

ETSI TS 103 169 V1.1.1 (2011-09)



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

---

Reference

DTS/RT-00015

---

Keywords

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

---

**Important notice**

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

[http://portal.etsi.org/chaicor/ETSI\\_support.asp](http://portal.etsi.org/chaicor/ETSI_support.asp)

---

**Copyright Notification**

No part may be reproduced except as authorized by written permission.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2011.  
All rights reserved.

DECT™, PLUGTESTS™, UMTS™ and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.  
3GPP™ and LTE™ are Trade Marks of ETSI registered for the benefit of its Members and  
of the 3GPP Organizational Partners.  
GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

---

# Contents

Intellectual Property Rights .....	4
Foreword.....	4
1 Scope .....	5
2 References .....	5
2.1 Normative references .....	5
2.2 Informative references.....	5
3 Abbreviations .....	6
4 ASCI Options for Interoperability.....	7
History .....	8

---

## Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is 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 Web server (<http://ipr.etsi.org>).

Pursuant to the ETSI IPR Policy, no investigation, 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.

---

## 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.

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] 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](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
<b>Notification process</b>			
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
<b>Inband signaling</b>			
Inband notifications for group calls	N/A	Yes	Yes
<b>Call setup</b>			
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*
<b>Uplink control (only VGCS)</b>			
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
<b>Misc.</b>			
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

<b>Document history</b>		
V1.1.1	September 2011	Publication