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**Railway Telecommunications (RT);
ASCI Options for Interoperability
for GSM operation on Railways**

Reference

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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 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

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

1 Scope

Recent work in the ETSI Technical Committee Rail Telecommunications (TCRT) has uncovered implementation options in the ETSI standards for VGCS calls which must be clarified by the Railways in order to ensure interoperability between GSM-R networks across Europe.

The present document replaces the former A 01T 0004 1 [i.1] document and details the implementation options of ETSI specifications that are mandatory for rail.

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.

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2.1 Normative references

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

- [1] ETSI EN 301 515 (V2.3.0): "Global System for Mobile communication (GSM); Requirements for GSM operation on railways".
- [2] ETSI TS 102 281 (V2.1.0): "Railways Telecommunications (RT); Global System for Mobile communications (GSM); Detailed requirements for GSM operation on Railways".
- [3] UIC Project EIRENE: "European Integrated Railway Radio Enhanced Network, System Requirements Specification" P0011D010 Version: 15.1 dated 1st June 2010.

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

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] A 01T 0004 1: "MORANE/UIC - ASCII options for interoperability".

NOTE: Available at: http://www.uic.org/IMG/pdf/MORANE_ASCII_Options_for_Interoperability.pdf.

- [i.2] O-9076-2.0: "Approved Changes to A 01T 0004 1 ASCII options for interoperability".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ASCI	Advanced Speech Call Items
BSS	Base Station Subsystem
CCCH	Common Control Channel
DRX	Discontinuous Reception
FACCH	Fast Access Control Channel
GSM-R	Global System Mobile-Railways
MS	Mobile Station
NCH	Notification Channel
NLN	Notification List Number
OTDI	Originator-To-Dispatcher-Information
PCH	Paging CHannel
RACH	Random Access CHannel
SACCH	Slow Associated Control CHannel
UIC	Union Internationale des Chemins de Fer
VGCS	Voice Group Call Service

4 ASCII Options for Interoperability

This table summarizes the ASCII options required for GSM-R implementations as referred in the corresponding specifications listed in [1], [2] and [3] and necessary to fulfil the amendments in [i.2] to the specifications referred in [i.1].

Table 1

	Required for interoperability		
	NSS	BSS	MS
Notification process			
Notification on PCH	N/A	No	No
Notification with channel description	N/A	Yes	Yes
Notification without channel description	N/A	No	No
DRX mode on CCCH	N/A	Yes	Yes
DRX mode on SACCH	N/A	Yes	Yes
Inband signaling			
Inband notifications for group calls	N/A	Yes	Yes
Call setup			
VGCS call ciphering	No	No	No
normal call setup	Yes	Yes	Yes
fast call setup	Yes	Yes	Yes
Immediate Setup 2 message incl. OTDI	Yes	Yes*	Yes*
Uplink control (only VGCS)			
originator channel release procedure	N/A	Yes	Yes
uplink on the common channel	Yes	Yes	Yes
transition by handover procedure	N/A	No	No
transition by assignment procedure	N/A	No	No
transition by channel mode modify	N/A	No	No
use of the UIC for RACH coding	N/A	No	No
uplink reply procedure	N/A	No	No
Misc.			
NLN: The BSS shall always transmit the NLN.	N/A	Yes	N/A
NCH repetition: An on-going group call in the cell shall be periodically notified on the NCH. The recommendation is that the period shall be less than 1 s	N/A	Yes	N/A
Periodical notification: Sending periodical notification on FACCH to mobile station in dedicated mode (as well as in group receive mode and group transmit mode) shall be done for calls of priority 0. The repetition interval shall be no more than 5 s, and be repeated for the duration of the call	N/A	Yes	N/A
Paging into ongoing group calls: Paging of individual MS engaged in a group call is mandatory on both the common and dedicated channel	Yes	Yes	Yes
Mobile dual receiver (NCH/PCH monitoring & cell change)	N/A	N/A	No
System Information 10	N/A	Yes	Yes
Yes:	Mandatory required.		
No:	Not required for interoperability.		
*:	The Immediate Setup 2 message is only used by the mobile if the network sets the MSC Release bit in the "Control Channel Description" information element to "1".		
N/A:	Means that the element is not concerned by the requirement (e.g. as a receiver, not sender).		

History

Document history		
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