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GK/GN0694
Guidance on Train Voice Radio Systems
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Rail Industry Guidance Note for GK/RT0094



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Guidance on Train Voice Radio Systems

Issue record

Issue	Date	Comments
One	March 2013	This document provides rationale and guidance to support the train voice radio requirements in GK/RT0094 for the Great Britain (GB) rail network.

Superseded documents

The following Rail Industry Guidance Notes are superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GE/GN8580 issue one Guidance on Train Radio Systems for Voice and Related Messaging Communications	All	01 June 2013
GE/GN8582 issue one Guidance on GSM-R Cab Mobile, Great Britain Open Interface Requirements (Rapid Response)	All	01 June 2013

GE/GN8580 issue one Guidance on Train Radio Systems for Voice and Related Messaging Communications ceases to be in force and is withdrawn as of 01 June 2013.

GE/GN8582 issue one Guidance on GSM-R Cab Mobile, Great Britain Open Interface Requirements (Rapid Response) ceases to be in force and is withdrawn as of 01 June 2013.

Supply

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Part 1 Introduction

1.1 Purpose of this document

- 1.1.1 This document gives guidance on interpreting the requirements of Railway Group Standard GK/RT0094 issue one Train Voice Radio Systems. It does not constitute a recommended method of meeting any set of mandatory requirements.
- 1.1.2 All requirements in GK/RT0094 are reproduced in the sections that follow. Guidance is provided as a series of sequentially numbered clauses prefixed 'GN' immediately below the boxed text to which it relates. Where there is no guidance given, this is stated.
- 1.1.3 Specific responsibilities and compliance requirements are laid down in the Railway Group Standard itself.

1.2 Background

- 1.2.1 This document and its associated documents: GK/RT0094 issue one Train Voice Radio Systems; RIS-0794-CCS issue one Rail Industry Standard for the GSM-R Train Voice Radio System; BR 1661 Train to SignalBox Radio System (Mobile Equipment) and BR 1845 Train to SignalBox Radio System (Fixed Equipment); and BR 1609 VHF Band III for the National Radio Network, set out the requirements to facilitate the use of train voice radio systems in Great Britain (GB).
- 1.2.2 GK/RT0094 and RIS-0794-CCS support the Technical Specification for Interoperability (TSI) relating to the control-command and signalling (CCS) subsystem.
- 1.2.3 The technical requirements that are contained under the control of the Technical Specification for Interoperability (TSI) relating to the Control, Command and Signalling (CCS) subsystem of the trans-European conventional and high-speed rail system do not form part of this document.
- 1.2.4 The CCS TSIs mandate through various related documents (for example, the European Integrated Radio. Enhanced Network (EIRENE) Functional Requirements Specification / System Requirements Specification (FRS/SRS) and European Telecommunications Standards Institute (ETSI) Standards etc and technical requirements for a European compliant digital train voice radio system (namely GSM-R).
- 1.2.5 Guidance is given on the technical requirements for legacy radio (Cab Secure Radio (CSR) and National Radio Network (NRN)) that remain different from the Global System for Mobile Communications – Railway GSM-R requirements which are mandated to facilitate the continued use of the legacy train voice radio systems within GB and these requirements are contained in Parts 8 and 9 of this document. Copies of the Technical Specification for CSR (BR 1661 and BR 1845) and NRN (BR 1609) are available from www.rgsonline.co.uk.

1.3 Structure of this document

- 1.3.1 The content of this document is set out in Parts 2 to 9 inclusive, as follows:

Part 2 sets out the general requirements applicable to all train voice radio systems.

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Part 3 sets out the technical requirements for GSM-R train voice radio applicable to the railway undertakings (RUs).

Part 4 sets out the operational requirements for GSM-R train voice radio applicable to the RUs.

Part 5 sets out the technical requirements for the GSM-R network applicable to the infrastructure manager (IM).

Part 6 sets out the operational requirements for the GSM-R network applicable to the IM.

Part 7 sets out the performance requirements for the GSM-R train voice radio system applicable to the IM and the RUs.

Additional requirements for legacy train voice radio systems covering both the National Radio Network (NRN) system and the Cab Secure Radio (CSR) system are set out in Parts 8 and 9.

- 1.3.2 The application requirements of GK/RT0094 Train Voice Radio Systems, are set out in Part 9.
- 1.3.3 Requirements relating to the connectivity matrix, which is to be applied for all users of the GSM-R train voice radio system are set out in Appendix B.

1.4 General information for the GSM-R system (Parts 3 to 7)

- 1.4.1 The CCS TSI and its sub-set EIRENE specifications are the normative references for the GSM-R system. The EIRENE specifications consist of a high-level functional document known as the Functional Requirements Specification (FRS) and a general technical specification known as the System Requirements Specification (SRS). Requirements within both specifications are designated as either mandatory or optional. It is not the purpose of this document to reproduce those requirements designated as mandatory.
- 1.4.2 Within the CCS TSI EIRENE specifications, reference is made to detailed specification documents, which are designated as 'normative' (mandatory) or 'informative'. The requirements in the 'normative' documents are considered as being integral with the CCS TSI and EIRENE specifications.
- 1.4.3 Guidance is given on the requirements for GB operation over and above those mandated by the CCS TSI.
- 1.4.4 Where appropriate, the rationale for the guidance is cross-referenced to the operational requirement contained within the UK application of GSM-R: The Operational Concept (version 1).

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1.6 Approval and authorisation of this document

- 1.6.1 The content of this document was approved by Control Command and Signalling (CCS) Standards Committee on 24 January 2013, and was supported by Traffic Operation and Management (TOM) Standards Committee on 16 January 2013.
- 1.6.2 This document was authorised by RSSB on 01 February 2013.

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Part 2 Guidance on General Requirements for Train Voice Radio Systems

2.1 Introduction

2.1.1 This part sets out the general requirements that the train voice radio system and infrastructure network have to supply.

2.2 Installation

2.2.1 Train voice radio installation

2.2.1.1 A train voice radio shall be operable from each cab that is required to be used as a driving cab of a train in service.

GN1 Rationale: A train voice radio is required for operational purposes and may be needed at any stage of a journey.

GN2 The installation can either be permanent or utilise transportable or portable equipment.

GN3 This clause applies to CSR, NRN and GSM-R train voice radios.

GN4 An operator's Defective On Train Equipment (DOTE) contingency plan should determine the actions needed to deal with a faulty train voice radio.

2.2.1.2 The train voice radio shall be compatible with the train voice radio system selected for trains using the route.

GN5 Rationale: The train voice radio interacts with the train voice radio fixed infrastructure to provide effective communications, principally between the signaller and the driver.

GN6 This clause applies to CSR, NRN and GSM-R train voice radios.

2.2.2 Infrastructure installation

2.2.2.1 The train voice radio fixed infrastructure shall be compatible with the train voice radio system selected for trains using the route.

GN7 Rationale: This ensures that, for all routes travelled by a train, mobile communications between the driver and a signaller is always possible.

GN8 This clause applies to CSR, NRN and GSM-R networks

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Part 3 **Guidance on Technical Requirements for the GSM-R Train Voice Radio**

3.1 Introduction

- 3.1.1 This part sets out the technical requirements for the GSM-R train voice radio.

3.2 Train voice radio software management

- 3.2.1 GSM-R train voice radio software updates shall not disrupt train operation while the train is in service.

GN9 Rationale: There is the ability to update train voice radio software or configurable data over a 'wireless link', where provided. The train voice radio is required for operational reasons at every part of the journey.

GN10 During software updates, erroneous or incomplete data can be uploaded, leading to the disabling of the train voice radio and loss of communications with the train.

GN11 The update process should be transparent to the driver

GN12 This requirement is intended to allow Over The Air changes, but an alternative is to implement changes to the train software when the train is not in service. However the change is carried out, all of the following should be considered:

- a) GSM-R trainborne radio software updates should be carried out in a controlled and progressive manner.
- b) GSM-R trainborne radio software should be thoroughly tested prior to full fleet implementation.
- c) GSM-R trainborne radio software should be capable of being fully regressed.

3.3 Driver only operation of passenger trains

- 3.3.1 Train voice radios on trains that are to be operated as Driver Only Operation (Passenger) DOO(P) trains shall interface to the:

- a) Driver Safety Device (DSD).
- b) Public Address (PA).

- 3.3.2 The DSD alarm message shall provide location information.

- 3.3.3 The DSD alarm message shall be sent with priority Multi-Level Precedence and Pre-emption (eMLPP) 2.

GN13 Rationale: Location information enables the signaller to deal with an incident expediently.

GN14 Rationale: The Operational Concept: Section 7.7 Drivers Safety Device (DSD) Activation and Appendix 1 – Part 11 DSD Activation – Scenario SCN/AOC/021, Section 7.8 Signaller Communication Over Public Address and Appendix 1 – Part 12 Signaller Communicates over PA – Scenario SCN/AOC/022.

3.4 Protection of phonebook entries

- 3.4.1 The GSM-R train voice radio shall not allow entries in phonebooks to be modified by GSM-R train voice radio users where the train voice radio has a called party look-up capability.

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- GN15 Rationale: To prevent accidental changes to configured data.
- GN16 Accidental deletion or alteration of stored data can be prevented by making the information read only and by limiting data entry to parameters that are only necessary or specific for each journey; for example the entry of a train voice radio journey registration code.

3.5 SIM card and network access arrangements

- 3.5.1 Only SIM cards configured in the train voice radio category shall be used in a GSM-R train voice radio.

- GN17 Rationale: It could be physically possible to place a SIM card that is configured for a handportable radio into a train voice radio. This situation should be avoided as the driver would not be provided with the correct operational functionality.
- GN18 SIM cards configured in the train voice radio category should not be used in other radios.

3.6 Journey registration using alphanumeric input

- 3.6.1 If the GSM-R train voice radio is capable of accepting input of alphanumeric format GB train head codes and the GSM-R train voice radio is camped on the network, with network reference 234 13, it shall:
- Translate an entered head code and location code into an eight digit numeric journey registration number using an algorithm, as set out in Appendix A.1, with the entered head code, to calculate the first five digits of the registration number.
 - Append the entered three digit location code to the calculated five digits, to form the journey registration number.
 - Present a progress indication on the Human Machine Interface (HMI), which shall remain displayed until an Unstructured Supplementary Service Data (USSD) registration response code is received from the network to show journey registration has completed, or until a USSD registration response code is received from the network to show failure of journey registration, after the third attempt.
 - Provide specific instruction to the GSM-R train voice radio user in the progress indication to wait for the successful completion of the journey registration process.
 - Use the lowest numerical value of the three five digit numbers returned by the algorithm for the first journey registration attempt.
 - Use the second lowest of the three five digit numbers for a second journey registration attempt, only if the USSD request utilising the lowest numerical value train number returns a response code indicating that the number is a duplicate.

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- g) Use the highest numerical value of the three possible five digit numbers for a third journey registration attempt, only if the USSD request utilising the second lowest numerical value train number returns a response code indicating that the number is a duplicate.
- h) On successful completion of journey registration of the leading driver functional number, the cab mobile shall automatically register the PA if configured for GSM-R.
- i) Show on the HMI the entered head code, if successful, on completion of the USSD registration process.
- j) Indicate failure to the user with information identifying that the attempt failed due to the journey registration number being a duplicate, if the USSD request utilising the highest numerical value train number returns a response code indicating that the number is a duplicate.
- k) If the network does not respond or sends an error message, this journey registration failure shall be indicated to the user.
- l) Accept and acknowledge the User-to-User Signalling 1 (UUS1) 'supplementary registration data' message from the network (if it is sent).
- m) Not display the content of the UUS1 'supplementary registration data'.

- GN19 Rationale: The Operational Concept: Section 6.1.2 Cab Mobile Registration, including pre-registration (Scenario 2) and Appendix 1 Scenario 2 Cab Mobile Registration – Scenario SCN/NOC/002.
- GN20 This journey registration process avoids the possibility of duplicate journey registrations with existing alphanumeric registered train voice radios.
- GN21 When the train voice radio is camped on a non-GB network, it should format the journey registration entry screen to accept up to an eight digit numeric train running number.
- GN22 If the train voice radio is not capable of accepting input of alphanumeric format GB train head codes, the user should either use a numeric running number from five to seven digits or an eight digit number translated from the head code and location code.
- GN23 A mobile originated Unstructured Supplementary Service Data (USSD) transaction with the network should take place for the journey registration of the user and attached system functional numbers in accordance with EIRENE.
- GN24 The EIRENE requirement for journey registration allows the user to register the train voice radio with the GSM-R network using a functional number that represents both the head code and the signal code. Within GB the journey registration process allows the network to perform location correlation in those areas where enhanced Location Dependent Addressing (eLDA) is supported.
- GN25 Rationale: The PA should be registered as an attached system prior to commencement of a journey, if during that journey the driver becomes incapacitated and the signaller needs to communicate using the PA system.

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3.7 Pre-defined text messages

3.7.1 Background

3.7.1.1 The specific pre-defined text message function provides the facility for text-based communications between, typically, the signaller and the GSM-R train voice radio, offering advantages in speed of operation, reduced driver workload and reduced signaller workload.

GN26 All current pre-defined text messages are specified in this RGS. A proposal for standards change will be needed for any new text message.

GN27 The following points should be considered before submitting a proposal for standards change to adopt a new pre-defined text message:

- a) Each pre-defined message should be able to be accommodated, without user interaction, onto the screen display of each train radio.
- b) All pre-defined messages should be short and unambiguous.
- c) The total number of pre-defined messages should be kept to a minimum.
- d) The operational use of pre-defined messages should be consistent with the capabilities of the messaging technology employed.

3.7.2 GB specific UUS1 tags

3.7.2.1 The requirements of 3.7.3, 3.7.4 and 3.8 to 3.12 shall only apply if a GSM-R train voice radio is capable of processing the GB specific UUS1 tags.

GN28 Rationale: This provides the exception case for train voice radios not capable of processing GB specific pre-defined text messages.

- 3.7.2.2 Those GSM-R train voice radios, incapable of processing GB specific UUS1 tags, as set out in 3.8 to 3.12, shall:
- a) Continue to operate normally following receipt of a GB specific tag.
 - b) Not present the contents of the UUS1 tags to the user.
 - c) Not acknowledge the GB specific UUS1 tags.

GN29 Rationale: This avoids the risk of the specific GB messages being processed in error or causing a malfunction.

GN30 Within 3.6 to 3.8 of this document, there are requirements involving the handling and displaying of GB specific pre-defined text messages. These requirements do not apply to those messages that should be ignored.

GN31 GSM-R train voice radios not capable of supporting GB specific UUS1 tags should act in accordance with the requirements of TS102 610.

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3.7.3 Incoming GB specific pre-defined text messages

3.7.3.1 The GSM-R train voice radio shall support the incoming pre-defined text messages set out in Table 1.

Message	Purpose
Wait	Sent by signaller in response to driver originated 'Standing at signal' message
Contact signaller	Sent by signaller at any time to prompt driver to make a voice call
Contact fixed terminal	Sent by operator other than signaller, with a fixed terminal to a GSM-R train voice radio user to prompt user to make a voice call, when user is ready to make the call

Table 1 Incoming pre-defined text messages

- GN32 Rationale: The Operational Concept: Section 4.1.8 Pre-defined text messages – message: 'Wait and Contact Signaller'.
- GN33 The Contact Fixed Terminal message provides a means of drawing attention to the driver the need to contact the RU operator when the driver is in a position to do so without the need to distract the driver with a voice call.
- GN34 The provision of incoming pre-defined text messages support train operation as a reminder to the driver to undertake a task when convenient, thereby helping to reduce workload.
- GN35 These messages can be selected and sent by persons with authorised access to a fixed terminal.
- GN36 The Contact Fixed Terminal message gives a third party the ability to request the driver to contact them when convenient.

3.7.3.2 On receipt of a valid UUS1 message, the GSM-R train voice radio Human Machine Interface (HMI) shall automatically display the associated pre-defined text message and provide an audible indication.

- GN37 Rationale: Each UUS1 message has an associated audible indication to alert the driver's attention to a message having been received and that is now displayed.

3.7.4 Outgoing pre-defined text messages

3.7.4.1 The train voice radio shall support the outgoing pre-defined text message, as set out in Table 2.

Message	Purpose
Standing at signal	Sent by driver to inform signaller that train is waiting at a signal

Table 2 Outgoing pre-defined text messages

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GN38 Rationale: The Operational Concept: Section 4.1.8 Pre-defined text messages – message: 'Standing at Signal'.

3.7.4.2 If the outgoing message transaction is unsuccessful, the train voice radio shall provide a specific indication on its HMI to inform the user that the called terminal has not successfully received the message.

GN39 Rationale: The user should be made aware that the message is unsuccessful in order to make an informed decision of any additional actions.

3.8 GB specific UUS1 tags

3.8.1 Background

3.8.1.1 The tag value identifies the type of message. Values in the range 128 to 255 are reserved for national use.

3.8.2 Tag definitions

3.8.2.1 The GB specific UUS1 messages shall use the UUIE format specified by the EIRENE System Requirements Specification.

3.8.2.2 The tags set out in Table 3 shall be used for GB specific applications.

Tag	Name	Originator	Recipient	Purpose
National				
128	Pre-defined text message	GSM-R train voice radio	Network	Presentation of pre-defined text messages (see tag 133)
132	Network status logging	GSM-R train voice radio	Designated terminal	Coverage loss and recovery flag use
133	Pre-defined text message acknowledge	GSM-R train voice radio	Network	Acknowledgement of received pre-defined text messages (see tag 128)
134	Supplementary registration data	Network	GSM-R train voice radio	Presentation of alphanumeric head code during journey registration (see tag 135)
135	Supplementary registration data acknowledge	GSM-R train voice radio	Network	Acknowledgement of receipt of journey registration head code (see tag 134)

Table 3 Application of tags on the GB network

GN40 Rationale: These are the GB tag allocations detailing how the network is to interface with the train voice radio. Tags 128 to 255 are reserved for national use in the CCS TSI.

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3.8.3 Exceptional procedures or unsuccessful outcome for outgoing messages

3.8.3.1 The outgoing message shall not include unassigned or reserved tags.

GN41 Rationale: Tags are unassigned or reserved for future use, and these should not be sent as the receiving equipment may not be able to process them.

3.9 UUS1 message definitions: pre-defined text message

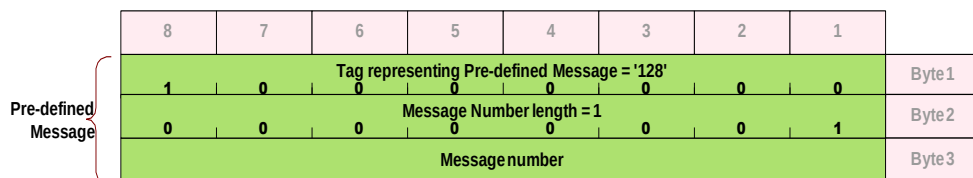
3.9.1 Application

3.9.1.1 Pre-defined text messages shall be received when sent by the network or shall be sent to the network when initiated by the train voice radio user.

3.9.2 UUS1 message format

3.9.2.1 This UUS1 message shall consist of tag 05 followed by tag 128.

3.9.2.2 Tag 128 shall be in the format set out below:



GN42 Rationale: The Operational Concept: Section 4.1.9 Pre-defined Text Messages (UUS1).

3.9.3 Message number definitions

3.9.3.1 The definitions of message numbers shall be as set out in Table 4.

Message number field	Text message name	Originator
1	Standing at signal	Train voice radio
2	Wait	Network
5	Contact signaller	Network
7	Contact fixed terminal	Network

Table 4 Pre-defined text message definition numbers

GN43 Rationale: This is the train voice radio and network interface requirement for the pre-defined text message, numbering scheme.

GN44 The facility to send text messages rather than voice calls only, helps to save the signaller time and reduces the workload.

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3.10 UUS1 message definitions: pre-defined text message acknowledge

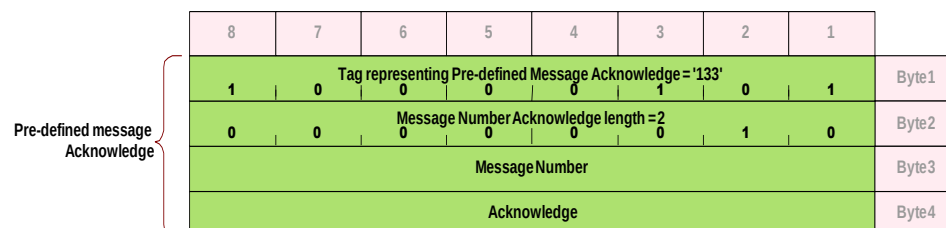
3.10.1 Application

3.10.1.1 A pre-defined text message acknowledge shall be sent by the train voice radio on receipt of a pre-defined text message.

3.10.2 Format

3.10.2.1 This UUS1 message shall consist of tag 05 followed by tag 133.

3.10.2.2 Tag 133 shall be in the format set out below:



3.10.2.3 (GE/RT8082 4.5.2.3) The Message Number byte shall be the number set out in Table 4.

- GN45 Rationale: The Operational Concept: Section 4.1.8 Pre-defined text messages – message: 'Acknowledge'.
- GN46 Tag 05 attaches the sender's identification details to pre-defined text messages, to provide an early indication of who has sent the message. This associates the acknowledgement to the actual message to provide operational confidence to the sender that the message was received successfully.
- GN47 Different confirmation messages are displayed on the HMI so the sender can more easily identify any problems should the message not be delivered.

3.10.2.4 The Acknowledge byte shall be as set out in Table 5.

Acknowledge field	Name	Meaning
0	Delivered	Destination available to receive pre-defined text message and message number recognised by recipient. Message format correct and length correct
1	Not delivered	Destination not available or not in correct state to receive UUS1 pre-defined message
2	Invalid format	Message format or length incorrect, or sender's functional number absent
3	Undefined message	Message number not recognised by the recipient

Table 5 Definition of the Acknowledge byte

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GN48 Rationale: The value of the acknowledge byte sets a specific error code for the acknowledge message, which is displayed to the user to confirm the status of the message.

3.11 UUS1 message definitions: network status logging

3.11.1 Application

3.11.1.1 If the GSM-R train voice radio is capable of supporting network diagnostic information, when the network is recovered after a period of loss, the GSM-R train voice radio shall send diagnostic information recording the GPS location, date and time when the network was lost and regained.

3.11.2 UUS1 message format

3.11.2.1 This UUS1 message shall consist of tag 132.

3.11.2.2 Tag 132 shall be in the format set out below:

8	7	6	5	4	3	2	1	
1	0	0	0	0	1	0	0	Byte 1
0	0	0	1	1	0	1	1	Byte 2
Tag representing Network Status = '132'								
Network Status length (bytes) = 26								
Network Lost UTC byte 1 MSB								Byte 3
Network Lost UTC byte 2								Byte 4
Network Lost UTC byte 3								Byte 5
Network Lost UTC byte 4 LSB								Byte 6
1	0	1	1	0	0	1	1	Byte 7
1	1	0	1	1	0	1	1	Byte 8
1	1	0	1	1	0	1	1	Byte 9
1	1	0	1	0	1	1	0	Byte 10
0	1	1	1	1	1	0	1	Byte 11
1	1	0	1	1	1	0	1	Byte 12
1	0	1	1	1	1	0	Valid	Byte 13
Network Recovered UTC byte 1 MSB								Byte 14
Network Recovered UTC byte 2								Byte 15
Network Recovered UTC byte 3								Byte 16
Network Recovered UTC byte 4 LSB								Byte 17
1	0	1	1	0	0	1	1	Byte 18
1	1	0	1	1	1	0	1	Byte 19
1	1	0	1	1	0	1	1	Byte 20
1	1	0	1	0	1	1	0	Byte 21
0	1	1	1	1	1	0	1	Byte 22
1	1	0	1	1	1	0	1	Byte 23
1	0	1	1	1	1	0	Valid	Byte 24
Stock Number digit #2				Stock Number digit #1				Byte 25
Stock Number digit #4				Stock Number digit #3				Byte 26
Stock Number digit #6				Stock Number digit #5				Byte 27
Stock Number digit #8				Stock Number digit #7				Byte 28

Network Status
logging

Stock
Identity

Guidance on Train Voice Radio Systems

GN49 Rationale: Logging of network coverage in real time by end users provides valuable data to support operation and maintenance of the network and to support incident investigation.

GN50 No acknowledgement of this message is sent by the network.

3.11.3 Message number definitions

3.11.3.1 UTC Time format shall be the time in seconds since midnight (00:00:00), January 1 1970.

3.11.3.2 A UTC Value of 0 shall indicate no valid time is available.

3.11.3.3 The 'valid bit' in the location is used to indicate if the location is valid; 1 = Valid, 0 = Invalid.

3.11.3.4 The location information (latitude and longitude) is formatted as set out in Table 6 and Table 7.

Units	Range	Number of bits	Example
Degrees	0-90	7	89
Minutes	0-59	6	59'
Hundredths of seconds	0-5999	13	59.99"
Direction	S = 0 N = 1	1	N
Total		27	

Table 6 Latitude coding

Units	Range	Number of bits	Example
Degrees	0-180	8	179
Minutes	0-59	6	59'
Hundredths of seconds	0-5999	13	59.99"
Direction	E = 0 W = 1	1	E
Total		28	

Table 7 Longitude coding

3.11.3.5 The Stock Number digits shall be in EIRENE engine number format.

GN51 No valid time might be available due to GPS not being equipped, being faulty or unable to obtain data.

GN52 Location might be invalid due to GPS not being equipped, being faulty or unable to obtain (sufficiently accurate) data.

3.12 UUS1 message definitions: supplementary registration data

3.12.1 Application

3.12.1.1 On successful completion of the journey registration process, the GSM-R train voice radio shall be ready to accept the Supplementary Registration Data UUS1 message.

3.12.2 Format

3.12.2.1 This UUS1 message shall consist of tag 134 only.

Guidance on Train Voice Radio Systems

- GN53 Rationale: This is required for versions prior to version 2 software to report the head code interpreted by the network.
- GN54 GB has a requirement for the head code alphanumeric characters to remain compatible with existing legacy train monitoring systems, including signal box train describers.

3.12.2.2 Tag 134 shall be in the format set out below:

8	7	6	5	4	3	2	1	
Tag representing Supplementary Registration Data = '134'								Byte 1
1	0	0	0	0	1	1	0	Byte 1
Supplementary Registration Data length = 4								Byte 1
0	0	0	0	0	1	0	0	
ASCII Head Code First Character								Byte 3
ASCII Head Code Second Character								Byte 4
ASCII Head Code Third Character								Byte 5
ASCII Head Code Fourth Character								Byte 6

Head Code

- GN55 Rationale: The Operational Concept: Section 6.1.2 Cab Mobile Registration and Appendix 1: Part 2 Cab Mobile Registration – Scenario SCN/NOC/002.
- GN56 The train journey registration number, when displayed, provides confirmation to the driver that the train has been correctly registered.

3.12.2.3 The head code characters shall be alphanumeric ASCII characters.

- GN57 GB has a requirement for the head code alphanumeric characters to remain compatible with existing legacy train monitoring systems, including signal box train describers.

3.13 eMLPP for high-priority point-to-point call

3.13.1 Designated call priorities

3.13.1.1 The eMLPP priority designations and numbers for the functions set out in this document shall be as set out in Table 8.

Function	eMLPP priority	Associated number
Incoming high-priority point-to-point voice call	Set by network	CT2/CT3
Outgoing high-priority point-to-point voice call	2	GBUSC

Table 8 Functions and associated numbers