

ERTMS National Identities Management

Synopsis

This document sets out the requirements for arrangements for the management of the ERTMS National Identities on the mainline railway.

Copyright in the Railway Group documents is owned by Rail Safety and Standards Board Limited. All rights are hereby reserved. No Railway Group document (in whole or in part) may be reproduced, stored in a retrieval system, or transmitted, in any form or means, without the prior written permission of Rail Safety and Standards Board Limited, or as expressly permitted by law.

RSSB members are granted copyright licence in accordance with the Constitution Agreement relating to Rail Safety and Standards Board Limited.

In circumstances where Rail Safety and Standards Board Limited has granted a particular person or organisation permission to copy extracts from Railway Group documents, Rail Safety and Standards Board Limited accepts no responsibility for, nor any liability in connection with, the use of such extracts, or any claims arising therefrom. This disclaimer applies to all forms of media in which extracts from Railway Group documents may be reproduced.

Published by RSSB

Issue record

Issue	Date	Comments
One	December 2016	Original document.
Two	December 2022 [proposed]	Replaces issue one. Simplified the structure of the requirements and included an additional requirement on relinquishing ERTMS National Identities.

Revisions have not been marked by a vertical black line in this issue because the document has been revised throughout.

Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
RIS-8072-CCS issue one	All	December 2022 [proposed]

Contents

Section	Description	Page
Part 1	Purpose and Introduction	5
1.1	Purpose	5
1.2	Background	6
1.3	Scope	6
1.4	Application of this document	7
1.5	Health and safety responsibilities	7
1.6	Structure of this document	7
1.7	Approval and authorisation of this document	8
Part 2	Requirements for the process of requesting and relinquishing ERTMS National Identities	9
2.1	Requesting ERTMS National Identities from the ERTMS National Identities Coordinator	9
2.2	Supplementary information for the request of ERTMS National Identities	10
2.3	Responsibility of the ERTMS National Identities Coordinator	11
2.4	Responding to the requesting organisation	12
2.5	Relinquishing ERTMS National Identities	12
Appendices		14
Appendix A		14
Definitions		18
References		19

List of Figures

Figure 1: The process of applying for and relinquishing ERTMS National Identities	5
Figure 2: The technical section of the request from in Appendix A.4 of ERA_ERTMS_040001	15

ERTMS National Identities Management

Part 1 Purpose and Introduction

1.1 Purpose

1.1.1 This document sets out requirements for the management of the European Rail Traffic Management System (ERTMS) National Identities on the GB mainline railway. The requirements form a process for the requesting organisation to request, or to relinquish, ERTMS National Identities from, or via, the ERTMS National Identities Coordinator.

1.1.2 The process of applying for and relinquishing ERTMS National Identities is expressed in the form of a flow chart and that is set out in figure 1.

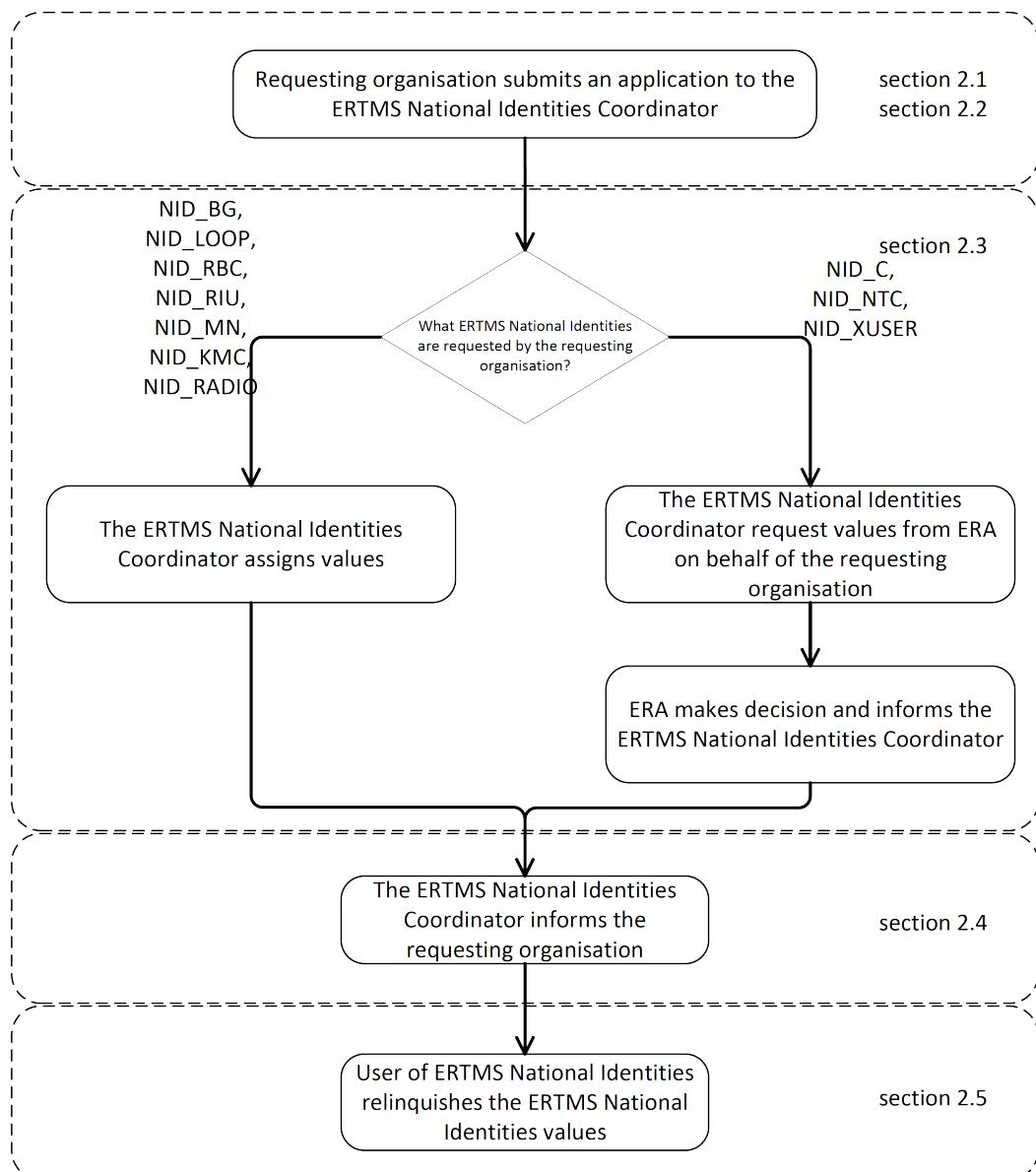


Figure 1: The process of applying for and relinquishing ERTMS National Identities

1.2 Background

- 1.2.1 An ERTMS system is composed of many sub-systems and components. The ERTMS specifications specify parameters for the purpose of identifying and referencing these sub-systems and components. These parameters are ERTMS National Identities.
- 1.2.2 There are a number of parameters in the list of ERTMS National Identities. Each parameter has a range of useable values which are specified in SUBSET-026, a mandatory specification in the Control, Command and Signalling (CCS) National Technical Specification Notice (NTSN). ERTMS National Identities are essential for the operation of ERTMS and the values of some of the parameters can only be assigned to one sub-system/component at any one time because having a repeated occurrence of these values can create an unsafe situation.
- 1.2.3 Each value has to be assigned a definition for it to be meaningful to the system. The European Union Agency for Railways (ERA) has set the definition of value for some of the ERTMS National Identities parameters. A project using those parameters would select the value that best describes their sub-systems and component for their ERTMS deployment. Some parameters do not have a pre-defined definition of value. A project wishing to use those parameters has to register the quantity of values they need and assign a definition to each of those values.
- 1.2.4 A coordinated process, managed by a designated organisation or organisations, to assign and record ERTMS National Identity values is central to the prevention of unwanted repetition of those values. This process is outlined in the ERA's ERTMS specification SUBSET-054 'Responsibilities and rules for the assignment of values to ETCS variables'.
- 1.2.5 SUBSET-054 sets out the responsibilities for the management of ERTMS National Identities, between the ERA and the ERTMS National Identities Coordinator. The ERA is responsible for the ERTMS National Identities that need international coordination for interoperability. The ERTMS National Identities Coordinator(s) is responsible for ERTMS National Identities that need coordination within a nation, and to act as an agent for a requesting organisation that wishes to apply for ERTMS National Identities managed by the ERA.
- 1.2.6 The GB mainline railway industry decided that there should only be one ERTMS National Identities Coordinator for the GB mainline railway, and that this is Network Rail. The Network Rail process on managing ERTMS National Identities is set out in NR/L2/SIG/50030 issue one 'Management of ERTMS National Identities'.
- 1.2.7 Although the United Kingdom (UK) has left the European Union, and ERA's SUBSET-054 has transposed to the UK requirements under the CCS National Technical Specification Notices (NTSN), the ERA remains the System Authority for ERTMS and is therefore responsible for the allocation of ERTMS National Identities that need international coordination.

1.3 Scope

- 1.3.1 This standard provides a process for the management of the values of ERTMS National Identities between the ERTMS National Identities Coordinator and an organisation wishing to request, or relinquish, values. The ERTMS National Identities

ERTMS National Identities Management

that are within the scope of this standard are the seven parameters that are managed by the ERTMS National Identities Coordinator, and the three parameters managed by ERA that the ERTMS National Identities Coordinator requests from the ERA on behalf of a requesting organisation. These ten parameters are:

- Identity number of a Key Management Center (NID_KMC),
- Identity of the Balise Group (NID_BG),
- Identity number of the loop (NID_LOOP),
- Identity number of ETCS Radio Block Centres (NID_RBC),
- Identity of Radio Infill Unit (NID_RIU),
- Radio subscriber number (NID_RADIO),
- Identity of radio network (NID_MN),
- Identity number of the country or region (NID_C),
- Identity of user system (NID_XUSER), and
- National system identity (NID_NTC).

1.3.2 NID_C, NID_XUSER and NID_NTC are managed by the ERA, these are within the scope of this standard because the ERA only accepts the request for those ERTMS National Identities from the ERTMS National Identities Coordinator.

1.3.3 The scope of this standard excludes requests for the 'identity numbers of an European Train Control System (ETCS) onboard equipment in service (NID_ENGINE)'. A request for NID_ENGINE is made directly by the ETCS onboard equipment supplier to the ERA.

1.4 Application of this document

1.4.1 Compliance requirements and dates have not been specified because these are the subject of internal procedures or contract conditions.

1.4.2 If you plan to do something that does not comply with a requirement in this RIS, you can ask a Standards Committee to comment on your proposed alternative. If you want a Standards Committee to do this, please submit your deviation application form to RSSB. You can find advice and guidance on using alternative requirements on RSSB's website www.rssb.co.uk.

1.5 Health and safety responsibilities

1.5.1 Users of documents published by RSSB are reminded of the need to consider their own responsibilities to ensure health and safety at work and their own duties under health and safety legislation. RSSB does not warrant that compliance with all or any documents published by RSSB is sufficient in itself to ensure safe systems of work or operation or to satisfy such responsibilities or duties.

1.6 Structure of this document

1.6.1 This document sets out a series of requirements that are sequentially numbered. This document also sets out the rationale for the requirement, explaining why the requirement is needed and its purpose and, where relevant, guidance to support the requirement. The rationale and the guidance are prefixed by the letter 'G'.

- 1.6.2 Some subjects do not have specific requirements but the subject is addressed through guidance only and, where this is the case, it is distinguished under a heading of 'Guidance' and is prefixed by the letter 'G'.

1.7 Approval and authorisation of this document

- 1.7.1 The content of this document [will be] approved by CCS Standards Committee on 22 September 2022 [proposed].
- 1.7.2 This document will be authorised by RSSB on 28 October 2022 [proposed].

ERTMS National Identities Management

Part 2 Requirements for the process of requesting and relinquishing ERTMS National Identities

2.1 Requesting ERTMS National Identities from the ERTMS National Identities Coordinator

2.1.1 The allocation of any of the following values shall be requested from the ERTMS National Identities Coordinator.

- Identity number of a Key Management Center (NID_KMC),
- Identity of the Balise Group (NID_BG),
- Identity number of the loop (NID_LOOP),
- Identity number of ETCS Radio Block Centres (NID_RBC),
- Identity of Radio Infill Unit (NID_RIU),
- Radio subscriber number (NID_RADIO),
- Identity of radio network (NID_MN),
- Identity number of the country or region (NID_C),
- Identity of user system (NID_XUSER), and
- National system identity (NID_NTC).

Rationale

G 2.1.2 The ERTMS National Identities Coordinator is responsible for the management of the allocation of ERTMS National Identities on the GB mainline. For ERTMS National Identities managed by the ERA, the ERTMS National Identities Coordinator acts as the agent of the requesting organisation.

Guidance

G 2.1.3 A requesting organisation of ERTMS National Identities can be:

- The supplier of ETCS trackside subsystem,
- The supplier of ETCS onboard subsystem,
- The organisation responsible for the trackside assembly,
- The organisation responsible for the Key Management Centre (KMC), or
- The operator of the network (for Global System for Mobile Communications – Railway (GSM-R)).

G 2.1.4 Network Rail is the ERTMS National Identities Coordinator for the GB mainline railway and its process for managing ERTMS National Identities is documented in NR/L2/SIG/50030 the 'Management of ERTMS National Identity'.

G 2.1.5 The ERTMS National Identities Coordinator represents the requesting organisation in obtaining of the ERTMS National Identities that are managed by the ERA, using the form in Appendix A.4 of ERA_ERTMS_040001 'Assignment of Values To ETCS Variables' as part of the application.

G 2.1.6 Although the requesting organisation can apply for as many NID_C, NID_XUSER and NID_NTC values as they require, there are benefits from reusing existing values where possible. For example:

- a) NID_C: If a new ERTMS deployment demands the use of a new NID_C value, with similar or the same National Values of an existing ETCS deployment, the requesting organisation can consider using a NID_C value that is already in use with its associated set of ERTMS National Values. Having the same set of National Values has the benefit of providing a consistent predicted braking curve from similar input factors, which supports driveability. RIS-0708-CCS provides further information on ERTMS National Values.

NID_C = 1 to 50 are assigned for the UK. At the time of the publication of this standard, seven of the fifty NID_C values are in operational use and the remainder are 'reserved'. The ERTMS National Identities Coordinator allocates NID_C values that are marked as 'reserved' for the requesting organisation to use and informs the ERA. When more NID_C values are needed for the UK it is the responsibility of the ERTMS National Identities Coordinator to request an extension of NID_C values allocated to the UK.

- b) NID_XUSER: RSSB manages NID_XUSER = 9 on behalf of the GB railway industry. The requesting organisation may find some of the existing message structures with NID_XUSER = 9 suitable for their application. RIS-0784-CCS provides further detail on the use of Packet 44 on the GB mainline railway.
- c) NID_NTC: For those NTC systems that have been registered with the ERA, the requesting organisations are encouraged to reuse registered NID_NTC values that best describe their NTC system where possible.

G 2.1.7 A full list of registered NID_C, NID_XUSER and NID_NTC is set out in ERA_ERTMS_040001 'Assignment of Values to ETCS Variables'.

2.2 Supplementary information for the request of ERTMS National Identities

2.2.1 An application to the ERTMS National Identities Coordinator for ERTMS National Identity values shall include the following:

- a) The ERTMS National Identity for which values are required, and
b) The quantity of values required.

2.2.2 When requesting values for the ERTMS National identities NID_C, NID_XUSER and NID_NTC, the requesting organisation shall submit :

- a) The application form A.4 in ERA_ERTMS_040001 'Assignment of Values to ETCS Variables'.
b) For an application requesting NID_C, the required geographical scope, defined by specifying the start and finish location(s) for each line.
c) For an application requesting NID_XUSER, the name of the design authority for that user system and when known, the specific user system for which the Packet 44 is intended.
d) For an application requesting NID_NTC, the identity of the associated national system or group of national systems.

2.2.3 An application for ERTMS National Identities NID_BG, NID_RBC, NID_LOOP or NID_RIU shall provide to the ERTMS National Identities Coordinator the 'Identity number of the country or region' (NID_C) where the values will be used.

ERTMS National Identities Management

Rationale

- G 2.2.4 The requesting organisation needs to declare to the ERTMS National Identities Coordinator what parameters and the quantity of values they wish to apply for.
- G 2.2.5 The ERTMS National Identities Coordinator and/or the ERA needs supporting information to make decisions on the allocation of ETCS National Identities.
- G 2.2.6 The ERTMS National Identities Coordinator needs to know the quantity of ERTMS National Identities to assign.

Guidance

- G 2.2.7 The provision of NID_C is necessary for an application for ERTMS National Identities NID_BG, NID_RBC, NID_LOOP or NID_RIU because these values are associated with a specific NID_C value.
- G 2.2.8 The document ERA_ERTMS_040001 'Assignment of Values to ETCS Variables' is an ERA document, which can be downloaded from the ERA website.
- G 2.2.9 Appendix A in this standard provides guidance for completing the technical section of the application form A.4 in ERA_ERTMS_040001 'Assignment of Values to ETCS Variables'.
- G 2.2.10 In addition to the information provided to the ERA for NID_C, the ERTMS National Identity Coordinator needs information on the geographical boundaries of a NID_C value. The information can identify whether there are gaps or overlaps of ETCS coverage on the network. The requesting organisation can express the geographical boundaries of the area needing a new NID_C in distances in the geographical scope, for example, in miles and chains, or kilometres and metres; lines can be described, for example, as fast or slow, up or down. The Engineer's Line Reference can be used to identify the route section. The infrastructure manager (IM) responsible for using the new NID_C, is also responsible for setting the ERTMS/ETCS National Values for that NID_C. The process is set out in RIS-0708-CCS.
- G 2.2.11 With a request for values of NID_C and also NID_BG and/or NID_LOOP, the logical sequence involves the coordinator confirming the allocation NID_C with the ERA before the coordinator assigns NID_BG and/or NID_LOOP.

2.3 Responsibility of the ERTMS National Identities Coordinator

- 2.3.1 The ERTMS National Identities Coordinator shall request NID_C, NID_XUSER or NID_NTC from the ERA.
- 2.3.2 In response to a request for values for NID_BG, NID_LOOP, NID_RBC, NID_RIU, NID_RADIO, NID_C or NID_MN, the ERTMS National Identities Coordinator shall allocate unique values.
- 2.3.3 The ERTMS National Identities Coordinator shall maintain a record of ERTMS National Identities values that have been allocated.

Rationale

- G 2.3.4 The ERTMS National Identities Coordinator represents the requesting organisation for the request of ERTMS National Identities that are managed by the ERA.
- G 2.3.5 The ERTMS National Identities Coordinator is responsible for managing ERTMS National Identities that are not managed by the ERA.

Guidance

- G 2.3.6 The ERTMS National Identities Coordinator for the GB mainline railway can allocate, or apply to the ERA for, values to be used on the GB mainline railway and associated sidings and depots in which ERTMS equipment operates.
 - G 2.3.7 NID_BG, NID_RIU, and NID_LOOP values form unique combinations with NID_C. The Coordinator can issue the same NID_BG, NID_RIU and NID_LOOP value to use with different values of NID_C.
-

2.4 Responding to the requesting organisation

- 2.4.1 The ERTMS National Identities Coordinator shall provide the allocated values in a timely manner for the ERTMS National Identities to the requesting organisation.
- 2.4.2 The ERTMS National Identities Coordinator shall inform the reasons behind the decision if it decides not to allocate, or allocate fewer ERTMS National Identities values than the quantity requested by the requesting organisation.

Rationale

- G 2.4.3 The requesting organisation needs to know the decisions made by the ERTMS National Identities Coordinator or the ERA.

Guidance

- G 2.4.4 Providing ranges of NID_C, NID_XUSER and NID_NTC values that have been allocated and the associated details can be useful to potential requesting organisations. They can consider extending the use of those allocated values in their ETCS deployment instead of applying for new values.
 - G 2.4.5 The ERA publishes the allocated ERTMS National Identities that are managed by the ERA in document ERTMS_040001_ETCS 'Assignment of Values to ETCS Variables'.
 - G 2.4.6 If the ERTMS National Identities Coordinator decides not to allocate, or allocate fewer values than the quantity requested by the requesting organisation, it is supported with a justification.
-

2.5 Relinquishing ERTMS National Identities

- 2.5.1 The organisations that are responsible for commissioning or decommissioning ERTMS assets shall inform the ERTMS National Identities Coordinator of ERTMS National Identities values that are no longer required.

ERTMS National Identities Management

Rationale

- G 2.5.2 Each parameter in ERTMS National Identities has a limited range of useable values. The ERTMS National Identities Coordinator needs to be informed about the ERTMS National Identities values that are not required, so that those values can be made available to future ERTMS deployments.

Guidance

- G 2.5.3 ERTMS National Identities values that are 'no longer required' can either be values allocated to a project but which have not been commissioned into use, or values associated with ERTMS assets that have been decommissioned without replacement.
- G 2.5.4 Relinquishing National Identity values before the assets using them are taken out of use could result in the relinquished value being reassigned to a different requesting organisation, potentially causing an unwanted repetition of values of ERTMS National Identities being in use, which could impact the safety and/or performance of the railway.
-

Appendices

Appendix A

A.1 Assignment of values to ETCS variables in ERA_ERTMS_040001_guidance

Guidance and supporting information for the request form in ERA_ERTMS_040001

- G A.1.1 This section provides guidance for the requesting organisations in completing the request form in section A.4 of ERA_ERTMS_040001 for the request of NID_C, NID_XUSER and/or NID_NTC. The ERTMS National Identities Coordinator will forward the completed request form to the ERA.
- G A.1.2 Guidance is provided for the technical section of the request form, an extract from version 1.31 of ERA_ERTMS_040001 is reproduced below. Please be aware that the ERA may update the ERA_ERTMS_040001 and the request form may be different from the extract below. Please use the latest version of the ERA_ERTMS_040001 from the ERA website.

ERA ERTMS UNIT

ASSIGNMENT OF VALUES TO ETCS VARIABLES

3/ Information about the request:

Name of the ETCS variable:
Reason of the request:	Please indicate if this request is either: <ul style="list-style-type: none"> - for a first assignment of value or, - for an extension of a previous assignment to the same variable by the same organisation or, - for an update of the definition or, - for a release of a previous assignment or, - for a transfer of responsibility to another entity ^(*).
Justification:	In case of an extension indicate why the previous assignment is not sufficient, in case of a release indicate the circumstances:
Requested value(s)	If the request relates to a preferred value or range of values, write it here:
Definition of value(s)	Give the definition that will correspond to the value(s) as it will be written down in the ERA listing of values:
References:	Indicate the reference to real planned project(s) or reference to awarded contracts this request is related to:

(*) : In this specific case, the current request shall also be accompanied by a request filled by the accepting entity which hands over the full responsibility for the use of the related variables.

Figure 2: The technical section of the request from in Appendix A.4 of ERA_ERTMS_040001

G A.1.3 **Name of the ETCS variable:** This is either NID_C or NID_XUSER, or NID_NTC.

G A.1.4 **Reason of the request:** These are options provided in the application form to the ERA. Select one only

- **For a first assignment of value** - Select this option if this is there is not an existing ERTMS National Identity suitable for the application that requires the ERTMS National Identity. For example, when Crossrail wanted a NID_NTC value for its Communication Based Train Control (CBTC) system, there was no NID_NTC

designated for this system, therefore a new NID_NTC was requested as the first assignment of such value.

- **For an extension of a previous assignment to the same variable by the same organisation** - Select this option if an ERTMS National Identity value or values have already been allocated for an application but more values are required for the same application, or if the geographic boundaries of a previously assigned value or range of values need to be adjusted. For example, Network Rail originally registered NID_C = 1 - 26 for use in the UK; in 2017 Network Rail requested an extension of NID_C = 27 - 50.
- **For an update of the definition** - Select this if there are changes to the definition(s) to the ERTMS National Identities. The definition of an ERTMS National Identities parameter provides additional information, and is published in ERA official documents, such as the ERA_ERTMS_040001 'Assignment of Values to ETCS Variables'. An example is when Network Rail established ENIF as an ERTMS test facility with its own ETCS region, Network Rail redefined the 'lines description' of NID_C = 26 from 'reserved' to 'ENIF' and informed the ERA.
- **For a release of a previous assignment** - Select this if the registered values of ERTMS National Identities are no longer in use on operational ERTMS assets. Before submitting an application with this option selected, ensure those values are decommissioned from all ERTMS assets that use or reference those values. Alternatively, instead of relinquishing those values, the user can consider reassigning the disused values to potential ERTMS deployments. This either involves transferring ownership from one responsible organisation to another, or to another ERTMS deployment of the same responsible organisation.
- **For a transfer of responsibility to another entity** - Select this if there is an agreement to transfer ERTMS National Identities values from an organisation that is responsible for a set of ERTMS National Identities to another organisation.

G A.1.5 **Justification:** The form in ERA_ERTMS_040001 asks:

- "In case of an extension indicate why the previous assignment is not sufficient" - This asks why an ERTMS deployment needs more values of a particular ERTMS National Identities parameter(s). For example, the project has applied for a NID_C, but realised an additional NID_C is needed.
- "In case of a release indicate the circumstances" - This asks why an ERTMS deployment no longer needs certain value(s) of an ERTMS National Identities parameter.

G A.1.6 **Requested value(s):** This is not necessary unless the applicant wishes to use a specific value(s) that is currently vacant. The ERA_ERTMS_040001 includes a register of used and available values for ERTMS National Identities managed by the ERA.

G A.1.7 **Definition of value(s):** This field is used to provide descriptions to complement the ERTMS National Identities requested for, including detail for the following:

- NID_C - The name of the line/region which will use the new NID_C.
- NID_NTC - The countr(ies) that this train protection system is/will operate in; the name that this train protection system is known as; additional information and/or alternative name of this train protection system.

ERTMS National Identities Management

- NID_XUSER - the specific user system for which the packet 44 is intended, and/or the name of the design authority for that user system.

G A.1.8 **References:** This field is to provide either the name of the project or references to the awarded contracts that will be using the ERTMS National Identities values applied in this application.

Definitions

NID_BG	This ETCS parameter is the identity of a balise group; it uniquely identifies the balise group within the area defined by NID_C.
NID_C	This ETCS parameter is the identity number of a National Area.
NID_ENGINE	This ETCS parameter uniquely defines the identity of the on-board ETCS equipment, stored in the European Vital Computer (EVC).
NID_KMC	This ETCS parameter identifies the Key Management Centre within a National Area.
NID_LOOP	This ETCS parameter uniquely defines the identity number of a Euroloop within a National Area.
NID_MN	This ETCS parameter defines the identity of the GSM-R network that the mobile has to register with.
NID_NTC	This ETCS parameter uniquely defines the identity number of an existing national system or group of national systems.
NID_RADIO	This ETCS parameter defines uniquely the radio subscriber number of the RBC.
NID_RBC	This ETCS parameter uniquely identifies an RBC within a National Area.
NID_RIU	This ETCS parameter uniquely defines the identity number of a radio in-fill unit within a National Area.
NID_XUSER	This ETCS parameter uniquely defines the identity of the User Design Authority, as set out in Subset-026. GE/RT8064 defines this as RSSB in Great Britain.

ERTMS National Identities Management

References

The Standards Catalogue gives the current issue number and status of documents published by RSSB: <http://www.rssb.co.uk/standards-catalogue>.

RGSC 01	Railway Group Standards Code
RGSC 02	Standards Manual

Documents referenced in the text

RSSB documents

RIS-0708-CCS	ERTMS/ETCS National Values
RIS-0784-CCS	The Management of Packet 44 Applications

Other references

SUBSET-026 issue 3.6.0	ERTMS/ETCS System Requirements Specification
SUBSET-054 issue 3.0.0	Responsibilities and rules for the assignment of values to ETCS variables
ERA_ERTMS_040001 version 1.31	Assignment of values to ETCS variables
NR/L2/SIG/50030 issue one	Management of ERTMS National Identities