EU-RAIL FRMCS EUROPEAN DEPLOYMENT GROUP

Report on the 2025 FRMCS Deployment questionnaire

V1.0

9 September 2025

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1 Introduction

1.1 History of the questionnaire

During the EU-RAIL FRMCS European Deployment Group meeting, it soon appeared that the level of information and the readiness of the stakeholders were unknown.

To raise the awareness of the different stakeholders and gather the first trend of the deployment of the FRMCS in Europe, it was decided to start an enquiry based on a questionnaire.

Subgroup 3 of the EU-RAIL FRMCS European Deployment Group, took responsibility to prepare the questionnaire. The questionnaire was sent to the representative associations and institutions (CER, UNIFE, UIC, EIM, AERRL, ERA) for a final check before distribution.

The questionnaire was distributed via the representative associations to organizations, on the 10th of June 2025, to get in touch with as many stakeholders as possible. A webinar was held on the 9th of July 2025, to clarify the questions that would need explanations. Over 50 people attended the webinar. The due date of the questionnaire was the 15th of July. Until 27 August 66 questionnaires were received.

The intention is to send a questionnaire on a regular basis in order to measure the trend changes. Next questionnaires will use another tool than EXCEL spreadsheets, used in this first initial questionnaire.

1.2 Methodology

The questionnaire contains a first page that gives indication on the reason for the questionnaire and on some practical aspects (Confidentiality, sections of the questionnaire).

The questionnaire is then divided in several sections depending on the stakeholders:

- Infrastructure Managers
- Railway undertaking and lessors,
- Infrastructure providers,
- Onboard providers,
- Regulatory bodies and Safety Authorities.

In order to perform the analysis, the person responsible for completing the questionnaire is requested to give identification information. This information is confidential. The assessment is done by a small independent team, under the obligation of confidentiality. The report does not contain information that would easily enable to understand where some sensitive data comes from.

The questionnaire contains precise questions but also gives some space for free expression. The report convenors have done their best to synthetize the information given in the free expression sections.

This report has been dispatched to the representative associations for final review before being made public.

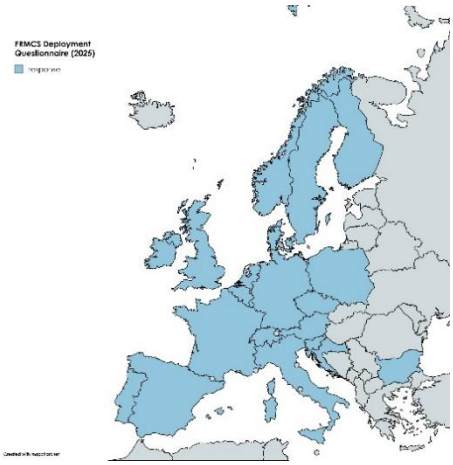
This report is fact-based. A summary section is included at the end by the assessment team. An, also anonymised, overall analysis of the questionnaire results will be distributed as a separate presentation.

2 Analysis Questionnaires

2.1 Key Figures

The EU-RAIL European FRMCS Deployment Management Team received 66 questionnaires of which:

- 19 from Infrastructure Managers (IMs),
- 26 from Railways Undertakings (RUs),
- 5 from Trackside Providers (TSPs),
- 5 from Onboard Providers (OBPs),
- 11 from National Safety Authorities (NSAs).



Input was received from 20 European countries, including UK, Norway and Switzerland.

2.2 Technologies

FRMCS Deployment can use either RMR Frequencies (Railway telecommunication dedicated frequencies) or PMNO (Public network) or other private networks.

A vast majority of the IMs intend to use both RMR and PMNO.

The architectures of the telecommunication networks are, however, different from one country to the other. Private Mobile Network Operators (PMNO) are intended to be used either as a redundancy network, as an additional network capacity or even as the only network. PMNO frequencies will be used.

Regarding frequencies for the RMR, both 900 and 1900 Mhz are intended to be used. Some companies intend to use 1900 Mhz during the migration phase and then to have 900 MHz only after GSM-R is switched off.

The multiplicity of the architectures that IMs intend to use shows that the Multipath design should be carefully looked at in order to cover all the expectations.

For the far future some IM's mention the use of satellite services.

2.3 Deployment of GSM-R

Some countries did not implement GSM-R so far.

For those that implemented GSM-R, the start of operation of GSM-R varies from 2000 to 2018 with a national coverage varying from 25 to 100 per cent. Several IMs use MNO in addition to GSM-R.

As FRMCS is not available yet and because some infrastructure managers need to roll-out TEN-T corridors or deploy telecommunication systems, GSM-R is still under deployment in some countries.

A few countries intend to switch off their first GSM-R installations as early as 2030. Most of the countries intend to switch off their first GSM-R installations in the 2036 – 2038 period (Based on the assumption that the CCS TSI will be released in 2028). One country intends to perform its first switch off after 2040.

The full GSM-R network switch-off dates vary from 2033 (Depending on ETCS compatibility with FRMCS) to 2044 or even later. Most of the IMs do not intend to switch-off their entire GSM-R network before 2037.

2.4 Deployment of FRMCS

The deployment of FRMCS is highly dependent on the time the CCS TSI will be put into force.

2.4.1 Trackside

Please refer to Section 2.2 for frequencies.

Few IM's intend to start pilot lines as early as 2029, a bigger number plan to start from 2033

Most of the IM's intend to cover 100% of their network with FRMCS.

The completion date of the coverage varies from 2033 (Voice only) to 2050. Most of the IMs intend to complete their coverage from 2036 to 2040.

A mixed GSM-R/FRMCS network is foreseen during the migration phase by most of the IM's. Also mixed GSM-R/FRMCS services are foreseen, for example data over GSM-R as long as FRMCS/ETCS compatibility is not completed.

All IM's foresee alignment with ERTMS (ETCS) roll-out programme's, and a few indicate a later coordinated roll-out with ATO and DAC programme's.

2.4.1.1 Production and procurement of the trackside equipment

The Trackside suppliers (TSS) do not see major capacity issues regarding the procurement of core network systems and MCX. They however consider that the procurement of the servers is not in their scope. The procurement of antennas and masts is not documented.

TSSs indicate that the production products could be rapidly available after CCS TSI publication (within a year) based on a 6-month period for type approval. Estimated lead-time (order to delivery) is indicated as 3-6 months. Availability of test centers and non-clarity on authorisation requirements are seen as potential bottlenecks.

IM's indicate to use (public) tender processes to procure new equipment and assets, based on a multi=vendor approach and dedicated tenders for core, RAN and MCX.

IM's foresee different approaches to redundancy concepts: multi-layer (double) coverage, geo redundant (overlapping), independent MNO's, geographically separated core, (dual) redundancy in hardware and power supply,

For the new projects, IM's are mostly waiting for the CCS TSI publication to start the Request For Quotation (RFQ) process. Some have no plans for RFQ yet.

2.4.1.2 Authorization

Most of IM's indicate they have knowledge and experience on authorization. They foresee a duration of 1-2 years for first in class vehicle authorisations and 4 months up to 1 year for trackside certification. IM's indicate the importance and dependency of NoBo's capacity.

Some of the IM's intend to perform the authorization process with their internal resources.

In the GSM-R roll-out different ways of authorisation was applied, including participation of NSA's.

2.4.1.3 Industrial capacity to install the trackside equipment

The respondents to the questionnaire indicate to have and plan >140.000 km of tracks equipped with FRMCS, with the usage of > 40.000 sites.

IM's indicate to use > 155.000 handhelds devices. All indicate that insufficient information on usage and requirements is available.

IM's indicate risks on availability of sufficient resources and knowledge. Parallel Railway programmes such as ETCS and FRMCS, regular maintenance (and DAC, ATO) all ask for resources in engineering, construction, retrofitting and maintenance.

2.4.1.4 Financing & Funding

Only 2 IM's indicate a financing scheme is available. All see and consider possibilities for National funding programmes, for trackside only.

During early 2000s GSM-R was rolled out. IM's indicate investment costs (original price level) for a site vary between EUR 70k and 400k. No data was supplied for certification and authorisation costs.

2.4.2 Onboard

Respondents to the questionnaire own > 20.000 vehicles (mainly passenger trains and locomotives). Not all RU's have mentioned the amount of vehicles in their fleet. Some 300 Yellow fleet vehicles are with voice/ETCS and over 450 new fleet is expected.

2.4.2.1 Production and procurement of the onboard equipment

The On-Board Suppliers are ready to implement industrial capacity to fulfill the demand. The availability of the chipsets and the modems are, however, potential bottlenecks.

The On-Board Suppliers (OBS) raise several concerns:

- The RUs have not placed orders yet and most of them do not intend to place orders before 2030. This means that the OBS's have no contract and thus face difficulties investing in technological development,
- There are many different architectures foreseen on the trackside, and this may create difficulties in the development of the onboard equipment,
- The authorization process is unclear but is foreseen as long and complex,
- There is a potential shortage of test facilities.

The estimated time to have the first systems ready for mass production for the onboard is 6 to 12 months. Suppliers foresee bottlenecks in the production chain for chipset, railway certified power supply, radio modem unit, antennas. In general they raise concern on cyber security, delay in development standards and products, capacity for extended GSM-R support, no clarity on MNO usage, specific customer requirements, (engineering) capacity for retrofit legacy trains.

Some RU's have already implemented some FRMCS requirements in their bid for new trainsets. For the existing fleets, RU's are mostly waiting for the CCS TSI publication to start the Request For Quotation (RFQ) process. Some have no plans for RFQ yet.

2.4.2.2 Authorization

Most of the RUs will ask the train manufacturers to support the authorization process; However, as this process is not defined yet, the workload is uncertain. A very first estimation is to certify hundreds first-of-class vehicles with an expected timeline of 1-2 years, dependent of engineering, test and Notified Body (NoBo) capacity and resources

For authorisation, suppliers consider following topics as a potential bottleneck: NoBo knowledge, no clear timing for delivery specifications, availability of lab tests and/or test facilities, and availability of modems

Some of the RU's intend to perform the authorization process with their internal resources.

2.4.2.3 Industrial capacity to install the equipment onboard

Most of the RU's that own their trainsets intend to perform industrial operations internally. Because of the limited timeframe, there may be a need for the support of the train manufacturers.

Except for 2 RU's all consider a combined FRMCS and ETCS modification for their fleet. Most of them favour a two-step approach, meaning pre-equip vehicles with assets during regular maintenance and finalise later. A main concern is a long out-of-service (down-)time of their fleet.

RU's that are leasing their trainsets and lessors will require support from other companies.

The answers to the questionnaire do not allow us to form an opinion regarding the European industrial capacity to install the FRMCS equipment onboard the trainsets.

2.4.2.4 Equipment priorities

Each RU has its own view of the equipment priorities. Some are prioritizing interoperable locomotives, others are choosing high-density regions, other are

choosing low-density regions, or even mainline routes. Also mentioned is a possibility to start in countries lagging behind in technology, because of an attractive greenfield approach. All RU's indicate they follow the IM roll-out schemes before investing and start retrofitting, also indicating to invest as late as possible.

2.4.2.5 FRMCS and ETCS

The situation on what is the impact of modifying a train which is already equipped with ETCS over GSM-R is unclear.

The RU's understand that there will be a need for modifications, but the solution, cost and workload are still unclear.

The authorization process of the modified trains is seen as a potential bottleneck.

2.4.2.6 Financing

A vast majority of the RU's have no firm plans for financing or a financing scheme available. Some demand/expect financial support from their Member States and or from the European Commission.

During the early 2000s during roll-out of GSM-R, respondents indicate CAPEX costs to equip rolling stock varied from EUR 30k – 80k per vehicle (voice only, original price level). No data is received on certification/authorisation costs or duration.

NB. during recent GSM-R upgrade/replacement programmes, conformity assessment/certification costs per type of EUR 150k – 250k are mentioned.

The 2035 target date is seen as not reachable from a financial point of view especially as the implementation of FRMCS is seen at the start as a cost with no quick return on investment.

Several RU's mention 2040 as a more realistic target date.

2.4.2.7 Coordination with the IMs

The big RU's are all informed on a regular basis by their IM's. The small RU's seem to have less direct information and need to look for information on websites and social media.

2.4.2.8 Implementation of remote maintenance

The answers to this question are mixed.

Some do not see any benefit from remote maintenance, especially for existing trains.

Others consider this a must for both existing and new trains. They are looking for remote error analysis and software upgrades.

2.5 National Safety Authorities authorization/approval processes

This paragraph describes the National Safety Authorities (NSA's) responses about their capacity to manage the authorization/approval processes.

It is important to mention that the views given by the NSA's are different. Some consider that most of the join will be supported by NoBo's which will have to get the relevant resources, some consider that, as NSA's, they must embark technical skills to analyze the files.

Whatever the organization scheme, the NSA's point that it is important to make sure that the trained personnel will have to be available to manage the big number of files.

The evaluation of the workload is difficult because the specifications are not available. Depending on whether the specifications give a precise description of the interfaces, the analysis work will be different.

The GSM-R and FRMCS frequencies innocuity is key for the approval process.

2.6 Focus on quantities

The number of questionnaires that have been received does not allow for a calculation of the number of (onboard and infra)_ equipment necessary to cover the needs for whole Europe. Combining information coming from the NIP's and this questionnaire however lead to better information. In the next questionnaire a more complete picture on quantities is expected,

Some figures are, however, interesting and already important, for example regarding the handhelds. The sum of the handhelds mentioned in the questionnaire is over 155.000. The bigger figures are coming from the IM's.

3 Summary

The EU-RAIL FRMCS Deployment Group Management Team has received 67 responses to the questionnaire. Although some key stakeholders of the FRMCS deployment did not participate in this first survey, some major points can be highlighted.

3.1 Diversity of implementation on the trackside

The analysis of the questionnaires shows a big diversity of implementation solutions on the trackside.

The use of RMR and MNO are described in a lot of different architectures from pure MNO to a mix of RMR 900/1900 and MNO.

This indicates that the TOBA specifications will have to contain all the necessary descriptions of the mechanisms to manage all these possibilities.

A focus is necessary on Multipath.

3.2 Deployment planning

A few countries have prepared a fast deployment plan for the FRMCS. This is part of a structured strategy prepared some years ago.

Most of the countries are preparing a plan to deploy FRMCS to manage GSM-R obsolescence. This means that their intention is to complete the deployment in the 2037-2040 period.

Other countries are still deploying GSM-R and have no plans to complete the deployment of FRMCS before 2040.

On the interoperability side, this means that cross-border trains will face different situations and may have to be able to run under both FRMCS and GSM-R for a period that could go well beyond 2040.

3.3 Financing & Funding

Very few IM’s and RU’s have a plan for financing and funding.

Most of the answers are “under study” or “no plans yet”.

Some are indicating they will look for support from their Member State and for the European Commission.

3.4 Authorization/approval process

Authorization process is mentioned in nearly every questionnaire coming from IM's, RU's, TSS's, OBS's.

The remarks are about the lead-time and costs to get an authorization/approval.

3.5 Human resources

The availability of the skilled workforce is not a given. This is even more important for the experts in charge of the design and authorization processes.

3.6 Handhelds

The figure of handhelds mentioned in the questionnaires is important.

The answers are referring to use of these equipment by construction workers and other IM's staff for safety purposes. This indicates that handhelds should be made available during the early phase of the FRMCS deployment.

3.7 Points to be further explored

During and after the questionnaire additional interviews have been conducted that gave extra information and lead to new additional questions. These questions will be addressed in a second version of the questionnaire.

For example, this first initial questionnaire do not allow us to understand the availability of components for the deployment of sites (Base stations, masts, antennas).

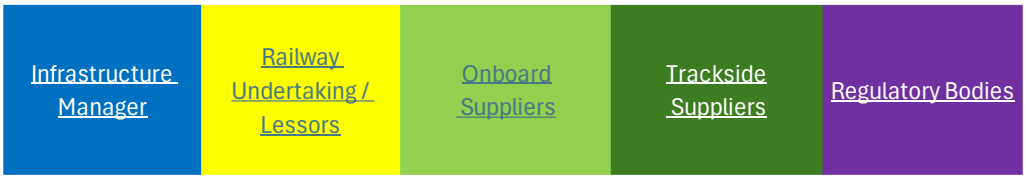
The interviews show that RU's have plans to deploy features other than Voice, ERTMS and radio emergency calls (REC). The readiness of the FRMCS specifications for the next phases should be investigated.

Attachment 1. Responses

Note: an organisation can respond to more than 1 section (e.g. RU and IM)

nr	organisation	country	sector
1	CRR Ireland	Ireland	NSA
2	PKP Cargo int.	Poland	RU
3	SNCB	Belgium	RU
4	Bane NOR	Norway	IM
5	ProRail	Netherlands	IM
6	SBB Cargo	Switzerland	RU
7	IP portugal	Portugal	IM
8	Traficom Finland	Finnland	NSA
9	NS	Netherlands	RU
10	ADRIA transport	Slovenia	RU
11	Rail Cargo Group	slovenia	RU
12	office of rail transport	Poland	NSA
13	SNCF Reseau	France	IM
14	EPSF	France	NSA
15	Finnish Transport Infrastructure	Finnland	IM
16	Slovenske železnice- Tovorni promet, d.o.o.	Slovenia	RU
17	Správa železnic	Czech	IM
18	EBA	Germany	NSA
19	Slovenske železnice - Potniški promet d.o.o.	Slovenia	RU
20	Banedanmark	Denmark	IM
21	Ansfisa	Italy	NSA
22	SIEMENS mobility		supplier
23	Trafikstyrelsen Denmark	Denmark	NSA
24	DB fernverkehr	Germany	RU
25	Trafikverket	Sweden	IM
26	Infrabel	Belgium	IM
27	luxembourg	luxembourg	RU/IM/NSA
28	PKP	Poland	IM
29	Nokia		supplier
30	port of Koper		RU
31	SBB	Switzerland	IM
32	Network Rail	UK	IM
33	Teltronic		supplier
34	croatia	Croatia	IM/RU
35	Hitachi		supplier
36	ORR	UK	NSA
37	Eviden		supplier
38	FSI	Italy	RU
39	SNCF voyageurs	France	RU
40	Funkwerk		supplier
41	Bulgara	Bulgaria	RU/NSA
42	DB Cargo	Germany	RU
43	DB InfraGO	Germany	IM
44	Beacon RU	UK	RU
45	DB Regio	Germany	RU
46	Rail Delivery Group UK	UK	RU
47	ADIF	Spain	IM
48	OEBB	Austria	IM
49	AKIEM Group	UK	lessor
50	NSA ES	Spain	NSA
51	SŽ - Infrastruktura	Slovenia	IM

Attachment 2. Questionnaire



QUESTIONNAIRE: European FRMCS Deployment

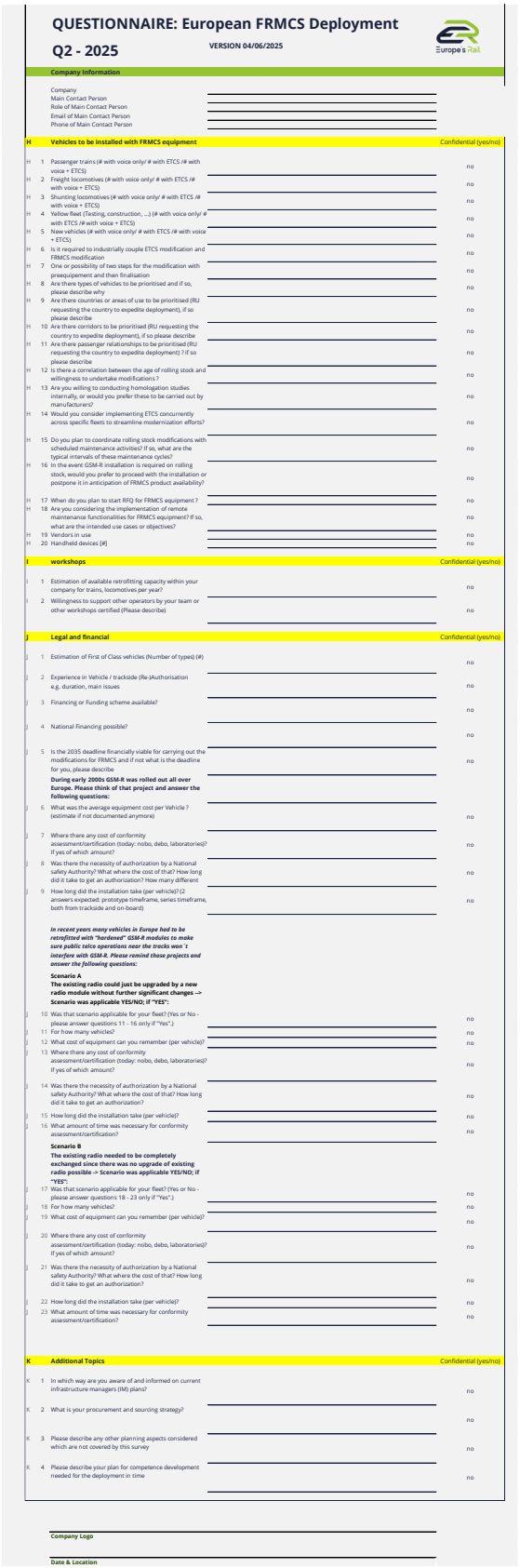
Q2 - 2025

VERSION 04/06/2025

Company Information				
		Company		
		Main Contact Person		
		Role of Main Contact Person		
		Email of Main Contact Person		
		Phone of Main Contact Person		
A		**Current Situation**		Confidential (yes/no)
A	1	GSM-R since (year)		no
A	2	Rail network % covered		no
A	3	Other radiosystems than GSM-R in use		no
A	4	First network switch off GSM-R (year) based on a mid-2028 CCS TSI assumption		no
A	5	Last network switch off GSM-R (year) based on a mid-2028 CCS TSI assumption		no
A	6	Spectrum in use		no
A	7	Vendors in use		no
B		**initial & final operation FRMCS**		Confidential (yes/no)
B	1	Estimated first network for FRMCS (year) based on a mid-2028 CCS TSI assumption		no
B	2	FRMCS Rail network fully implemented (year) based on a mid-2028 CCS TSI assumption		no
B	3	Rail network % planned coverage by FRMCS		no
B	4	Describe which programmes or subsystems (e.g. CCS) are foreseen to be aligned with FRMCS programme (e.g. ERTMS/ETCS/ATO/DAC)		no
B	5	Do you plan to have mixed GSM-R/FRMCS network (If yes please describe) ?		no
B	6	Do you plan to have mixed GSM-R/FRMCS services for voice and data (If yes please describe) ?		no
C		**Technology and services planned**		Confidential (yes/no)
C	1	FRMCS spectrum for RMR (900MHz FRMCS) & PMNO		no
C	2	FRMCS spectrum for RMR (1900MHz FRMCS) & PMNO		no
C	3	Mix of 900MHz (FRMCS) and 1900MHz (FRMCS)		no
C	4	PMNO spectrum (700Mhz, 800 Mhz, 2600 MHz, 3500Mhz ref. UIC SRS V2.0.0)		no
C	5	900 MHz RMR (FRMCS) Only		no
C	6	1900 MHz RMR (FRMCS) Only		no
C	7	Which services (voice/data) are intended to be applied on which spectrum (If applicable please describe) ?		no
C	8	Other combinations not listed above		no
D		**Operational strategy**		Confidential (yes/no)
D	1	FRMCS dedicated network only		no
D	2	PMNO only		no
D	3	Hybrid (Dedicated network + PMNO)		no
D	4	PMNO as back-up for FRMCS dedicated network		no
D	5	PMNO for capacity increase		no
D	6	PMNO for other usage (Reliability, Availability, Maintainability)		no
D	7	Single or multiple PMNO		no
D	8	Other combinations not listed above		no
D	9	What is your procurement and sourcing strategy?		no
E		**Trackside rail network to be installed with FRMCS equipment**		Confidential (yes/no)
E	1	track where FRMCS is implemented [km]		no
E	2	masts [#] including reuse of existing masts		no
E	3	base stations [#]		no
E	4	Expected redundancy concept(s) (please describe)		no
E	5	Handheld devices [#]		no
F		**Legal and financial**		Confidential (yes/no)
F	1	Experience in Vehicle / trackside (Re-)Authorisation e.g. duration, main issues		no
F	2	Financing or Funding scheme available (Yes/No/Under construction) ?		no
F	3	National Financing possible?		no
		During early 2000s GSM-R was rolled out all over Europe. Please think of that project and answer the following questions		
F	4	What was the average equipment cost per mast ? (estimate if not documented anymore)		no
F	5	Where there any cost of conformity assessment/certification (today: nobo, debo, laboratories)? If yes of which amount?		no
F	6	Was there the necessity of authorization by a National safety Authority? What where the cost of that? How long did it take to get an authorization? How many different type of authorization did you need? (today: vehicles type / trackside approval)		no
F	7	How long did the installation take (per vehicle/per mast site)? (2 answers expected: prototype timeframe, series timeframe, both from trackside and on-board)		no
G		**Additional Topics**		Confidential (yes/no)
G	1	Please describe any other planning aspects considered which are not covered by this survey		no
G	2	Please describe your plan for competence development needed for the deployment in time		no

Company Logo

Date & Location



QUESTIONNAIRE: European FRMCS Deployment

Q2 - 2025

VERSION 04/06/2025

Europe's Rail

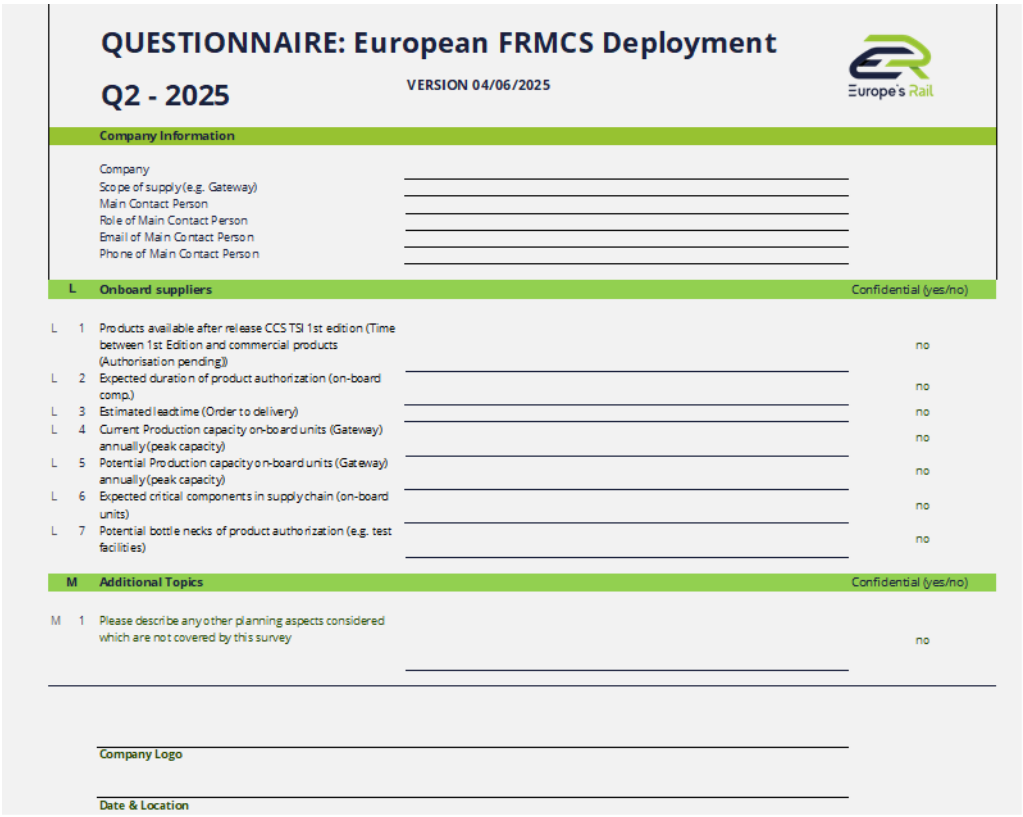
Company Information

Company	
Main Contact Person	
Role of Main Contact Person	
Email of Main Contact Person	
Phone of Main Contact Person	

				Confidential (yes/no)
H		**Vehicles to be installed with FRMCS equipment**		
H	1	Passenger trains (# with voice only/ # with ETCS /# with voice + ETCS)		no
H	2	Freight locomotives (# with voice only/ # with ETCS /# with voice + ETCS)		no
H	3	Shunting locomotives (# with voice only/ # with ETCS /# with voice + ETCS)		no
H	4	Yellow fleet (Testing, construction, ...) (# with voice only/ # with ETCS /# with voice + ETCS)		no
H	5	New vehicles (# with voice only/ # with ETCS /# with voice + ETCS)		no
H	6	Is it required to industrially couple ETCS modification and FRMCS modification		no
H	7	One or possibility of two steps for the modification with prerequipement and then finalisation		no
H	8	Are there types of vehicles to be prioritised and if so, please describe why		no
H	9	Are there countries or areas of use to be prioritised (RU requesting the country to expedite deployment), if so please describe		no
H	10	Are there corridors to be prioritised (RU requesting the country to expedite deployment), if so please describe		no
H	11	Are there passenger relationships to be prioritised (RU requesting the country to expedite deployment) ? if so please describe		no
H	12	Is there a correlation between the age of rolling stock and willingness to undertake modifications ?		no
H	13	Are you willing to conducting homologation studies internally, or would you prefer these to be carried out by manufacturers?		no
H	14	Would you consider implementing ETCS concurrently across specific fleets to streamline modernization efforts?		no
H	15	Do you plan to coordinate rolling stock modifications with scheduled maintenance activities? If so, what are the typical intervals of these maintenance cycles?		no
H	16	In the event GSM-R installation is required on rolling stock, would you prefer to proceed with the installation or postpone it in anticipation of FRMCS product availability?		no
H	17	When do you plan to start RFQ for FRMCS equipment ?		no
H	18	Are you considering the implementation of remote maintenance functionalities for FRMCS equipment? If so, what are the intended use cases or objectives?		no
H	19	Vendors in use		no
H	20	Handheld devices [#]		no
I		**workshops**		Confidential (yes/no)
I	1	Estimation of available retrofitting capacity within your company for trains, locomotives per year?		no
I	2	Willingness to support other operators by your team or other workshops certified (Please describe)		no
J		**Legal and financial**		Confidential (yes/no)
J	1	Estimation of First of Class vehicles (Number of types) (#)		no
J	2	Experience in Vehicle / trackside (Re-)Authorisation e.g. duration, main issues		no
J	3	Financing or Funding scheme available?		no
J	4	National Financing possible?		no
J	5	Is the 2035 deadline financially viable for carrying out the modifications for FRMCS and if not what is the deadline for you, please describe		no
		During early 2000s GSM-R was rolled out all over Europe. Please think of that project and answer the following questions:		
J	6	What was the average equipment cost per Vehicle ? (estimate if not documented anymore)		no
J	7	Where there any cost of conformity assessment/certification (today: nobo, debo, laboratories)? If yes of which amount?		no
J	8	Was there the necessity of authorization by a National safety Authority? What where the cost of that? How long did it take to get an authorization? How many different		no
J	9	How long did the installation take (per vehicle)? (2 answers expected: prototype timeframe, series timeframe, both from trackside and on-board)		no
		In recent years many vehicles in Europe had to be retrofitted with "hardened" GSM-R modules to make sure public telco operations near the tracks won´t interfere with GSM-R. Please remind those projects and answer the following questions:		
		Scenario A		
		The existing radio could just be upgraded by a new radio module without further significant changes --> Scenario was applicable YES/NO; if "YES":		
J	10	Was that scenario applicable for your fleet? (Yes or No - please answer questions 11 - 16 only if "Yes".)		no
J	11	For how many vehicles?		no
J	12	What cost of equipment can you remember (per vehicle)?		no
J	13	Where there any cost of conformity assessment/certification (today: nobo, debo, laboratories)? If yes of which amount?		no
J	14	Was there the necessity of authorization by a National safety Authority? What where the cost of that? How long did it take to get an authorization?		no
J	15	How long did the installation take (per vehicle)?		no
J	16	What amount of time was necessary for conformity assessment/certification?		no
		Scenario B		
		The existing radio needed to be completely exchanged since there was no upgrade of existing radio possible -> Scenario was applicable YES/NO; if "YES":		
J	17	Was that scenario applicable for your fleet? (Yes or No - please answer questions 18 - 23 only if "Yes".)		no
J	18	For how many vehicles?		no
J	19	What cost of equipment can you remember (per vehicle)?		no
J	20	Where there any cost of conformity assessment/certification (today: nobo, debo, laboratories)? If yes of which amount?		no
J	21	Was there the necessity of authorization by a National safety Authority? What where the cost of that? How long did it take to get an authorization?		no
J	22	How long did the installation take (per vehicle)?		no
J	23	What amount of time was necessary for conformity assessment/certification?		no
K		**Additional Topics**		Confidential (yes/no)
K	1	In which way are you aware of and informed on current infrastructure managers (IM) plans?		no
K	2	What is your procurement and sourcing strategy?		no
K	3	Please describe any other planning aspects considered which are not covered by this survey		no
K	4	Please describe your plan for competence development needed for the deployment in time		no

Company Logo

Date & Location



QUESTIONNAIRE: European FRMCS Deployment

Q2 - 2025

VERSION 04/06/2025

Europe's Rail

Company Information

Company	
Scope of supply (e.g. Gateway)	
Main Contact Person	
Role of Main Contact Person	
Email of Main Contact Person	
Phone of Main Contact Person	

				Confidential (yes/no)
L		**Onboard suppliers**		
L	1	Products available after release CCS TSI 1st edition (Time between 1st Edition and commercial products (Authorisation pending))		no
L	2	Expected duration of product authorization (on-board comp.)		no
L	3	Estimated leadtime (Order to delivery)		no
L	4	Current Production capacity on-board units (Gateway) annually (peak capacity)		no
L	5	Potential Production capacity on-board units (Gateway) annually (peak capacity)		no
L	6	Expected critical components in supply chain (on-board units)		no
L	7	Potential bottle necks of product authorization (e.g. test facilities)		no
M		**Additional Topics**		Confidential (yes/no)
M	1	Please describe any other planning aspects considered which are not covered by this survey		no

Company Logo

Date & Location

QUESTIONNAIRE: European FRMCS Deployment

Q2 - 2025

VERSION 04/06/2025

Europe's Rail

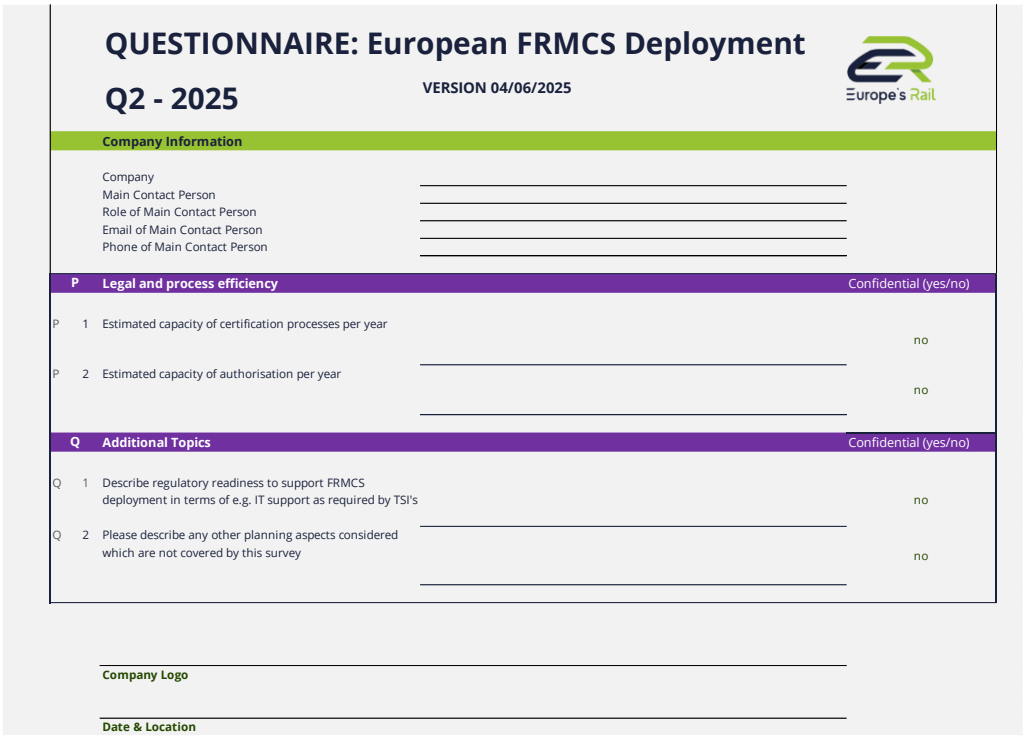
Company Information

Company	
Scope of supply	
Main Contact Person	
Role of Main Contact Person	
Email of Main Contact Person	
Phone of Main Contact Person	

				Confidential (yes/no)
N		**Trackside suppliers**		
N	1	Products available after release TSI CCS with FRMCS 1st edition (Time)		no
N	2	Expected duration of product certification		no
N	3	Estimated leadtime (Order to delivery)		no
N	4	Production capacity trackside equipment (Gateway) annually (peak capacity)		no
N	5	Production capacity trackside equipment (MCX Server) annually		no
N	6	Current Production capacity trackside equipment (Basestations) annually		no
N	7	Potential Production capacity trackside equipment (Basestations) annually		no
N	7	Expected critical components in supply chain (trackside) equipment)		no
N	8	Potential bottle necks of product implementation (e.g. test facilities)		no
O		**Additional Topics**		Confidential (yes/no)
O	1	Please describe any other planning aspects considered which are not covered by this survey		no

Company Logo

Date & Location



QUESTIONNAIRE: European FRMCS Deployment

Q2 - 2025

VERSION 04/06/2025

Europe's Rail

Company Information

Company	
Main Contact Person	
Role of Main Contact Person	
Email of Main Contact Person	
Phone of Main Contact Person	

		P	Legal and process efficiency	Confidential (yes/no)
P	1	Estimated capacity of certification processes per year		no
P	2	Estimated capacity of authorisation per year		no

		Q	Additional Topics	Confidential (yes/no)
Q	1	Describe regulatory readiness to support FRMCS deployment in terms of e.g. IT support as required by TSI's		no
Q	2	Please describe any other planning aspects considered which are not covered by this survey		no

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Date & Location