REFERENCE F 12 T 6002 4	
Company / organisation	UIC ERTMS/GSM-R Operators Group GSM-R Industry Group

FIS FOR

CONFIRMATION OF HIGH PRIORITY CALLS

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EVOLUTION SHEET

Version	Date	Author	MODIFICATION
A	27/08/1996	AMC	Creation
B	09/09/1996	AMC	Update after review
1	09/09/1996	AMC	First approved version
1 A	16/04/1997	KAPSCH	SMS removed, various changes, Stage 3 incorporated
1 B	17/06/1997	KAPSCH	Editorial changes after review
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3.01	23/03/2006	Siemens TS	Incorporation of CR 0-9067-2.0 and other agreed changes under contract I/01/U189-GSM-R
3.02	31/03/2006	Siemens TS	Update after internal review
3.1	04/04/2006	Siemens TS	Submission to UIC
3.11	09/10/2006	Siemens TS	Update after UIC (OG) comments
3.2	13/10/2006	Siemens TS	Submission to UIC
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1. SCOPE

This Functional Interface Specification (FIS) specifies the GSM-R interface and message requirements necessary for the realisation of the GSM-R feature *Confirmation of high priority calls*. Additionally all parameters to be set in the mobile application, their formats and range of values are specified herein.

2. NORMATIVE REFERENCES

[1] MORANE FFFS, Confirmation of high priority calls, F 10 T 6002 4

[2] MORANE "Usage of the UUIE in the GSM-R environment", Ref.: H 22 T 0001 2

[3] ETSI EN 301 515 Requirements for GSM operation on Railways, version 2.3.0

[4] ETSI TR 102 281 Detailed requirements for GSM operation on Railways, version 2.0.0

[5] MORANE, FFFIS for GSM-R SIM Cards. P 38 T 9001 4

3. ABBREVIATIONS

AC	Acknowledgement Centre
CHPC	Confirmation of High Priority Calls
FFFS	Form-Fit and Function Specification
FIS	Functional Interface Specification
GSM	Global System for Mobile Communications
GSM-R	GSM Rail
ISDN	Integrated Service Digital Network
MSISDN	Mobile Station International ISDN Number
PABX	Private Automatic Branch eXchange
SIM	Subscriber Identity Module
UUIE	User-User Information Element
UUS1	User-to-user Signalling Service 1

4. INTERFACE DESCRIPTION (MESSAGE FUNCTIONAL DEFINITION AND CONTENTS)

This FIS describes the special requirements of the user data layout for the GSM-R functionality *Confirmation of high priority calls* on the U_m interface for the standard GSM service User to User supplementary Service #1. A special interface description will not be given here because only standard GSM call scenarios are used.

4.1. Supplementary service UUS1

The SETUP message may contain a user-user information element (optional) according to the standards identified by [3] & [4]. This user-user information element is used for the transfer of the confirmation message to the acknowledgement centre.

For the acknowledgement of the confirmation message either RELEASE COMPLETE or DISCONNECT message is used and also contains a user-user information element. For specific UUIE encodings for CHPC consult reference [2]. Note that the Acknowledgement Centre shall always use the RELEASE COMPLETE message for its acknowledgement of the confirmation message, but that switching elements and signalling flows external to the GSM-R network (such as the PABX to which the AC may be connected) might result in the acknowledgement being returned to the sending mobile in a DISCONNECT message.

5. Parameters in mobile application

5.1. Timers

name	usage	started by:	stopped by:	bits/ count	limits
T_DUR	measures the duration of a call	signal from TASK MS-1 : 'Conf. Request'	signal from TASK MS-1: 'End of call'	24/up	min: 1/10 sec max.: approx.19 days
T_REL	time between end of call and transmission of confirmation	internal	internal	32/up	min: 1/10 sec max.: approx. 13 years
T_RAN	random timer	internal, pre-set with random value[1]	internal, timer value is zero	16/ down	max. from SIM field MAX_RAND*
T_ACK	time-out : waiting for acknowledgement from AC	internal, pre-set	internal, timer value is zero	16/ down	10 sec

Although the resolution of the timers is 1/10 sec their accuracy is in the region of approximately 1 second only.

5.2. Parameter values

All of the following parameter values shall be obtained from the GSM-R SIM. They are located in Elemental File $EF_{CallconfC,}$ as described in [5].

N_ACK_MAX (16 Bit) max. number of attempts to send confirmation

- 0 no confirmation
- 1 no repetition of confirmation
- 5 recommended value

MAX_RAND (8 Bit) T_RAN chosen between 0 and this value (in seconds)

- 30 maximum and recommended value

N_NESTED_MAX (8 Bit) stack depth for queuing of confirmation

- 10 maximum and recommended value

[1] with statistical equal probability distribution

PL_ACK (8 Bit) threshold level for triggering confirmation service routine if the call notification does not have the acknowledgement flag set (Priority level of call must be greater than PL_ACK for confirmation to be triggered)

5	Priority level 0
4	Priority level 1
3	Priority level 2
2	Priority level 3
1	Priority level 4
0	no triggering - no confirmation

PL_CONF (8 Bit) Priority level of confirmation call.

5	Priority level 0
4	Priority level 1
3	Priority level 2
2	Priority level 3
1	Priority level 4
0	no triggering - no confirmation

CONF_NR (16 Bit - 4 BCD digits)
storage for the AC - number (short code)

Non volatile buffer with N_NESTED_MAX - times the following:
T_DUR_s 24 Bits
T_REL_s 32 Bits
PL_CALL 8 Bits
CAUSE 8 Bits
GC_REF 4x8 Bits (max.8 digits - BCD)
FNR 8x8 Bits (ITU-E.164: max.15 digits - BCD)

6. PARAMETERS SENT TO TRAIN BORNE EVENT RECORDER

The **format of entries** #1-2 are equal to that defined for the contents of the confirmation message respectively.

Entry #1:

PL_CALL	(8 Bit) Priority of incoming call
GC_REF	(32 Bit) max. 8 BCD digits Group Call Reference of incoming call
FNR	(64 Bit) max. 15 BCD digits Functional number selected on mobile

Entry#2:

T_DUR	(24 Bit) duration of the call (binary coded, tenth of seconds)
CAUSE	(8 Bit) Cause value for ending the call

Entry #3:

ACK/CAUSE (8 Bit) contains the value of the final acknowledge

0x00	ACK	finally no error
0x01 ... 0x7f		NACK1 - repairable error
0x80 ... 0xff		NACK2 - fatal error

N_ACK (16 Bit) number of attempts needed

7. PARAMETERS STORED IN ACKNOWLEDGEMENT CENTRE

Absolute time (format not specified here)

octet 5 to octet 35 of UUI with the same format

T_DUR
T_REL
PL_CALL
CAUSE
GR_REF
FNR

MSISDN (from CLIP)

15 (BCD) (refer to ITU-E.164)