure 1).

Figure 1 Production of hard coal in the EU

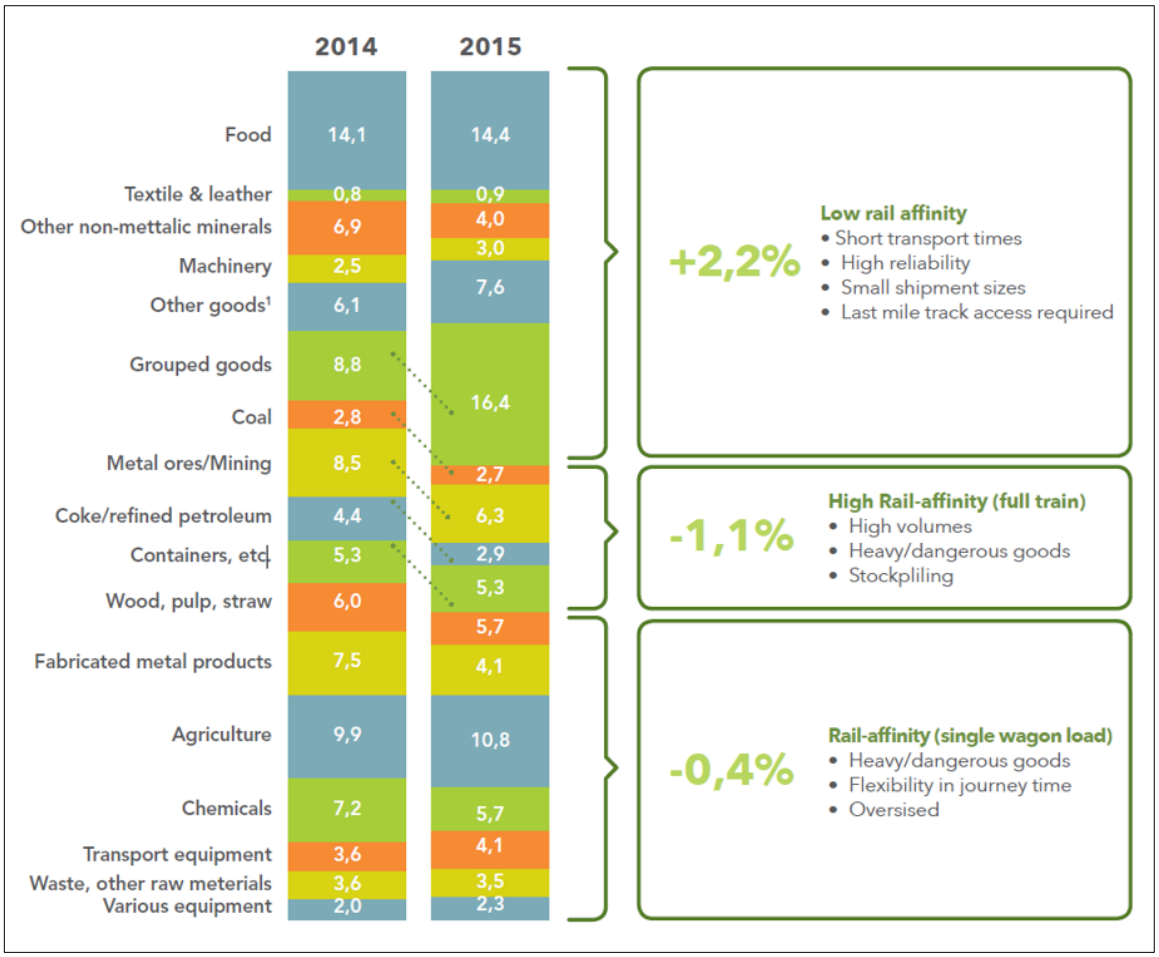


Recent figures show that commodity groups with high rail affinity continue to decline in volume while groups with traditionally low rail affinity are growing[24] (see Figure 2).

[23] COM(2001) 370 final of 12 September 2001.

[24] Rail Freight Forward, 2016: 30 by 2030. Rail Freight Strategy to Boost Modal Shift.

Figure 2 Commodity groups with high and low rail transport affinity



Source: Rail Freight Forward, 2016: 30 by 2030. Rail Freight Strategy to Boost Modal Shift

While trade in traditional rail commodities is declining, transport for smaller consignments and containerised goods is increasing. The most dynamic freight transport segment is courier, express, parcel commodities with growth rates of about 10% per year[25], which has very low affinity to rail. Intermodal transport is the only segment for rail freight transport, which has been continuously increasing, thus making rail freight competitiveness even more dependent on efficient cooperation with other transport modes[26]. Intermodal transport by rail is suffering from the weaknesses of rail freight performance more than bulk cargo, as punctuality and reliability are much more important when organising several legs of a trip versus using only rail.

The data shows that rail has become increasingly exposed to competition from other modes, in particular road, as the commodity structure in the EU is changing. This means that some of its specific advantages (being able to carry heavier loads and provide safer

[25] See evaluation support study.

[26] See **Error! Reference source not found.**- Intermodal transport services involving rail freight: players, processes and interfaces involved.

transport of dangerous goods) became less relevant and rail has to compete increasingly in terms of quality (speed and reliability) and price. This makes a shift to rail freight all the more difficult.

Furthermore, freight faces a growing competition for access to rail capacity with passenger rail. Total rail traffic grows steadily and, as freight is stagnating, passenger traffic is responsible for most of the growth at EU level. In terms of train kilometres, over 80% of the traffic is passenger transport[27]. The growing competition for capacity is illustrated by the increase in the length of lines declared congested from 700 km in 2012 to close to 2 300 km in 2016, including more than 1 300 km of lines designated to the rail freight corridors (see Annex VII, Section 3.3).

The mid-term review of the 2001 White Paper on transport suggested that to improve rail's competitiveness the following **structural obstacles** for the rail industry needed to be addressed:

1. technical barriers such as the low levels of interoperability, the lack of mutual recognition of rolling stock and products;
2. the weak coordination of infrastructure and interconnection of IT systems that infrastructure managers use to allocate and manage rail infrastructure capacity;
3. lack of profitability of the business model based on single wagons loads[28].

These obstacles (with the exception of single wagon loads), were addressed by a number of EU instruments. The Regulation addresses only some of them and not at the same level of detail. Interoperability, IT systems, infrastructure planning are addressed to a rather limited extent, even though they have a big impact on the performance of rail freight transport.

The impact assessment accompanying the Commission proposal for the Regulation identified lack of cooperation with regard to the infrastructure capacity for rail freight, and in particular international freight, as an issue that had not been sufficiently addressed by EU legislation at the time. Therefore, the Regulation focused on this by addressing the following problems:

- Lack of priority of rail freight, in comparison to passenger traffic, with regard to operations on mixed-traffic lines and the choice of investment.
- The lack of cooperation, both in terms of investment and the operational management of infrastructure.
- The lack of coordination between the rail infrastructure part and the terminals in general (at ports, on the ground or at marshalling yards), which resulted in poor punctuality of freight trains.

[27] See e.g. Section 2.4.15 of the Statistical pocketbook – EU transport in figures, 2019.

[28] These obstacles were identified in the mid-term review of the European Commission's 2001 Transport White paper, COM(2006) 314 final of 22 June 2006.

- Insufficient transparency related to the information provided to infrastructure users, which was perceived as limiting the access to transport markets favouring incumbent railway undertakings.

To address the problems, the Regulation set the following objectives:

- Objective 1: Improve coordination between infrastructure managers, Member States, railway undertakings and terminal owners/operators, both between these different groups of actors and – within the groups – across borders;
- Objective 2: Coordinate and plan investments to ensure that infrastructure capacities and capabilities available along the corridor meet the needs of international rail freight traffic, including as regards interoperability;
- Objective 4: Guarantee international freight trains access to adequate infrastructure capacity, recognizing the needs of other types of transport, including passenger transport;
- Objective 3: Improve operational conditions for international rail freight services, in particular by coordinating traffic management along the corridors, including in the event of disturbance and monitor the performance of rail freight services on the corridors;
- Objective 5: Facilitate the use of rail infrastructure for international rail freight services and support fair competition between rail freight service providers;
- Objective 6: Improve intermodality along the corridors.

To achieve the objectives, the Regulation mandated Member States with the establishment of rail freight corridors and provided the corridors with a set of **dedicated procedures**.

Rail freight corridors are defined in the Regulation as all designated railway lines, including railway ferry lines, on the territory of or between Member States, and, where appropriate, European third countries, linking two or more terminals, along a principal route and, where appropriate, diversionary routes and sections connecting them, including the railway infrastructure and its equipment and relevant rail services.

The Regulation provides for six main areas of action for stakeholders:

A. the geographical definition and the establishment and modification of rail freight corridors;
B. the governance of rail freight corridors at the policy (Member States) and operational levels (infrastructure managers and other operational stakeholders);
C. the production of a set of planning, programming, information and reporting documents to steer and align investments and works along the rail freight corridors, inform operational stakeholders and monitor performance;
D. the development and use of tools and procedures of preferential capacity allocation along the rail freight corridors (pre-tactical phase);
E. the development of procedures for coordination of traffic management (tactical phase) and

F. the supervision by regulatory bodies.

The following analysis makes reference to these areas, in particular when presenting the analysis on the five evaluation criteria in Chapter 5.

The governance of the freight corridors is the primary actor in implementing the measures required by the Regulation and therefore, the main responsible for achieving the Regulation's objectives. The governance consists of:

- **executive boards**, consisting of representatives of the public authorities of the Member States;
- **management boards**, consisting of representatives of the infrastructure managers and the allocation bodies;
- **advisory groups** to the management boards (one for the railway undertakings and one for the terminal owners and operators).

The executive boards' main task is to provide an impetus for the management boards by setting general objectives and monitoring their implementation. The management boards are the main responsible for implementing the measures envisaged in the Regulation. The advisory groups ensure the consultation of infrastructure users, the so-called applicants[29], and partners in the logistics chain, the terminals along the corridors.

The Regulation provides for a number of tools and measures (Table 1). The most prominent tools of the Regulation are the 'one-stop shop', 'pre-arranged train paths and 'reserve capacity'. The one-stop shop was supposed to contribute mainly to the objective of facilitating the use of infrastructure, by providing railway undertakings and other applicants with a single point of contact as regards infrastructure capacity. Eliminating the need to contact individual infrastructure managers for the allocation of capacity was expected to streamline the planning processes of railway operators. The two capacity products defined in the Regulation, 'pre-arranged train paths' and 'reserve capacity', were expected to guarantee adequate infrastructure access by defining and reserving capacity earmarked for international freight trains ahead of requests for other types of traffic. In this way, these capacity products confer a priority to international rail freight traffic in capacity allocation, provided sufficient quantities are offered[30].

[29] 'Applicants' include railway undertakings and other parties interested in reserving railway infrastructure capacity, such as shippers, freight forwarders and combined transport operators. Applicants other than railway undertakings appoint a railway undertaking to conclude an agreement with the infrastructure manager to use the capacity.

[30] These mechanisms are described due to the importance of these tools and for the sake of illustration. A comprehensive description of the mechanisms underlying all tools defined by the Regulation is beyond the scope of this chapter.

Table 1 Objectives, tools/measures and scope of the Regulation

No	Objective	Tool/measure	Scope
1	Improve cooperation between stakeholders	Governance: executive and management boards, advisory groups	Not covering all stakeholders (e.g. shippers are missing)
		Rail freight corridor lines and diversionary roots	Partial coverage of the overall train path
		Reconciliation procedures for the establishment of RFCs	Member States
		Consultation of applicants for rail capacity	Implementation plans and corridor lines
		Committee	Consulted on corridor lines Monitoring implementation
2	Coordinate and plan investments	Investment plan	Corridor lines
3	Guarantee international freight trains access to adequate infrastructure capacity	Transport market studies	Passenger and freight rail traffic Corridor lines Socio-economic costs and benefits of RFC (optional)
		Pre-arranged train paths and reserve capacity	Corridor lines Freight trains
		Coordination of works	Corridor lines
		Publication of performance of rail freight services and user satisfaction	Corridor lines
		Procedures for coordination of capacity allocation between infrastructure managers	Corridor lines Freight trains only
4	Improve operational conditions	Procedures for coordination of traffic management	Corridor lines Focus on management in the event of disturbance
		Common targets for punctuality / guidelines for punctuality	Trains running on capacity allocated by the one-stop shop
5	Facilitate the use of rail infrastructure and support fair competition between rail freight service providers	Corridor one-stop shop	Corridor lines Freight trains
		Corridor information document	Corridor lines
		Coordination between regulators	Competition on corridor lines No specific tool (e.g. common decision, arbitrage

No	Objective	Tool/measure	Scope
			body, etc.)
		Coordination of deployment of interoperable IT applications or alternative solutions for capacity requests and the operation of international traffic	Corridor lines ERTMS, PCS - examples
6	Improve intermodality along the corridors	Procedures for coordination between the operation of the railway infrastructure and the terminals	Corridor lines Freight traffic only
7	All objectives	Reports from the executive boards and the Commission on the implementation of the Regulation	Corridor lines

Source: own elaboration based on Regulation (EU) No 913/2010

2.3 Baseline and points of comparison

The evaluation of the impacts of the Regulation ideally requires a comparison of the current situation (i.e. with the intervention) against a 'no policy intervention' situation, which is defined as the 'counterfactual situation', or 'evaluation baseline'. The baseline describes the developments throughout the evaluation period that could have been expected in the absence of the Regulation. In this sense it is a purely hypothetical scenario against which the actual developments are compared to identify the results attributable to the Regulation.

The preparatory impact assessment carried out in 2008[31] built upon three scenarios, including a 'status quo' scenario involving no new policy measures. This 'status quo' scenario would in theory provide a benchmark against which the impacts of the Regulation can be measured.

This section describes the baseline assumptions of the original impact assessment and discusses policy or market developments that have occurred since then which may have diverted from these assumptions. Given the limitations, the evaluation uses a variety of case-specific assumptions to define a suitable point of comparison or benchmarks, as described below, rather than a complete baseline scenario.

The impact assessment assumed the following key changes:

- Reductions in dwelling times at border crossings (resulting from technical harmonisation of the infrastructure);
- Reductions in dwelling times at terminals/shunting yards;

[31] SEC(2008) 3028 final of 11 December 2008.

- Additional train paths for freight traffic;
- Knock-on effect of less capacity and lower commercial speed for passenger traffic.

Table 2 Cost-benefit analysis of the 2008 impact assessment

Cost(s) / benefits		Net present value (million Euro)
Technical harmonisation of the infrastructure	Investments to extend sidings	-3,219.6
	Reduction in costs of rail freight	2,409.9
	Reduction in waiting times at the borders	6,532.7
Rules for allocating train paths and managing traffic	*Additional capacity for freight trains*	*1,209.3*
	Reduction in times (scheduled and unscheduled) for freight	854.2
	Reduction in times (scheduled and unscheduled) for passengers	-473.8
	Increase in tolls for rail freight	-263.0
Terminals	Investments to extend transfer tracks	-322.0
	Reduction in the cost of assembling trains	221.9
	Reduction in transfer times	1,160.3
	Reduction in waiting time	3,770.9
Administrative costs	Additional administrative costs	-0.8
Total updated net value at operational level (without additional capacity)		**10,670.7**
Total updated net value at the operational level (with additional capacity)		***11,880,0***
Economic impact	Reduction in the cost of transport	5,604.3
Environmental impact	External costs avoided	86,567.3
	Congestion costs avoided	*455,298.9*
Total updated net value at the societal level (without additional capacity)		**92,171.6**
Total updated net value at the societal level (with additional capacity)		***547,470.5***

Source: 2008 impact assessment

The focus of the Regulation was on reserving and allocating capacity to rail freight, which correspond to objectives 4 and 5 mentioned above. This is the area of intervention

where the Regulation provided the most detailed rules and clearly formulated instruments: the corridors' one-stop shops, the pre-arranged train paths and reserved capacity. The Regulation does not directly address the objective set by the Commission of shifting freight from road to rail. Instead it focusses on improving the performance of rail freight transport, reducing its operational costs and ultimately boosting its competitiveness to allow it to compete with road transport.

The intervention logic of the Regulation identified the significant improvement of rail freight's performance as the main goal and it relied heavily on improvements in interoperability, for which the Regulation provides limited tools.

The Regulation was more specific as regards providing adequate amounts and high quality capacity for rail freight. For the Regulation to be effective, the one-stop shops and the capacity offered by them were supposed to meet the dominant part of the railway undertakings' requests for capacity for international rail freight. This would suggest that virtually all railway undertakings involved in international rail freight would use the one-stop shops. The intervention logic counted on the rail freight corridors developing a digital user-friendly tool for requesting rail infrastructure capacity. This tool and the procedures of the Regulation should have allowed railway undertakings to receive the capacity they need without making requests for capacity to several individual infrastructure managers. The expected result was that railway undertakings would be able to manage train paths over the whole process (from first request to actual train run), without contacting individual infrastructure managers.

The other major improvement that the Regulation was supposed to produce was improved coordination with terminals. In practice this meant that across the EU virtually all terminals serving international rail freight traffic would coordinate their operations with the corridors' one-stop shops in terms of allocating capacity in a coordinated fashion and exchanging information to allow for effective traffic management. This meant that the Regulation should have resulted in the adoption and implementation of procedures that would allow for common offers of train paths and terminal slots and for operational traffic management. This should have resulted in minimised delays and better access to terminals for international freight trains and ultimately an improved performance by rail freight.

In terms of specific targets, the Regulation did not set any targets directly stemming from the Commission's strategic goal of implementing a modal shift in freight. As explained above, the Regulation focused on boosting performance and competitiveness of rail freight, in particular by increasing commercial speed, improving punctuality and reducing costs. No clear targets were set on those objectives either and the impact assessment only provides estimates in terms of reduced costs. Therefore, the focus for the points of comparison falls on performance indicators and cannot measure the effectiveness of the Regulation by analysing impacts going beyond the operational performance of rail freight, such as changes in the modal share of rail freight.

Furthermore, a number of factors deviate from the assumptions made in the impact assessment and therefore limit its usefulness to ring-fence the effects stemming from the implementation of the Regulation.

Firstly, the 2008 proposal for the Regulation differs significantly from the version adopted by the co-legislation that entered into force in 2010, and the eleven rail freight corridors established[32] have significantly broadened the scope of application compared to the six corridors used in the preparatory impact assessment.

Moreover, the comparison of the assumptions of the preparatory study of 2008[33] and the Commission's EU Reference Scenario of 2016[34] with the data observed after the establishment of the freight corridors shows that the forecast and observed average annual growth rates of rail freight transport activity are significantly different. The forecast and actual annual growth rates of the volume of international rail freight are 3.0% against 0.9%, while the forecast and observed annual growth rates of the gross domestic product at EU27 level are relatively closer with 3.3% against 2.5%.

In its proposal, the Commission focused on the prioritisation of rail freight along those corridors and put forward the concept of 'priority freight', the creation of governance body as an independent legal entity and the mandatory use of a one-stop shop for requests of international train paths. It also proposed that infrastructure managers should define a 'priority freight' traffic category and reserve capacity for this category in the annual timetable. The legislators removed the 'priority freight' category, the independent governance body and the mandatory use of the one-stop shop, and borrowed the concept of pre-arranged train paths, which Directive 2001/14/EC[35] had introduced for ad hoc requests. In the Regulation, pre-arranged train paths are used for meeting capacity requested in the annual timetable via the corridor one-stop shops. The latter were a new concept, which provided for a single place for requesting rail capacity on the freight corridor lines. The other elements of the Regulation are presented in Section 3.

Secondly, a number of initiatives and measures aimed at improving the competitiveness of rail freight transport were implemented after the adoption of the Regulation in 2010, both at EU level, as presented in Section 2.2.

---

[32] Nine 'initial' corridors are defined in the Annex to the Regulation, which has been modified in 2013 by Regulation (EU) No 1316/2013 establishing the Connecting Europe Facility. Two 'further' corridors have been established on the proposal of Member States on the basis of Article 5 of the Regulation.

[33] SEC(2008) 3028 final of 11 December 2008.

[34] EU Reference Scenario 2016 (https://ec.europa.eu/energy/data-analysis/energy-modelling/eu-reference-scenario-2016_en).

[35] Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification (OJ L 75, 15.3.2001, p. 29).

At EU level, the most important initiatives adopted after the entry in force of the Regulation are:

- the Single European Railway Area Directive 2012/34/EU,
- Regulation (EU) No 1315/2013 on Union guidelines for the development of the trans-European Transport Network, and the Connecting Europe Facility Regulation (EU) No 1316/2013,
- the Railway Interoperability Directive (EU) 2016/797 ('technical pillar' of the Fourth Railway Package) and
- the Governance Directive[36] ('market pillar' of the 4th railway package), amending the Single European Railway area Directive 2012/34/EU.

More information on the interaction of the Regulation with the above-mentioned legislative initiatives is provided in Section 5, in the analysis of the criteria of relevance and coherence.

Furthermore, a number of recent political initiatives and measures at national level have affected the competitiveness of rail freight transport, including notably significant reductions in track access charges for freight trains.

In the light of the above considerations, the 'status quo' from the 2008 impact assessment could not be used as a valid point of reference to identify the impacts of the Regulation. **Therefore, the evaluation used a variety of case-specific assumptions to define a suitable point of comparison or benchmark**, including:

- Comparing performance before and after the implementation of the corridors, or assessing the evolution of performance based on time series (see for example Figure 14);
- Comparing performance between different corridors (see for example Table 4);
- Comparing performance of trains making use of the tools of the Regulation, notably the one-stop shop and pre-arranged trains paths, to those running on the same lines but not making use of these tools (see for example section 5.3).

The choice of benchmarks was also limited by data availability issues:

- Data availability was limited, in particular for the period before or early during the implementation of the Regulation, limiting the scope for before/after comparisons or time series analysis;
- Data are frequently reported in non-harmonised manner, e.g. traffic volume is reported in train numbers at specific points on the network in some cases and in terms of train-kilometres) in others, complicating comparisons between corridors;

[36] Directive (EU) 2016/2370 of the European Parliament and of the Council of 14 December 2016 amending Directive 2012/34/EU as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure (OJ L 352, 23.12.2016, p. 1).

- Trains using capacity allocated via the corridor one-stop shops cannot easily be distinguished in operations from trains running on the same lines but not making use of the services of the one-stop shops, reducing the extent to which the third approach could be used.

In order to compensate these limitations, the results were triangulated with opinions provided by stakeholders about the presumable impact of the Regulation.

The data used for constructing points of comparison and the results of the analysis, which are analytical in nature, are presented in Chapter 5, in particular in Section 5.2 assessing the effectiveness of the Regulation.

3 IMPLEMENTATION / STATE OF PLAY

3.1 Description of the current situation

The Regulation sets an obligation for Member States to establish rail freight corridors. Nine 'initial' corridors were defined in the Regulation on the basis of a list of geographical nodes. The establishment of these corridors was carried out in two steps: by November 2013 for six of the corridors and by November 2015 for the remaining three. Following an amendment of the Regulation in 2013[37], the corridors were given official names, they were extended and the deadline for the Rhine-Danube rail freight corridor was set at 10 November 2020. The freight corridors identified in the Regulation are: Rhine-Alpine, North Sea–Mediterranean, Scandinavian-Mediterranean, Atlantic, Baltic-Adriatic, Mediterranean, Orient/East-Med, North Sea-Baltic and Rhine-Danube (which replaces the the former rail freight corridor No 9). Two 'further' rail freight corridors were established following proposals by the Member States concerned[38]. The two corridors, Amber corridor and Alpine-Western Balkan corridor, were established in 2019 and 2020.

Therefore, 11 rail freight corridors are currently operational, involving 23 Member States and 3 third countries (Norway, Serbia and Switzerland[39]).

[37] The Regulation was amended by Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010 (OJ L 348, 20.12.2013, p. 129).

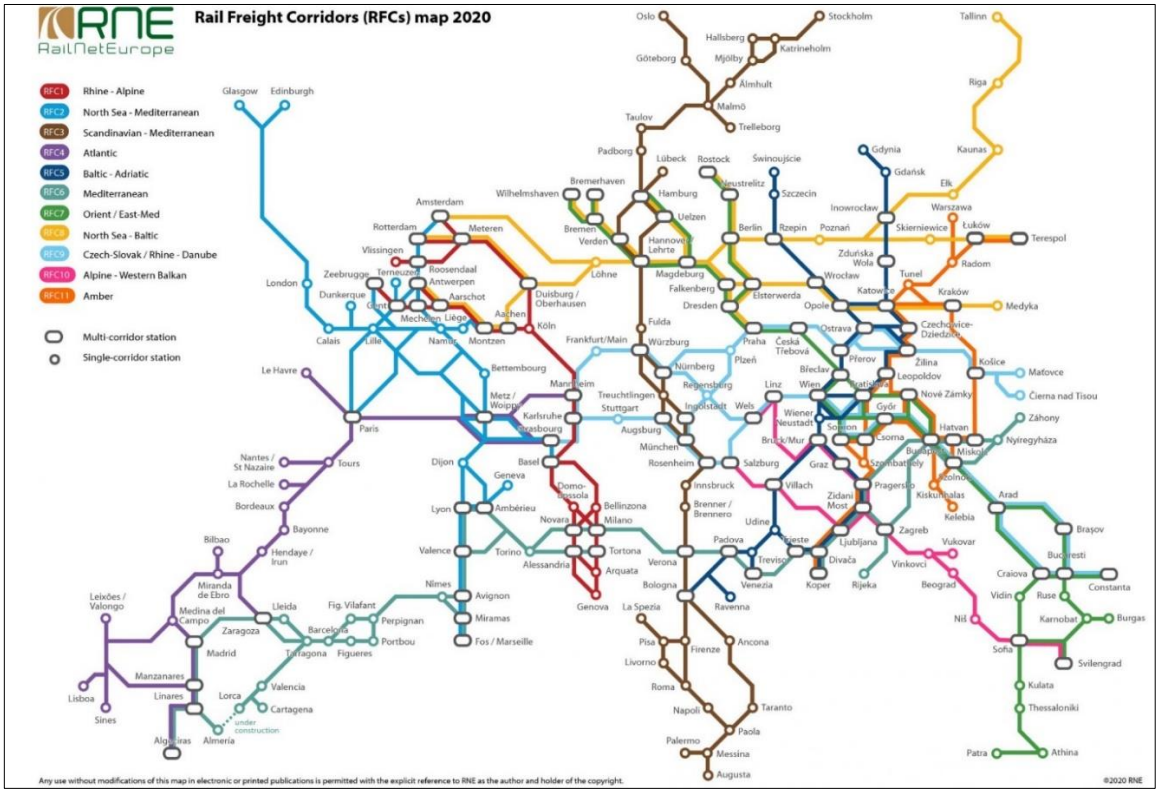
[38] Commission Implementing Decision (EU) 2017/177 of 31 January 2017 on the compliance with Article 5 of Regulation (EU) No 913/2010 of the European Parliament and of the Council of the joint proposal to establish the 'Amber' rail freight corridor (OJ L 28, 2.2.2017, p. 69) and Commission Implementing Decision (EU) 2018/500 of 22 March 2018 on the compliance of the proposal to establish the Alpine-Western Balkan rail freight corridor with Article 5 of Regulation (EU) No 913/2010 of the European Parliament and of the Council (OJ L 82, 26.3.2018, p. 13).

[39] Since 1 January 2021 the United Kingdom is no longer part of rail freight corridor North Sea-Mediterranean.

All rail freight corridors were established on time, meaning that the responsible Member States and infrastructure managers set up the governance structure and formally implemented the requirements of the Regulation.

A map of the rail freight corridors network is presented below.

Figure 3 Map of the rail freight corridors in 2020



Source: RailNetEurope

The Regulation requires the executive boards of the rail freight corridors, where representatives of public authorities sit, to present to the Commission the results of the implementation plan for that corridor. These reports were one of the inputs to the evaluation.

The Regulation requests to the Commission to examine periodically its application. The Regulation scheduled the first report by 10 November 2015 and the following reports for every third year thereafter. In 2018, the Commission produced the first and only report on the application of the Rail Freight Corridors Regulation[40], accompanied by a Commission staff working document[41]. The main conclusion from the report is that '… the implementation of the RFCs has contributed to enhanced cooperation across borders, which the rail freight sector was missing before the entry into force of the Regulation, in particular as regards operational infrastructure management.' The report also noted indi-

[40] COM(2018) 189 final of 16 April 2018.

[41] SWD(2018) 101 final of 16 April 2018.

rect effects from the cooperation stemming from the Regulation – e.g. facilitation of operational contacts at international level, even for issues not concerning rail freight, or incentivising the development of coordination processes and IT-tools at EU level. The report concluded that there are mixed or modest results as regards capacity dedicated to rail freight corridors, coordination of works and coordination of traffic management.

3.2 Relevant changes in the EU legal framework

Following the adoption of the Regulation, the Single European Railway Area Directive ('Recast')[42], the Fourth Railway Package[43] and Commission Delegated Decision (EU) 2017/2075[44] came into force. These legal acts introduced, *inter alia*, more detailed rules on planning of rail infrastructure maintenance. The latter is also a task required by the Regulation. The interplay between the Regulation and these legal acts if addressed in Section 5.4 (Coherence).

4 METHOD

4.1 Short description of methodology

An evaluation of the Regulation started in May 2016. During the course of the work, the Commission services concluded that it was too early to evaluate the act, as the establishment of some rail freight corridors had only happened in 2013 and some initiatives were still in early phase[45]. Therefore, results from this preliminary evaluation were used to prepare the **report from the Commission to the European Parliament and Council on the application of the Regulation**[46], which was adopted in 2018 as mentioned above.

The present evaluation has been relaunched in February 2019 and overseen by an inter-service steering group (details in Annex I), which followed the exercise.

---

[42] Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (recast) (OJ L 343, 14.12.2012, p. 32)

[43] Fourth railway package of 2016 (https://ec.europa.eu/transport/modes/rail/packages/2013_en).

[44] Commission Delegated Decision (EU) 2017/2075 of 4 September 2017 replacing Annex VII to Directive 2012/34/EU of the European Parliament and of the Council establishing a single European railway area (OJ L 295, 14.11.2017, p. 69).

[45] In June 2016, Member States signed the Rotterdam Ministerial Declaration on the Rail Freight Corridors, which identified a number of objectives and activities for the rail freight corridors. This declaration was complemented by the Railway Sector Declaration on Boosting International Rail Freight, which identified measures to improve the competitiveness of the rail freight corridors in order to make rail freight more attractive.

[46] COM(2018) 189 final of 16 April 2018.

This evaluation builds in particular on the above-mentioned report and the findings of an **evaluation support study**[47]. The study relied on a combination of sources and methods, including desk research and extensive stakeholder consultation.

The **desk research** included documents produced by the rail freight corridors' governance and one-stop shops, as well as documents produced by RailNetEurope[48], industry papers and documents produced by the Commission services. These include documents that are required by the Regulation, such as transport market studies, biennial reports by the executive boards, annual reports by the management boards, implementation plans and investment plans.

The support study also included four **case studies** that allowed for an in-depth analysis of key topics. They covered:

1. Setting up an international rail freight service – an in-depth process analysis;
2. Infrastructure capacity provided by the rail freight corridors – quality of the products, processes, systems and information provided by the corridor one-stop shops and the infrastructure managers;
3. Coordination of infrastructure works that restrict available capacity;
4. Coordination of capacity and operations between railway infrastructure and terminals.

The **targeted consultation** conducted by external consultants under the study included a survey of key stakeholders, using surveys adapted to eight different stakeholder groups (see Annex II). The consultation also included **interviews** with a selection of 43 stakeholders. The study answers to 20 detailed evaluation questions, including on implementation, where the study looked into all established rail freight corridors. The interviewees and the case studies were chosen by the contractor in collaboration with the Commission services.

The Commission services organised an online **public consultation** to support the evaluation. The consultation ran from 4 November 2019 to 3 February 2020. The questionnaire of the public consultation was made available on the Commission's Public Consultation Portal 'Have your say'[49] in all EU languages. A total of 112 responses to the consultation were received, with a majority (58%) coming from representatives of companies/business

[47] Evaluation of Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight, Evaluation support study by Ricardo, TRT, MFive, MC Mobility Consultants and TEPR, 2020.

[48] RailNetEurope is an association of rail infrastructure managers and allocation bodies. Its goal is to facilitate its members' international business. It has 36 full members from over 25 different countries (including all Member States with rail network except Estonia, Finland and Ireland) and the rail freight corridors are its associate members. RailNetEurope's focus is on developing IT systems and supporting the harmonisation of conditions and procedures in international rail infrastructure management.

[49] EU rail freight network – evaluation (2010-19) (https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/2118-Evaluation-of-the-rail-freight-network/public-consultation).

organisations and public authorities. Of the remaining respondents, EU citizens (16%) and business associations (11%) were the most represented. There were no responses from consumer organisations. Responses were not received from 11 EU Member States: Denmark, Estonia, Ireland, Croatia, Cyprus, Lithuania, Malta, Portugal, Slovenia, Finland and the United Kingdom[50]. There were also five responses from representatives based in EEA countries (Norway and Switzerland).

4.2 Limitations and robustness of findings

The evaluation relied mostly on existing data on rail freight transport, complemented by datasets extracted from IT systems operated by RailNetEurope. The evaluation support study collected additional information, mostly of qualitative nature, through the consultation activities described above and in Annex II.

The results of the stakeholder consultation clearly showed differences in perception and assessment between different stakeholder groups, due to vested interests. As a general pattern, stakeholder groups required to provide services under the Regulation (notably infrastructure managers) assess the impact of the Regulation more favourably as their customers and partners, namely railway undertakings, terminal owners / operators and the buyers of rail freight services. However, due to the balanced participation of all relevant groups in the consultation, it was possible to identify such differences; they are made explicit whenever relevant.

The evaluation was limited by the fact that the 'status quo' scenario developed in the 2008 impact assessment did not provide a valid point of reference as explained in section 2.3.

Another key limitation for the methodology is the limited availability of quantitative information. This is due to the almost complete lack of IT systems at EU level prior to the implementation of the Regulation. The situation has improved recently, not least due to the gradual introduction of systems and performance monitoring as required under the Regulation. However, the lack of historical data severely limited the scope for time-series analysis and before / after comparisons. For a few cases, Rhine-Alpine, North Sea-Mediterranean and Czech-Slovak, historical data could still be reconstructed and provides indications of the effectiveness of the Regulation.

The evaluation does not analyse the effects of the COVID-19 pandemic. As most of economic sectors, international rail freight transport was significantly affected by the crisis. However, it turned out to be difficult to draw reliable conclusions as regards the performance of the Regulation. Section 11 of Annex VII provides a brief overview of the situation of international rail freight transport during the first 'lock-down' in March to April 2020.

[50] The United Kingdom was still an EU Member State at the start of the consultation.

5 ANALYSIS AND ANSWERS TO THE EVALUATION QUESTIONS

The evaluation questions are included in Annex V. The chapter is structured by the five standard evaluation criteria. Each section aims to answer all corresponding evaluation questions. However, for the sake of readability, the evaluation questions are not repeated in the main text of the document.

5.1 Relevance

This section aims at replying to the question whether the objectives and the tools of the Regulation are still relevant to address the needs of EU's rail freight transport. This section also looks at developments in relevant EU policies in areas such as transport, climate change, energy, environment and the economy to see if the Regulation is still aligned with these EU policies. It investigates whether the scope, the areas of intervention and the measures provided for in the Regulation are appropriate to address the problems and needs of European rail freight transport and to reach the objectives of the Regulation.

As explained in Section 2.2 above, the objectives of the Regulation are linked to improving the performance of rail freight and as a result increasing its modal share. The latter produces numerous positive effects (lower GHG emissions, improved energy efficiency of transport, less road congestion, etc.), and is thus in line with a wide range of EU policies (climate change, energy, environment and transport).

In policy terms, the relevance of the Regulation's objectives has even increased, with the increase of the Union's ambitions in particular concerning climate change policy. Already in 2011, the White Paper on transport set the following major objectives: reduction of GHG emissions, a drastic decrease in the oil dependency ratio of transport-related activities and limiting the growth of congestion[51]. The paper introduced the target of shifting 30% of road freight over 300 km to 'other modes such as rail or waterborne transport by 2030, and more than 50% by 2050, facilitated by efficient and green freight corridors'[52]. The European Green Deal sets a target for shifting freight to rail as well: 'As a matter of priority, a substantial part of the 75% of freight carried today by road should shift onto rail and inland waterways.'[53]

In terms of environmental policy, the European Green Deal sets ambitious goals: 'Transport should become drastically less polluting, especially in cities.' and '… the Commission will adopt in 2021 a zero pollution action plan for air, water and soil.' With

[51] SEC(2011) 359 final of 28 March 2011.

[52] COM(2011) 144 final of 28 March 2011.

[53] COM(2019) 640 final of 11 December 2019.

road transport being a major source of nitrogen oxides[54], shifting freight from road to rail can contribute to reducing air pollution[55].

In terms of energy policy, a shift of freight from road to rail would improve the overall energy efficiency of EU freight transport. Rail transport consumes significantly less energy than transport over road, thanks to physical advantages such as the wheel-on-rail mechanism and air resistance[56].

The Regulation is also relevant in respect to competition policy, in that it sets the regulatory framework aimed to facilitate the use of rail infrastructure by rail freight market operators and thus contributes to the achievement of a level playing field between rail freight service providers. The ongoing review of the Community guidelines on State aid rules for railway undertakings[57] is aimed at updating the existing State aid rules applicable to the railway sector in line with the new European policy priorities and strategies to boost the green and digital transition, in order to help increase the share of rail freight transport whilst at the same time ensuring fair competition.

As regards the objectives of the Regulation, they remain relevant for improving the performance of rail freight. The key barriers to increasing competitiveness of rail freight, according to the replies provided in the consultations[58], are those identified in the intervention logic. They are the lack of price competitiveness, the lack of quality of rail freight transport services (in particular punctuality, predictability and flexibility), the lack of responsiveness to meet shippers' needs, interoperability barriers for rail and the lack of level playing field between different transport modes (e.g. lack of consistent application of 'polluter pays' and 'user pays' principles).

Freight market developments (growing trade flows, including with third countries), rail infrastructure capacity challenges (growing passenger traffic in some Member States and neglected rail infrastructure) as well as technological developments (IT tools for rail capacity allocation) also confirm the relevance of the Regulation's objective. On the last point, ensuring interconnectedness and interoperability of capacity allocation IT tools

[54] EEA - Air pollution sources (https://www.eea.europa.eu/themes/air/air-pollution-sources-1).

[55] Diesel traction seems to be used on fully electrified tracks by freight trains. This has a negative effect on the environmental benefits of rail freight. Nevertheless, rail remains the most environmentally friendly mode of freight transport.

[56] Directorate-General for Mobility and Transport of the European Commission, *Transport in the European Union – current trends and issues*, 2019.

[57] https://ec.europa.eu/competition/state_aid/modernisation/fitness_check_en.html

[58] See Annex I, Section 1 of the Evaluation support study.

appears to be insufficiently addressed in existing legislation. It is also an issue where an EU network-level solution is currently missing[59].

The available data also confirms lack of improvement in commercial speed and punctuality of rail freight (see Annex VII, section 3.1 and section 3.2), during the time of operation of the rail freight corridors. This suggests that some of the objectives have not been achieved to the extent necessary to make an impact.

The relevance of the objective to 'guarantee international freight trains access to adequate infrastructure capacity' has actually increased since the adoption of the Regulation. The competition for capacity between passenger and freight traffic is increasing. The discrepancy between supply and demand of capacity is illustrated by the increase in the length of lines declared congested from700 km in 2012 to close to 2 300 km in 2018, including more than 1 300 km of lines designated to the rail freight corridors (see section 3.3 of Annex VII).

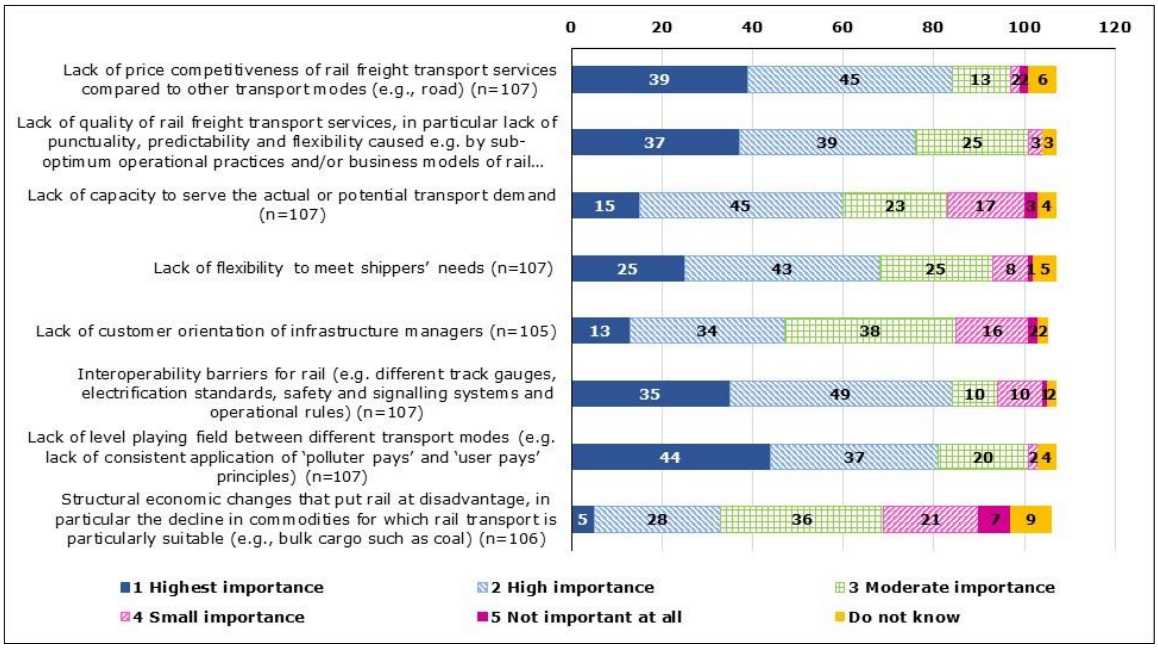
Another important question is whether the scope, the areas of intervention, the tools and the measures provided for in the Regulation are appropriate to address the problems and needs of European rail freight transport and to reach the objectives of the Regulation.

The intervention logic describes most of these tools and measures in the sections 'Activities' and 'Outputs'. The table in Section 2.2 above provides a more detailed, yet streamlined, overview that links the tools and measures to the objectives and identifies their scope.

The relevance of the Regulation in relation to the strategic targets for EU transport identified by the Commission has not changed. The tools of the Regulation, if adjusted to meet railway undertakings' needs, would help drive costs down for rail freight and improve its performance. As indicated below, stakeholders confirm that these issues are key in the competition between rail and road freight.

[59] An example of problems related to poor interoperability of IT tools for capacity allocation is the limited data exchange between the corridor capacity management system (PCS) and national-level systems. This has created considerable disincentives for the use of the corridors' one-stop shops.

Figure 4 Barriers to increasing the competitiveness and the market share of rail freight according to the targeted survey-questionnaire (number of replies)



Source: Evaluation support study, based on the targeted survey questionnaire

Stakeholders identify as main problems for rail freight the lack of a level playing field with other modes, price competitiveness, the poor performance of rail and interoperability barriers. Different stakeholder groups see the main problems to rail freight differently. **Railway undertakings** are the only ones who point to capacity restrictions as the most important problem facing rail freight.

Customers of rail services agree with the major problems mentioned above, giving less importance to the level playing field but stressing the importance of structural economic changes and to a slightly smaller extent the lack of flexibility of rail services.

Infrastructure managers follow the majority opinion, but also stress the importance of interoperability issues and to a lesser extent the poor coordination of railway undertakings.

The views of stakeholders confirm that rail freight is facing a number of serious challenges and many of them are not addressed by the Regulation, but by other EU legislation, e.g. the issue of the level playing field or price competitiveness vis-a-vis road freight.

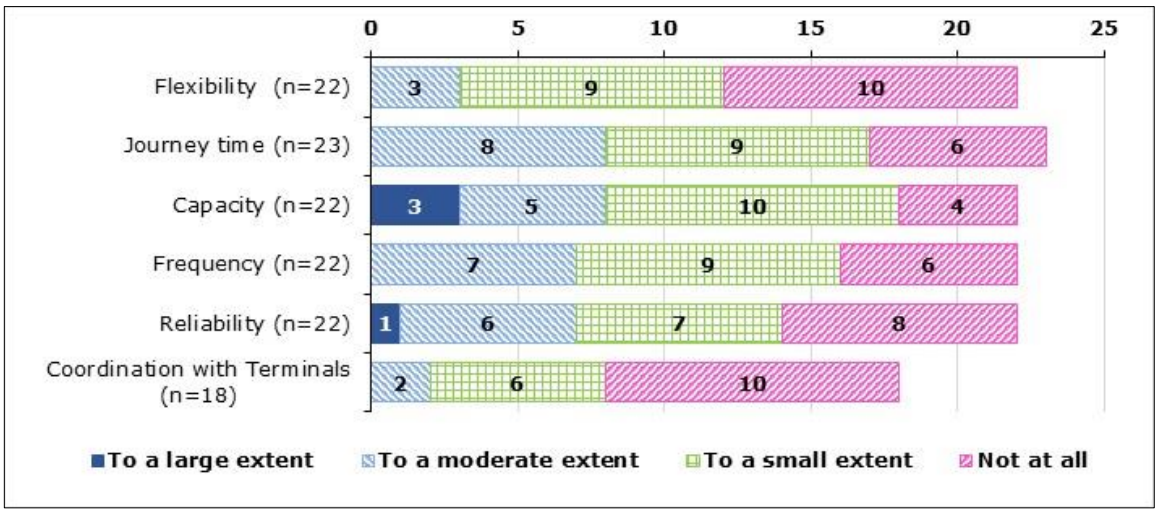
Nevertheless, issues with rail infrastructure capacity allocation, which are the focus of the Regulation, were mentioned by many and especially by infrastructure managers.

In general, **the tools and measures envisaged by the Regulation are still relevant as there have been no new alternative solutions (including technological) that would allow for achieving the objectives of the Regulation.** The list of tools and measures is provided in Table 1, Section 2.2, above.

The relevance of the two key tools - the 'one-stop shop' and 'pre-arranged train paths and reserve capacity' was undermined by the fact that they were in competition with an alternative capacity allocation process, where the applicants addressed their capacity requests to individual infrastructure managers. Thus, only 10% of international rail freight traffic in the countries involved in the rail freight corridors used capacity allocated by the one-stop shops.

Furthermore, stakeholders, and in particular railway undertakings, indicated that the instruments provided by the Regulation did not suit their needs. The pre-arranged train paths did not provide sufficient quality as assessed below on the basis of 6 criteria.

Figure 5 Summary of the responses to the question 'Has the process of pre-arranged path allocation proved to be effective in meeting the market needs?'



Source: Evaluation support study

The evaluation support study found that, especially smaller railway undertakings, were reluctant to use the services of the one-stop shop. The reasons included language problems and lack of knowledge of the corridor one-stop shop application process. Other issues included the IT tool (PCS), used by the one-stop shops for requesting capacity, which was avoided by stakeholders. Pre-arranged paths were possibly more interesting for the railway undertakings when capacity was scarce, which is more the case in the western rather than in eastern Europe.

The Regulation allows the one-stop shops to provide capacity different from pre-arranged train paths, but in reality this instrument is the dominant option offered by the one-stop shops. Its relevance seems limited and the perception of stakeholders is that it does not correspond to most capacity needs of rail freight. Stakeholders complained in a survey that the deadlines for capacity requests come too early, compared to the reality of the market, which often requires changes of train paths at later stages. These changes lead to additional work and staff cost. In the evaluation support study, a railway undertaking was quoted saying that the requests were due 18 months in advance, although rail freight transport contracts were usually agreed just 3 months in advance. Some 40% of one railway undertaking services are ordered 2 months prior to the train run, namely during the

ad hoc phase. Another railway undertaking stated that 99% of the train paths were ordered on an ad hoc basis and less than 10 days before departure. Even, if these extreme numbers are not representative of the sector, other statements confirm that the tools or the Regulation are not perceived as suitable, as they are limited in terms of flexibility.

EU legislation adopted after the Regulation had come into force, introduced some measures and tools that raise some questions about the relevance of the following tools/measures:

- investment planning,
- coordination of works and
- designation of corridors.

They are presented in detail in Annex VII, section 12.

The overall conclusion on investment planning is that the TEN-T Guidelines provide a more focused framework for this purpose. The scope and the approach is not the same, leaving possibilities for synergies, which had been explored to a limited extent.

In regard to coordination of works, Annex VII of Directive 2012/34/EU, introduced very detailed requirements as regards the planning of temporary capacity restrictions and consultation of applicants. The governance of the rail freight corridors remains an important interface for stakeholders to improve the implementation of the coordination, which remains the focus of criticism by railway undertakings.

The geographical designation of corridors is crucial for the relevance of the tools of the Regulation, as it defines the Regulation's geographical scope of application. In this case the adoption of Commission implementing decisions, which extended the network of rail freight corridors, helped increase the relevance of its tools. However, this resulted in a growing misalignment between the rail freight and the core network corridors, which resulted in a challenge for some management boards to ensure access to high quality infrastructure for international rail freight traffic.

As regards **the relevance of the Regulation in terms of the scope of the provisions**, the intervention logic clearly indicates that the Regulation aims at addressing a limited set of problems. The focus of the Regulation is on rail capacity allocation and operational management (rail freight traffic, coordination with terminals, etc.) of rail freight. As mentioned above, the problems and the objectives identified in the intervention logic remain relevant. **Capacity allocation and traffic management are particularly relevant for addressing rail freight's performance issues on heavily used lines with mixed traffic**.

The recently adopted Commission communication on an EU Sustainable and Smart Mobility Strategy[60] envisages measures to boost long-distance and cross-border passenger rail services, including night trains. Increasing rail passenger traffic will make rail ca-

[60] COM(2020) 789 final of 9 December 2020.

pacity management more challenging and hence more relevant, especially for cross-border trains. The possibilities for building new and improving existing rail infrastructure are limited and bottlenecks would have to be addressed via optimisation of capacity planning and allocation, especially as traffic is going to continue primarily on mixed use lines.

5.2 Effectiveness

This section addresses the criterion of effectiveness by analysing the impacts of the main intervention areas addressed by the Regulation, as outlined in Section 2.2.

Geographical definition and establishment and modification of rail freight corridors (Articles 2(2a) and 3 to 7)

The rules of the Regulation apply only to lines designated to the corridors. Therefore, the geographic definition of the corridors plays a key role for the effectiveness of the Regulation. The evaluation has shown that the network overall covers the most relevant transport axes and the specific lines used for freight traffic. Section 4 of Annex VII provides maps of the total number of international rail freight trains on the entire EU railway network in 2019 overlaid over a map of the rail freight corridors. Nevertheless, data on international rail freight traffic on the network shows that a number of lines with significant international traffic are missing from the network. Some notable examples include the lines Berlin – Hamburg (Germany), Paris – Dijon (France), Koblenz (Germany) – Wasserbillig (Luxembourg) / Saarbrücken, Munich – Berlin – Rostock (Germany). All of these lines have higher number of international freight trains than some of the lines included in the corridors.

Even more significantly, the corridors include only a very limited selection of diversionary lines. Diversionary lines are crucial to ensure continuity of traffic in the event of disruption of the principal lines of the corridors. As an example, the key diversionary routes for the Rhine-Alpine corridor during the major disruption in 2017 in Rastatt (Germany) are not included in the corridor. The same is true for diversionary lines used during the significant disruptions at Modane and Narbonne in 2019 (see Annex VII, section 4 for details). The limited coverage of diversionary lines significantly impairs the effectiveness of the Regulation in the event of disturbances – an issue explicitly addressed by Article 17 – because the rules of the Regulation do not apply to lines not formally designated to a corridor.

Furthermore, in the majority of the cases only part of the freight train's path is on the rail freight corridors lines. Thus, the applicants need to make separate requests for the part of the trip from the starting point to the corridor line or from the corridor line to the final destination (so-called feeder and outflow paths). This limits the simplification effect of the one-stop shop, as the applicant still needs to contact the individual infrastructure managers for the first and last leg of the trip.

The Regulation gives Member States and infrastructure managers significant flexibility to define and modify the alignment of the corridors. While this flexibility facilitates a response to potentially evolving market needs, it has also weakened the geographic consistency of the corridors with the TEN-T network and the core network corridors, which are more stable over time. This in turn may compromise the complementarity between the two policies in terms of development and management of infrastructure.

Overall, the evaluation indicates a potential to strengthen the effectiveness of the Regulation via on optimisation of the geographical definition of the network and the rules for modifying it. The lack of a network approach that would allow to cover the whole train path in a single effort, undermines the impact of the Regulation and puts into question any simplification effects. Any additional analysis should also consider the potential impact of industry initiatives such as the Timetable Redesign Project, which are still in an early phase.

Governance, implementation plan and monitoring (Articles 8, 9 and 22)

The Regulation lays down the following governance structure: (i) the **executive board** composed of **representatives of Member State authorities**, (ii) the **management board** composed of **representatives of the infrastructure managers** and (iii) two advisory groups made up of **railway undertakings** and **managers and owners of the terminals**, respectively. The establishment of a dedicated legal entity for the management board is optional. The Commission has no formal role in the governance structure.

The governance structures have been established for all corridors as provided for in the Regulation. In addition to setting up the formal governance, i.e. the decision-making bodies of the corridors, stakeholders have delegated operational tasks related to the implementation to (i) permanent structures set up at corridor level and (ii) to working groups assembling experts within the individual infrastructure managers. The organisational and legal setup of the corridor-level structures varies. Many but not all of them are implemented in the form of dedicated legal entity, typically a European Economic Interest Group. A more detailed description of the implementation of the governance is provided in Section 2.1 of Annex VII.

As regards the coordination between the freight corridors' **governance** and related entities – such as the European Union Agency for Railways, the TEN-T Core Network Corridors, the Single European Rail Area Committee (SERAC), the Platform of Rail Infrastructure Managers in Europe (PRIME), the Railway Undertakings Dialogue (RU Dialogue), the S2R Joint Undertaking and the Digital Transport and Logistics Forum – the information collected suggests that some coordination has taken place, with variations between corridors; see section 2.4 of Annex VII for an overview of examples. In particular, a number of corridors regularly engaged with the corresponding TEN-T corridor. In some cases, the European Union Agency for Railways was involved in resolving issues identified by the governance structure. Interactions with other organisations and entities have been rather limited.

The successful establishment of the governance structure in itself contributes directly to achieving the objective to improve cooperation on international rail freight transport. However, its ultimate role is to drive the development of the corridors, i.e. to enable the achievement of the other objectives of the Regulation as listed in Section 2.2 above. In the following, the analysis focusses on issues that supported or hampered the effectiveness of the governance structure in this steering role.[61]

Objective-led corridor management

The first observation is that the Regulation imposes a layered model of management borrowed from the organisation of business corporations. The strategic level is provided by the executive boards. Member State representatives define general objectives, supervise the activities taken by the operational level to implement them and provide political support where needed. At the operational level, the management board break down the general objectives into more operational ones, set out an implementation plan comprising the measures designed to achieve the objectives (Article 9), implement (Articles 10 to 18) and monitor the effects of these measures (Article 19). Overall, the intervention logic of the Regulation defines an objective-led approach to corridor management.

The Regulation also requires the governance of the freight corridors to monitor market developments via the transport market studies. Thus, the executive boards should be able to set objectives based on market needs. At the same time, the executive boards can also take into account any market failures, such as limited competition, which prevent the development of rail freight services and address these via the general objectives.

The management cycle is closed by the requirement in Article 9(2) to periodically review the implementation plan, i.e. the objectives and the programme of implementing measures[62]. Direct customers of the infrastructure managers, i.e. railway undertakings and other applicants, and the immediate partners in the logistic chain, owners and operators of terminals, are consulted but not actively involved in this cycle.

The corridor governance structures did implement a variety of measures to implement the Regulation, responding in many cases to the specific challenges in individual corridors. However, available evidence suggests that the objective-led management process as outlined above has not been effectively implemented.

At a very fundamental level, only a minority of the executive boards have adopted general objectives for the corridors in accordance with Article 8(1) of the Regulation; see Section 1 of Annex VII for an overview.

---

[61] The overall effectiveness of the Regulation in achieving its objectives is analysed in detail in the following sections, structured by the main intervention areas.

[62] There is no explicit requirement for the executive board to re-adjust the general objectives based on the results of the performance monitoring. However, this should be implicit as the governance boards are expected to steer the development of the freight corridor by taking into consideration market changes and by addressing market failures.

In the cases where general objective have been adopted, there is no clear evidence that executive boards have used the general objectives as tool supporting their supervisory role in the governance, as already pointed out in the Commission report of 2018: '… the link between the results of the performance monitoring and the objectives defined in the implementation plan as well as the general objectives of the RFCs has not been very clear so far.'

Overall, executive boards have not exploited the general objectives as a tool to achieve the objectives of the Regulation.

Independence of the governance from national level

The governance structure is designed as a collective decision-making body assembling representatives of Member State authorities and individual infrastructure managers, i.e. entities set up at national level.

Analysis on the implementation and effectiveness of the measures taken in the various intervention areas (see below) suggests that a reliance on national approach has persisted despite the requirements of the Regulation, e.g. as witnessed by the limited role assigned to the corridor one-stop shops or the limited offer of corridor capacity (pre-arranged train paths and reserve capacity).

It seems plausible that the absence of an independent entity representing corridor, i.e. supra-national interests in the formal governance structure has contributed to the persistence of national-level approaches.

In this respect it is worth noting that the Commission proposal for the Regulation[63] envisaged a single governance body, implemented in the form of an independent legal entity and headed by a director with a term of office of at least three years. The governance body would have had reporting obligations vis-à-vis Member States and, in addition and where necessary, the European TEN-T coordinators. Overall, the proposal provided for a governance more independent from the national level than the Regulation as adopted by the co-legislators.

Involvement of customers of rail freight services and other relevant stakeholders

The governance structure does not involve buyers of rail freight services, such as combined transport operators, logistic service providers or shippers from industry. These stakeholder groups are the ultimate decision-makers when it comes to modal choice. As a logical consequence of the non-involvement of this stakeholder group, the Regulation also does not define a process ensuring that their needs are reflected in the objectives of the corridors.

63 COM(2008) 852 final

In addition, as the analysis on the other intervention areas below shows, problems hampering the performance of international rail freight services transcend the scope of the Regulation. The formal governance structure does not specify the interrelations between the corridor governance and the bodies and structures responsible for such issues, such as the European Union Agency for Railways or the national safety authorities. Some corridors have involved these bodies on a voluntary basis on specific issues but the practise is not systematic.

Resources dedicated to the governance

The effectiveness of the governance hinges on the availability of adequate resources, enabling the bodies to fulfil its tasks in an effective manner. The evaluation suggests that the resources dedicated to the governance have not been sufficient.

At the level of the executive board (Member States), one of the more work-intensive tasks is the preparation of the implementation reports to be submitted to the Commission in accordance with Article 22. The reports do not provide all the information required by the Regulation and exhibit considerable differences in the structure and level of detail[64]. This suggests that the executive boards might lack resources to properly address this obligation. They might also choose not to invest efforts in reporting because it is not perceived as a useful policy tool.

Management boards have delegated most of the operational tasks in implementing the Regulation to permanent structures. The human resources allocated to these bodies are limited to a few full-time equivalents; see Section 2.2 of Annex VII for an overview. The staff of the permanent office consists of three to seven full-time equivalents depending on the corridor.

As an example, the tasks related to operation of the corridor one-stop shop are typically carried by a single person part of the permanent management office, i.e. with one full-time equivalent. This appears insufficient to allow for effective implementation of the Regulation and for achieving its objectives. To illustrate DB Netz AG, the German infrastructure manager, receives tens of thousands of path requests per year, most of them on an ad-hoc basis (see Figure 12 below). It is doubtful to what extent a single person can provide effective support in the coordination such request volumes.

Coordination between corridors via informal coordination structures

The Regulation defines the governance structure exclusively at the level of individual corridors. Coordination between corridors is required only as regards specific tasks,

[64] The Commission services raised the issue of inconsistency before the last submission of biennial reports with the executive boards and provided an overview of the required content, as a first step in addressing the problem.

namely the coordination of pre-arranged train paths (Article 14(3)) and introducing procedures for coordinating traffic along connected freight corridors (Article 16(1)).

However, the network nature of international rail freight transport[65] implies that uniform rules and approaches at the level of the EU rail network are often more effective and efficient.

In practice, stakeholders at all levels of the governance structures – Member States, infrastructure managers, railway undertakings, terminal owners/operators and regulatory bodies – have set up informal structure for coordination across corridors. These structures have been created outside the rules of the Regulation. The existence of these structures is indicative of a gap in the Regulation which ultimately aims at establishing a 'European network for competitive freight'.

These structures have implemented a number of requirements in a manner harmonised across corridors even though the Regulation does not require such coordination. Notable examples include:

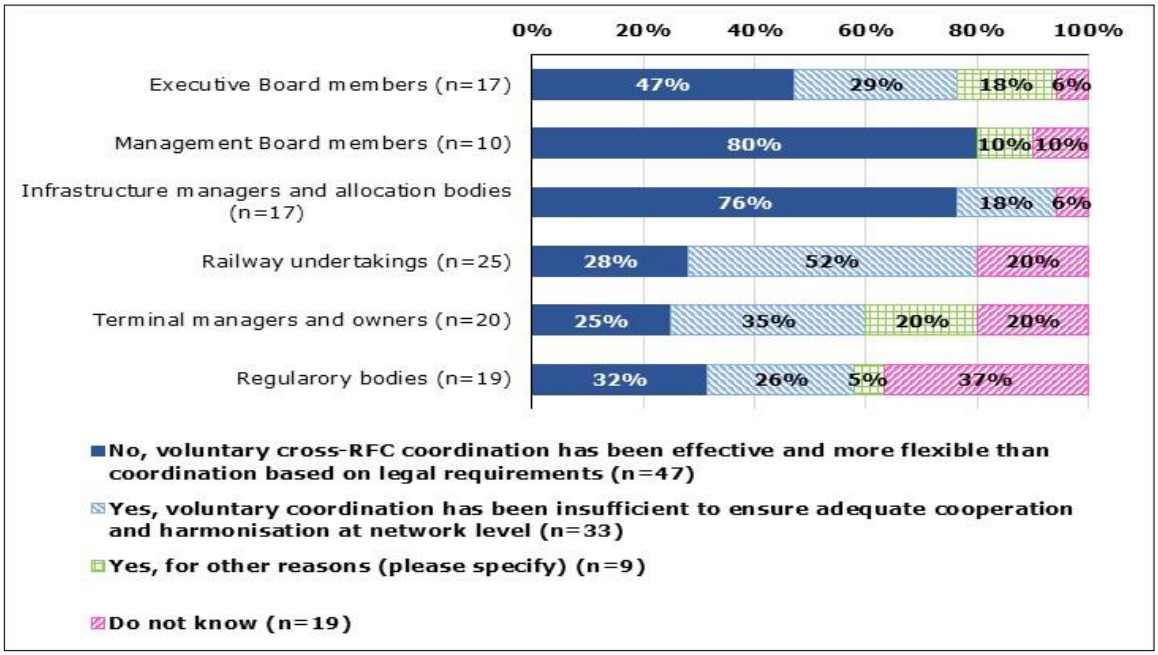
- The adoption of harmonised IT tools and interfaces (e.g., the Path Coordination System and the Customer Information Platform).
- The adoption of an agreed list and rules on calculation of key performance indicators (with work continuing on the issue).
- The adoption of guidelines and standards crucial for the implementation of the Regulation, e.g. the guidelines for corridor one-stop shops concerning the management of pre-arranged train path and reserve capacity[66].
- A uniform user satisfaction survey.

In the stakeholder consultation, representatives of management boards and infrastructure managers appear content with the effectiveness of these voluntary structures (Figure 8). However, railway undertakings and terminal owners and operators do not share this assessment: less than 30% of these groups consider voluntary coordination between corridors to be sufficiently effective.

[65] Approximately 39% of all capacity requests via the corridor one-stop shops concerns more than one corridor; see Table 6.

[66] A full list is available on RailNetEurope's website, https://rne.eu/rail-freight-corridors/downloads-documents/.

Figure 8 Targeted stakeholder consultation: Responses to the question 'Do you think that the lack of formal requirements on the network-level coordination in the Regulation has negatively affected coordination between the rail freight corridors?



Source: evaluation support study, targeted stakeholder consultation (survey-questionnaire)

Practical challenges created by the informal approach to cross-corridor coordination include:

- The proliferation of decision-making and coordination bodies reduces transparency of decision-making processes.
- The efficiency of the decision-making processes suffers due to the need to revert to formal governance structures with formal decision-making competences set up at corridor level. This creates significant avoidable complexity in decision-making processes (see Figure 18).
- The informal nature of the coordination bodies can also create uncertainty as regards the status of the harmonised guidelines and standards. In many cases, the lack of legal obligations results in non-implementation of these guidelines and standards at national level, mainly by individual infrastructure managers. See for example Section 2.6 of Annex VII on the implementation of the priority rules for capacity allocation in the 'Handbook for International Contingency Management'[67], which implements Article 17 of the Regulation. Failure to implement network-level guidelines at national level ultimately eliminates their effectiveness.

[67] RailNetEurope and Platform of Rail Infrastructure Managers in Europe. 2018. Handbook for International Contingency Management, (https://rne.eu/blog/news/international-contingency-management/).

Much of the work and even of the decision-making as regards harmonised guidelines and standards has been taken over by RailNetEurope, an association established by (most) European infrastructure managers but with no formal role in legislation. Guidelines with high relevance for the implementation of the Regulation are adopted by representatives of infrastructure managers in the decision-making bodies of RailNetEurope, i.e. outside the governance structure defined by the Regulation.

The fourth railway package introduces a 'European Network of Infrastructure Managers'[68] but does not explicitly assign this network with any tasks or decision-making competences under the Regulation.

Overall, the evaluation indicates that the lack of a formal network layer in the formal governance structure for international rail freight results in an untapped potential to increase its effectiveness and efficiency of the Regulation. However, given an already complex landscape of existing bodies and structures – both formal and informal – further analysis would be needed to assess this potential, the possible ways to realise it and how these compare in terms of costs and benefits.

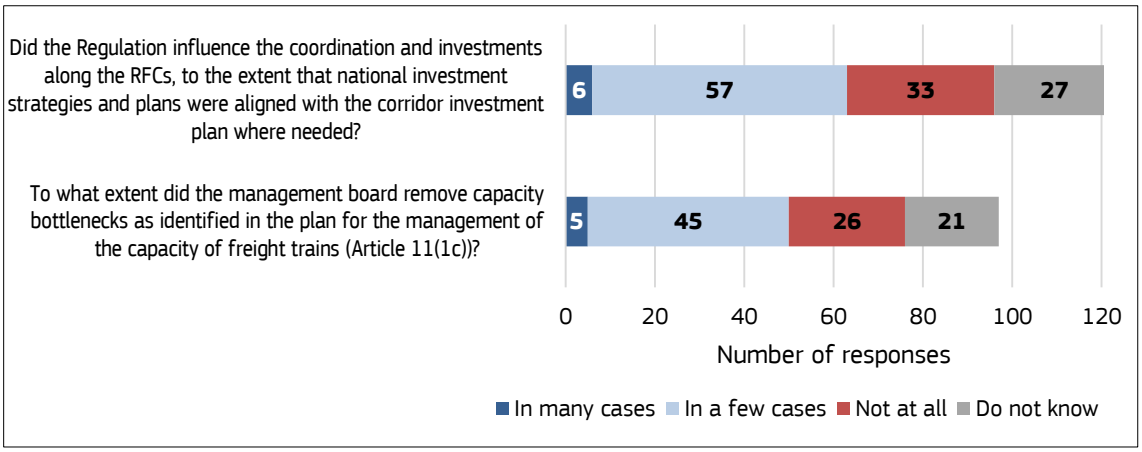
Investment planning (Article 11)

The management boards of all corridors have drawn up investments plans including details of indicative medium and long-term investment as required by Article 11 of the Regulation. However, these plans appear to be mostly a compilation of investment planning at national level. Their contribution to the coordination of investments has been limited at best. In addition, the frequency of updates of the plans is generally too low to serve a tangible information function, e.g. as a basis to assist railway undertakings in their strategic planning (e.g. purchase of rolling stock).

This assessment is confirmed by the targeted stakeholder consultation (see Figure 9 below). Only about half of the respondents in the stakeholder consultation consider that the Regulation resulted at least in some "true" coordination of investments along the corridor, in the sense of cross-border coordination that resulted in an adjustment of national investment plans. A similar opinion prevails on the removal of capacity bottlenecks.

[68] Article 7f of Directive 2012/34/EU.

Figure 9 Assessment of contribution of the contribution of the Regulation to the coordination of investments and removal of bottlenecks



Source: evaluation support study, stakeholder survey-questionnaire.

However, there are some examples of good practices: a few corridors have started in-depth studies of bottlenecks and the market potential of lifting them, for example as regards longer and heavier trains. Such studies have the potential to strengthen the effectiveness of the Regulation in terms of coordination of investments, by focussing on the concrete needs of rail freight transport and by fully taking into account benefits at corridor level which may not always be reflected by studies at national level[69].

A factor hindering a consistent identification of infrastructure capacity bottlenecks is the lack of a common definition and methodology to identify capacity bottlenecks as highlighted by a recent study carried out by Rhine-Alpine freight corridor[70].

The effectiveness of investment planning has been hampered by a lack of full coherence between the Regulation and the TEN-T Guidelines adopted three years after the adoption of the Regulation. Between the two acts, there is a certain overlap in tasks and instruments without a clear delineation of their respective purpose. This concerns most notably the investment plan to be drawn up by the management boards of rail freight corridors (and to be adopted by executive boards) in accordance with Article 11 of the Regulation and the corridor work plan to be prepared by the European coordinator in accordance with Article 47 of the Regulation (EU) No 1315/2013.

[69] In the framework of core network corridors, such studies are not carried out so there is no duplication of activities.

[70] Rail Freight Corridor Rhine – Alpine / Working Group Infrastructure and Terminals. *Report on National Differences influencing the Determination of Capacity Bottlenecks*, 26 May 2020.

Figure 10 Assessment of the cooperation between the governance structure of rail freight corridors and TEN-T core network corridors by stakeholders

Intervention area	For those areas for which you think there is an overlap in competences and activities, how effective do you consider the co-operation in practice between the governance structure of the rail freight corridors, on the one hand, and the EU coordinators and their secretariat, on the other?			
	To a large extent	To a moderate extent	To a small extent	Not at all
Overall	0	9	15	0
Investment planning	2	9	11	2
Deployment of new technologies and telematics applications, incl. ERTMS	0	9	13	2
Examining the demand for transport services (e.g., Transport Market Study)	0	7	14	2
Improving infrastructure use	0	6	12	3
Improving intermodal/multimodal transport	1	5	14	4
Total	3	45	79	13

Source: evaluation support study

Coherence of the Regulation with the TEN-T and CEF policies has also been hampered by differences in the geographical alignment of the rail freight corridors, on the one hand, and the core network corridors, on the other. The Regulation gives sector stakeholders leeway to designate specific lines based on market and operational considerations[71]. Therefore, the alignment of rail freight corridors may include lines with relevance for international rail freight which are not covered by the planning and financing framework of TEN-T and CEF Regulations.

On top of extensive information exchange in various form, there have been very positive examples of cooperation between the governance of the rail freight corridors and the European TEN-T coordinators. On initiative of DG MOVE, the governance structure of the rail freight corridors has also gathered input on the specific infrastructure needs of international rail freight traffic along the corridors, which was considered by the EU coordinators in drawing up their fourth edition of the corridor work plans.

In some cases the political weight of EU coordinators was leveraged to progress on issues within the remit of the rail freight corridors, which did not necessarily refer to infrastructure development. A notable example is the ministerial declaration of the Member States involved in Orient/East-Mediterranean corridor on 'effective improvements at border crossings'[72] or coordinators addressing issues such as the impacts of works on rail freight traffic, etc.

[71] The Regulation specifies only the nodes to be included in the principal route but leaves the designation of individual lines to the governance structure of the corridors.

[72] *Joint Ministerial Declaration on effective improvements to eliminate bottlenecks and facilitate international traffic on the Orient/East-Med Rail Freight Corridor*. Rotterdam, 21 June 2016:

In conclusion, the government structures of the corridors have not used the investment plan as an effective tool for the coordination of infrastructure investments along the corridors. The investment plan consist mainly in a compilation of investment plans at national level or replicates the works plans drawn up by the European coordinators in accordance with Article 47 of the TEN-T Guidelines. On a practical level, some useful work have nevertheless been carried out by the governance of rail freight corridors, focussing on the specific infrastructure needs of rail freight traffic.

Capacity allocation and coordination of works (Articles 12, 13, 14, 15)

The issue of capacity allocation is the key intervention area of the Regulation. Measures in this area contribute to the following objectives:

- Objective 3: Guarantee international freight trains access to adequate infrastructure capacity, recognizing the needs of other types of transport, including passenger transport;
- Objective 5: Facilitate the use of rail infrastructure for international rail freight services and support fair competition between rail freight service providers;

The key tools to achieve these objectives are:

1. the corridor one-stop shop allowing applicants to request and be allocated infrastructure capacity in a single place, facilitating the use of infrastructure for operators of international rail freight services;
2. Two dedicated capacity products, 'pre-arranged train paths' and 'reserve capacity' which are intended to guarantee international freight train capacity of adequate quantity and better quality than so far.

The data gathered for the evaluation support study and from documents produced by the governance and the one-stop shops of the rail freight corridors, suggests that the these tools failed to provide better access to rail capacity for international freight. The overall conclusion is that the implementation was not in line with the objective of the Regulation to facilitate capacity requests for international freight and guarantee access to the best available quality of rail capacity for international freight.

One-stop shops

The purpose of the one-stop shops is to facilitate applicants to request capacity for freight trains crossing at least one border along the freight corridors.

The data shows that one-stop shops failed to make a big impact on the rail market. In 2017 and 2018, the capacity allocated by the one-stop shops amounted to less than 10%

https://ec.europa.eu/transport/sites/transport/files/political_rail_cross_border_declaration_signed_0.pdf .

of international rail freight traffic in the countries involved in the rail freight corridors. In 2019, the share has slightly increased to 13%. The volume of capacity offered and allocated via the corridor one-stop shops has not significantly increased since 2019, so it is likely that the relevance of the one-stop shops in capacity allocation for cross-border freight traffic remains limited even now[73].

In this context, it is worth mentioning that infrastructure managers have not implemented their commitment in the 2016 Sector Statement[74] to 'allocate, coordinate or support the majority of the entire international rail freight market along the corridors and connecting lines via the C-OSS' in the medium term.

The share of capacity allocated via the one-stop shops differs between corridors, with a single corridor, North Sea-Mediterranean RFC, allocating about one third of the total. However, a corridor-specific share of capacity allocated via the one-stop shops cannot be calculated, as no information is provided on total traffic by corridor.

Table 3 Cross-border rail freight traffic: overall volume and capacity offered / allocated via the corridor one-stop shops

	Million train-km / train path-km						**Relation to total cross-border traffic**		
	TT2017	**TT2018**	**TT2019**	**TT2020**	**TT2021**	**TT2022**	**TT2017**	**TT2018**	**TT2019**
Total cross-border traffic	366,6	374.8	362.3(1)	n/a	n/a	n/a	100%	100%	100%
Capacity offered via one-stop shops	151.6	132.7	150.9	160.2	147.9	n/a	41%	35%	42%
… of which PaPs	113.8	105.1	120,6	130.8	123.6	129.4	31%	28%	33%
… of which RC	37.8	27.6	30.2	29.4	24.3	n/a	10%	7%	8%
Capacity allocated by one-stop shops	32.9	33.7	46.3	49.2	48.2	n/a	9%	9%	13%
… of which PaPs	30.2	31.9	42.9	47.8	47.4	n/a	8%	9%	12%
… of which RC	2.8	1.8	3.3	1.4	0.8	n/a	1%	0%	1%
Notes: PaP = pre-arranged train path; RC = reserve capacity; TT = timetable year (starts in December of preceding year) (1) Information on rail freight traffic in BE in 2019 missing; the 2018 was imputed instead.									

Sources: RailNetEurope (Path Coordination System); TRAMOS database

The limited market uptake of capacity offered via the corridors suggests that the capacity offer currently provided by infrastructure managers via the corridors does not even provide railway undertakings with sufficient benefits to move from the pre-existing regime

[73] The exact share for years later than 2019 cannot be calculated, as information on total international freight traffic only becomes available with a two-year delay in the TRAMOS database.

[74] CER et al. 2016. Sector Statement - Boosting International Rail Freight, available at (https://www.cer.be/publications/latest-publications/sector-statement-rail-freight-corridors).

that it was intended to replace[75]. Obviously, this simple insight raises serious doubts about the effectiveness of the Regulation.

Corridor capacity products (pre-arranged train paths and reserve capacity) and their impact

Reserving capacity for rail freight during the process of preparing the annual timetable is the other key tool of the Regulation. The capacity is reserved by the infrastructure managers by constructing pre-arranged train paths and by defining reserve capacity for international freight trains. These tools are instrumental for achieving the objective to 'guarantee international freight trains access to adequate infrastructure capacity'.

'Pre-arranged train paths' in the sense of the Regulation are train paths that are defined by infrastructure managers prior to the capacity allocation process and which are allocated with priority to international freight trains.

The introduction of pre-arranged train paths constitutes a fundamental change to the pre-existing regime of capacity allocation[76] as it reverses the order of demand and offer in the process. The traditional process is initiated by capacity requests submitted by railway undertakings and other applicants, i.e. on the demand side, while the definition of pre-arranged train paths represents the supply side.

This reversal offers a number of advantages, including notably:

- The possibility to safeguard capacity for specific types of traffic, i.e. international freight trains in the case of the Regulation;
- An increased transparency of the capacity available to railway undertakings;
- The possibility to optimise the use of infrastructure capacity by 'bundling' trains[77]. Such optimised patterns of capacity utilisation are unlikely to emerge as a result of capacity requests placed by individual railway undertakings.

However, the offer-driven approach involves an unavoidable trade-off between the benefits above and a number of disadvantages and challenges:

---

75 This approach consists in allocating capacity in a piecemeal manner by individual infrastructure managers, i.e. allocating national sections essentially independently from each other, on the basis of bilateral cooperation of varying degrees of effectiveness.

76 As defined in Directive 2012/34/EU.

77 Basically, the approach consists in sequencing trains with similar speed and stopping patterns. This allows a reduction in the time between two consecutive trains, similar to a metro system which typically allows trains to run every one or two minutes. Trains with different speed characteristics require more time in between, up to ten to fifteen minutes depending on the specific characteristics of the trains and the infrastructure.

- Lower flexibility to accommodate specific capacity needs, which result e.g. from different speeds of the trains depending on train weight or rolling stock and which cannot be perfectly anticipated;
- A lower overall flexibility of the capacity allocation process, as the pre-definition of the capacity offer needs to be maintained to be effective in practice, i.e. changes in capacity needs due to changes in demand means that capacity requests potentially could be declined if not in line with the pre-defined offer;

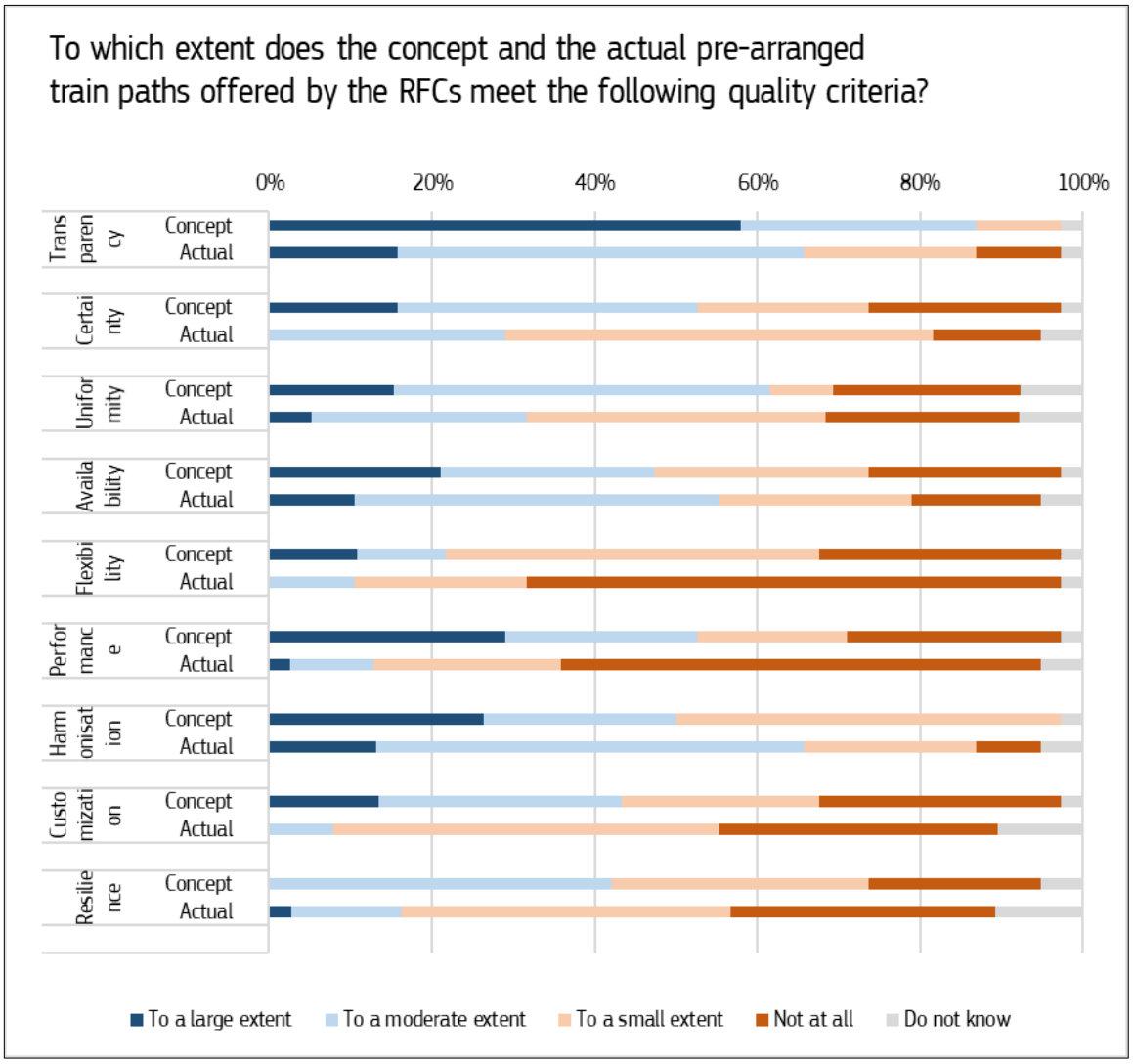
Section 9 of Annex VII provides additional details.

Railway undertakings confirm the theoretical potential of the concept in the stakeholder consultation. For most of the quality criteria considered[78], a majority of respondents consider that pre-arranged train paths can make a 'high' or 'moderate' contribution to quality. The most notable benefit is expected in terms of the transparency of the capacity offer, on which close to 60% of respondents expect a 'high' and more than 80% at least a 'moderate' contribution (see Figure 11 below).

Obviously, the biggest benefits from reserving capacity can be expected on congested infrastructure, i.e. lines where demand is above the available capacity. However, this approach is only effective if sufficient quantities of such train paths are offered.

[78] The criteria to assess the quality of infrastructure capacity are borrowed from an in-depth study on the quality of capacity for freight; see Morvant (2015), *Le processus de répartition des capacités sur le réseau ferré français : quelle place pour le fret ?*

Figure 11 Pre-arranged train paths and key quality criteria of infrastructure capacity for rail freight traffic



Source: evaluation support study; targeted stakeholder consultation

Effectiveness of corridor capacity in safeguarding capacity

Data for a number of congested sections of corridor lines shows that the capacity offer via the corridor one-stop shops is in most cases below the total volume of international rail freight traffic (see Table 4 below). **This means that the pre-arranged train paths are not effective in safeguarding capacity for international freight trains on these sections.**

A more limited but still effective way of safeguarding capacity for international rail freight traffic would be to offer PaPs particular during daytime, when the capacity needs of passenger traffic are most intense. During night time, capacity for freight trains could be considered to be abundant anyways. However, Table 4 shows no evidence that PaPs are strategically offered during daytime: in most cases, the share of PaPs between 6.00 and 19.00 roughly amounts to half of the entire PaP offer.

Table 4 Some examples of capacity offer by rail freight corridors on congested lines or lines close to congestion (i.e. with limited residual capacity)

Section (specific point for number of trains)	RFC(s)	Declaration of congestion[1]	Capacity demand (traffic in trains per day)				Capacity offer (PaPs per day)		Capacity offer (8) exceeds capacity demand (7)?
			Total	Passenger	Freight	Of which: international freight	Number of PaPs (all day)	Number of PaPs between 6:00 and 19:00	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Karlsruhe – Basel (Bad Krozingen)	RFC 1	Yes	249	129	120	120	52	23	No
Prague – Česká Třebová (Pardubice)	RFC 7, RFC 9	No	426	281	145	35	20	10	No
Copenhagen – Roskilde (Glostrup)	RFC 3	Yes	397	365	32	21	24	14	Yes
Koper – Divača (Koper Tovorna)(2)	RFC 5, RFC 6, RFC 11	Yes	68	9	59	45	14	8	No
Budapest- Ferencváros – Kelenföld (Kelenföld)	RFC6, RFC7, RFC9, RFC11	No	261	165	97	68	42	28	No
Strasbourg – Séléstat (Séléstat)	RFC 2	No	135	109	26	23	44	29	Yes

Notes:
(1) Declaration of congestion in accordance with Article 47 of Directive 2012/34/EU
(2) This line is single track, its capacity is therefore significantly lower than of the other lines presented.

Sources: Eurostat, RNE, path catalogues of rail freight corridors, network statements of infrastructure managers

Another important aspect in the capacity allocation process is the timing when capacity is made available (and reserved) for international freight trains. Ideally, the timing of the capacity offer is synchronised with the evolution of demand.

The demand for railway infrastructure capacity in the form of train paths derives from the demand of shippers, i.e. industry and commerce, for transport and logistics services. The elaboration of the schedule of shippers predetermines to a large extent the moment when the concrete capacity needs become known. The time horizon over which shippers plan their logistics operations varies significantly between different sectors and commodities. As an example, a sector practicing 'just-in-time' production concepts, such as the automotive industry, will have a high share of spot transport demand whereas more stable industries, such as the energy industry, will have more stable demand over time.

Interestingly, the stakeholder consultation has shown that even for relatively stable transport, precise capacity needs become known only a few months in advance. This is significantly later than the deadline to request pre-arranged train paths, which is 8 months before the change in the annual timetable, i.e. up to 20 months before the running day of an individual train.[79] **The timing of offer and demand for infrastructure capacity is obviously not aligned.**

The tools to safeguard capacity for international rail freight traffic have not been effective in many cases. A number of factors have been identified in the evaluation.

Incomplete harmonisation between corridors

In order to address the shortcomings of the 'pre-arranged capacity' approach, corridors have adopted different approaches, notably to address the lack of flexibility inherent to pre-defined capacity[80]. However, this has reduced the harmonisation of the capacity products introduced by the Regulation, hampering the facilitation effect of the corridors. This is exacerbated by the fact that the majority of railway undertakings serve geographically dispersed markets, i.e. operate not only along a single corridor[81].

In addition, roughly 40% of the path requests placed via the corridor one-stop shops concern more than one corridor. In such cases, harmonisation issues may even concern individual path requests as different products may be offered on different corridors.

---

79 The total of 20 months comprise the 8 months period to request capacity before the change of the annual working timetable plus the 12 months period of validity of the annual timetable.

80 This includes concepts such as 'flexible pre-arranged train paths' and 'bandwidth capacity', which reintroduce varying degrees of flexibility as regards the routing and timing of the pre-arranged train paths.

81 See Oliver Wyman Consultantcy, *Securing the future of European freight railway operators*, 2016 (https://www.oliverwyman.com/content/dam/oliver-wyman/global/en/2016/feb/2016_Oliver-Wyman_European-Freight-Rail.pdf).

Incomplete coverage of the capacity management process

The remit of the corridor one-stop shops defined in the Regulation covers the offer and the allocation of train paths along the corridors. However, the allocation of train paths is only one step in the overall process of managing railway infrastructure capacity.

In practice, train paths are often modified after being allocated. Modifications of train paths may be required both on the demand side (railway undertakings), e.g. due to changes to operational or commercial needs, or on the offer side (infrastructure managers), e.g. due to unanticipated infrastructure restrictions resulting from breakdowns or works scheduled on short notice. On the German network, 60% of train paths are modified after being allocated (Figure 12)[82].

Figure 12 Modifications of freight train paths after allocation on the network of DB Netz AG



Source. DB Netz AG

In principle, the Regulation does not impede infrastructure managers from involving corridor one-stops in modifications of train paths. However, this has not happened systemically in practice. As a precondition, such an operational roles would require infrastructure managers to dedicate more human resources to the one-stop shops (typically one full-time equivalent, see the analysis of the governance structure above).

The fact that the Regulation does not assign the one-stop shop with responsibilities with respect to train path modifications has the practical effect that railway undertakings in many cases still have to get in touch with individual infrastructure managers. **Obviously, this significantly reduces the facilitation effect of the one-stop shop.**

82 Statistical information is not available for other networks but feedback from the stakeholders consultation suggests that the situation in Germany is not an exception.

Lack of integration of integration of the pre-construction approach in overall capacity management

As outlined above, the introduction 'pre-arranged train paths' and 'reserve capacity' fundamentally changes the approach of capacity allocation by initiating the process of on the capacity offer side.

However, this change in approach applies to international freight trains, while all other types of traffic, i.e. all passenger and domestic freight trains, are not covered by this new regime. This creates challenges for practical implementation on the European rail network which consists mainly in mixed-used lines accommodating all types of traffic: Safeguarding sufficient quantity of capacity for freight traffic by reserving pre-arranged capacity inevitably results in a means that the capacity for all other market segments has to be pre-arranged as well. This is particularly true for the sections of the European network most relevant for international traffic, where up to ten freight trains per hour have to share capacity with passenger trains[83]. It appears that infrastructure managers were not able – or, to a certain extent, willing – to make this step.

- Limiting the facilitation effect for international traffic to only a subset of the European network, has not shown to be feasible in practice: 86% of the train paths allocated via the one-stop shops in 2019 include sections which cannot be accommodated by pre-arranged train paths either because they are not on the RFC network or because the needs of the railway undertakings are too specific to anticipate them.

The one-stop shops have tried to better align their offer with market needs. Some improvements include train paths better coordinated with demand, capacity coordinated with terminals, the offer of pre-arranged train paths with longer train length than normally permissible. However, these attempts have not resulted in widespread results yet.

Railway undertakings most frequently cite the following reasons for not requesting higher volumes of capacity via the corridor one-stop shops (Table 5):

- Shortcomings of the IT tool, both in terms of accuracy and completeness of data and in terms of functionalities of the tool itself;
- Insufficient quantity and quality of the capacity offered by the one-stop shops, in terms of speed, train length etc.;
- Insufficient advantages of capacity allocated by the one-stop shops as regards reliability, notably protection against modification due to infrastructure works.
- Lack of harmonisation of the process following the allocation limits the facilitation effect of the one-stop shops, i.e. the requirement to interact with individual infrastructure managers remains.

[83] The capacity of a rail line is highly dependent on the infrastructure characteristics and the characteristics and composition of train services using the line (speed, stopping patterns, accelerations etc.).

Table 5 Reasons preventing railway undertakings from requesting higher volumes of capacity via the corridor one-stop shops

	Which were the most important factors preventing railway undertakings from requesting higher volumes of capacity via the C-OSS?			
Factor	**Important**	**Unimportant**	**Not relevant**	**Do not know**
Insufficient quality and quantity of the pre-arranged train paths and reserve capacity at the moment of publication (e.g., commercial speed, train length, etc.)	29	2	3	1
Lack of cross-border harmonisation of the process following allocation of pre-arranged train paths (at X-7.5) limits the facilitation effect (i.e., the need to interact with several IMs remains and the COSS is actually an additional interface)	17	10	7	1
The **IT tool for requesting and allocating capacity via the corridor one-stop shops (PCS) is not satisfactory** in terms of functionality and usability	27	5	4	1
The **IT tool for requesting and allocating capacity** via the corridor one-stop shops (PCS) is **not satisfactory in terms of the completeness and accuracy of data** (e.g. it is not up-to-date due to missing interfaces with national IT systems for timetabling)	32	2	1	1
Pre-arranged train paths and reserve capacity **do not offer significant advantages** over capacity allocated by individual infrastructure managers **in terms of reliability** (e.g., protection against modifications due to capacity restrictions due to work)	29	3	3	1
The **facilitation effect of the C-OSS** is **limited for requests involving lines not in included in the network of RFCs** (i.e., involving 'feeder' and 'outflow' sections)	9	17	6	3
The **facilitation effect of the C-OSS** is **limited for requests involving two or more RFCs**	7	13	11	4
Legal issues make it difficult to request international train paths, in particular in the case of freight trains operated in 'cooperative mode' by several RUs. This includes for example the question **of liability of the (lead) railway undertaking – which requests an international train path for the entire journey of a train** – on networks on which the train is operated by another railway undertaking	7	18	7	3
Challenges on RU side to make use of RFC services (e.g., language knowledge of staff, lack of familiarity with PCS, etc.)	12	15	9	0

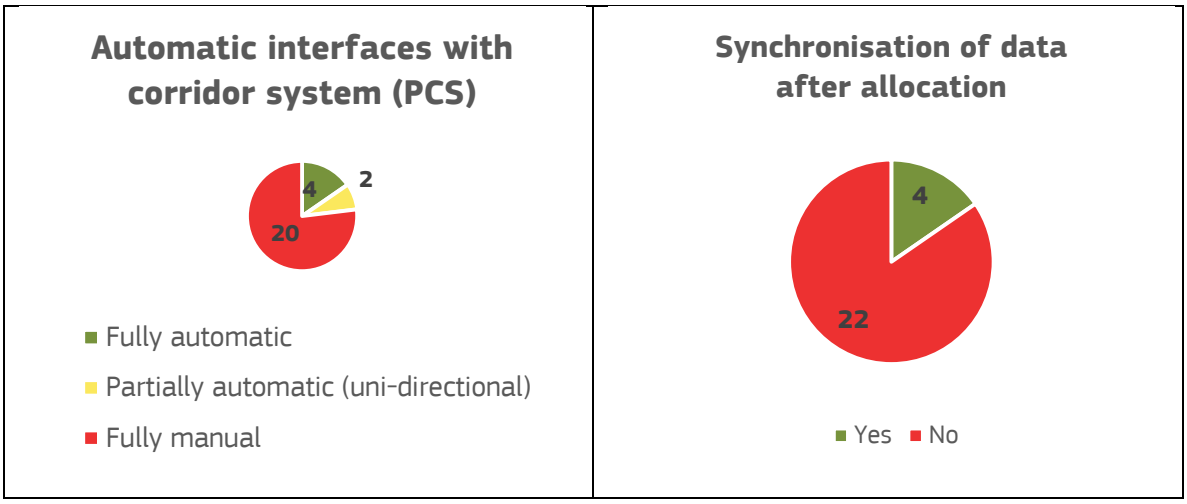
Source: evaluation support study

At the same time, pre-arranged train paths actually offered by one-stop shops are seen more critically than the potential of the concept by railway undertakings. This suggests that the potential of the tool was not realised in its practical implementation.

Shortcomings of the IT system for path allocation

All corridors have deployed a common IT system for the management of infrastructure capacity between infrastructure managers and applicants, i.e. for the submission of path requests by railway undertakings and other applicants and for submitting information about the path allocation. The so-called 'Path Coordination System' is developed and provided by RailNetEurope[84]. Recent version of the system comply with the requirements set out in the relevant technical legislation at EU level, the technical specification on interoperability for telematics applications for freight[85]. In this regard, infrastructure managers have implemented a higher level of harmonisation and standardisation than strictly required by the Regulation.

Figure 13 Data exchange between the corridor capacity management system (PCS) and national-level systems



Source: RailNetEurope

However, the system has a number of shortcomings which so far have prevented a comprehensive facilitation effect of the tool:

- PCS cannot be used for the entire life-cycle of a train path from the offer of a pre-arranged path up to the actual train run. The reason for this is that information in PCS is not continuously synchronised with the national systems. This results from missing

84 https://pcs.rne.eu/

85 Commission Regulation (EC) No 62/2006 of 23 December 2005 concerning the technical specification for interoperability relating to the telematic applications for freight subsystem of the trans-European conventional rail system (OJ L 13, 18.1.2006, p. 1).

automatic interfaces with the IT systems at national level: only 4 out of 26 infrastructure managers involved in the corridors have fully automatic (bi-directional) IT interfaces with PCS. 20 infrastructure managers rely on fully manual data exchange, 2 more have unidirectional IT interfaces. Changes to train paths after allocation are therefore not reflected in PCS for the majority of infrastructure managers (see Figure 13 above).

- Functionalities and ease-of-use of PCS are not on par with the more advanced systems at national level, e.g. as regards the possibility to place complex capacity requests or as regards the response time to ad-hoc request for capacity[86];
- Some railway undertakings have automatic interfaces with the (legacy) IT systems for capacity allocation used by infrastructure managers at national level, which means that a switch to PCS actually results in less automated processes unless railway undertakings develop interfaces with PCS which involves significant development costs.

Overall, limited take-up of the IT tool used by the corridors is a chicken and egg problem. Inadequate implementation of the tool by infrastructure managers limited benefits for railway undertakings. The resulting limited take-up of the tool by railway undertakings in turn did not encourage infrastructure managers to intensify deployment.

More recently, progress has been made as regards the performance of the tool itself. In addition, infrastructure managers committed themselves to develop and roll out automatic interfaces with PCS until 2022[87].

When defining and organising pre-arranged train paths and reserve capacity for ad-hoc requests, management boards and infrastructure managers did in general not implement the requirement to take into account the results of the transport market studies, or only to a limited extent. In order to fill in the function intended for the transport market study, the one-stop shops introduced a consultation of railway undertakings on their needs for capacity, the so-called 'capacity wishes survey'. The purpose of the survey is to get first-hand about the capacity needs as anticipated by infrastructure users themselves. The survey is carried out upfront the preparation of the offer, one and a half years before the entry into force of the working timetable concerned[88]. The survey does not constitute an allocation of capacity in legal sense, i.e. any pre-arranged train paths constructed on the basis of the survey are available to all applicants and are allocated in the regular process

[86] As a more extreme example, the German infrastructure manager, DB Netz, explicitly discourages the use of PCS for ad-hoc path requests in its network statement; see DB Netz Network Statement (https://fahrweg.dbnetze.com/fahrweg-en/customers/network_statement/network_statement/network_statement/network_statement_2020-3589250?contentId=1394802).

[87] https://rne.eu/blog/news/ttr-approval-of-overall-action-plan-and-concept-for-pilot-phase-2/

[88] The survey is being carried out by all corridors in a harmonised manner; pre-arranged train paths are offered 11 months prior to the entry into force of the timetable.

for capacity allocation on the basis of the Regulation. The survey clearly shows the need to consult the actual users of infrastructure on their capacity needs already earlier than provided for in the process of the Regulation.

Due to the high relevance of this process for open access and fair competition between operators of rail freight services – which obviously involves an inherent potential for discrimination – the lack of involvement and legal competences of regulatory bodies to supervise the process remains a gap which can ultimately only be addressed by a change in legislation.

The Redesign of the International Timetabling Process project is a major sector-driven approach to completely modernise the capacity management process, by simplifying, unifying, and solidifying improvements to the European rail timetabling system. The project takes into account some of the key insights gained from the implementation of the Regulation, notably the shortcomings, and could therefore considered to be an unintended side-effect of the Regulation[89].

The overall goal of the project is to significantly increase the competitiveness of railways. The project starts from the premises that the differences between the timetabling processes differ considerably across European countries, which making international cooperation difficult, that poorly coordinated construction works and timetable clashes. It is also based on the acknowledgement that capacity products currently provided by the infrastructure managers do not serve all market needs, in particular as regards freight traffic.

The project is carried out under the auspices of RailNetEurope, based on agreement and support of national infrastructure managers as the association's constituent members, and developed under close involvement of associations of railway undertakings, Forum Train Europe and by the European Rail Freight Association.

Traffic management (Articles 16 and 17)

The purpose of traffic management is to organise the movement of trains on the railway network with a view to reducing smaller deviations from the timetable in the most efficient manner and to ensure the continuity of operations during larger disruptions. Traffic management comprises safety-critical tasks, such as ensuring the spatial separation of trains, as well as more operational optimisation tasks, via monitoring and dispatching activities and on the basis of close communication with the railway undertakings operating on the network, with neighbouring infrastructure managers and, ideally, with the operators of railway service facilities such as terminals, shunting yards and depots. As the purpose of traffic management is managing deviations from the timetable, the ultimate criteria to assess its effectiveness are its contribution to reducing delays on the network

[89] See https://ttr.rne.eu/ for more information on the project.

and the extent to which the continuity of traffic is maintained during disturbances to normal operations.

The Regulation addresses the specific issue of coordination of traffic management across borders (i.e. between different infrastructure managers) and between the railway network and terminals. The Regulation requires the following measures:

- As regards normal day-to-day operations (Article 16), it requires the management board, infrastructure managers and operators of terminals to set up coordination procedures between different networks, different corridors and with terminals.
- For the event of disturbances to normal operations on the freight corridor, it requires (Article 17) the management boards to adopt common targets for punctuality and/or guidelines for traffic management. It also requires infrastructure managers to draw up priority rules for the management between the different types of traffic in the part of the freight corridors within the responsibility of that infrastructure manager in accordance with the common targets and/or guidelines. The purpose is to minimise delays and to achieve that infrastructure managers may coordinate the management between the different types of traffic along several freight corridors.

The 2018 Commission report on the application of the Regulation[90] provides some information on the implementation of the rules on traffic management. Annex VII, Section 7 presents an overview of the measures taken to implement the provisions of the Regulation on traffic management in normal operation (Article 16) and in the event of disturbance (Article 17).

Overall, it is difficult to assess the actual measures taken to implement of the Regulation (Articles 16 and 17). The documents providing information on the conditions of use of the freight corridors are published by the management boards. They provide references to a number of guidelines prepared and adopted by RailNetEurope and to documents providing an overview of bilateral agreements. However, it is difficult to verify in practice to what extent these bilateral agreements address traffic management on the rail freight corridors in particular, or if they are dealing with cross-border traffic in general and how they are being implemented.

'Procedure to coordinate traffic management along corridors' (Article 16(1))

There is no sufficient information on the implementation of this provision. The information on the actual procedures for the coordination of traffic management is difficult to find. There is no indication whatsoever in how far the procedures for coordinating traffic management were harmonised along the corridor.

[90] SWD(2018) 101 final of 16 April 2018.

Overall, the information provided by the management boards of the corridors on traffic management:

- Does not achieve a facilitation effect by providing infrastructure users with easily accessible information in a single place: information about the actual procedure for the coordination of traffic management applicable to a specific border crossing can only be accessed via a succession of references.
- Leaves it entirely unclear, whether management boards have actually implemented the requirement to 'put in place procedures for coordinating traffic management along the freight corridor'.

It is worth noting that RailNetEurope had analysed existing traffic management rules and procedures and came to the conclusion that the main field of action to implement Article 16(1) of the Regulation should be to standardise communication procedures.

'Procedure to coordinate traffic management along connected corridors' (Article 16(1))

The corridor information documents do not provide any concrete information about this requirement. They do state that traffic management is coordinated at bilateral level only, not at the level of corridor. The logic of bilateral coordination between infrastructure managers automatically rules out coordination between corridors.

'Procedure to ensure optimal coordination between the operation of the railway infrastructure and the terminals' (Article 16(1))

Even less information is available on this issue. Some rail freight corridors report on activities related to improving coordination with terminals. For example, freight corridor Scandinavian-Mediterranean offers the product Terminal Integrated Capacity Offer (TICO) with participating terminals and freight corridor Mediterranean is running a pilot End-to-End Freight Traffic Monitoring Pilot, involving terminals.

Nevertheless, the overall conclusion is that the effectiveness of coordination between rail infrastructure and terminals cannot really be assessed, as there is little information on the implementation of the Regulation in this area. At the same time coordination between terminals and infrastructure managers, but especially with railway undertakings could help improve punctuality. Data shows that a considerable number of trains running on the rail freight corridors start with a delay of over 30 minutes[91].

[91] For example, freight corridor Rhine-Alpine reports that 21-36% of the trains began their run on the corridor lines with a delay of over 30 minutes (see Train Performance Report - Management Summary, October 2020). A train delayed by less than 30 minutes is considered punctual.

IT tools could be considered in the future as a way to improve traffic management coordination with terminals. These could include RailNetEurope's Train Information System and the European Rail Facilities Portal.

Experience from the aviation sector shows that the efficiency and resilience of operations involving numerous actors, such as at airports, can be significantly improved by a more transparent and collaborative approach of all partners involved. The so-called 'Airport Collaborative Decision Making' approach[92] requires not only the deployment of adequate IT tools but also mutual understanding of operational requirements, the readiness to share operational information in a transparent manner and on the basis of clearly defined performance indicators, as well as the commitment to engage in a continuous improvement process on the part of all operational stakeholder involved. An impact assessment of the approach has shown that in the 17 airports applying the approach in 2016, Airport Collaborative Decision Making has resulted in a reduction in fuel consumption and CO_2 emissions of about 8% and in air traffic management-related delays of about 10%.[93]Given the functional and structural similarity between airports and rail terminals as regards the planning and allocation of limited resources (e.g., airport slots / rail capacity), the involvement of a broad range of operational stakeholders, the development and implementation of approaches based on the same principles could be expected to deliver significant benefits for intermodal rail freight, adjusted to the specific needs of rail freight transport.

Traffic management in the case of disturbance (Article 17)

As with general operational traffic management, the measures taken to implement the Regulation as regards traffic management in the case of disturbances were limited. Overall, operational functions in traffic management continues to be performed exclusively by individual infrastructure managers.

Coordination between infrastructure managers is done predominantly at bilateral level with varying degrees of intensity and effectiveness. Procedures for operational functions and tasks are not harmonised at corridor level. However, in some cases, procedures are standardised at the level of pairs of infrastructure managers, i.e. similar or the same procedures apply to several or all border crossings between their networks.

As of today, there is no end-to-end monitoring – let alone management – of international freight trains along their entire journey.

Nevertheless, efforts to improve the coordination of traffic management during disturbance has been significantly strengthened in the wake of the seven-week disruption of the Rhine-Alpine corridor between Karlsruhe and Basel in 2017 (the Rasttat incident). Infra-

[92] See https://www.eurocontrol.int/concept/airport-collaborative-decision-making.

[93] Eurocontrol (2016), A-CDM Impact Assessment (https://www.eurocontrol.int/sites/default/files/2019-04/a-cdm-impact-assessment-2016.pdf).

structure managers developed and adopted a Handbook for International Contingency Management, which defines harmonised rules, processes and competences for the management of major disruptions with an impact of international rail (freight) traffic. The governance of the rail freight corridors have contributed to the development and to the implementation of the handbook.

Since its adoption, the infrastructure managers' handbook has been applied in three cases and has helped to improve communication and coordination between the stakeholders involved (according to feedback).

However, the contribution of the handbook to improve the resilience of rail freight transport in the event of major disruptions remains limited so far. During the most recent disruption (on the Rhine-Alpine freight corridor, near Auggen), only about 25% of the trains scheduled to run on the disrupted line during the incident could effectively be re-routed via diversionary lines. The key reasons for this are:

- Limited availability of diversionary routes with appropriate infrastructure parameters (e.g. electrification, loading gauge, etc.).
- Barriers related to operational and safety-related requirements (e.g. requirements for train drivers as regards knowledge of operational rules and language), in particular if diversionary routes involve a network not part of the normal itinerary.
- Limited ability of infrastructure managers to provide – possibly significant amounts of – capacity on diversionary routes on short notice, in particular if more than one infrastructure manager is concerned.
- Lack of cooperation between railway undertakings, e.g. by applying prohibitive pricing for traction services provided by railway undertakings able to operate on the alternative routes.

Some of these issues are within the scope of the governance structure of the rail freight corridors, in particular the provision of capacity (train paths) on diversionary routes and the coordination of operations. However, addressing the operational and safety-related issues goes beyond the remit of the governance structure of the corridors, as the Regulation does not assign it with any role or tasks in this regard.

Overall, there are positive developments on the implemented measures on traffic management in the case of disturbance, but in reality there are major limitations to their effectiveness. A more comprehensive approach appears to be necessary, which could address issues such as alternative routes going outside the rail freight corridor lines of a single corridor, safety and language requirements, cooperation between railway undertakings, etc. Some of those measures appear to require entities that can act at EU rail network level (e.g. on rerouting).

Providing information, monitoring performance and regulatory bodies (Articles 18, 19, 20)

Providing information to users

The Regulation set the objective of facilitating access to information concerning the use of all the main infrastructure on the freight corridor and guaranteeing non-discriminatory access to the corridor. For this purpose it obliged the management board to draw up, regularly update and publish a document containing all this information. In response, the management boards of the freight corridors, together with RailNetEurope, developed the **corridor information document** – providing a uniform structure for providing the information. These documents are available online for all rail freight corridors. In terms of implementation, the documents published by the freight corridors are in line with the provisions of the Regulation. In general, all technical information and parameters are provided. Some differences can be found regarding the format in which information is displayed and this may depend on the different approaches used by the infrastructure managers to gather the information needed.

In general the corridor information documents increased availability of information on the conditions for the use of the infrastructure. However, it should be pointed out that differences in structure, format and contents of the documents between corridors undermine the positive effect. Also the use of electronic documents replicating paper documents instead of IT tools and platforms to present the information in a user-friendly way limits the positive effect.

The latter is partially addressed by the RailNetEurope's Corridor Information Platform, an interactive, internet-based information tool. It uses a graphical user interface to provide precise information on the routing, terminals, specific infrastructure properties and infrastructure investment projects, as well as ICM lines and their re-routing options of the participating Rail Freight Corridors (RFCs). However, the customer information platform is not coordinated with the 'register of infrastructure' to be published in accordance with Article 49 of the Interoperability Directive[94]. The functions of the register of infrastructure are further specified in Commission Implementing Regulation (EU) 2019/777. Point 2 thereof specifies that the 'main purpose of the register of infrastructure is to set out transparent characteristics of the network and be used as a reference database'. The purpose of the corridor information platform is closely related to the purpose of the register of infrastructure. In the future, more information will become available on other IT platforms, such as the European Rail Facilities Portal[95].

[94] Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union.

[95] https://railfacilitiesportal.eu/

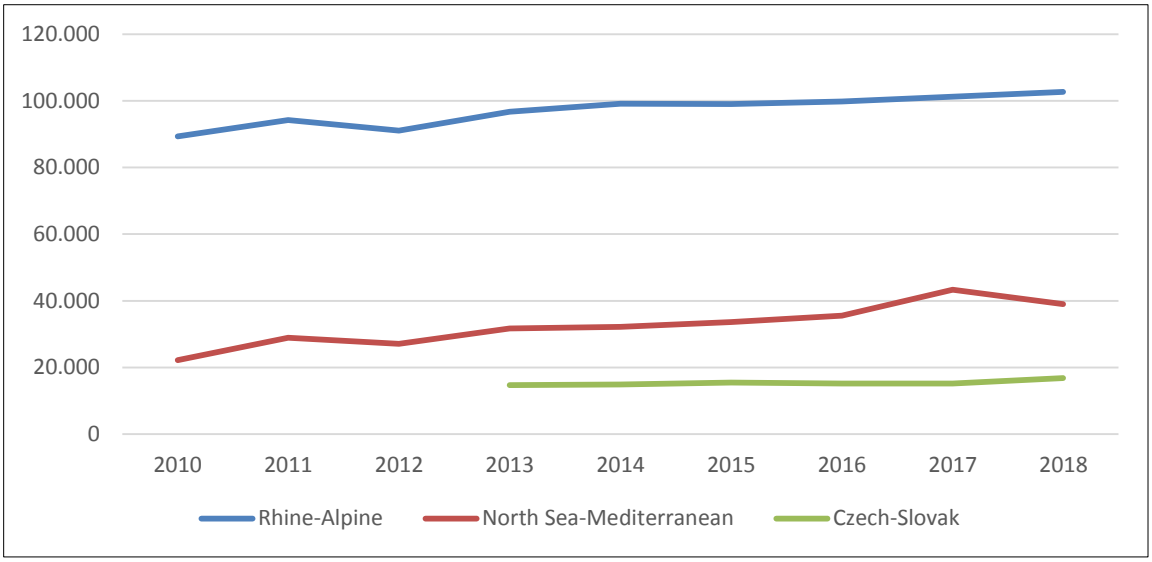
It appears there is room to increase the effectiveness and efficiency of providing information, as current tools seem to duplicate the provision of the same or closely related information. Further analysis based on concrete use cases would be required to better understand the nature and extent of such duplication.

Performance monitoring

As mentioned above, performance monitoring is part of the process of improving performance of rail freight by identifying and setting a schedule for measures in an implementation plan. The lack of noticeable improvement of commercial speed and punctuality on the rail freight corridors (see Annex VII, Section 3), suggests that the process was not effective overall. As a result, rail freight has not been able to increase its modal share.

The lack of the Regulation's effectiveness in supporting the development of rail freight in terms of market volume is also supported by the limited amount of time series data available: The establishment of the rail freight corridors has not trigged a statistically significant growth trend on Rhine-Alpine, North Sea-Mediterranean and Czech-Slovak corridors (see Figure 14).

Figure 14 Development of international rail freight traffic along the Rhine-Alpine, North Sea-Mediterranean and Czech-Slovak corridors



Data source: RailNetEurope

Performance monitoring is a task for the management boards. The governance of the rail freight corridors discussed the issue with railway undertakings and shippers, but data limitations restricted the scope of performance monitoring. With the assistance of RailNetEurope, the management boards developed guidelines and a set of key performance indicators commonly applicable to all freight corridors. The indicators are split in three main areas:

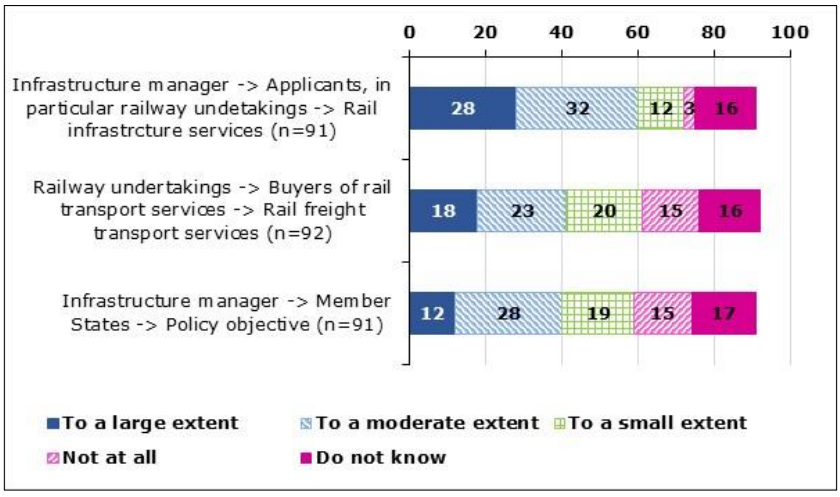
- capacity management;
- operations and
- market development.

Although these guidelines were agreed by the network of executive boards, the treatment of these issues is different in the management boards' annual reports and the executive boards' biennial reports. It is not clear how the indicators were used by the governance of the vast majority of the rail freight corridors. For example, only the executive board of rail freight corridor North Sea-Mediterranean reported on clear targets, linked to key performance indicators in its biennial report. Some clear targets, linked to the indicators are set in the implementation plans – e.g., rail freight corridor Mediterranean has a clear target on punctuality, Atlantic has clear targets on number of international prearranged freight paths using the corridor and average speed of prearranged paths, etc. However, some management boards did not set targets for their objective and the objectives differ between corridors. The lack of specific (quantitative) freight corridors targets for short and medium-term periods and the setting up of roadmaps allocating the necessary tasks to the involved parties appears to affect negatively the process of performance monitoring and performance improvement. Therefore, the effectiveness of performance monitoring is undermined.

Another is that performance monitoring on the freight corridors does not take into account the perspectives of all stakeholders in a balanced way. There is a strong focus on performance as regards infrastructure services (e.g. volume of capacity offered) but aspects relevant for rail freight customers (e.g. door-to-door punctuality) or for policy makers (e.g. modal share of rail and other modes along the corridors) are not taken into account adequately.

The key argument is that while the railway capacity management process is relatively well covered, monitoring leaves gaps on more strategic issues relevant for policy makers – notably the modal share of rail freight transport – and on operational and commercial aspects relevant for end customers. This is the view of stakeholders expressed in the replies to the survey.

Figure 15 Summary of the responses to the question 'To what extent does performance monitoring of the freight corridors address the following stages of the rail logistics value chain?'



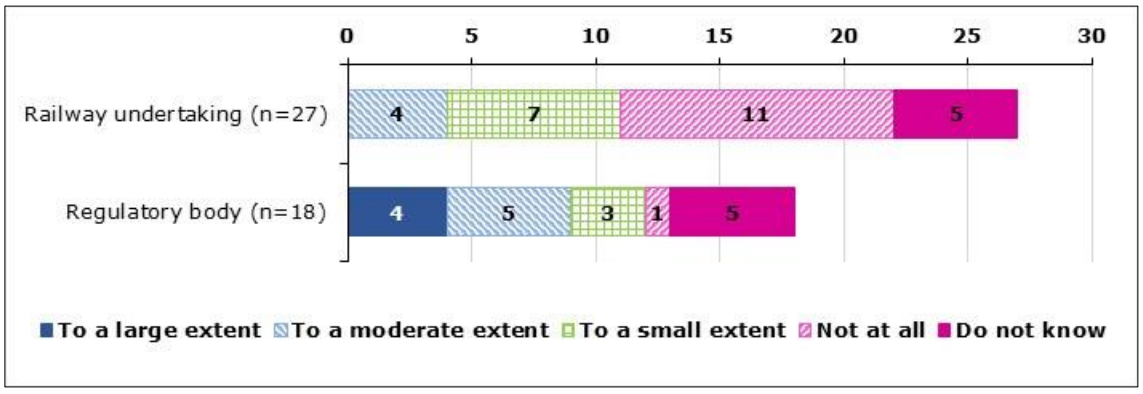
Source: Evaluation support study

The particular importance of punctuality – arguably the single most important quality criterion for the performance of freight transport services – has been taken into account by more frequent and in-depth monitoring as compared to other indicators. One key limitation of punctuality monitoring so far is the fact that it is limited to train runs on the main rail network. This is helpful for stakeholders involved in operations of freight trains, notably infrastructure managers and railway undertakings. However, it does not address the needs of further partners and the ultimate customers of rail freight services, such as terminals, multimodal operators and shippers and consignees.

As part of performance monitoring, the Regulation requires the management boards to organise and publish annually satisfaction surveys of the users of the freight corridors. The boards, together with RailNetEurope, created a harmonised survey questionnaire, which is being revised and updated every year. The fieldwork is conducted by an independent market research institute in order to ensure neutrality and transparency of the survey. The surveys were carried out every year.

In general, stakeholders had some concerns about performance monitoring and user satisfaction surveys as a particularly effective tool to improve the performance of rail freight. The members of the management boards were particularly unfavourable to this tool. The user satisfaction surveys attracted most criticism, including from users (railway undertakings) and some management board members suggested reducing their frequency.

Figure 16 *Summary of the responses to the question 'In how far as the following information and documents provided added-value for planning and operating the rail freight services or for monitoring competition over similar information provided at national/network level?' with respect to the publication on the results of the user satisfaction survey (Article 19(3))*



Source: evaluation support study, stakeholder survey-questionnaire

It appears that performance monitoring exhibited some gaps by overlooking key stakeholder groups (customers of rail freight services) and it could not play its part in performance improvements, mostly due to the limited use of specific targets in implementation plans and in their supervision, as demonstrated by the biennial reports of the executive boards.

Involvement of regulatory bodies

In addition to performance monitoring, the Regulation introduced **regulatory supervision** on the freight corridors in an attempt to ensure a level playing field and ultimately increase competition between rail freight service providers.

The regulatory bodies are required to cooperate in monitoring competition in the rail freight corridors and ensuring non-discriminatory access. The regulatory bodies also act as appeal bodies for decisions taken by the one-stop shop.

The available information indicates that there were almost no cases, where regulatory bodies had to act as an appeal body for the corridor. In fact, the responses gathered during the consultation show that out of 22 respondents, 21 regulatory bodies did not report any complaints lodged from applicants. Three have launched own-initiative investigations.

The overall share of conflicts is found to be between 14% and 21% of the path requests submitted for the period 2017-2019, but it would appear that those conflicts did not give rise to complaints. Thus it is not possible to evaluate the effectiveness of the cooperation between regulatory bodies. Nevertheless, anecdotal evidence suggests that the responsibility of individual regulatory bodies has limitations in regard to international freight traffic and in particular for capacity allocation not handled by an individual infrastructure manager, but by the corridor one-stop shop. It cannot be excluded that in the future, this could result in legal challenges towards any decisions of a national regulatory body.

Other issues affecting the effectiveness of the Regulation

This section addresses issues identified in the evaluation which concern more than one intervention area.

Absence of a network layer

Implementation of the Regulation has shown that achieving the objectives of the Regulation ultimately requires the implementation of a single European railway area, i.e. rules, processes and tools harmonised at the level of the entire European rail network.

On the demand side, data shows freight transport flows are not limited to individual corridors: about 40% of capacity requests via the one-stop shops concern more than one corridor showing the need for harmonisation between corridors (Table 6). Furthermore 86% of the train paths allocated via the corridor one-stop shops cannot be accommodated by pre-arranged train paths on the corridors in their entirety, indicating that harmonisation cannot be limit to a subset of the European network only (Table 7).

Table 6 Capacity requests via the one-stop shops for the 2019 timetable: single and multi-corridor requests

Corridor	Number in 'dossiers'[1]			Shares (%)	
	Total	Single corridor	Multi-corridor	Single corridor	Multi-corridor
Rhine-Alpine	155	130	25	84%	16%
North Sea-Mediterranean	238	131	107	55%	45%
Scandinavian-Mediterranean	51	43	8	84%	16%
Atlantic	52	6	46	12%	88%
Baltic-Adriatic	23	14	9	61%	39%
Mediterranean	100	33	67	33%	67%
Orient/East-Med	42	35	7	83%	17%
North Sea-Baltic	18	13	5	72%	28%
Czech-Slovak	35	33	2	94%	6%
Alpine-Western Balkan[2]	n/a	n/a	n/a	n/a	n/a
Amber	11	5	6	45%	55%
Total	**570**	**443**	**282**	**61%**	**39%**

Notes:

(1) A 'dossier' is a request for infrastructure capacity submitted as a single request in the IT system. It can comprise anything from a single train run (i.e. 1 running day) to a train run every day of the year (i.e. 365 running days).

(2) Alpine-Western Balkan corridor was not yet operational in 2019

Sources: RailNetEurope, Path Coordination System

The geographic dispersion of transport markets implies that rail freight operators need a single framework of rules, processes and tools to significantly improve the efficiency of planning and operation of cross-border rail freight services, in order to provide more competitive services to the buyers of transport services.

Table 7 Capacity requests: entirely on corridor and with sections outside the corridors ('with f/o' = with feeder / outflow path)

Corridor	Number (dossiers)			Share	
	Total	Corridor only[1]	With feeder/ outflow[2]	Corridor only[1]	With feeder/ outflow[2]
Rhine-Alpine	155	1	154	1%	99%
North Sea-Mediterranean	238	20	218	8%	92%
Scandinavian-Mediterranean	51	17	34	33%	67%
Atlantic	52	9	43	17%	83%
Baltic-Adriatic	19	3	16	16%	84%
Mediterranean	100	14	86	14%	86%

Orient/East-Med	42	9	33	21%	79%
North Sea-Baltic	18	6	12	33%	67%
Czech-Slovak	39	20	19	51%	49%
Alpine-Western Balkan					
Amber	11	0	11	0%	100%
Total	**725**	**99**	**626**	**14%**	**86%**

Notes:

(1) Corridor only: capacity requests only involving pre-arranged train paths

(2) With feeder / outflow: capacity requests involving pre-arranged train paths and additional sections constructed to order by individual infrastructure managers

Source: RailNetEurope, Path Coordination System

Corridors can be a useful tool to implement this unique framework in a geographically focused manner, but their effectiveness is undermined by the fact that certain roles, functions and tasks are most effectively and efficiently implemented on a network level.

Key examples for such roles, functions and tasks include the definition of the framework for the allocation of capacity in accordance with the Regulation (Article 14(1)), the preparation of operational guidelines to implement functions related to capacity management (allocation) and traffic management (Articles 13 to 17), the provision of IT tools and interfaces or the conduct of transport market studies (Article 9(1)).

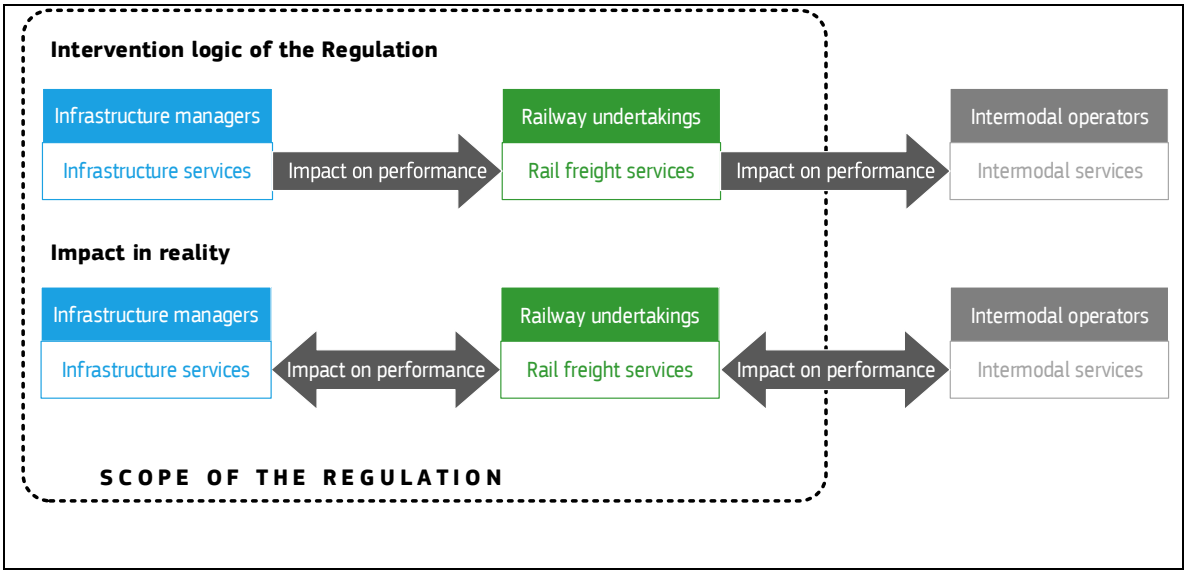
Stakeholders have implemented some (but not all) of these functions and tasks at network level on the basis of voluntary coordination (see Annex VII, Section 8) for an overview of functions and activities carried out at network level and an indicative assessment of effectiveness and efficiency of cross-corridor coordination).

Limited consideration of the interactions involved in providing rail freight services

Rail freight services are provided to final customers in a complex multi-stakeholder process with various linkages in planning and operational phases. This is particularly the case for intermodal services, as illustrated in Annex VII, Section 10.

In contrast, the intervention logic of the Regulation to a certain extent assumes a sequential (one-way) delivery process in which the performance of upstream activities affects downstream activities (Figure 17).

Figure 17 The cause-effect mechanism assumed by the intervention logic of the Regulation vs actual interactions



This limited consideration of the interactions between stakeholders hinders the effectiveness of the implementation of the Regulation. Examples include the requirement to 'monitor the performance of rail freight services on the freight corridor' (see below) and the issues of dwelling times of freight trains at border crossings (next subsection).

Management boards, i.e. infrastructure managers, cannot on their own 'monitor the performance of rail freight services on the freight corridor', a task assigned to them in Article 18(2). In many cases, infrastructure managers do not have a complete overview of the delivery of rail freight services because the ultimate origins and destinations of the services are outside the network of the rail infrastructure managers, notably in terminals and private sidings. As a consequence, performance monitoring of the corridors is limited to measuring punctuality of rail freight services at corridor entry and exit points, i.e. on the network of infrastructure managers. However, this is of limited relevance for the stakeholders making the decision between transport modes, i.e. typically shippers or logistic service providers.

These examples indicate that the effectiveness of the Regulation in achieving its objective to increase the competitiveness of rail freight transport is limited by the following factors:

- Incomplete coverage by the Regulation of the stakeholders involved in the provision of intermodal services, notably absence of intermodal operators and logistics service providers;
- Insufficient instruments to support the complex interactions between stakeholders, despite the fact that overall performance delivered to final customers is determined by the cause-effect of many interrelated actions.

Despite the gap in the Regulation in relation to some stakeholder groups, some actions triggered by the Regulation did reflect their importance. Member States expressed sup-

port at ministerial level to international rail freight and the freight corridors in particular. A number of high-level declarations were adopted: the Rotterdam declaration[96], the Vienna declaration[97] and the Berlin declaration[98]. The first one was complemented by the Sector Statement[99], a statement by the rail sector associations and their members (representing the interests of the shippers, freight forwarders, rail freight operators, intermodal operators, intermodal terminals, infrastructure managers, allocation bodies, rail freight corridors and rail equipment suppliers). The stakeholders committed to enhancing the competitiveness of the rail freight corridors, and to improving the quality, reliability and efficiency of transporting goods by rail across Europe.

In general the corridors tried to engage the rail freight customers. For example, the permanent management office of freight corridor Mediterranean in partnership with Federchimica (the association of the Italian chemical industry) launched a study to identify the potential for increasing the modal share of rail in the logistics chain of the chemical industry. However, such targeted initiatives cannot replace a thorough framework for cooperation with rail freight customers.

Dwelling times of freight trains at border crossings

One of the key elements driving the benefits expected in the impact assessment were major reductions of the dwelling times of freight trains at border crossings and, hence, major improvements in punctuality and commercial speed (see Table 2). The estimated benefits were mainly based on the assumption that dwelling times would be reduced considerably. For example the introduction of a network of strategic terminals was expected to lead to a maximum of 30 minutes of waiting time per border crossing.

Despite the apparent relevance of the issue, information on dwelling times at border crossings is still scarce. Dwelling times are not systematically monitored in the context of the performance monitoring in accordance with Article 18 of the Regulation by any of the rail freight corridors. Recently, however, the RFC bodies in cooperation with RailNetEurope have started to work on a systematic approach to measuring border dwelling times.

Preliminary results from this initiative show that the assumptions made in the impact assessment are far from being reached: for more than 70% of the border crossings on

96 Rotterdam Declaration of Ministers on Rail Freight Corridors, 2010(https://zoek.officielebekendmakingen.nl/blg-71933.pdf).

97 Vienna Declaration Progress on Boosting Rail Freight. 2018 (https://zoek.officielebekendmakingen.nl/blg-868192.pdf).

98 Ministerial Declaration Rail Freight Corridors: The Future of Rail Freight in Europe, 2020 (https://www.bmvi.de/SharedDocs/EN/Documents/K/innovative-rail-transport-21-09-2020.pdf?__blob=publicationFile).

99 Boosting International Rail Freight, 2016 (https://www.cer.be/sites/default/files/publication/160520_Sector_Statement_RFC.pdf).

which data are available, the average actual dwelling time is more than one hour. While roughly a third of the border crossings for which data are available, dwelling times are below the 30 minutes assumption in the impact assessment, dwelling times at the majority of border crossings for which data are available are beyond it (see Table 8)[100].

Table 8 Dwelling times of freight trains at a sample of RFC border crossings in 2019

Average dwelling time(minutes)	Number of border crossings		Share of border crossings	
	Planned dwelling time	Actual dwelling time	Planned dwelling time	Actual dwelling time
0 to 15	7	6	28%	21%
15 to 30	2	2	8%	7%
30 to 60 (1 hour)	8	6	32%	21%
60 to 120 (2 hours)	6	8	24%	28%
120 to 240 (4 hours)	2	5	8%	17%
More than 240 (4 hours)	0	2	0%	7%
Total	25	6	100%	100%

Source: RailNetEurope

See further details in Section 16 of Annex VII.

- At some border crossing, a non-negligible share of trains incurs dwelling times of more than 4 hours (up to one third) and even more than 24 hours.
- Dwelling times differ significantly across the EU. On the basis of the limited dataset currently available, border crossings within and to the Benelux countries do not pose specific problems. However in central and eastern Europe, dwelling times of less than 1 hour are an exception with typical dwelling times in the range of 1.5 to 4 hours.

The estimates in the impact assessment were largely based on the expectation that coordination of investments along the corridors in accordance with Article 11 of the Regulation would result in a significant reduction of technical interoperability barriers, e.g. the deployment of ERTMS replacing the variety of national control, commanding and signalling systems in place. This has not materialised to the extent expected, partly due to the limited effectiveness of investment coordination in the context of the rail freight corridors (see sub-section on 'Investment planning (Article 11)' above).

[100] Data for individual border crossings is presented in section **Error! Reference source not found.** of **Error! Reference source not found.**. However, due to data quality and completeness issues, the figures presented there are only indicative of the actual situation.

Furthermore, the impact assessment envisaged that considerable progress would be made on a number of barriers which affect cross-border operations either in conjunction with technical issues or on their own.

In-depth work of stakeholders involved in the Orient/East-Med corridor on the root causes for the excessive border dwelling along this corridor has identified in particular the following factors: lack of human recourses or insufficient coordination of infrastructure managers, railway undertakings and other stakeholders involved (authorities in charge of border controls); the need for change of locomotives and/or drivers; uncoordinated staff shifts; delays due to police border formalities in Member States not parties to the Schengen agreement; redundant technical checks of trains at borders.

The fact that infrastructure managers did little to implement the 'procedures to coordinate traffic management' in accordance with Article 16 of the Regulation arguably contributed to the lack of improvements on this issue. In addition, another insight of the analyses has been that a significant share of these dwelling times is not caused by infrastructure managers but by railway undertakings. The reason is insufficient coordination between railway undertakings when handing over trains at border stations, in particular when operating in the traditional 'cooperative mode' (traction provided by different railway undertakings on different networks). In such cases, (e.g. no locomotive or train driver available to continue the train run after the border crossing). The lack of coordination between railway undertakings has negative impacts on the performance of infrastructure managers, as trains delayed at border crossings negatively affect traffic on the downstream network.

This problem cannot be addressed by better infrastructure services provided by infrastructure managers but needs to be addressed in a collaborative manner by all stakeholders involved, indicating an incomplete coverage of the relevant interaction by the Regulation (see previous point).

The issue of border dwelling times has received additional attention in the context of the COVID-19 pandemic. While border dwelling times of road transport could quickly be monitored and reduced below a target threshold value of 15 minutes, this was not possible for rail. The recent Communication of the European Commission on 'upgrading the transport Green Lanes to keep the economy going during the COVID-19 pandemic resurgence'[101] therefore extent the scope of the Green Lanes approach to all modes, including the target of a maximum of 15 minutes per border crossing.

[101] COM(2020) 685 final of 28 October 2020.

Differences between corridors and the potential to disseminate best practices

The performance of rail freight transport differs significantly between the corridors. For example, the planned commercial speed of international freight trains varies between less than 40 to close to 70 km/h; the punctuality of freight trains at destination differs between 40 and 80 % (see section 3 of Annex VII).

To a large extent, these differences are based on differences in the performance of the infrastructure managers involved and determined by factors such as the performance and state of repair of the infrastructure. The corridors are essentially a coordination instrument and therefore have limited competences and instruments to reduce such variations in performance[102].

However, the corridors did to a certain extent prioritize their activities taking into account the specific challenges encountered along their routes. Examples include: (i) the work of Rhine-Alpine corridor on ERTMS operations, as deployment is relatively advanced along this corridor[103]; (ii) Orient/East-Med corridor focussed on identifying and addressing the reasons for the above-average dwelling times of freight trains at border crossings along this corridor (see footnote 77 and the text referring to it); (iii) Scandinavian-Mediterranean corridor offers an innovative product allowing applicants to request capacity on the rail network (train paths) and terminals slots in a single operation[104].

Such corridor-specific innovations and achievements obviously create potential for the dissemination of best practices. There is so far limited evidence of such dissemination. The lack of a formal network-level layer for cross-corridor coordination may have been a factor in this (see 'Absence of a network layer' above).

5.3 Efficiency

Costs

The evaluation did not identify any **indirect costs**. This is largely because there is no concrete evidence that the Regulation produced considerable increase of rail freight traffic.

[102] As example, the commercial speed of rail (freight) traffic can be significantly reduced by speed restrictions due to a bad state of repair of the infrastructure. The RFC Regulation does not give corridors any competences and instruments to address such issues.

[103] See https://www.corridor-rhine-alpine.eu/ertms-and-etcs.html.

[104] See https://www.scanmedfreight.eu/scanmedrfc/services/capacity-offer/tico/.

The majority of the direct costs are related to **compliance**[105]. The Regulation does not require cost reporting by the governance boards in their biennial reports. EU funding covers the major costs related to specific actions or to covering staff costs for the administration of the rail freight corridors (the permanent management offices). All additional costs are primarily related to human resources engaged in the activities of the rail freight corridors governance. In the vast majority of cases, the work for the rail freight corridors is not done full-time. In many situations, the split could be difficult. For example, staff working for the timetabling department of an infrastructure manager would have to prepare train paths, even in the absence of the Regulation. The Regulation requires the definition of pre-arranged train paths, but they are one category of the many train paths that this department would have to prepare anyway to meet the demand of applicants. This poses challenges to identify the costs per activity. A possible solution could be to require the governance of the rail freight corridors to report costs based on activities when applying for EU funding, including staff costs.

The Regulation does not always prescribe the way in which certain actions should be implemented (means of compliance). For example, the Regulation is very clear on the obligation of the management boards to produce an implementation plan, but it does not prescribe how the management board should carry out the work on drafting and approving the plan. Therefore, the Regulation leaves a great deal of discretion to the stakeholders concerned on how to implement measures and organise their work hiring.

The establishment and the functioning of the rail freight corridors requires resources from a wide range of stakeholders, although the effort is not evenly distributed. The main effort falls on rail infrastructure managers and allocation bodies who are responsible for the majority of the activities stemming from the Regulation. Some of these activities are optional (e.g., registering the management board as a legal entity), but the majority are obligatory (e.g., drawing up an implementation plan, carrying out a transport market study, setting up a one-stop shop, defining and organising international pre-arranged train paths).

Member States are responsible for monitoring the overall implementation of the Regulation by the infrastructure managers and for establishing the rail freight corridors and for participating in the activities of the executive board.

The rail regulatory bodies are required to cooperate in monitoring the competition in the rail freight corridor.

Railway undertakings and other applicants for rail capacity, as well as terminal operators have the possibility to participate in the governance of the rail freight corridors via the advisory groups, which entails costs for those stakeholders too.

[105] The programme support actions (grants) signed between the European Commission and the management boards of the rail freight corridors provide information on costs. The funding is focused on supporting the management boards in the implementation of the obligations, stemming from the Regulation.

The cost categories (predominantly related to compliance costs) can be summarised as follows:

- Governance costs: mostly labour and travel (for all stakeholders, but mostly for the infrastructure managers).
- Rail freight corridors' operational and product costs: administrative costs (mostly labour and travel costs for the permanent corridor management staff), one-stop shop, pre-arranged train paths, planning reserved capacity, short-term capacity products and pilot projects: all costs for the infrastructure managers.
- IT costs: Corridor Information Platform (for the infrastructure managers), Path Coordination System (for infrastructure managers and railway undertakings/applicants), other IT tools used by the rail freight corridors' governance, e.g. websites (infrastructure managers and Member State authorities).

Based on the effort, the main costs from the policy intervention fall upon the infrastructure managers and to a much lesser extent to Member States' transport authorities. EU funding was also provided. The rail freight corridors (i.e. mostly infrastructure managers) received a total of about EUR 35 million of EU funding between 2011 and 2016, against total eligible cost of about EUR 55 million. These costs do not include the full costs for infrastructure managers, as they also claimed additional **indirect costs**, which are still necessary for the functioning of the permanent offices. The data of four freight corridors collected for the study showed that the coverage of the EU contribution is between 38% and 89% of the annual budget, but if one considers also the indirect costs borne by the participating members of the freight corridors, the coverage of the EU contribution would be on average less than 50% of the actual costs.

Costs and EU financial support are not evenly split between the rail freight corridors. A detailed split of costs between the rail freight corridors is provided in Annex VI.

At present, beneficiaries are not required to provide a detailed split of the costs. The costs are categorized into personnel, subcontracting and others. Without a clear allocation of costs to the activities of the corridors' governance and management boards, it is not possible to make any firm conclusions. Nevertheless, the agreements envisaged that 47% of the financial support was to be dedicated to personnel costs with subcontracting coming at 39%.

This data is difficult to interpret without information about the specific activities that were funded. Still, the relatively high share of personnel costs could be an indication of the unwillingness of Member States, but especially of infrastructure managers, to integrate the freight corridor activities into the every-day work on capacity allocation. It could also suggest that replicating administrative functions for each corridors could be producing sub-optimum expenditures. On the positive side, the staff hired to work in the permanent management offices of the corridors and in some cases in the public administration was able to focus on international rail freight and develop a cross-border perspective of rail freight.

In order to find the total costs, one has to add to the EUR 55 million, the costs of applicants and terminal operators participating in the work of the rail freight corridors, plus some (mostly human) resources dedicated by the infrastructure managers and Member State authorities that were not included in the eligible costs for EU funding mentioned above[106]. It is difficult to calculate costs for regulators stemming from the implementation of the Regulation, as the obligations are relatively limited and do not affect the core work of this group of stakeholders. Furthermore, there were no cases of joint action on competition issues on the rail freight corridors, which could be directly linked to the Regulation.

For railway undertakings the declared labour and travel costs were in the EUR 0-20 000 range per year, with replies covering 2018 and 2019.

Anecdotal evidence from rail infrastructure managers on travel and especially on labour costs also varied considerably. One infrastructure manager declared about EUR 300 000 per year for the four people assigned to work on rail freight corridor matters, plus a membership fee of EUR 450 000 per year. Another one estimated about EUR 90 000 per year for both 2018 and 2019 for 80 employees dedicated to rail freight corridors (mostly full-time), in addition to about EUR 30 000 per year for travel expenses and EUR 1 000 for other expenses in 2018 and EUR 2 000 in 2019. Another example of an infrastructure manager who declared that it employed about 35 people on rail freight corridor matters. Accordingly, labour expenses accounted to EUR 2 586 000 in 2018 and EUR 2 664 000 in 2019, whilst travel costs to EUR 314 700 in both years. Furthermore, the company declared other costs in 2018 for about EUR 2 838 000 and EUR 2 923 000 in 2019.

In addition to increased labour costs, one infrastructure manager pointed out to other costs for RFC-related products (such as the pre-arranged train paths).

The variable annual costs can be summarised as follows:

- railway undertakings/applicants and terminal managers and owners generally reported costs in the range of EUR 0-20 000 for the years 2018 and/or 2019, covering mainly travel and/or labour expenses;
- infrastructure managers reported growing annual ongoing costs between the years 2018 and 2019, covering labour, travel and other expenses. Annual ongoing costs ranged between EUR 130 000 and EUR 5 738 700 in 2018 and between EUR 140 000 and EUR 5 901 700 in 2019; and
- annual budgets of the permanent management offices of the rail freight corridors are between EUR 500 000 and EUR 2 000 000.

In interviews, stakeholders reported that the **administrative burden** related to the reporting activities of freight corridors is considered to be high and increases the workload of

[106] These costs are not included in the programme support action (grants) for the rail freight corridors, as they are not eligible.

the permanent management offices quite substantially. The management board is obliged to monitor the performance on the corridor, to organise a satisfaction survey of the users of the freight corridor and to publish the results of those two once a year.

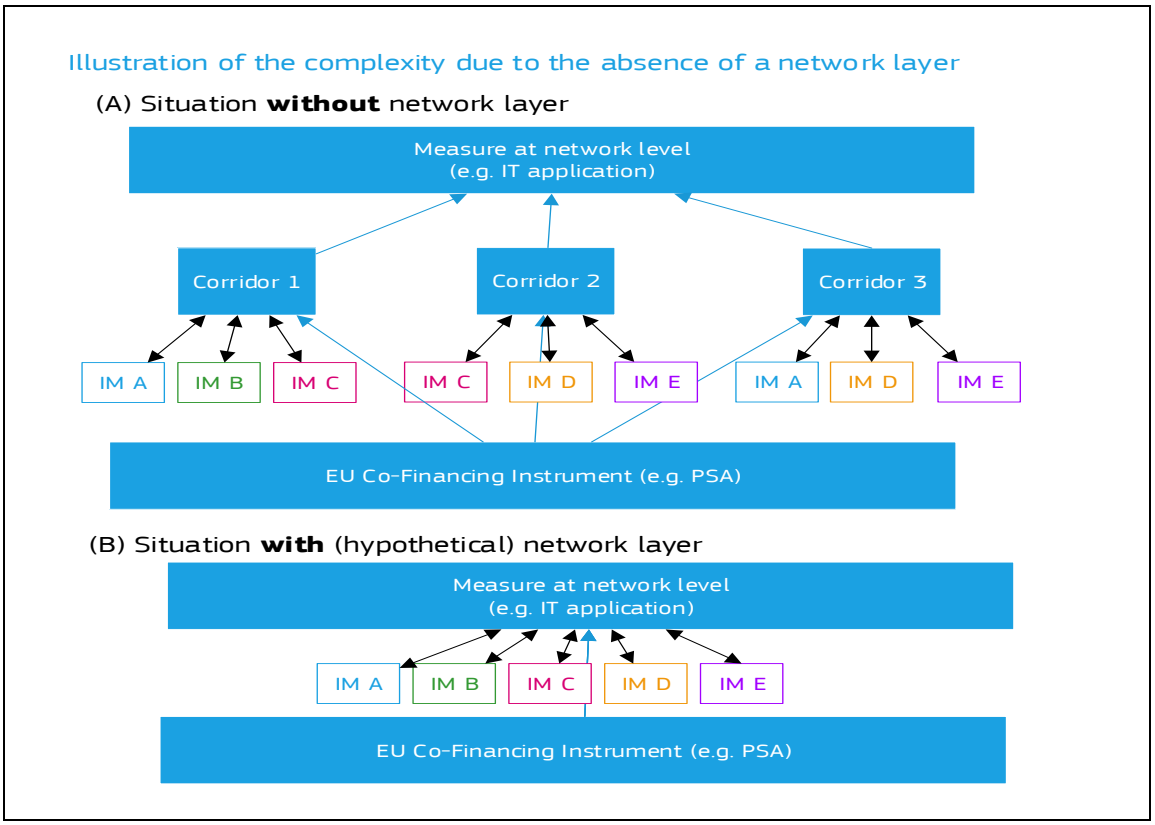
As the reporting activity might hamper other more important tasks of the office, some representatives of the freight corridors have called for a simplification of reporting activities. However, in addition to the annual performance reports, many management boards provide monthly reports on punctuality, which are not required by the Regulation. The management boards outsourced the user satisfaction surveys to RailNetEurope, who uses an independent market research institute for the task, which should also alleviate the administrative burden for the staff of the permanent one-stop shop.

The evaluation support study gathered anecdotal information on **enforcement costs**, i.e. costs linked to monitoring performance, organising satisfaction surveys by the management board and preparing reports both by the management and the executive boards. An estimation of the overall costs for producing the management board's annual reports amounts to an average of nearly EUR 30 000 per year per corridor. The monthly punctuality report published by the freight corridors on a voluntary basis does not result in a significant workload (i.e., 1.5-6.0 days per year). The costs for the user satisfaction surveys were not provided, as there was no data on the costs for the permanent offices' human resources engaged in this activity. The claims of performance monitoring causing high administrative burden for the permanent staff of the rail freight corridors do not appear to be substantiated by figures.

The same applies for the biennial reports of the executive boards, which are mostly the responsibility of the chair, who gets input from the permanent management office corridor. These reports vary considerably in the level of detail, which also suggests a difference in the effort and costs to produce them.

A number of costs categories are directly linked to the establishment of the corridors and they multiply with the establishment of new corridors. Reducing complexity by adopting a network approach with a single governance structure could result in efficiency gains and reduce cost. Some activities already take place at a network level, e.g. the development of a framework for capacity allocation, which is then adopted separately by each corridor. The difference in complexity is presented by the diagram below.

Figure 18 Illustration of complexity created by the absence of a network layer in the governance structure defined by the Regulation



The regulatory bodies are responsible for monitoring the competition in the rail freight corridor. The evaluation could not identify any such activity having taken place.

Benefits

The intervention logic gives a general idea of the main direct benefits from the intervention, in line with the results indicated in the intervention logic (see Annex IV):

- stronger political support for rail freight;
- facilitated access to high quality infrastructure for rail freight;
- lower costs and higher quality service (e.g. more reliability, shorter journey times) from international rail freight;
- more competition between rail freight operators and
- development of new services, in particular intermodal.

The evaluation found only limited quantitative evidence on these benefits. The Regulation did produce non-monetizable benefits. One of the objectives of the Regulation was to increase the cooperation between different stakeholders. This is achieved largely via the activities of the governance of the rail freight corridors.

Surveys and interviews showed that stakeholders believed the Regulation increased the level of cooperation and coordination. The increased cooperation happened as the rail freight corridors created a platform for discussion, where information, experiences and

best practices could be exchanged, problems shared and solved together. The reported benefits can be summarised as follows:

- an increased level of cooperation and coordination between actors;
- creation of a platform for discussion, where information, experiences and best practices could be exchanged and problems shared and solved together;
- improvements in the knowledge of the market and the possibility of benchmarking;
- greater clarity in the rail freight industry;
- progress in coordinating capacity allocation along the rail infrastructure and in terminal facilities;
- improvements in the level of coordination between infrastructure managers when searching for alternative routes or constructing new train paths; and
- a simplification of the process of solving problems along the corridors and analysing recurring delays.

In relation to simplification and burden reduction, the Regulation was supposed to produce benefits by facilitating requests for infrastructure capacities for international rail freight services by introducing a one-stop shop for each freight corridor. As elaborated in more detail in section 5.2, the facilitation effect was undermined by:

- the pre-arranged train paths offered by the one-stop shops not including the first/last sections from origins and to destinations, hence forcing applicant to contact individual infrastructure managers to construct a full train path for a large number of cases[107];
- one-stop shops are not competent for handling modifications of train paths after the allocation phase, which still need to be negotiated with the individual infrastructure managers concerned;
- complications occur for sections belonging to several freight corridors[108] resulting in additional effort for the applicant;
- the perceived poor quality of the products offered by the one-stop shops[109];
- lack of integration of the IT tool (Path Coordination System) with other IT tools (of infrastructure managers and railway undertakings[110]).

The reported benefits are also the intended actions of the policy intervention.

[107] The share of one-stop shop capacity requests involving sections outside the corridor is between 67 and 100% for the different freight corridors.

[108] These can be as high as 67% for some freight corridors.

[109] This refers to issues such as lack of reliability of the train paths, no benefits in terms of commercial speed, no coordination of infrastructure and terminal capacity, etc.

[110] Integration of the railway undertaking's IT tools with PCS is costly and often considered unfeasible, because of the small number of path requests sent to the one-stop shop. In the one case where PCS is used also for requesting paths directly from the infrastructure managers, one-stop shops are more successful (freight corridor Czech-Slovak).

Quantifying the benefits of the Regulation was difficult, because of the methodological difficulty to link the coordination activities to improved performance of rail freight (e.g. higher punctuality or reduced operating costs).

Nevertheless, an attempt was made to estimate the impact of any potential reductions in journey times that can be attributed to pre-arranged train paths on rail freight traffic along the freight corridor[111]. The analysis exploits the fact that a certain share of freight trains running along the corridors use pre-arranged train paths while others use train paths allocated by individual infrastructure managers. The commercial speed was calculated for both types of train paths; the impact of the difference in commercial speed on rail freight traffic was estimated on the basis of demand elasticities identified in a literature review. Data to support this analysis were available only for Rhine-Alpine, North Sea-Mediterranean and Czech-Slovak corridor; see Section 10 of Annex VII for details.

The calculations based on the method described above showed that, the impact of the Regulation on cross-border rail freight traffic was limited. **The increase in the number of international freight trains was between 0.1% for the Rhine-Alpine freight corridor, around 1.5 to 2.5% for North Sea-Mediterranean corridor and just over 3% for the Czech-Slovak/Rhine-Danube freight corridor.** Despite the lack of quantitative data for other corridors, there are no indications that the impact would be significantly different.

As an illustration of the orders of magnitude involved: extrapolating the most favourable estimate – the 3% increase on Czech-Slovak corridor – to the entire rail system equates to a 0.5% increase in the modal share of rail freight transport in the EU. In any case, these estimates should only be taken as an indication of the order of magnitude, as the analysis does not address the large variety of factors affecting the demand for rail freight transport.

5.4 Coherence

Coherence with EU policy

As mentioned in Section 5.1 above, improving the performance of rail freight is highly relevant for a number of EU policies.

Consequently, the objectives of the Regulation are fully coherent with those outlined in other policy documents. The table below presents a short summary of the most relevant objectives in some key EU policy documents:

[111] Article 14(3) of the Regulation explicitly states: "(…) [Pre-arranged train paths] shall facilitate journey times, frequencies, times of departure and destination and routings suitable for freight transport services with a view to increasing the transport of goods by freight trains running on the freight corridor."

Table 9 Objectives in key EU policy documents

Sector	Strategy	Objective	RFC Regulation
Overall EU strategies (economy, trade, etc.)	Europe 2020 strategy [112]	1. Promoting multimodality 2. Shift towards rail	Objectives of the Regulation
Overall EU strategies (economy, trade, etc.)	European Green Deal	1. Promoting multimodality 2. Shift towards rail freight	Objectives of the Regulation
Transport	Sustainable and smart mobility strategy	1. Promoting multimodality 2. Shift towards rail freight	Objectives of the Regulation
Transport	Low-emission mobility strategy[113]	1. Promoting multimodality 2. Shift from road to rail	Objectives of the Regulation in regard to freight
Transport	2011 White Paper on Transport	1. Promoting multimodality 2. Shift from road to rail freight	Objectives of the Regulation
Energy	2018 European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy[114]	Reducing oil dependency of transport	Implicit goal as rail uses predominantly electricity[115]
Climate change	2018 European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy [116]	1. Increase competitiveness of rail vs road 2. Eliminating operational and technical barriers and fostering innovation 3. Increase efficiency of	1. Objective of the Regulation 2. Partially covered by some of tasks of the management boards 3. Objective of the Regulation

[112] COM(2010) 2020 final of 3 March 2010.

[113] COM(2016) 501 final of 20 July 2016.

[114] COM(2018) 773 final of 28 November 2018.

[115] Unlike other transport modes, rail is largely electrified and electricity generation does not use predominantly oil. According to Eurostat, in 2019, 39% of the gross electricity was generated by fossil fuels (including locally produced coal and natural gas), 26.3% came from nuclear and the rest was mostly from renewable sources.

[116] COM(2018) 773 final of 28 November 2018.

		rail	
Competition	Review of the Community Guidelines for State aid to railway undertakings	Support fair competition between rail freight service providers	Objectives of the Regulation

Source: evaluation support study

Internal coherence

Overall, the provisions of the Regulation are coherent in the sense that all of them are in line with the objectives as outlined in the intervention logic. The objectives of the Regulation are also fully coherent with each other, as they address different challenges facing rail freight. The same applies to the tools and procedures introduced by the Regulation, all of which aim at strengthening cooperation.

Nevertheless, in some particular cases the legal text does not provide sufficient clarity. These are the provisions on the implementation plan, the link between capacity allocation and the coordination of works and the framework for infrastructure capacity allocation. Further details are provided in Annex VII, Section 13.

Furthermore, for some objectives the Regulation provides more than one instrument and quite detailed rules, but for other it gives limited guidance, leaving it to stakeholders to decide on the detailed implementation. For example, to address the objective of improving cooperation, the Regulation provides legal obligations for the setting up of the corridors' governance and its advisory groups and specifies some procedures (reconciliation, e.g.). The other objectives where the Regulation is more detailed are on guaranteeing access to rail infrastructure capacity for international rail freight and facilitating the use of rail infrastructure.

Areas where the Regulation gives limited guidance include the coordination and planning of investments, the improvement of operational conditions and improving intermodality. These are also areas, where results of the implementation of the Regulation are rather modest.

Still, the lack of results is not an issue of incoherence, but rather of limited implementation and discrepancies between the needs of stakeholders and the restricted scope of the Regulation. For example, the evaluation support study confirmed that in many cases applicants did not request capacity from the corridors' one-stop shops, as they could not provide the right service for them. This issues are analysed further in Section 5.2 above.

Coherence with other relevant legal acts

The evaluation checked the coherence with the following legal acts:

- Directive 2012/34/EU represents a recast of the First Railway Package and establishes the single European railway area;
- TEN-T Guidelines[117];
- CEF Regulation[118];
- the Directive on Combined Transport[119];
- the Railway Interoperability Directive[120] and related implementing acts;
- the Governance Directive;
- Community guidelines on State aid rules for railway undertakings;
- EU funding facilities.

In addition, the evaluation looked into relevant national and international initiatives on rail freight.

The conclusion is that there is no outright incoherence between the Regulation and the above mentioned legal acts.

There are issues related to the readability of the Regulation, as it uses concepts also used and sometimes defined in the Recast Directive, but also introduces new concepts, which are not addressed explicitly by the Recast Directive. The latter addresses 'representatives of infrastructure managers', whereas the Regulation addresses a number of provisions to the management board of the freight corridor, which is a legal entity[121], composed of representatives of the infrastructure managers.

In the case of the TEN-T Guidelines, even if there is no outright incoherence, the implementation of investment planning under the two legal acts poses practical challenges. The investment planning is carried out for infrastructure which overlaps partially. There are opportunities for synergies between the work of the two structures, but they are not explicitly addressed in the Regulation.

The evaluation could not identify any lack of coherence between the Regulation and the Directive on Combined Transport. Similar to the TEN-T further synergies can be developed. This is particularly relevant for ensuring feedback from the rail freight corridors on the performance of terminals and the availability of capacity. The lack of explicit pro-

[117] Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU (OJ L 348, 20.12.2013, p. 1).

[118] Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010 (OJ L 348, 20.12.2013, p. 129).

[119] Council Directive 92/106/EEC of 7 December 1992 on the establishment of common rules for certain types of combined transport of goods between Member States (OJ L 368, 17.12.1992, p. 38).

[120] Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union (OJ L 138, 26.5.2016, p. 44).

[121] For most corridors the entity is in the form of a European Economic Interest Grouping (EEIG).

cesses in the Regulation for the collection of such feedback undermines not only the planning of rail freight services, but also of national and EU policy on combined transport and in particular timely assessment of the needs for additional terminals. The latter is particularly important for rail freight as demonstrated by developments on the rail freight market where combined transport is the only segment for rail freight transport which has been continuously increasing (see Section 2.2 above).

The evaluation did not identify any coherence issues, related to the Community guidelines on State aid rules for railway undertakings.

Further details on the coherence of the Regulation with other EU legal acts are provided in Annex VII, Section 16.

Coherence of the Regulation with relevant national and international initiatives on rail freight

General issues with local policy

The Commission proposal set the objective of giving priority to international rail freight transport. This was largely watered down in the final text. National and local transport policy can sometimes undermine even more the objectives of the Regulation.

In the case of capacity constraints, the national practice of first allocating capacity to passenger trains (at least during the daytime) and allocating the remaining capacity to freight trains makes it impossible to give priority to international freight trains. This is the case for the corridors associated with high volumes of rail freight transport, but also in countries in which the main freight routes overlap with regional passenger transport.

The approach to rail freight differs considerably between Member States: some have integrated transport strategy, some - individual measures and some - no specific support[122].

Rail track charges for freight transport are comparatively low in most EU countries. Considering that infrastructure managers tend to maximise revenues for financing current infrastructure costs and (at least) part of maintenance costs, there is little economic incentive for them to prioritise rail freight.

Therefore, in general the coherence of the Regulation with transport policy at national level is mostly limited and varies between Member States[123]. Anecdotal information suggest that lack of EU priority rules on rail freight affects considerably international rail freight, especially in cases of disruptions.

[122] DG MOVE collected replies from Member States' representatives via a questionnaire studying national support measures for rail freight. The results were presented to the SERAC Working Group on Rail Freight on 23 October 2018.

[123] See e.g., RailNetEurope, *Overview of priority rules in operation*, updated 2019, (https://rne.eu/wp-content/uploads/RNE_OverviewOfthePriorityRulesInOperation_V9.pdf).

Modernisation of the timetabling process

Despite its rather comprehensive nature (the Regulation addresses capacity allocation for rail infrastructure and terminals, infrastructure funding and planning, interoperability, traffic management, cooperation between regulatory bodies, etc.), the Regulation leaves a considerable leeway on the implementation. This leaves room for international, corridor and cross-corridor, bilateral, national and even local initiatives on rail freight. Some of these initiatives have the potential to strongly influence the development of rail freight in the near future, such as the recent project to modernise the process of capacity allocation, known as 'Timetable Redesign Project' (TTR)[124].

TTR is an industry-driven and ambitious wide-range project that encompasses rules on timetabling for passenger and freight, commercial conditions for the use of infrastructure and IT systems. The initiative is coherent with the Regulation in the sense that it uses rail freight corridor lines for the pilot runs. However, it also envisages a different approach to timetabling, which cannot co-exist with the capacity allocation rules in the Recast Directive.

National initiatives

As the Regulation is directly applicable, there are limited possibilities for Member States to adopt national law and hence limits the possibility of incoherence. The Commission did not launch any infringements procedures on the basis of the Regulation, which is an indicator that the national legislation was not outright incoherent with the Regulation. The potential for incoherence is mostly manifested in national rail or transport policies. However, an analysis of national transport policies on rail freight would go beyond the scope of the current evaluation[125]. Therefore, the evaluation focused on initiatives directly addressing or influencing rail freight, which are mentioned below.

The German Ministry of Transport plans to introduce a clock-face timetabling (Deutschlandtakt) by the end of 2020, with the purpose of increasing the utilization of rail infrastructure by increasing rail traffic. This type of timetabling is by definition better suited to passenger traffic, which is normally run at regular intervals, whereas freight traffic is much more demand driven, which is proven by its high use of ad hoc requests[126]. It remains to be seen how this plan will be implemented and what would be the effect on international rail freight.

---

124 https://ttr.rne.eu/

125 For example, Article 8 of Directive 2012/34 requires Member States to adopt indicative rail infrastructure development strategies, which should, *inter alia*, reflect the needs of rail freight. The evaluation did not address the implementation of these strategies.

126 Anecdotal evidence suggests that ad hoc capacity requests can easily represent over 40% of the total capacity for rail freight.

There are also initiatives specifically designed to support rail freight. Those include direct subsidies (in at least five Member States), support for modernisation of rolling stock, support for automated solutions (e.g. automatic coupling), digitalisation of traffic management, etc.

International initiatives

The most prominent external dimensions of rail infrastructure planning are:

- Transport Corridor Europe-Caucasus-Asia (TRACECA);
- Belt and Road Initiative (BRI; Europe-Asia-China).

Those initiatives are largely coherent with the objectives of the Regulation as they focus on developing rail freight. On the other hand, they could take away resources from interoperability challenges that need to be addressed at EU level.

5.5 EU added value

The prevailing international character of rail freight (50% of the traffic) predicates the need for international coordination. EU legislation pre-dating the Regulation confirmed the need for rules going beyond bilateral traffic management agreements. The need for clear and uniform rules allowing applicants to request rail infrastructure capacity in any EU Member State was a prerequisite for an internal market of rail freight services. This meant that a regulation was the only viable tool that could guarantee the uniformity necessary to achieve this untethered access to infrastructure capacity.

Negative trends for rail freight indicated that measures at national level were not sufficient to improve its modal share. The growing EU ambitions in policy areas such as climate change, energy efficiency and environment, also required coordinated action.

On operational level, rail freight involves a high number of operating entities. In addition to the entities directly needed to operate the train (infrastructure managers and railway undertakings), terminals and shippers and forwarders are also involved. A structure that would allow all relevant stakeholders from several Member States to communicate and coordinate is clearly not achievable in a national framework and would be inefficient, if set up at bilateral level only.

The issues addressed by the Regulation are still relevant. Many are of cyclical or operational nature. For example, the planning of infrastructure capacity and capacity restrictions is multiannual, the timetabling process is annual, whereas traffic management are or operational nature. Developments demonstrated that there is a deficit of EU-level intervention (lack of a network layer, need for further alignment of priority rules for managing traffic in the case of disturbance, need to clarify the status of the decisions of the governance structure of the freight corridors, etc.). The actions envisaged by the Regulation remain just as relevant as they were at the time of its adoption.

Even though the implementation of the Regulation did not result in major improvement of rail freight performance, it had a positive effect and stopped or at least slowed down the negative trend. The lack of major effects should also be seen in the light of the numerous challenges facing rail freight, which the Regulation did not address, or did so only partially. For example, the impact assessment accompanying the proposal envisaged major cost reductions for rail freight from reduced dwelling times at the border and from better coordination of rail infrastructure and terminal capacity. As already mentioned in Section 5.2, a number of factors affect dwelling times, including national safety rules, coordination between railway undertakings in cases of changes of locomotives, etc. These issues were not directly tackled by the Regulation. Furthermore, issues related to interoperability also result in bottlenecks. The Regulation does not prescribe any actions on this, other than coordination of investments by Member States.

Positive effects were more pronounced beyond rail freight performance improvements. The Regulation created structures that allowed rail freight to get back on the political agenda, that provided fora for coordination and cooperation and resulted in a number of international (ELETA, Timetable Redesign, Issues Logbook, etc.) and corridor-focused projects.

It was the cooperation and coordination element of the freight corridors that provided the most noticeable added value. The governance structures of the freight corridors might have not fulfilled all legal obligations in all cases, but they used the freight corridors to develop projects, involve additional stakeholders and launch a cross-corridor cooperation. The EU added value of the Regulation was restricted by the lack of a network approach, particular in some specific areas, such as the limited coverage of rail infrastructure capacity (especially in case of cross-corridor traffic), limitations to the services provided by the one-stop shops, untapped coordination potential with important stakeholders (shippers, end customers, but also national safety authorities), insufficient harmonisation of rules (e.g. on priority rules in case of disturbance), lack of a coordinated approach on developing uniform IT tools for capacity management (including planning and allocation), etc.

In some cases, stakeholders filled the gap by setting up entities, not mandated by the Regulation, or using existing entities to carry out certain actions. For example, this happened with RailNetEurope, which developed IT tools, or in cases of cross-corridor governance (e.g. the joint meetings of the executive boards of freight corridors Rhine-Alpine and North Sea-Mediterranean). However, the effectiveness and efficiency of these voluntary structures have drawbacks by design – e.g. guidelines developed by RNE are not legally binding and are not effectively implemented by all infrastructure managers, the decision-making processes is complicated and financial support is limited.

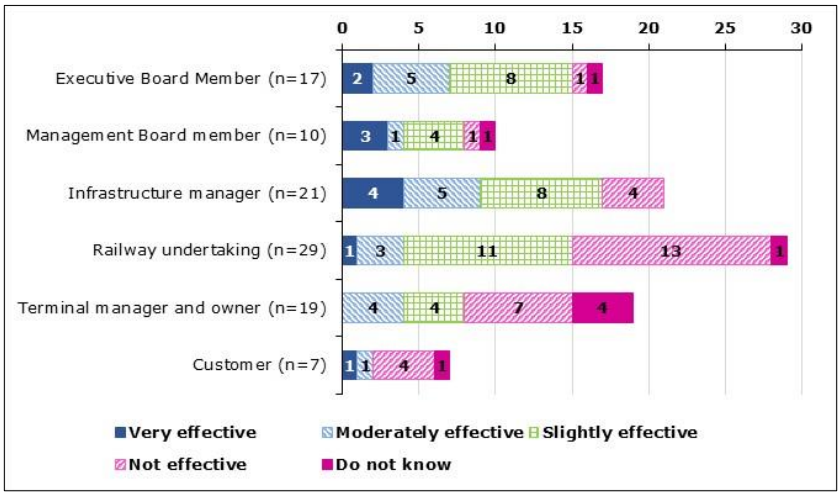
Further constraints to the added value at EU level come from the lack of effectiveness of the governance structure. A particular feature was the lack of an EU perspective. This issue can easily be contrasted with the core network corridors, where EU coordinators, provide a much needed EU perspective on infrastructure development. In some cases coordinators provided impetus to the work of the freight corridors, but there is no struc-

tured approach at EU level. Coordination of investments was an area where EU added value was particularly undermined, as it was mostly limited to exchanging information on national investment decisions.

EU added value is also limited at operational level, where a corridor concept and the lack of a network layer undermine coordination again (of capacity allocation, infrastructure works, etc.). This has a wider effect on the efficiency and effectiveness of infrastructure capacity management. One particular issue is the failure for the Regulation to deliver a facilitation effect for rail freight stakeholders and this is clearly demonstrated by the rather negative assessment of the EU added value of the corridors by stakeholders involved in international rail freight transport. Even though the main instruments of the Regulation failed to produce the desired effects, they were not standing in the way of stakeholders' initiatives either. As mentioned above, voluntary solutions were not up to the task of complementing or substituting the Regulation's tools, because they lacked the enforcement mechanisms associated with EU law.

Across all stakeholder groups, 65 out of 103 respondents, i.e. close to two thirds, consider the corridors, i.e. the implementation of the Regulation, only slightly or even not effective in delivering EU added value.

Figure 19 Assessment by stakeholders of the EU added value of the corridors compared to action at national level (e.g. bilateral agreements); source: evaluation support study



Source: evaluation support study, stakeholder survey-questionnaire

As a general pattern, the beneficiaries targeted by the Regulation, railway undertakings, terminal operators / owners and customers of rail freight services, assess the EU added value of the Regulation significantly more negative than the groups responsible for implementing them, Member States and infrastructure managers. Even though this pattern may be expected to a certain extent, the magnitude of the difference is clearly unsatisfactory: stakeholders representing customers are half as likely to consider the EU value added of the corridors as either 'very effective' or 'moderately effective' (about 20%) than Member States and infrastructure managers (about 40%).

6 CONCLUSIONS

The Regulation represents the first ever legislative act to set up an institutional framework that facilitates the cross-border cooperation of Member States and rail infrastructure managers in view of the provision of a good quality and sufficiently financed railway infrastructure to international freight transport services. Its overarching objective is to make progress towards sustainable mobility by reinforcing the attractiveness of freight transport services. Market forces (rail freight was fully liberalised on 1 January 2007) were not sufficient to produce the necessary operational conditions for international rail freight to grow and compete with other modes of transport. Thereby, the need for specific procedures to optimise the use of the network and ensure it supports the performance and competiveness of rail freight.

The implementation of the measures put forward by the Regulation had a positive impact on the development of more coordinated infrastructure-related services for rail freight operators along the rail corridors. However, this impact is still too limited to contribute to modal shift from road to rail. The cooperation between Member States and infrastructure managers in the management of the rail infrastructure is still ineffective from a cross-border perspective. In addition to this, the achievement of a true European rail market (the Single European Railway Area) is still lagging behind compared to other modes of transport like aviation and road transport. Major entry barriers for the development of international rail freight traffic persist, consisting of higher costs for investments due to the lack of cross-border interoperability and the persisting fragmentation resulting from the prevalence of national approaches.

The Regulation pursued 6 general objectives, but the implementation failed to make considerable progress on any of them. The reasons are twofold: incomplete implementation, mostly by failing to meet the objectives of the Regulation, and the mismatch between the instruments put forward by the Regulation and the needs of rail freight.

In its present form, the Regulation is not sufficient to support the ambitious EU policies in the field of transport, climate change, energy and environment. The evaluation showed that the tools provided by the Regulation were inadequate, or in some cases non-existent, to address all the objectives. Streamlining the areas of intervention by redirecting efforts to other EU legal acts, identifying better tools and approaches to address rail capacity and traffic management in a more holistic approach – not just international rail freight – and ensuring uniform implementation of the Regulation by providing detailed rules where needed are all venues that should be pursued further.

In regard to addressing the specific objectives, the Regulation did intensify cooperation between stakeholders, but some stakeholder groups were left out of the consultation mechanism of the rail freight corridors, which undermined the overall effect. Coordination of investment planning was limited at best as the Regulation did not provide any detailed rules and most Member States focused efforts in the implementation within the

TEN-T Guidelines, rather than coordinate in the rail freight corridors' executive boards. There was some progress on traffic management, especially for contingencies, but overall, the freight corridors did not have a major positive effect. The process for safeguarding capacity for rail freight was largely unsuccessful as railway undertakings made limited use of the one-stop shop and the capacity they offer (pre-arranged train paths and reserve capacity). Furthermore, cross-corridor traffic was considerable (estimations put it over 40%), but the Regulation addressed it in a very limited way. With few exceptions, there was no major improvement in the coordination of rail and terminal capacity and operations. All these challenges, which were not resolved by the Regulation require a renewed effort at EU level in particular in regard to facilitating capacity management that would suit the *modus operandi* of freight and foster a more flexible response by rail to shippers' needs, in particular by integrating better rail freight in the intermodal chain.It is clear that some of stakeholders' expectations and needs will need to be addressed via instruments other than the Regulation, like the issue of the level playing field between different freight modes or even price competitiveness of international rail freight.

Relevance

The lack of good quality and quantity of rail infrastructure capacity for rail freight is the key problem addressed by the Regulation. Pending the solution of this problem, rail freight is underperforming and it cannot fully exploit its advantages in terms of lower greenhouse gas emissions, better energy efficiency and safety as compared to road transport. The urgency to address this problem has increased since the adoption of the Regulation, as demonstrated by the European Green Deal and the sustainable and smart mobility strategy. Furthermore, the COVID-19 pandemic demonstrated the key importance of infrastructure capacity for the performance of rail freight: in the wake of a significant reduction of passenger traffic in most Member States, the performance of rail freight in terms of punctuality has immediately thrived.

The tools provided by the Regulation contribute to achieving the EU transport policy goal for a cleaner transport by boosting rail freight's performance, making it more competitive to road transport and thus facilitating a modal shift. It is clear that these tools should not be viewed in isolation, as their effect will materialize only in conjunction with measures addressing major challenges for rail freight such as the lack of a level playing field with other transport modes, interoperability problems and infrastructure bottlenecks.

In this respect, the cooperation between rail stakeholders brought forward by the implementation of the Regulation can also provide important added value, as it allowed for a number of specific problems and solutions to be identified, especially in the field of interoperability.

In terms of objectives, the Regulation clearly remains relevant. This is direct consequence of the fact that the problems targeted by the Regulation are still undermining the performance of international rail freight. In terms of the measures and the tools, which the Regulation introduced, the evaluation found that the implementation had resulted in

limited use of the one-stop shops and the pre-arranged train paths, with considerable differences across freight corridors. Therefore, in their present form and with the current level of implementation the main tools of the Regulation that deal with rail capacity allocation are of limited relevance.

It is clear that the main tools need to be further developed, to respond better the needs of railway undertakings and to effectively contribute to the achievement of the Regulation's goals. This means, *inter alia*, addressing the different needs of rail freight in the EU including those for high quality capacity requested at shorter notice, ensuring that there is a one-stop shop that acts as a single contact point for the whole process of capacity allocation and the appropriate digital tools are put in place to facilitate all of this.

Effectiveness

Stakeholders have taken a rather formal approach in implementing the Regulation, mainly aimed at fulfilling its requirements on paper rather than implementing it in a way conducive to achieving its objectives.

The Regulation has definitely contributed to strengthening dialogue and cooperation in the rail freight transport sector, both across borders and between different stakeholder groups. Some stakeholders even consider it has prompted a sort of 'culture change' in the railway sector moving away from the traditional focus on the national level. However, concrete operational improvements with a direct impact on the competitiveness of rail freight transport vis-à-vis other modes still remain limited to specific cases.

The success of this intervention heavily depends on the governance of the rail freight corridors, which is supposed to drive the improvement of the performance of rail freight services. The governance has been the key enabler for improvements in dialogue and cooperation but its impact on the performance of rail freight services remained limited overall.

The governance structure set out in the Regulation did not deliver as intended. In essence, the Regulation borrows the organisational structure of business corporations, assigning Member States (in the executive board) with the role to define the strategic framework and infrastructure managers with the implementation of this strategy. However, executive boards do not seem to have fulfilled this strategic role as highlighted notably by the lack of 'general objectives' on most corridors.

The governance structure was designed as collective decision-making entities assembling representatives of Member State authorities and individual infrastructure managers acting on unanimity. However, it did not succeed in overcoming the prevailing focus on national approaches to managing international rail freight transport, possibly due to the lack of an independent entity or process representing supra-national interests.

In addition, the management level of the governance structure, involving infrastructure managers, failed to reach out to buyers of rail freight services, such as combined transport operators, logistic service providers or shippers from industry. These stakeholder groups are the ultimate decision-makers when it comes to modal choice. The Regulation did not define a process ensuring that their needs were reflected in the objectives of the corridors.

Despite the obligation put on Member States and infrastructure managers to draw up an investment plan, such plans mainly consist of a compilation of plans adopted at national level, rather than an effective alignment of investments along the corridors. In 2013, the revised TEN-T Guidelines established the concept of core network corridors. Many stakeholders consider it as the relevant structure for the coordination of infrastructure investments across the borders, though it has not yet delivered the desired outcome to remove persisting bottlenecks along the rail freight corridors. This puts into question the role of the governance of the rail freight corridors for coordinating infrastructure investments.

The availability of infrastructure capacity (train paths) of high quality and sufficient quantity is a key prerequisite for rail freight transport to compete with other modes. The Regulation defines a specific set of instruments and procedures, notably the one-stop shop, pre-arranged train paths and capacity reserve.

These procedures did not result in significant improvements of the volume of capacity made available to rail freight traffic or the quality of this capacity, measured by criteria such as speed or reliability. Pre-arranged train paths and reserve capacity are in principle adequate mechanisms to safeguard capacity for rail freight but their benefits have not been realised because offer was not in line with market demand. The concept of capacity reserve has practically been disregarded as a mechanism to provide a flexible response to ad hoc capacity requests. Moreover, one-stop shops are not involved in the capacity management process following the allocation phase, when frequent changes to timetables occur, and their exclusive focus on international freight traffic disregards the mixed-used character of railway lines accommodating both freight and passenger trains.

With a few exceptions, the operational conditions for international rail freight services have not improved. Implementation measures include the deployment of an IT tool to coordinate traffic management and guidelines for cross-border coordination in the case of major international disruptions. However, these tools do not per se improve operational conditions but rather provide the ground for improvements by means of pre-defined performance management processes, which have not been implemented. In addition, barriers to operations often result from technical and operational rules, such as language requirements for train drivers. The removal of these is beyond the scope of the Regulation. Some of the governance structures have nevertheless worked on such issues.

The objective to facilitate the use of rail infrastructure has been achieved to a limited extent only. The tools intended to deliver the facilitation effect, such as the one-stop shops, the IT applications for capacity allocation and traffic management and the docu-

ments providing information on the corridor infrastructure and its conditions of use, have been implemented. However, these tools do not cover all the processes and interactions necessary to plan and operate international rail freight services. Secondly, their performance remains lower than that of the equivalent national systems in terms of functionalities and completeness or accuracy of information.

The Regulation also addresses the need to better integrate rail freight transport in intermodal logistics chains. It requires coordination between infrastructure managers and the owners and operators of terminals even if it does not impose specific measures to achieve this objective.

The implementation in this field has been limited to a few pilot projects addressing specific aspects of intermodality or local improvements rather than a general improvement of coordination between rail and other modes along the entire supply chain. Experience from the aviation sector shows that close cooperation involving all operational stakeholders in the logistics chain can result in tangible improvement in performance. In this light, there is a lack of involvement of other important players such as road hauliers, combined transport operators and the ultimate shippers and consignees.

Efficiency

The full costs for implementing the Regulation could not be calculated. Still, the information available covers the costs of the operational bodies set up by infrastructure managers to implement the Regulation, which arguably account for a major share of total implementation costs. The costs of these bodies are estimated at EUR 55 million for the period from 2011 to 2016, out of which 35 million were co-financed by the European Union. Part of these costs result from the duplication of structures and activities at the level of individual corridors and the consequent proliferation of meetings and unnecessarily complex decision-making processes and financial arrangements. In practice, some of these activities have been carried out at network level, jointly for all corridors, which is more efficient. The Regulation does not require such practices as it does not define a network layer for governance and measures, which can be considered a shortcoming of the Regulation.

Despite these inefficiencies, costs did not appear to be excessive.

Coherence

The Regulation is fully coherent with EU policy objectives. It is also largely coherent internally, with few minor exceptions, which had a limited effect on implementation. The Regulation is mostly coherent with other EU legal acts. However, there is room to improve the interrelation between the Regulation – and the governance which it establishes –and other legislation and bodies in order to ensure effective and efficient implementation. This applies in particular to legislation adopted after the Regulation, such as the TEN-T Guidelines or the Recast Directive and secondary legislation adopted on its basis.

EU added value

The prevailing international character of rail freight transport – 50% of the traffic is cross-border – was instrumental to the adoption of a Regulation, departing from the usual approach in the rail sector of opening national markets on the basis of Directives. Despite the lack of major improvements in the performance of rail freight services, the Regulation did contribute to addressing the problems and needs over and above what would have been achieved by action taken at national level, in particular as regards cooperation across borders and between stakeholder groups. The governance of the freight corridors was instrumental in launching a number of cross-border projects some within the rail freight corridors (e.g. the work to reduce border dwelling times), some cross-corridor (e.g. the Customer Information Platform) and some that could affect the whole EU rail network (like the Timetable Redesign Project[127]).

The lack of a true network approach, both in terms of the governance structure and in the measures imposed, hampered the achievement of a more integrated operating rail network for competitive freight. Stakeholders filled the gap via voluntary structures and measures. However, the effectiveness and efficiency of those voluntary actions turned out to be insufficient to contribute to the achievement of the objectives of the Regulation and to overcome the persistent problems of the sector in terms of competitiveness.

The growing EU ambitions in policy areas such as climate change, energy efficiency and environment require coordinated action at EU level, which has to be broader in its scope than the current Regulation, to achieve the much needed boost of rail freight.

Given the persistence of the problems and needs the Regulation aimed to address and the continued relevance of its objectives, the Commission will proceed to an impact assessment to analyse complementary or alternative measures to overcome the problems and achieve the objectives. This impact assessment will be carried out as part of the initiatives set out in the European Commission's 2019 Communication on the European Green Deal[128] and further specified in its 2020 sustainable and smart mobility strategy[129].

[127] See the description of the project in 'Modernisation of the timetabling process', Section 5.4 above.

[128] COM(2019) 640 final of 11 December 2019.

[129] COM(2020) 789 final of 9 December 2020. See in particular actions 19 and 24 in the Annex to the Strategy.

Annex I Procedural information

1 LEAD DG, DECIDE PLANNING/CWP REFERENCES

Directorate-General for Mobility and Transport

Agenda Planning Reference AP No	Title	Foreseen adoption
PLAN/2019/5077	Evaluation of Regulation (EU) 913/2010 concerning a European rail network for competitive freight	June 2020

2 ORGANISATION AND TIMING

The inter-service steering group (ISSG) was set up in 2015, when it worked on the Commission report on the application of the Regulation[130], and picked up its work again in 2019. The group included the following directorates-general and services: Secretariat-General, Legal Service, DG Competition and DG Mobility and Transport.

Two meetings were organised between March 2019 and October 2020. The feedback on the external study received from these directorates-general and services has been taken into account.

The ISSG was consulted also by e-mail. The ISSG discussed the terms of reference for the evaluation support study and provided feedback on the key deliverables from the study, and on the draft evaluation report.

3 EXCEPTIONS TO THE BETTER REGULATION GUIDELINES

Not applicable.

[130] COM(2018) 189 final of 16 April 2018.

4 CONSULTATION OF THE RSB (IF APPLICABLE)

The evaluation was submitted to the Commission's Regulatory Scrutiny Board on 18 November 2020. The Board issued a positive opinion on 18 December 2020. The Board made recommendations. Those were addressed in this final evaluation as follows:

- Additional explanations about the intervention logic of the Regulation were added in Section 2.2.
- Additional qualitative analysis was added to address the potential of the key tools introduced by the Regulation (the one-stop shop, the pre-arranged train paths and the reserved capacity) to achieve the objectives outlined in the preamble of the act and the EU policy objectives, as identified in strategic documents adopted by the Commission.
- Additional qualitative analysis was added on the relevance of the Regulation and its tools, in light of the adoption of subsequent EU legal acts (such as Directive 2012/34/EU and the TEN-T Guidelines) and in light of the new strategic goals for rail freight and passenger transport, outlined in the European Green Deal and the Commission's sustainable and smart mobility strategy.
- Overall improvements of the presentation of the information were made with the addition of visual aids such as figures and tables.

5 EVIDENCE, SOURCES AND QUALITY

The starting point for the drafting of the evaluation was the report from the Commission to the European Parliament and the Council[131] and an evaluation support study prepared for the Commission by a consortium led by Ricardo Nederland B.V. Information provided by the stakeholders through the stakeholder consultation activities were another source of information (see Annex 2).

A wide range of other sources was also used. The biennial reports of the executive boards, as well as the annual reports of the management boards of the rail freight corridors were used as sources of information, in particular in the assessment of the implementation of the Regulation. Data from the Train Information System of RailNetEurope, Eurostat and other sources was also used.

[131] Report from the Commission to the European Parliament and the Council on the application of Regulation (EU) 913/2010, in accordance to its Article 23 (COM(2018) 189 final of 16 April 2018).

Nevertheless, the data on international rail freight traffic showed the following limitations:

- Data availability was limited, in particular for the period before or early during the implementation of the Regulation;
- Data are frequently reported in non-harmonised manner, e.g. traffic volume is reported in train numbers at specific points on the network in some cases and in terms of train-kilometres) in others, complicating comparisons between corridors;
- Trains using capacity allocated via the corridor one-stop shops cannot easily be distinguished in operations from trains running on the same lines but not making use of the services of the one-stop shops, reducing the extent to which the effect of the Regulation can be quantified.

Annex II Stakeholder consultation

The stakeholder consultation activities included exploratory interviews, targeted surveys-questionnaires, targeted interviews made in the context of the case studies, discussion in the Single European Railway Area Committee Working Group on Rail Freight Corridors and the open public consultation (hereafter 'OPC').

The consultation activities covered stakeholders from EU Member States, plus Norway, Serbia and Switzerland. They included a combination of surveys and interviews targeting the governance bodies of the freight corridors (i.e., executive board members and management board members) and the broadest scope of the railway industry that has included (i) the national infrastructure managers and capacity allocation bodies, (ii) the railway undertakings (also enlarging the consultation to a sample of operators not directly involved in the context of the freight corridors), (iii) the terminal managers and owners, (iv) the regulatory bodies and (v) the customers. Finally, other interested stakeholders (i.e., citizens and citizens' associations) participated in the OPC.

The table below shows the stakeholders engaged and the tools used in the field research.

Stakeholder engaged	Engagement tool				
	Exploratory interviews	Targeted-survey	Targeted interviews	Expert group meetings	Open public consultation[132]
Freight corridor governance bodies	√	√	√	√	
Infrastructure managers	√	√	√	√	
Railway undertakings	√	√	√	√	
Terminal managers and owners	√	√	√	√	
Regulatory bodies		√	√	√	
Customer		√	√	√	
Other (i.e., citizens and associations)					√

Source: evaluation support study

[132] A different categorisation has been used for the OPC, which cannot be compared with the groups used in the other exercises.

The type and number of concerned stakeholders to be consulted in the course of the evaluation support study was discussed and agreed with the Commission services.

Almost all respondents stated that rail freight transport is an appropriate tool to make the transport sector more sustainable. Only two respondents, one from a company, the other from a public authority, believed that rail freight transport was not an appropriate tool to make the transport sector more sustainable.

The majority of respondents (71%) did not agree that the measures and tools imposed by the Regulation corresponded to the level of ambition set for rail freight transport by the objectives of the 2011 Transport White Paper. Representatives of companies and 'other' respondent types were more critical than were representatives of public authorities. Among the former, most respondents indicated that the measures and tools were inadequate or absent, while fewer were concerned about the lack of binding targets in the Regulation or the financial support provided.

The five challenges for rail freight transport that received the largest number of responses are those related to[133]:

- interoperability barriers for rail (76 responses);
- lack of quality of rail freight transport services (74 responses);
- lack of level playing field between different modes (70 responses);
- lack of price competitiveness of rail freight transport services compared to other modes (64 responses) and
- lack of capacity to serve the actual or potential transport demand (63 responses).

These same five challenges were also considered to be the five 'most important' challenges, although the third and second challenges in the list above were considered to be the 'most important' by more respondents compared to the other three.

The following two specific objectives of the Regulation were identified as being important by more than half of all the responses:

- Coordinate and plan investments to ensure that infrastructure capacities and capabilities available along the corridor meet the needs of international rail freight traffic, including interoperability.
- Improve coordination between rail freight stakeholders: infrastructure managers, Member States, railway undertakings and terminal operators.

When asked whether the choice of specific objectives of the Regulation was adequate/appropriate to achieving the overall objective of making rail freight transport more competitive, more respondents (47%) believed that there was a need for additional spe-

[133] The question was 'Which are the key barriers to increasing the competitiveness and the market share of rail freight?'. The same question has been included in the targeted survey-questionnaire, which was part of the evaluation support study.

cific objectives. Representatives of companies, in particular, were critical of the choice of specific objectives, whereas a majority of public authority respondents believed that the chosen specific objectives were adequate/appropriate to make international rail freight transport more competitive.

In terms of the scope of the Regulation, a majority of respondents (54%) believed that the competences assigned to the governance structure of the freight corridors were not appropriate to achieve the general and specific objectives of the Regulation, with the majority of these (85%) believing that more competences were needed. As with their response to other questions, public authorities were proportionally more supportive of the Regulation than other types of respondent. Many respondents proposed examples of additional competencies that the governance structure of the freight corridors should have on top of those set out by the Regulation.

A clear majority of respondents (69%) believed that the rules and instruments contained in the Regulation were clear and appropriate, at least to a certain degree. Public authority representatives were proportionally more likely to be supportive of the Regulation's rules and instruments than company respondents.

More than half of respondents (54%) agreed that all relevant groups of stakeholders were adequately involved in the governance structure of the freight corridors, although most of these (92%) believed that the role of the stakeholders should be clarified and/or strengthened. On the other hand, nearly a third of respondents believed that additional stakeholder groups should be involved in the governance structure of the freight corridors.

53% of respondents agreed that the lack of formal requirements in the Regulation has had a negative impact on the coordination between rail freight corridors. Most of these (81%) believed that voluntary coordination had been insufficient to ensure adequate cooperation and harmonisation at the network level. On the other hand, 26% of respondents thought that voluntary cross-freight corridors coordination had been effective and was more flexible than any coordination based on legal requirements would be for reasons other than those provided in the question. Public authorities were more likely to hold this view than representatives of other respondent types.

A majority of respondents (54%) believed that the geographic scope of the Regulation was not appropriate. Of these, slightly more than half felt that the corridors should provide services covering the entire route/network of international trains. On the other hand, 40% agreed with the appropriateness of the geographic scope of the Regulation and suggested that RFCs should focus on providing high quality services on the main transport axes. Respondents from public authorities were more likely to believe that the corridors should provide services covering the entire route/network of international trains than were representatives of other respondent types.

A clear majority of respondents (72%) believed that the mechanisms to create and modify the freight corridors were not appropriate to develop a European network for competitive freight. Of these, 65% felt that the mechanisms needed to be further developed to

ensure the coordinated establishment and modification of the freight corridors, in line with transport market needs.

Respondents were divided when assessing how investment planning within the freight corridors had contributed to addressing the needs of the stakeholders involved in international rail freight traffic. However, more respondents (46%) agreed that investment planning had played a positive role in addressing stakeholders' needs, either entirely (4% of them) or to a certain extent (96% of them). Conversely, 38% of respondents thought that investment planning had not contributed to adequately addressing the needs of stakeholders. More company respondents supported this conclusion, whereas public authorities tended to agree that investment planning had contributed to address the needs of stakeholders.

Respondents almost unanimously agreed that investment plans of the freight corridors had not provided a significant contribution to coordinating investments and creating more continuous infrastructure capacity for freight trains (84% of all respondents). Most of these (54%) believed that this was due to the fact that investment decisions were still largely taken at the national level, without proper coordination across borders. Proportionally fewer public authority representatives felt that there was a problem with investment decisions being largely taken at the national level, compared to respondents from companies.

A large majority of respondents (70%) believed that the coordination and publication of infrastructure works by the freight corridors had not helped to reduce their impact on international rail freight traffic. Of these, a majority (56%) felt that the inadequacy of the quality of the planning of infrastructure works at the level of individual infrastructure managers or differing network maintenance strategies between infrastructure managers was the problem.

When asked to assess whether the one-stop shop concept had provided the facilitation effect that it was supposed to, respondents were split almost equally: 37% of respondents did recognise the facilitation effect resulting from the corridor one-stop shop concept, whereas slightly more respondents (41%) did not. The distribution of responses shows that representatives of companies tended to be more sceptical towards any facilitation effect resulting from the corridor one-stop shop concept than those of public authorities.

The majority of respondents (65%) felt that the objective of safeguarding capacity of sufficient quantity and quality had not been achieved. Representatives of companies were more likely to be sceptical that the objective of safeguarding capacity of sufficient quantity and quality had been achieved than representatives of other respondent types. Of the options provided for the objective of safeguarding capacity of sufficient quantity and quality not being achieved, the most popular was that the quality of the capacity offered by the C-OSS was not significantly better to that offered by individual infrastructure managers (37%).

A majority of respondents (57%) believed that the procedures to coordinate traffic management were not sufficient to improve operational conditions for international rail

freight traffic. Of these, 64% felt that there was a need for another approach, amongst which there were a lot of company representatives.

According to a slight majority of respondents (52%), the provisions of the Regulation related to priority in traffic management were not sufficient for achieving the goal of improving the quality of international rail freight services, in particular as regards punctuality and reliability. Of these, 78% thought that this was due to the lack of explicit priorities for international rail freight. Proportionally, more public authorities felt that the provisions were adequate compared to representatives of companies and other stakeholders.

The majority of respondents (65%) did not agree that the Regulation dealt sufficiently well with the issue of improving the intermodality of rail with other transport modes. Of these, 75% believed that the requirements in the Regulation were unclear or not precise enough.

47% of respondents felt that the publication of information by the freight corridors was effective in ensuring non-discriminatory access, with the majority of these (57%) believing that this had only been achieved to a certain extent. Representatives of public authorities were more likely to support this view than other stakeholders. On the other hand, 31% of respondents believed that the publication of information was not effective in ensuring non-discriminatory access.

More respondents (41%) believed that the performance monitoring of the freight corridors had not contributed to the evaluation of the benefits of the freight corridors or to improve the performance and quality of rail freight services, than who felt that they had. Proportionally respondents representing companies were more likely to have such a view compared to representatives of public authorities.

Twenty-five respondents submitted additional ad hoc contributions in support of their contribution; in total twenty-nine documents were submitted, as two respondents submitted more than one document. Additional seven contributions supported the expansion of the network.

Annex III Methods and analytical models

The evaluation was guided by an inter-service steering group.

An external study has been contracted in order to support the evaluation of the Rail Freight Corridors Regulation - Evaluation of Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight. The research was designed and conducted in cooperation with the European Commission services and all relevant stakeholders. The latter's input was collected via exploratory interviews, which contributed to the design of the evaluation support study.

The study was organised in accordance with the requirements of the Better Regulation Guidelines. It provided the reconstructed intervention logic of the Regulation. The intervention logic was reconstructed from the recitals of the Regulation. It is structured in line with the evaluation questions, provided in the terms of reference for the study. The study prepared a baseline using key performance indicators for rail freight. It also produced 4 case studies.

The study covered all operational rail freight corridors, by involving their governance members and users of the corridors. This meant that all Member States and some third countries (Norway, Serbia, Switzerland and the United Kingdom) involved in the rail freight corridors, were approached by the contractors. The analysis covered all the period of the functioning of the rail freight corridors, which differs due to the different timing of their establishment.

The study produced a GIS representation of the international rail freight flows on the main network has been prepared on the basis of RNE data. The main objective of the task is to understand whether all the main lines used for freight transport are included in the rail freight corridor network and to assess the importance of diversionary routes.

For this, data were provided by RailNetEurope from its Train Information System.

The data allowed for the mapping of the flows using a selection of border crossings to highlight the actual origins and destinations of international flows.

The flow maps outline:

- The total number of trains
- The average number of trains
- The trains transiting through the identified sections in the 10 peak days (i.e., peak day measured individually for the specific section)
- The median number of trains transiting through the section.

The study used data from Eurostat. In particular, Eurostat was the source for the total rail freight flows between countries crossed by the freight corridors. In addition, the data was used for classification of freight flows with respect to their affinity to rail transport. The changes of shares of commodity groups, which in the past were railway affine, compared with the change of less railway affine commodity groups were also studied on the basis of Eurostat data.

Performance indicators for the rail freight corridors came from data gathered from desk and field research, as well as from the datasets made available by RNE. The reports and other documents produced by the governance of the rail freight corridors were a useful source of information.

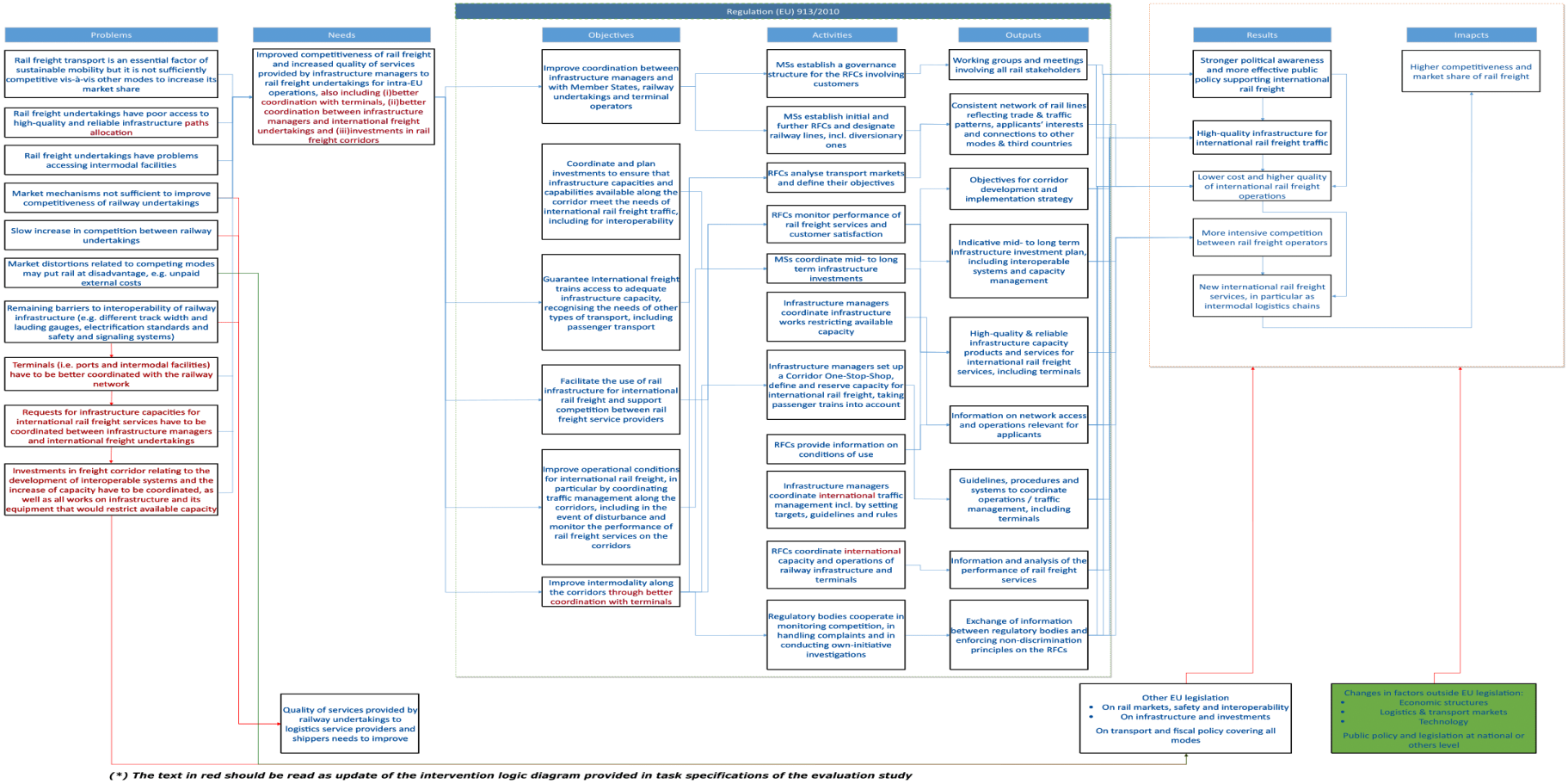
The contractor extracted qualitative information from targeted questionnaires and interviews. The consultation of stakeholders encompassed three main activities:

- the submission of targeted survey questionnaires;
- having targeted interviews and
- the analysis of the responses to the open public consultation conducted by the Commission.

In regard to replying to the questions on effectiveness, the study used as a basis the Commission report on implementation from 2018[134], but also other available information, produced by the rail freight corridor governance.

[134] COM(2018) 189 final of 16 April 2018 and SWD(2018) 101 final of 16 April 2018.

Annex IV Intervention logic



(*) The text in red should be read as update of the intervention logic diagram provided in task specifications of the evaluation study

Annex V Evaluation questions

Relevance

(1) To what extent are the objectives of the Regulation (still) relevant to address the current problems and needs of European rail freight transport and what new elements can be identified since the adoption of the Regulation?

(2) To what extent do the objectives of the Regulation (still) contribute to the goals of EU transport policy and to that of related policies (e.g. climate change, energy, economic policy)?

(3) Are the scope, the areas of intervention and the measures provided for in the Regulation appropriate to address the problems and needs of European rail freight transport and to reach the objectives of the Regulation?

(4) How well-suited are the provisions of the Regulation and do they provide for the appropriate tools to address the objectives, in light of the current and expected developments in trade, transport, logistics, technology and public policy?

Effectiveness

(5) To what extent the provisions of Regulation 913/2010 have been implemented by Member States, infrastructure managers, regulatory bodies as well as managers and owners of the terminals and regulatory bodies? Is there a good balance between the content of the provisions of the Regulation and its ambitious objectives (e.g. one of the objectives is more priority for freight traffic: is the Regulation giving the right tools to achieve this objective)?

(6) To what extent have the general, the specific and the operational objectives of Regulation 913/2010 been achieved?

(7) Which side effects have materialised, both positive and negative? Which external and internal factors and developments have contributed to the achievement of the objectives of Regulation 913/2010, both positively and negatively?

(8) How effective has the cooperation and coordination between the governance structure of the RFCs and related institutions and structures been, including in particular the European Union Agency for Railways, the TEN-T Core Network Corridors, the Single European Rail Area Committee (SERAC), the Platform of Rail Infrastructure Managers in Europe (PRIME), the Railway Undertakings Dialogue (RU Dialogue), the S2R Joint Undertaking, the Digital Transport and Logistics Forum as well as relevant sector-driven groups?

(9) Have the tools provided for by the Regulation (e.g. the corridor one-stop shops, the pre-arranged train paths, the framework for the allocation of the infrastructure capacity) produced the intended effects?

(10) In how far has the Regulation overall contributed to increase the quality of infrastructure services offered to operators of international rail freight services and to the competitiveness of rail freight transport? In how far has the Regulation helped to improve coordination, increase the priority of rail freight traffic and simplified the use of rail infrastructure?

Efficiency

(11) Are the (direct and indirect) costs of the governance structures imposed by the Regulation (executive board, management board, advisory groups for terminals and railway undertakings) attributable to specific stakeholder groups proportionate to its benefits, in comparison to a baseline scenario, i.e. if there was no intervention at EU level? Which factors and developments have influenced the relation between costs and benefits, both positively and negatively?

(12) Is the burden of preparing and updating the documents required by the Regulation (implementation plan, investment plan, corridor information documents, transport market study, etc.) proportionate to its benefits?

Coherence

(13) How coherent is Regulation No 913/2010 with the objectives of EU transport policy (e.g. the 2016 Low-Emission Mobility Strategy[135], the 2011 White Paper) and with the objectives of related policies, such as energy and climate change policy (the 2018 European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy[136]), and economic, trade and digital policy (the Europe 2020 strategy[137], the Digital Single Market Strategy for Europe[138]), competition policy?

(14) To what extent are the provisions set out in Regulation No 913/2010 coherent with each other?

(15) To what extent is the Regulation coherent with other relevant and related EU legislation, including in particular:

(a) The Single European Railway Area Directive 2012/34/EU[139], including all amendments as well as delegated and implementing acts based on that Directive;

[135] COM(2016) 501 final of 20 July 2016.

[136] COM(2018) 773 final of 28 November 2018.

[137] COM(2010) 2020 final of 3 March 2010.

[138] COM(2015) 192 final of 6 May 2015.

[139] Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (OJ L 343, 14.12.2012, p. 320).

(b) The TEN-T Guidelines, Regulation (EU) No 1315/2013 and the CEF Regulation (EU) No 1316/2013;

(c) The Combined Transport Directive, Council Directive 92/106/EEC;

(d) The Railway Interoperability Directive (EU) 2016/797 and the technical specifications for interoperability defined in accordance with that Directive, in particular the technical specification for interoperability relating to telematics applications for freight, Commission Regulation (EU) No 1305/2014;

(e) The legislative acts included in the Fourth Railway Package, as far as relevant;

(f) Community Guidelines for State aid to railway undertakings[140],

(16) How has the work of the RFCs been support by EU funding instruments and institutions, such as the Connecting Europe Facility, the European funds for transport, regional and/or industrial development (such as the structural funds and the cohesion fund), the Marco Polo programme, the Shift2Rail Joint Undertaking as well as the European Investment Bank?

(17) How does Regulation (EU) No 913/2010 interact with other international, national and regional/local legislation and initiatives relevant for (international) rail freight transport?

EU added value

(18) What is the added value resulting from the EU level intervention of Regulation (EU) No 913/2010, compared to what could reasonably have been expected from Member States and infrastructure managers acting at national level?

(19) To what extent do the issues addressed in the Regulation continue to require intervention at EU level? What would be the progress made in the EU to date in increasing the competitiveness of international rail freight transport without the Regulation?

(20) What elements of the Regulation provide the highest EU added value, can they be quantified and what would be the most likely consequence of withdrawing the Regulation?

(21) What is the value added, e.g. in terms of coordination, legal certainty, complementarities and synergies, of the 'rail freight community' involved in the activities resulting directly or indirectly from the implementation of the Regulation?

[140] Communication from the Commission (2008/C 184/07).

Annex VI Costs and EU funding for the rail freight corridors for the period 2012-2020

Source: evaluation support study and data from INEA

Freight corridor	Year of funding	Beneficiary	Period covered	Eligible cost [EUR]	Maximum EU contribution [EUR]
Rhine – Alpine	2014	EEIG Corridor Rhine-Alpine EWIV	01/2015-12/2018	5,710,000	2,855,000
	2016	EEIG Corridor Rhine-Alpine EWIV	01/2019-12/2020	1,090,909	1,090,909
North Sea – Mediterranean	2011	European Economic Interest Grouping (EEIG) Corridor C	04/2012-12/2014	2,600,000	1,300,000
	2012	EEIG Rail Freight Corridor 2	03/2013-12/2015	3,734,000	1,867,000
	2014	Rail Freight Corridor North Sea – Mediterranean	01/2015-12/2018	4,761,000	2,380,500
	2016	EEIG Rail Freight Corridor North Sea - Mediterranean	2019-2020	1,104,242	1,090,909
Scandinavian - Mediterranean	2016	Association of the Scandinavian-Mediterranean Rail Freight Corridor	2017-2019	1,139,889	1,089,978
Atlantic	2011	Ministerio de Fomento – Dirección General de Ferrocarriles Ministère de l'Écologie, du Développement durable et de l'Énergie Gabinete de Planeamento Estratégico e Relações Internacionais	04/2012-12/2014	2,140,000	1,070,000
	2014	EEIG Atlantic Corridor (France)	01/201612/2020	6,120,000	3,060,000

	2016	EEIG Rail Freight Corridor Atlantic	n. a.	1,000,000	1,000,000
Baltic - Adriatic	2012	ÖBB-Infrastruktur AG Správa železnièní dopravní cesty Rete Ferroviaria Italiana S.p.A. PKP Polskie Linie Kolejowe Železnice Slovenskej republiky Ministry of Infrastructure and Spatial Planning	03/2013-12/2015		1,005,907
	2014	European Economic Interest Grouping for Baltic-Adriatic Rail Freight Corridor 5	01/2016-12/2020	2,910,000	1,455,000
	2016	EEIG Rail Freight Corridor Baltic-Adriatic	n. a.	1,081,040	1,081,040
Mediterranean	2011	European Economic Interest Grouping for Corridor D	04/2012-12/2014	2,745,698	1,372,849
	2014	GEIE per il Corridoio Merci 6EEIG for Rail Freight Corridor	01/2015-12/2018	4,800,000	2,400,000
	2016	EEIG for Mediterranean Rail Freight Corridor		1,090,909	1,090,909
Orient/East-Med	2016	MÁV Hungarian State Railways	01/2018-12/2020	1,090,909	1,090,909
North Sea - Baltic	2011	DB Netz AG Infrabel Lietuvos geležinkeliai Prorail PKP Polskie Linie Kolejowe	04/2012-12/2014		936,289
	2014	EEIG "North Sea - Baltic Rail Freight Corridor" EZIG (Poland)	01/2015-12/2020	8,262,500	4,131,250
	2016	Ministry of Infrastructure and Construction of the Republic of Poland	n. a.	305,000	305,000

Rhine – Danube	2016	ÖBB Infrastruktur	2018-2020	1,089,704	1,089,704
Alpine – western Balkan	2016	SZ Infrastruktura	2018-2020	1,090,791	1,090,791
Amber	2016	GYSEV	09/2017-12/2020	1,090,909	1,090,909

Annex VII Supporting material

1 (GENERAL) OBJECTIVES ADOPTED BY THE GOVERNANCE STRUCTURES OF THE CORRIDORS

The table below presents an overview of the (general) objectives adopted by executive boards in accordance with Article 8(1) and by management boards in accordance with Article 9(1c) of the Regulation.

The overview indicates: (i) whether one or more objective(s) has / have been defined; (ii) whether one or more performance indicators has / have been specified to monitor progress in the achievement of the objective; (iii) whether one or more target value(s) for the performance indicator(s) have been specified.

The overview takes into account (i) the implementation plans drawn up in accordance with Article 9(1) of the Regulation, (ii) the reports presented to the Commission in line with Article 22, (iii) the documents published in accordance with article 18 of the Regulation 'corridor information document' and (iv) any publicly available reports published by the governance structure, e.g. 'annual reports'.

Corridor	**Body**		**Investment planning, incl. interoperable systems** *Art 11*	**Capacity** *Art 13+14*	**Coordination of works** *Art 12*	**Quality of freight services** *Art 19*	**Traffic management** *Art 16+17*	**IT tools** *Art 8(9)*	**Market development (modal share, traffic)**	**Interoperability (not investment-related)**
Rhine-Alpine	Executive board	Objective(s)	☑	☑	☑	☐	☑	☐	☐	☑
		Indicator(s)	☐	☑	☐	☑	☑	☐	☑	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
	Management	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐

	board	Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
North Sea-Mediterra-nean	Executive board	Objective(s)	☑	☑	☑	☑	☑	☐	☑	☑
		Indicator(s)	☐	☑	☑	☑	☑	☐	☐	☐
		Target(s)	☐	☑	☑	☑	☑	☐	☐	☐
	Management board	Objective(s)	☐	☐	☐	☑	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☑	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☑	☐	☐	☐	☐
Scan-Med	Executive board	Objective(s)	☑	☑	☑	☑	☑	☑	☑	☑
		Indicator(s)	☑	☑	☐	☑	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
	Management board	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
Atlantic	Executive board	Objective(s)	☑	☑	☐	☑	☐	☐	☐	☐
		Indicator(s)	☐	☑	☐	☑	☐	☐	☐	☐
		Target(s)	☐	☑	☐	☑	☐	☐	☐	☐
	Management board	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐

Baltic-Adriatic	Executive board	Objective(s)	☑	☑	☐	☐	☑	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
	Management board	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
Mediterra-nean	Executive board	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
	Management board	Objective(s)	☑	☑	☐	☑	☐	☐	☑	☑
		Indicator(s)	☐	☐	☐	☑	☑	☐	☑	☐
		Target(s)	☐	☐	☐	☑	☐	☐	☐	☐
Orient/East-Med	Executive board	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
	Management board	Objective(s)	☑	☑	☐	☑	☐	☑	☐	☑
		Indicator(s)	☑	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
North Sea-Baltic	Executive board	Objective(s)	☐	☑	☐	☑	☐	☑	☐	☐
		Indicator(s)	☐	☑	☐	☑	☐	☐	☑	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
	Management	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐

	board	Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
Alpine-Western Balkan	Executive board	Objective(s)	☑	☑	☐	☑	☐	☐	☐	☑
		Indicator(s)	☑	☐	☐	☑	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☑	☐	☐	☐	☐
	Management board	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐
Amber	Executive board	Objective(s)	☐	☑	☑	☑	☑	☑	☑	☑
		Indicator(s)	☐	☑	☐	☑	☐	☐	☑	☐
		Target(s)	☐	☑	☐	☑	☐	☐	☐	☑
	Management board	Objective(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Indicator(s)	☐	☐	☐	☐	☐	☐	☐	☐
		Target(s)	☐	☐	☐	☐	☐	☐	☐	☐

2 GOVERNANCE STRUCTURE

2.1 Descriptive elements on the implementation of the governance

The **executive boards** meet regularly – between twice and four times a year, although there is a lack of clarity about the specific roles assigned to board members. Often deputies replace high-level board representatives in meetings and there are considerable differences between Member States in the level of representation (from director to junior expert level).

In general, executive boards have fulfilled their obligations defined in Article 8(1) of the Regulation, with one notable exception: Based on publicly available information, only a minority of the executive boards have adopted general objectives for the corridors in accordance with Article 8(1) of the Regulation; see section 1 of Annex VII for an overview.

Overall, the executive boards have not used the general objectives as a tool to achieve the objectives of the Regulation. There is no clear evidence that executive boards have used the general objectives as tool supporting their supervisory role in the governance, as already pointed out in the Commission report of 2018[141]: '… the link between the results of the performance monitoring and the objectives defined in the implementation plan as well as the general objectives of the RFCs has not been very clear so far.'

Executive boards of all corridors have implemented the task to define the framework for capacity allocation in a coordinated manner by agreeing on a uniform wording, exceeding in this way the legal requirements for cross-corridor harmonisation.

The concept of the framework for capacity allocation in the Regulation has raised questions on its legal standing[142]. In general, the lack of clarity about the legal status of the decisions of the executive board appears to limit its effectiveness.

The biennial reports were produced on three occasions.

With regard to the permanent task of supervision, most executive boards organise regular meetings with the management boards. There is a difference in the approach to monitoring. Some freight corridors (including Rhine-Alpine, North Sea-Mediterranean and North Sea-Baltic) proactively employ detailed action plans, whereas other corridors limit themselves to fulfil their legal obligations in a more reactive manner. The effectiveness of the

[141] SWD(2018) 101 final of 16 April 2018.

[142] The lack of clarity triggered a request for a preliminary ruling to the Court of Justice of the EU: Case DB Netz, C-12/20 (pending).

monitoring appears questionable, especially where there are no clear objectives and policy guidelines for the management boards. There is also no mechanism in the Regulation for the executive board to implement corrective measures or to require their implementation by the management board or a specific infrastructure manager.

Nevertheless, on many occasions the executive boards showed initiative and pushed for solutions addressing corridor-specific issues. These include for example, the work on reducing border dwelling times by Orient/East-Med freight corridor or a number of activities tackling interoperability issues and national safety rules (some of which are also addressed in the framework of the Issues Logbook[143]). Some executive boards involve the national rail safety authorities in the board meetings when addressing interoperability issues, which again is an approach going beyond the requirements of the Regulation.

The **management boards** are the decision-making body at the operational level of the freight corridor, being composed of representatives of infrastructure managers and allocation bodies. Management boards have delegated operational tasks to **permanent management office**. In addition to the PMOs, the management boards also establish a number of working groups.

The staff of the permanent office consists of three to seven persons depending on the organisation established, roles covered and full or part-time positions. The corridor one-stop shop manager is a resource of the permanent management office.

The **working groups** (different from the advisory groups) focus on the following topics: (i) temporary capacity restrictions, (ii) train performance, (iii) one-stop shop and capacity management, (iv) interoperability and ERTMS, (v) infrastructure development and (vi) communication and legal aspects. The working groups complement the governance of the freight corridors. They bring together the technical experts of the infrastructure managers and allocation bodies concerned. Railway undertakings are more critical compared to the members of the governance structures of the freight corridors and infrastructure managers. In any case, stakeholders did not consider the working groups' lack of an official status in the Regulation as a problem.

The members of the management board have provided human resources that are sufficient to meet legal requirements, but mostly in a formalistic way. This means preparing all documents required, establishing the one-stop shop, offering capacity, etc. It is also apparent that with the level of resources dedicated, the implementation of the Regulation was not sufficiently effective to achieve its objectives. For example, the corridor one-stop shops are typically relying on a single full-time equivalent employee. The results are obvious with an average of only 10% of potential traffic going via the one-stop shops.

[143] The Rail Technical Operational Issues Logbook was set up to list and review the technical issues that cause the most problems to cross border rail operations and develop suitable actions to help with improvement. The Issues raised in the logbook mainly arise from international operations on the rail freight corridors (https://ec.europa.eu/transport/modes/rail/interoperability/interoperability/ope-tsi_en).

The same applies for IT resources, which were developed by RailNetEurope, but for which users complained of lack of integration with national IT systems, their functionality, their user-friendliness and the quality and completeness of the information contained in these systems. The persistence of the complaints is indicative of the lack of resources dedicated to this issue.

The governance is completed by the **advisory groups** composed of managers and owners of the freight corridor terminals and of railway undertakings interested in the use of the corridor. Despite resource constraints, stakeholders participate in the group meetings, indicating interest and the expectation of benefits on the parts of the stakeholders concerned. However, in the targeted consultation stakeholders expressed a number of concerns: Firstly, these concern the prevalence of one-way communication, suggesting that the opinions of advisory groups are not taken adequately into account by infrastructure managers. Secondly, the concerns and the fact that the groups do not .

- The groups do not represent all relevant stakeholders – rail freight users, shippers and forwarders are missing.

On the positive side, in 2020, the advisory groups actively participated in a consultation on prioritisation of bottlenecks, which was carried out in coordination with the core network corridors. The input should contribute to the planning of the coordinators of the core network corridors. The groups hold regular meetings and provide feedback on issues such as contingency management, planning of works, key performance indicators, etc. A self-organised network-level group of railway undertakings – Efficient Cross Corridor Organisation (ECCO) – produced a Railway Undertakings' Handbook for International Contingency Management.

The conclusion appears to be that the advisory groups are perceived as a useful element of the governance model and they offer a unique forum for key rail freight stakeholders groups. They provide valued input and to the management board and complement the work of infrastructure managers (e.g. on contingency management). A network-level approach was added for railway undertakings, as for the other governance structures. However, the predominant sentiment among the members of the groups is that they largely failed to perform their main objective of insuring two-way communication. It should be pointed out that the executive boards organise meetings with the advisory groups, an effort not prescribed by the Regulation, but this does not seem to help strengthen the groups' role. It appears that lack of consultation procedures in the Regulation, involving the executive boards, might have prevented the groups from making an impact and might have reduced their effectiveness.

The freight corridors' **governance** was also given the task of coordinating with a number of other institutions, such as ERA, TEN-T core network corridors, PRIME and others. The information collected suggests that a relatively narrow scope of institutions and entities have been engaged. The activities of coordination and cooperation have been mainly conducted at institutional level and with institutions and entities of the railway industry.

Few other activities can be reported with entities outside the railway industry, either of other transport modes or of completely different fields. Table 2.4 in Annex VII presents the overview of the entities engaged by the freight corridors.

In general, cooperation and coordination initiatives have been initiated both by the freight corridors governance structure towards other entities and vice versa. In general, the stakeholders report that certain other entities have not been systematically engaged, for instance the customers of the rail freight services[144], the authorities in charge of railway safety[145] and entities active in the field of rail research and innovation.

The table below summarises the initiatives, measures and actions developed with other institutions and entities in the process of implementation of the provisions of the Regulation.

The initiatives, measures and actions have mainly focussed on traffic management and traffic management in the event of disturbance. The cooperation also addressed links with third countries with exchanges on other corridor concepts (OSJD corridors) and monitoring performance.

The list of initiatives shows some important gaps. Cooperation with the organisations of infrastructure managers (PRIME), railway undertakings (RU Dialogue) and shippers (European Shippers' Council) is not exploiting to the maximum synergies, like performance monitoring. Also, rail freight is in need of compatible or even integrated digital tools for capacity management, operations and information exchange. However Shift2Rail, a rail initiative focused on research and innovation and looking to provide market-driven solutions, has not really been put to work on this issue.

A core tool prescribed by the Regulation is the implementation plan. The plan presents the means and the strategy to develop the necessary measures to establish the freight corridor. The plan includes:

- a description of the characteristics of the freight corridor, including bottlenecks;
- a programme of measures necessary for creating the freight corridor;
- the essential elements of a transport market study;
- objectives for the freight corridor, in particular in terms of performance expressed as the quality of the service and the capacity of the freight corridor;
- an investment plan referred to in Article 11 and
- measures to implement the essential functions of the freight corridor.

[144] There are exceptions, such as the freight corridor Mediterranean's contacts with the chemical industry and cereal producers or Rhine-Alpine's contacts with market stakeholders after the Rastatt incident in 2017.

[145] There are exceptions, such as freight corridor Rhine-Alpine's National Safety Authority (NSA) Working Group.

All rail freight corridors adopted implementation plans. However, not all meet all the requirement of the Regulation (see below).

The implementation plans should be updated periodically, but six out of ten management boards of the freight corridors consider that this is not necessary. Seven boards believe the requirement creates unnecessary burden, as the corridor implementation measures are largely accomplished once it has been made operational and there should be more flexibility for subsequent reporting.

The implementation plan also requires that the management boards carry out and periodically update a transport market study relating to the observed and expected changes in the traffic on the freight corridor. Transport market studies have been prepared by all rail freight corridors. However, only three corridors[146] have implemented the requirement to regularly update them[147].

Based on the surveys and the position papers, it can be concluded that the effectiveness of the implementation plan to improve the performance of the freight corridors is questionable. The majority of stakeholders seem to believe that this is rather a tool to establish freight corridors, rather than a tool to continuously improve their performance.

These views put into question the effectiveness of the implementation plan as a tool for the development of the freight corridors, partly because of poor implementation of the Regulation (no updates for important elements of the plan). However, a more important question is whether implementation plans provide an adequate tool to set targets and implement measures for improving the performance and the quality of service on the freight corridors. The Regulation does not set specific performance indicators, nor does it lay down obligations for target setting, and consequently it does not contain clear requirements for the biennial reports in this respect. Thus, the Regulation does not provide for a sufficiently detailed and coherent process for planning, implementation and monitoring. The overall performance of rail freight on the corridor lines (e.g. commercial speed and punctuality figures) suggests that the implementation plan has not been sufficiently effective in achieving performance improvements on the rail freight corridors.

The issue of performance improvement is directly linked to the issue of the effectiveness of performance monitoring.

2.2 Resources dedicated to the operational structures of the corridors

All management boards have delegated operational tasks related to the implementation of the Regulation to dedicated permanent structures. The following table presents an overview of resources assigned to these structures.

[146] The three corridors are Rhine-Alpine, North Sea-Mediterranean and Mediterranean corridor.

[147] Some management boards wanted to work on an EU wide transport market study and delayed the updates for that reason.

Table 10 Information on the organisation of the permanent management office

Rail Freight Corridor		Resources	Roles (number of persons in brackets)	Infrastructure managers/countries involved (number of persons in brackets)
1	Rhine - Alpine	7	• Managing Director • Deputy Director • Corridor Manager (3) • Student intern • C-OSS manager	DE (5), IT (1), CH (1),
2	North Sea - Mediterranean	4	• Managing Director • Operations and investment manager • Communication and finance manager • C-OSS manager	n. a.
3	Scandinavian - Mediterranean	5	• Managing Director • Communication administration officer • CRM manager • Accessibility manager • C-OSS manager	SE (2), NO (1), IT (1), DE (1),
4	Atlantic	3	• Management controller • Director • C-OSS manager	PT (1), FR (2)
5	Baltic - Adriatic	3	• Executive manager • Corridor Infrastructure Manager • C-OSS manager	IT (2), SK (1)
6	Mediterranean	6	• Managing Director • Deputy Director • Project Manager • Administrative assistant • C-OSS manager	IT (3), ES (1), FR (1), HU (1)
7	Orient / East-Med	2	• Secretariat (not specified) • C-OSS manager	HU(2)
8	North Sea - Baltic	3	• Managing Director • Project Director • Project manager (9) • C-OSS manager	BE (1), NL (1), DE (1), CZ (2), PL (3), LT (1), LV (1), EE (1)
9	Rhine - Danube	3	• Managing Director • Infrastructure manager • C-OSS manager	AT, HU, DE
10	Alpine - Western Balkan	3	• Executive manager • Infrastructure manager • C-OSS manager	SI (1), HR (1), RS (1)
11	Amber	5	• Managing Director • Coordination group • Ad-hoc project team • Secretariat • C-OSS manager	HU (4), PL (1)

Source: Evaluation support study, based on freight corridors websites and annual reports

2.3 Tasks of the management board and infrastructure managers

- Coordinating the management of the freight corridors, using all instruments provided in Chapter IV (e.g. the one-stop shop, the pre-arranged train pats and reserved capacity), including all information instruments.
- Consulting applicants (Article 10).
- Implementing the freight corridor plan and reviewing the implementation plan (Article 9(1)).
- Setting up advisory groups for railway undertakings and terminal managers and owners (Article 8(7) and(8))
- Coordinating the use of interoperable IT applications (Article 8(9)).
- Carrying out and periodically updating a transport market study (Article 9(3)).
- Drawing up and periodically updating a medium and long-term investment plan (Article 11(1)).

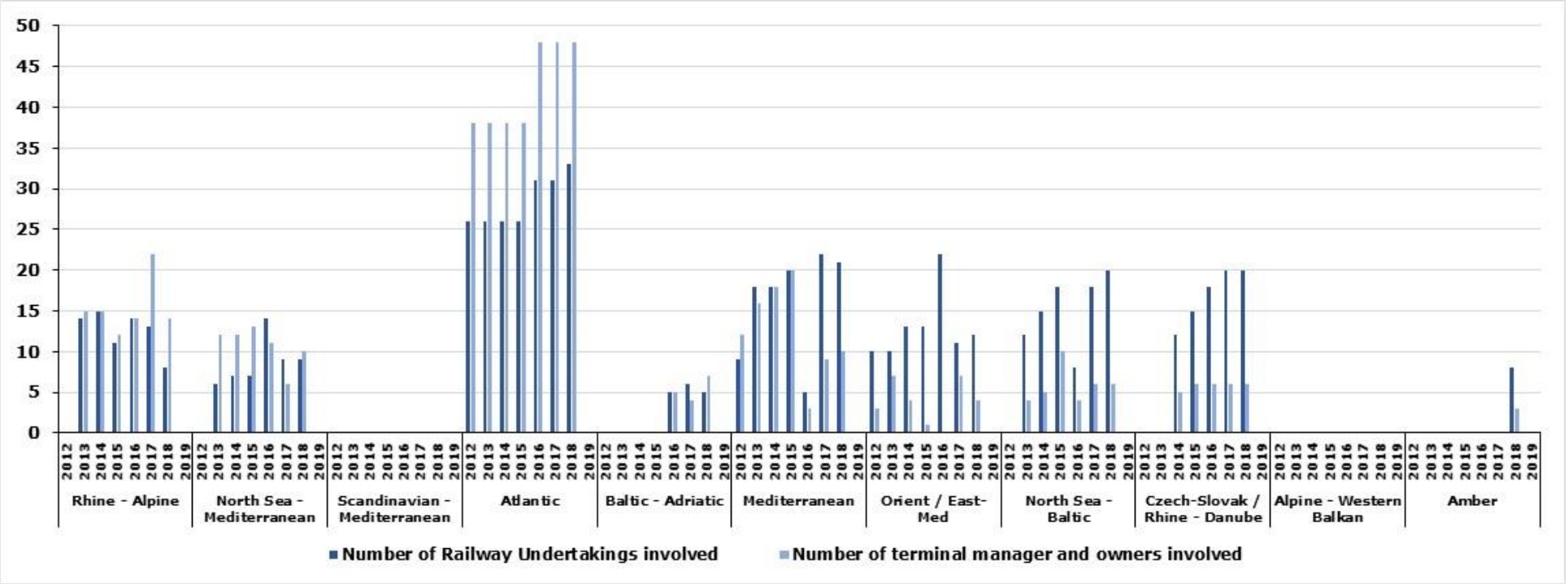
Drawing up a deployment plan relating to interoperable systems based on a cost-benefit analysis (Article 11(1)(b)).

2.4 Examples of initiatives, measures and actions implemented with other institutions and structures

Provision of the Regulation involved	Initiative, measure and action
Article 11 Investment planning	Consultation of RFC governance and railway undertakings on infrastructure priorities for cross-border rail freight and submission to EU Coordinators for Core Network Corridors
Article 16 Traffic management	Rail Technical Operational Issues Logbook
	Union internationale des chemins de fer Efficient Cross Corridor Organisation
	Quality Charter project with Eurocontrol
	Core network corridor coordinator on the necessities of the railway undertakings
	Core network corridor coordinator on border processes and especially for reasons for longer train stops at the border
Article 17 Traffic management in the event of disturbance	RailNetEurope and Platform of Rail Infrastructure Managers in Europe on the Handbook for International Contingency Management
	Union internationale des chemins de fer railway undertakings' Handbook for International Contingency Management
Article 19 Quality of service	Independent Regulators' Group – Rail
	Railway Undertakings Dialogue
	European Shippers' Council
(various)	Cooperation with Organisation for Cooperation of Railways (OSJD)

2.5 Participation in the advisory groups of the corridors

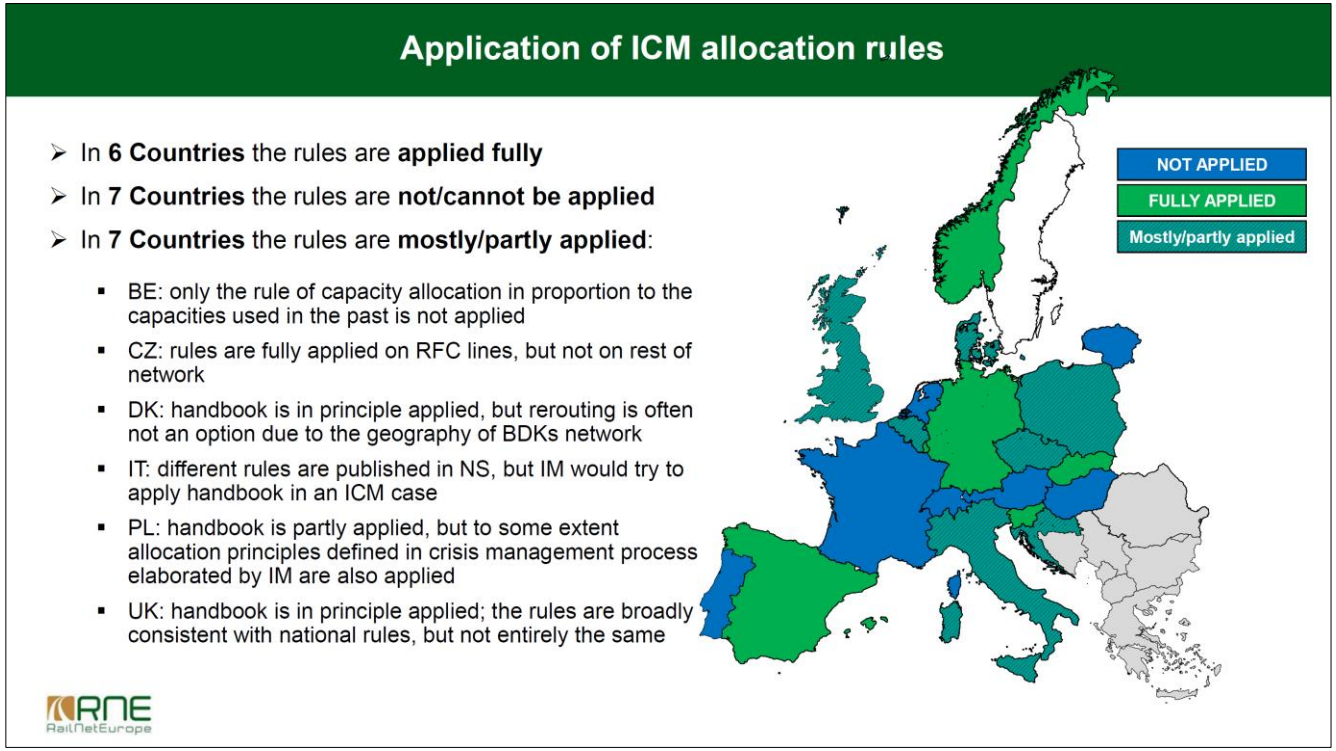
Number of railway undertakings and terminal manager and owners involved in RAG and TAG meetings by freight corridor



Source: Evaluation support study, based on official documents of the freight corridors (various years) and data of RNE

2.6 Illustration of the lack of implementation of voluntary network-level guidelines at national level

The chart shows that the rules for capacity allocation on diversionary lines defined in the 'Handbook for International Contigency Management' are only applied by a minority of infrastructure managers.[148] Source: RailNetEurope.



148 https://rne.eu/news/international-contingency-management/