

ETSI TS 103 389 V1.1.1 (2011-09)



Railway Telecommunications (RT); Global System for Mobile communications (GSM); Usage of Session Initiation Protocol (SIP) on the Network Switching Subsystem (NSS) to Fixed Terminal Subsystem (FTS) interface for GSM Operation on Railways

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Railway Telecommunications (RT).

Introduction

While a number of interoperability specifications for various interfaces at various layers of GSM-R systems exist, the interface between the Network Switching Subsystem (NSS) and the Fixed Terminal Subsystem (FTS) has not yet been addressed by any interoperability specification activity.

In most of the GSM-R system deployments available at the time of the creation of the present document, the Network Switching Subsystem and the Fixed Terminal Subsystem are interconnected using TDM based interfaces such as DSS1 [i.2].

TS 102 610 [9] specifies the usage and format of UUIE for call-related end-to-end functionality in GSM-R systems but no other interworking topics.

The present document addresses the interoperability specification gap between the Network Switching Subsystem and the Fixed Terminal Subsystem with an interface based on the Internet Protocol (IP) [2], the Session Initiation Protocol (SIP) [3], the Session Description Protocol (SDP) [6] and the Real-Time Transport Protocol (RTP) [7].

In addition to the table of contents, the following explanation will help you navigate through and understand the contents of the present document:

- Clauses 1 to 3 are predefined by ETSI.
- Clause 4 shows and explains the reference system architecture and identifies the interface(s) for the present document.
- Clause 5 holds the functional requirements for the interface subject to the present document.
- Clause 6 specifies in detail the signalling interface for all supported functions and services.
- Clause 7 specifies in detail the media interface.
- Annex A explains the mechanism to locate SIP entities at the present interface.
- Annex B contains recommendations on the use and implementation of standardized Quality of Service mechanisms at the present interface.
- Annex C contains recommendations about the security mechanisms.
- Annex D contains a mapping table of EIRENE [1] to interface features.

1 Scope

The present document defines the signalling and media interface between the Network Switching Subsystem and the Fixed Terminal Subsystem in order to provide a clear set of services needed for GSM-R operations. This includes voice call service and available call-related supplementary services. The present document addresses the Internet Layer and upwards of the Internet Protocol Suite [i.18] on the signalling and media interface.

Any service other than voice call service and call-related supplementary services (such as data services, Short Message Service, etc.) is out of scope of the present document; additional features may be addressed in future releases.

The present document does not specify any other interface between the Network Switching Subsystem and the Fixed Terminal Subsystem nor does it cover any internal interfaces of either NSS or FTS. Voice recording and related interfaces are out of scope of the present document. Such interfaces may be addressed in a future release of the present document.

The present document does not address any specific 3GPP Release or Architecture.

2 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 reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

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

2.1 Normative references

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

- [1] UIC P001D010 (Version 15.1): "UIC Project EIRENE System Requirements Specification".

NOTE: Available at <http://www.uic.org/IMG/pdf/p0011d010-15.1.pdf>.

- [2] IETF RFC 791 (1981): "Internet Protocol".
- [3] IETF RFC 3261 (2002): "SIP: Session Initiation Protocol".
- [4] IETF RFC 3264 (2002): "An Offer/Answer Model Session Description Protocol (SDP)".
- [5] IETF RFC 4733 (2006): "RTP Payload for DTMF Digits, Telephony Tones, and Telephony Signals".
- [6] IETF RFC 4566 (2006): "SDP: Session Description Protocol".
- [7] IETF RFC 3550 (2003): "RTP: A Transport Protocol for Real-Time Applications".
- [8] IETF RFC 3326 (2002): "The Reason Header Field for the Session Initiation Protocol (SIP)".
- [9] ETSI TS 102 610 (V1.1.0): "Railways Telecommunications (RT); Global System for Mobile communications (GSM); Usage of the User to User Information Element for GSM Operation on Railways".
- [10] IETF RFC 5234 (2008): "Augmented BNF for Syntax Specifications: ABNF".
- [11] IETF RFC 3262 (2002): "Reliability of Provisional Responses in the Session Initiation Protocol (SIP)".