Final draft ETSI TS 103 765-1 V1.1.0 (2025-11)

TECHNICAL SPECIFICATION

Rail Telecommunications (RT); Future Railway Mobile Communication System (FRMCS); Building Blocks and Functions; Part 1: Transport Stratum

Reference
DTS/RT-0083

Keywords
architecture, FRMCS, railways

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Contents

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI IPR online database.

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Foreword

This final draft Technical Specification (TS) has been produced by ETSI Technical Committee Railway Telecommunications (RT), and is now submitted for the Vote phase of the ETSI Standardisation Request deliverable Approval Procedure (SRdAP).

The present document is part 1 of a multi-part deliverable covering Building Blocks and Functions for the Future Railway Mobile Communication System (FRMCS), as identified below:

Part 1: "Transport Stratum";

Part 2: "Service Stratum";

Part 3: "Train On-Board functions and interfaces";

Part 4: "Trackside functions and interfaces";

Part 5: "User Equipment (UE) capabilities".

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

1 Scope

The present document specifies the FRMCS Transport Stratum for the Future Railway Mobile Communications System (FRMCS). In general, the FRMCS Transport Stratum provides data connectivity and the related services.

The present document covers:

- 3GPP terrestrial access.
- Transport stratum interconnection scenarios in all aspects.
- 3GPP access sharing, mobility within transport stratum.
- QoS and policy control.
- Authentication and authorization for the use of the transport stratum.
- Transport stratum common features.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found in the ETSI docbox.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents are necessary for the application of the present document.

[1] ETSI TS 123 501 (V18.9.0): "5G; System architecture for the 5G System (5GS) (3GPP TS 23.501 version 18.9.0 Release 18)".

[2] ETSI TS 127 001 (V18.0.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS) (3GPP TS 27.001 version 18.0.0 Release 18)".

[3] ETSI TS 127 007 (V18.8.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; 5G; AT command set for User Equipment (UE) (3GPP TS 27.007 version 18.8.0 Release 18)".

[4] ETSI TS 138 201 (V18.0.0): "5G; NR; Physical layer; General description (3GPP TS 38.201 version 18.0.0 Release 18)".

[5] ETSI TS 138 300 (V18.5.0): "5G; NR; NR and NG-RAN Overall description; Stage-2 (3GPP TS 38.300 version 18.5.0 Release 18)".

[6] ETSI TS 103 765-2: "Rail Telecommunications (RT); Future Railway Mobile Communication System (FRMCS); Building Blocks and Functions; Part 2: Service Stratum".

[7] ETSI TS 103 765-3: "Rail Telecommunications (RT); Future Railway Mobile Communication System (FRMCS); Building Blocks and Functions; Part 3: Train On-Board functions and interfaces".

[8] FRMCS FFFIS-7950: "FRMCS FFFIS - Form Fit Functional Interface Specification", V2.1.0.