Guidance, Standards, Safety and Assurance Group

# A GUIDE TO PROMOTERS PLANNING TO OPERATE LIGHT RAIL AND OTHER NON-MAINLINE VEHICLES ON NETWORK RAIL MANAGED INFRASTRUCTURE

## RSSB Non-mainline vehicles: guidance on regulatory requirements – T1049

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# Contents



# Executive Summary

This document summarises the process that applies solely where the promoter wishes to run vehicles, exempted from the Railway Interoperability Regulations, on a main line railway that is subject to these regulations. In other cases, the application of the normal processes under the Railway and Other Guided Systems (ROGS) apply.

Typically, this would apply to the operation of Tram Trains, other Trams, Metro, Light Rail or Heritage vehicles to be operated on the main line network managed by Network Rail.

Typical vehicles, if they were to be newly introduced would include,

- Tram Trains such as planned to be introduced between Sheffield and Rotherham Parkgate
- Light Rail car such as the Class 139 operating between Stourbridge Junction and Stourbridge Town
- The Tyne and Wear Metro Vehicles operation between Pelaw and Sunderland
- New London Underground Vehicle running on NR infrastructure
- Refurbished Heritage vehicles

Any promoter wishing to introduce non-mainline vehicles onto the national railway network will need to undertake several processes to gain approvals to operate.

- The Operator of the vehicles will need to be a Licensed Train Operator with Safety Certificates issued by the Office of Rail and Road.
- The Operator will need a Track Access Agreement with Network Rail.
- The Vehicle and any specific non-mainline equipment will need to be excluded from the Railway Interoperability Regulations by the DfT where the regulations allow.
- The vehicle will need to go through the “Placing into Service” process that will give a form of Type Approval.
- The Operator will need to demonstrate that the vehicle is compatible with the section of the railway network where it will operate under the “Putting into Use” process.
- These processes require that the vehicle is demonstrated to be safe to operate and compatible with the infrastructure over which it will operate (subject to modifications if required) and that the necessary safety assessments and verifications have been undertaken in accordance with both ROGS and the CSM RA as required by the EU Safety Directive.
- The Equalities Act requires that the vehicles and infrastructure is accessible in accordance with the “Railway Vehicle Accessibility Regulations” and Department for Transport/Transport Scotland “Design Standards for Accessible Railway Stations”

There will be a need for several organisations to work together to enable the project to proceed successfully and in a timely manner.

The proposer will need to discuss with Network Rail to determine whether the proposed service would be feasible in terms of:

- Track Capacity – can the proposed service be accommodated on the line of route without adversely affecting existing users of the line?

- Compatibility – Is the line technically suitable for the proposed vehicle type and service and what changes will be required?
- Network Costs – what works would need to be undertaken to make the route compatible and an estimate of the costs. eg route clearance, signalling immunisation, raised check rails.
- Enhancement cost – what new infrastructure will be required to enable operation of the new service and an estimate of costs. eg connections, stations platforms, power supply, signalling changes – TPWS on every signal.

The main project partners, Proposer, Train Operator and Network Rail will need to enter into agreements to develop the proposals and set up a project team. Best Practice would suggest that a Project Board is set up as part of the project governance to oversee the whole programme.

The Project Board would set the Objectives and Success criteria for the project. The Project Board would agree who would be the Project Entity that would procure the Vehicles and undertake the "Placing into Service" Process.

The Train Operator, as Railway Undertaking would lead the "Putting into Use" process to demonstrate compatibility with the infrastructure.

The new vehicles will need to be fully accessible in accordance with the Railway Vehicle Accessibility Regulation unless already verified as compliant with the TSI for Persons of Reduced Mobility.

The new station infrastructure would need to be fully accessible as described by the DfT/TS "Design Standards for Accessible Railway Stations"

Independent organisations or individuals will need to be engaged by all project partners to undertake safety assessments and verification.

The Vehicle Manufacturer and the infrastructure contractors and their designers will need to work with the assessment and verification bodies to ensure compliance which will be confirmed during testing and commissioning.

Further assistance and guidance can be obtained from the UKTram Centre of Excellence.

Full details of the processes and the regulatory framework is described in RSSB publication

**Operating non-mainline vehicles on mainline infrastructure**
**Guidance on the regulatory requirements**

An output from the research project T1049 Safe Integration:
Published – December 2014

# 1 Introduction

## 1.1 Purpose

The purpose of this document is to introduce, in plain terms, the legal/regulatory requirements that need to be satisfied before a "Non-mainline" vehicle can be introduced onto the mainline railway infrastructure managed and owned by Network Rail and subject to the Railway Interoperability Regulations (RIR).

These requirements describe how to introduce into service vehicles that do not comply with the EU Main Line standard for Passenger Rolling Stock (LOC & PAS TSI) and have been exempted from complying with the RIR by the Department for Transport as the Member State Representative.

Note: the UK decision to leave the EU may affect the requirements in detail, but this will take some time to become clear. The requirements are based on complying with the Railway Safety Directives, with which the UK may wish to continue compliance therewith in order to maintain interoperability with Europe and good practice.

## 1.2 T1049

T1049 was a project undertaken by RSSB to provide guidance as noted below, however, the guidance given goes into more detail than is required by those deciding whether or not to promote such a project.

Accordingly, T1049 is aimed at companies and organisations which operate, or intend to introduce, non-mainline vehicles (such as light rail and metros) and want to understand the nature of the regulatory requirements for running these vehicles on the mainline railway and describes in detail the processes involved.

The guidance is divided into 3 parts, with increasing technical detail. The main parts of the guidance are:

Part A: The process; an explanation of the basic steps for ensuring regulatory compliance for operating non-mainline vehicles on the mainline railway.

Part B: Detailed guidance; more specific details about how to negotiate and apply the regulations.

Part C: Case studies; six examples of real industry experience of approaching the regulations in the context of non-mainline rail vehicles.

This document provides an overview of the processes to indicate the type and scale of the approvals required rather than a detailed guide to their application.

## 1.3 Scope of applicability

This process applies solely where the promoter wishes to run exempted vehicles on a main line railway that is subject to these regulations. In other cases, the application of the normal processes under the Railway and Other Guided Systems (ROGS) apply.

Typically, this would apply to the operation of Tram Trains, other Trams, Metro, Light Rail or Heritage vehicles to be operated on the main line network managed by Network Rail.

Typical vehicles, if they were to be newly introduced would include,

- Tram Trains such as planned to be introduced between Sheffield and Rotherham Parkgate
- Light Rail car such as the Class 139 operating between Stourbridge Junction and Stourbridge Town
- The Tyne and Wear Metro Vehicles operation between Pelaw and Sunderland
- New London Underground Vehicle running on NR infrastructure eg Queens Park to Harrow and Wealdstone or Gunnersbury Jn to Richmond.
- Refurbished Heritage vehicles

## 1.4 Legal background

The Main Line railways are required to comply with various processes and standards.

The European Union has passed several Railway Interoperability Directives that apply to the Main Line railways. Member States are permitted under these directives to exclude several types of railway from these directives where they are of a local nature, functionally separate or used for heritage purposes.

In GB there is a list published by the DfT of excluded systems or lines and this included all tram systems, functionally separate metros such as LUL, DLR and Tyne & Wear Metro and heritage railways. Additionally, the designated Community Rail Lines, whilst part of the main line network, have been excluded from the requirement of the Directive.

The Interoperability Directives has been transposed into UK law through the Railway Interoperability Regulations. As these Directives and Regulations are updated from time to time, no specific versions are mentioned herein as the latest will apply.

The EU has also passed the Railway Safety Directive that sets out the Essential Requirements for Safety and how they must be applied to the railways and this is incorporated into UK law through the Railways and Other Guided Transport Systems (Safety) Regulations 2006 and CSM-RA

Tram Trains and other vehicle that are intended to operate on the highway, such as on a street tramway, must comply with the legislation for “Tramcars”.

In addition, as well as applying these requirements, there may be a need to apply for Powers through an Order under the Transport and Work Act 1992 as amended, for authorisation to build and operate any new tramway, metro railway or link to the main line. This could confer powers for the compulsory purchase of land, to interfere with people’s rights and provide protection against ‘actions in nuisance’.

## 1.5 UK Tram Centre of Excellence

The UK Tram Centre of Excellence can provide expert guidance and assistance in the interpretation and best practice in all matters relating to Light Rail and the operations of Light Rail rolling stock on Mainline Infrastructure such as would be required to implement a Tram Train Service.

# 2 Definitions

A full list of definitions is given in section 5 of the RSSB Report from Project T1049 'Operating non-mainline vehicles on mainline infrastructure. Guidance on the regulatory requirements'

## 2.1 Introduction to the terminology

Much of the specific terminology is defined in the UK Railways (Interoperability) Regulations 2011 and the Railways and Other Guided Transport Systems (Safety) Regulations 2006, both as amended. Accordingly, certain phrases have specific meanings that may not be intuitive to many readers. The main ones used in this guide are noted below.

Assessment Body (AsBo) – Checks CSM RA process is correctly applied, and the results from the risk management process. Can be a body external to the organisation or a suitably independent in-house body. Could be an individual, group or more than one organisation depending on the scale of the project.

CSM RA The use of the Common Safety Method for risk evaluation and assessment in accordance with EU Commission Regulation 402/2013. Further details are available from on the ORR website http://www.orr.gov.uk/rail/health-and-safety/health-and-safety-laws/european-railway-safety-legislation/csm-for-risk-evaluation-and-assessment

Designated Body (DeBo) – Undertake compliance assessment against National Rules.

Grandfather Rights – Authorisation for the continued operation of a vehicle, plant, equipment or infrastructure, authorised for use under an previous procedure and where safety and compatibility has been demonstrated through operation over an extended period.

Infrastructure Manager (IM) – the organisation responsible for the management, maintenance and renewal of the fixed infrastructure such as track, signalling stations and electrification. Network Rail is the IM for the main line railway in Great Britain. Northern Ireland Railways is the IM for Northern Ireland and Iarnród Éireann in the Irish Republic.

Notified Body (NoBo) – Undertake compliance assessment against TSIs.

Notified National Technical Rules (NNTR) – these are national rules or standards that have been notified to the EU Commission to cover Specific Cases, Open Points and for Compatibility when applying acceptance against TSIs under the RIR.

National Safety Authority – The designated safety authority. In the UK, the role of NSA is shared between the Office of Rail and Road (ORR), responsible for England, Scotland and Wales, and the Department for Infrastructure (DfI), responsible for Northern Ireland

Placing into Service – all the operations by which a subsystem is put into its design operating state; and cognate expressions shall be construed accordingly. The sub-system will need to be verified as compliant with the agreed standards for main line operation. (This definition applies only for introductions onto mainline systems using the RIR and it has a different meaning in ROGS, see section 4.1)

Project Entity – The Organisation, Consortium or Project Team responsible for undertaking the "Placing into Service" process.

Putting into Use - when, having been constructed, upgraded or renewed, it is first used on or as part of the rail system in the United Kingdom for the transportation of passengers or freight or for the purpose for which it was designed. This will require demonstration that the new infrastructure or vehicle is compatible with the existing vehicles or infrastructure within the area of operation.

Railway Group Standards – standards covering the interfaces between sub-systems for the GB railway. These standards have been revised to complement TSIs and provide the national rules (NNTR) required to cover open points and for compatibility assessments.

Railway Industry Standard (RIS) – a non-mandatory standard that is available for use by the Railway Industry and is managed by the RSSB Standards Committees

Railway Interoperability Regulations (RIR) – the transposition into UK law of the EU Interoperability Directives.

Railways and Other Guided Systems Regulations (ROGS) – the regulations governing the approval of railway and tramways systems not covered by the RIR.

Railway Undertaking – the operator of the train service. Also known as the “Transport Undertaking” in ROGS. This organisation will be responsible for undertaking the “Putting into Use” process.

Sub-system – the Railway System is divided into functionally separate subsystems that are described in the various TSIs and where the interfaces between these subsystems are defined. Railway Group Standards described the interface standards that apply to the GB railway network.

Technical Specifications for Interoperability (TSIs) – Common standards for the main line railways in Europe, mandated by the Interoperability Directives. Specific cases exist where required for constraints on a national system.

Transport Undertaking – The ROGS expression for the train operator referred to as the “Railway Undertaking” in the Railway Interoperability Regulations.

Urban Rail Standards – Standard for urban railways and managed by UK Tram

*To be completed and include all items within this document.*

# 3 Applicability

## 3.1 When the process has to be applied

This process must be followed when it is proposed to introduce a vehicle on the main line where it does not have established rights to run, often called 'Grandfather Rights' and the vehicle does not comply with the current standards for main line operation.

New main line vehicles are required to comply with the applicable Technical Standards for Interoperability (TSIs) and be certified as being compliant with the standards and compatible with the routes where they will run. Exempted vehicles still have to comply with the essential safety requirements, but they can use other processes as described within this guide.

## 3.2 Type of vehicles

The processes described in this guide applies only to vehicles that have been exempted from the RIR by the DfT that will be operated on the main line railway.

Typical Vehicles and Services where these processes would apply include:

Vehicles

- Tram Trains
- Light Rail Vehicle
- Metro Vehicles
- Heritage Vehicles

Service that operate partly or wholly on the main line railway

- Tram Train services.
- Metro extensions
- Steam Specials with heritage coaches when newly introduced
- Branch lines services

## 3.3 Type of network

Wherever exempted vehicles operate on the Main Line network, these processes apply.

In UK, the main line networks would include:

- Lines managed by Network Rail in GB
- Lines operated by Northern Ireland Railways
- HS1
- Future Main lines that come under the RIR such as CrossRail which connects two Interoperable Main Lines and HS2.

Typical examples where exempted vehicles could benefit from access to the Main Lines include:

- Tram Trains that operate on tramway networks and connect into and sharing main line tracks with mainline services, such as the proposed pilot service between Sheffield and Rotherham Parkgate.
- Light Metro services that extend from a dedicated network onto the mainline such as the Tyne and Wear Metro extension to Sunderland.

- Branch line that could be operated exclusively using exempted vehicles, but need use the main line to reach the railhead. Typical services could be say the St Ives Branch that can operate independently, but would benefit from some services being extended to Penzance. Many such branch lines are exempted from the RIR under the 'Community Rail' initiatives as 'Designated Lines'.
- Heritage services that extend from a 'Heritage line' onto the main line such as the services on the North Yorkshire Moors Railway that go to Whitby.
- The operation of Steam and other Heritage Specials on the main line.
- Operation of metro/tram train services between NR routes and lines converted to metro/tramway operation and taken out of NR ownership

# 4 Process

## 4.1 Overview

The first matter to be determined is that the Vehicle can be excluded from scope of the Railway Interoperability Regulations. This must be granted by the Secretary of State in accordance with Regulation 3(3), otherwise the normal main line procedure will apply.

Once this exemption has been agreed, the 'Project Team' will need to demonstrate that the vehicle is suitable to run on the main line with or without operational restrictions. The vehicle will have to comply with standards that will be suitable for operation on its segregated network and on the main line. There is a process of independent verification that the 'Essential Requirements' have been met and that the vehicle is fit to run on the main line. This process gives the vehicle a form of 'Type Approval' known as 'Place in Service'.

Next the Vehicle's Operator, the 'Railway Undertaking' in RIR terms will need to demonstrate that it can operate the vehicle safely in passenger service on the specific route. This will require the vehicle is:

- technically compatible with the route,
- an independent safety assessment has been undertaken and the RU's/IM's Safety Management Systems have been amended if necessary.
- It is compliant with Railway Group Standards (with agreed Deviations) and registered on the Rolling Stock Library.

This process gives the vehicle a form of route acceptance and is known as 'putting into use'.

These terms are set down in the Railway Interoperability Regulation where the following definitions are given:

'placing in service' means all the operations by which a subsystem is put into its design operating state; and cognate expressions shall be construed accordingly; (Regulation 2 (1))

A structural subsystem is "put into use" when, having been constructed, upgraded or renewed, it is first used on or as part of the rail system in the United Kingdom for the transportation of passengers or freight or for the purpose for which it was designed. (Regulation 4(2))

Beware, the term 'placing in service' has a different meaning to the term 'placed in service' used in the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended).

Additionally, it is essential that any new vehicle that is to be used as a 'tramcar' on the highway is separately verified as compliant and fit for use under road traffic regulations.

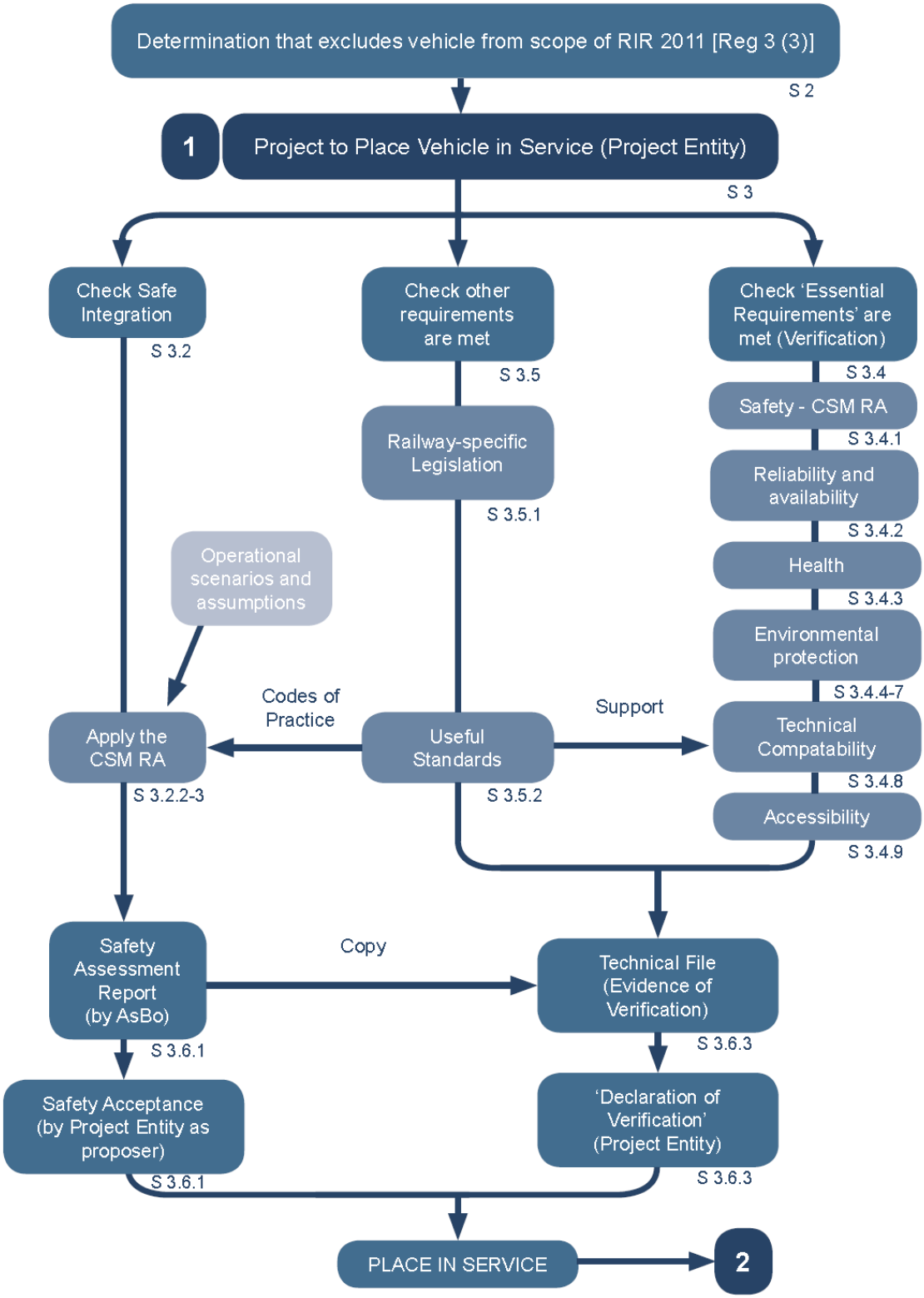
## 4.2 Obtain approval for the vehicle – Main Line Type Approval (Place Vehicle into Service)

This process will normally be managed for a promoter by the Project's Technical Team which could be in-house or contracted out. In both cases an "Independent Competent Person" or ICP (CIP in Network Rail parlance) will undertake compliance checks in accordance with requirements of ROGS. However, the RIR requires that assessments are undertaken by an Assessment Body (AsBo) and that compliance with National Rules is undertaken by a Designated Body (DeBo). It is acceptable for the ICP, the AsBo and the DeBo to be the same person or organisation provided that the applicable certification for each role is held. The main part of this process is to the review and certify that the

vehicle is fit for use in terms of technical compliance and safety assessment using the "Common Safety Method" (CSM). The ICP can be a suitably experienced individual or a company that has the necessary range of experience.

It is important that the assessors are engaged early in the design process so that problems can be identified early and solutions determined that will be acceptable to all concerned.

The flow chart for the process was shown in the RSSB T1049 report and is reproduced below.




These elements of the process will be undertaken by the Project Team (Project Entity) using ICP and AsBos for assessments and verifications as required. The Project Team will have to apply the process as experts in the field who will know the detail. It is quite possible that the manufacturer of the vehicles will already hold the appropriate certification for "Placing into Service" for their vehicles

from introductions in other cities or countries within Europe. There may still be a need to undertake further assessments and verifications for the UK market where significant differences in requirements can be demonstrated, however, these should be limited to only those necessary.

## 4.3 Obtain approval to use the vehicle on a specific route – Confirm System-Infrastructure/Vehicle Compatibility (Put Vehicle into Use)

Where as to Place into Service is the responsibility of the "Project Entity" that is the project team responsible for the design and construction of the vehicle, it is the responsibility of the "Railway Undertaking" in RIR terms, that is the operator, to lead the process of confirming that the vehicle is compatible with the infrastructure over which it will run.

The infrastructure, which usually will be owned and managed by Network Rail in GB and, as such, full and open discussions should be undertaken from an early stage. This will enable Network Rail to identify any particular issues that would need to be addressed with both the vehicle and the infrastructure. Normally NR would expect the vehicle to fit the infrastructure and be designed accordingly, however, there may be issues that would be easier solved through changes to the infrastructure. It must be remembered that any changes to the infrastructure will have to be compatible with all other users thereof and normally be in accordance with the mainline standards including the TSIs and the Railway Group Standards. Any item that is required solely for the safe operation of the excluded vehicle may itself require exclusion from the RIR and also be demonstrated to be compatible with the mainline systems and other vehicles using the line. Any changes to the infrastructure will be subject to the railway industry regulatory procedure such as 'Network Change' and 'Station Change' where other users of the infrastructure will be consulted and have the right to comment or object. The introduction of the new vehicle will be subject to 'Vehicle Change'

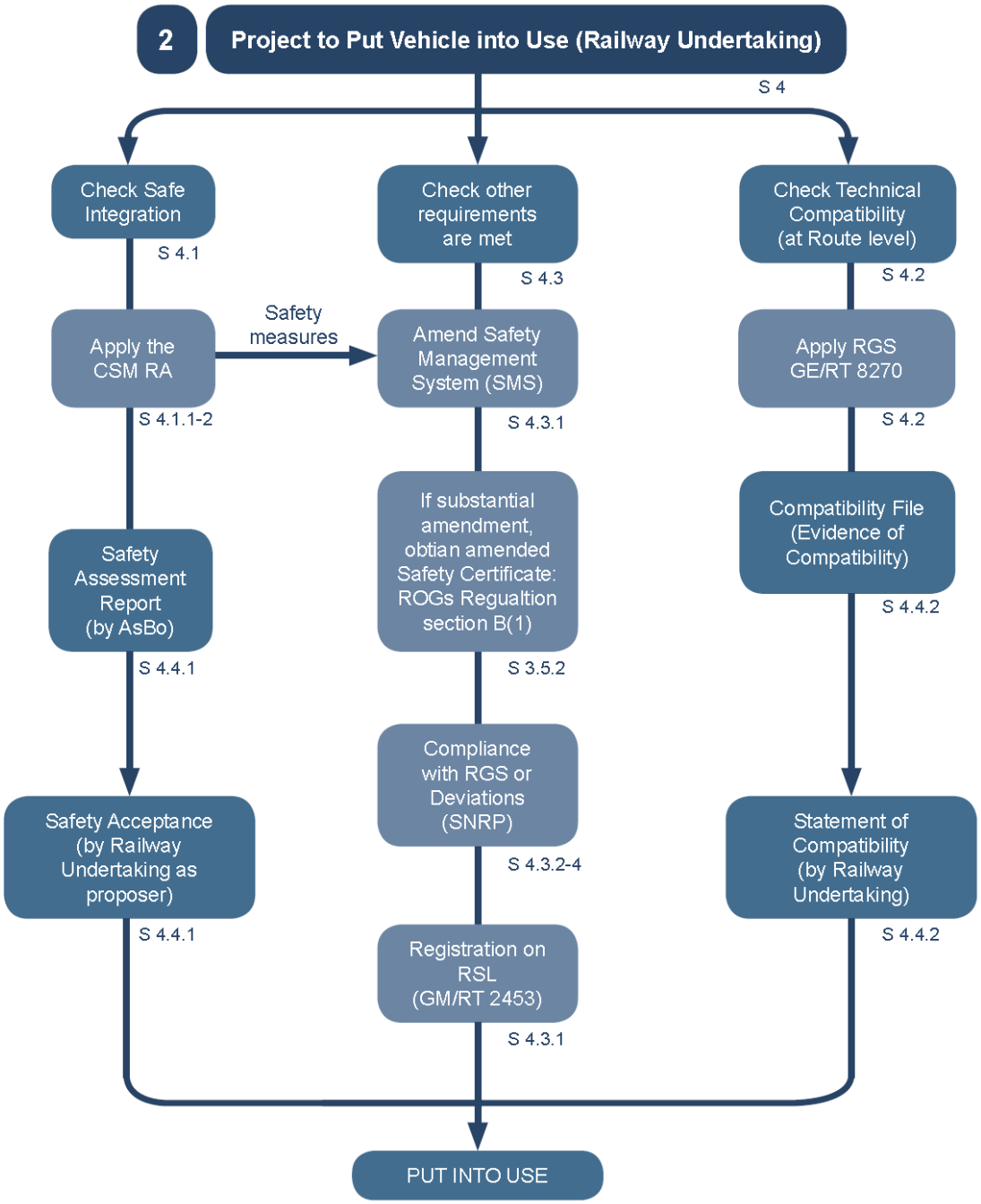
For example, if 750 V dc overhead electrification is installed over mainline tracks, the Overhead Line Equipment will need to be structurally and electrically clear of all other vehicles, not interfere with the communication, signalling and train detection systems and that stray currents are controlled. This could result in replacement of all track circuits within a wide area including run in and off sections and adjacent lines and the raising of low bridges or lowering of the track. The introduction of non-standard equipment may also require "Type Approval" by NR, revisions to their Safety Management System and training of maintenance staff.

The process of demonstrating compatibility covered by Railway Group Standards GE/RT8270 issue 3 and GE/RT8273 issue 1 (Gauging and Stepping Distances).

The process to 'Put Into Use' a vehicle would normally be managed by appropriately experienced Project Managers and Engineers engaged by the Train Operator (Railway Undertaking) with the use of AsBos and ICP to provide verification where appropriate. The Compatibility is usually confirmed at a "Compatibility Forum" between the Train Operator and Network Rail with supporting advisors and verification and assessments bodies.

Where it is demonstrated as necessary to deviate from standards, the 'Deviations' must be agreed by the appropriate standards bodies. Deviations from TSIs are very difficult to obtain, and thus it is better to arrange exclusions which would be granted by the Department for Transport as the it is empowered to grant such exclusions under very specific circumstances. Several exclusions have already been granted which cover most situations for the introduction of excluded vehicles.

The flow chart for the process was shown in the RSSB document and is reproduced below.



# 5 Organisations that need to be involved in the Process.

## 5.1 Responsibilities

The responsibilities of the various parties need to be understood from the start of any project. This is particularly so for the introduction of non-mainline vehicles onto mainline tracks.

As these vehicle introductions tend to be complicated projects, it is recommended that a Project Governance ensures collaborative working between the various organisations involved.

### 5.1.1 Project Managers,

Each organisation should have a person responsible for managing its responsibilities under the process. Accordingly, there are likely to be several Project Managers each reporting to and protecting the interests of their organisation. It is extremely important that these Project Managers work together to progress the project in a timely and complete manner. To facilitate this, it is recommended that a Programme Manager is appointed with the purpose of co-ordinating all the processes that have to be undertaken by each organisation. Ideally the Programme Manager will be appointed by the Project Board and be empowered to lead the project.

The Project Manager should manage the process for his organisation in collaboration with the other project partners, ensuring accurate information flows and arrange assessments and verification certificates within their organisation's responsibility. The Project Managers should prepare the specifications for the elements of the project for which they are responsible and share these with the project partners at an early stage to ensure compatibility and identify issues that need to be solved. The Project Managers should also engage the assessment and verification bodies at an early stage to review the specifications, designs and construction as they progress to ensure that all will be acceptable and what assessments and verification activities will be required. This is to ensure that the required assessments, test and verifications are undertaken at the appropriate time and issues resolved quickly.

### 5.1.2 Designers,

The designers for each element of the project should work in collaboration with each other and the assessment and verification bodies. In particular, any changes to agreed designs should be checked to ensure that the impact on each other party is understood and agreed.

As several systems between project partners will be involved, it is good practice for one organisation to act as the System Integrator. This could be one of the designers or an independent expert experienced with systems involved.

### 5.1.3 Builders

The builders, be they vehicle manufacturers or infrastructure contractors, ideally should be brought into the process at an early stage. This is to ensure that construction expertise is available to confirm the practicalities of the designs, construction schedules and when specific information will be required.

The vehicle manufacturers and infrastructure contractors will need to work with the assessment and verification bodies to ensure that all the processes are included in the project schedules and all are co-ordinated within the Programme Manger's Master Schedule.

### 5.1.4 Stakeholders and organisations that will form part of the approvals process and will be required to make assessments and issue certificates

All the bodies that are required to provide approvals, make assessments and verify compliance should be identified at the start of the project.

Typical organisations include:

| | |
|---|---|
| Department for Transport - | Confirm that the proposed vehicle and any specific equipment can be excluded from the requirements of the Railway Interoperability Regulations. |
| Assessment Body (AsBo) - | Checks correct application of CSM RA |
| Independent Competent Person - | Undertake verifications required by ROGS and issue certificates |
| Designated Bodies (DeBos) - | Undertake verification of compliance with National Technical Rules for works to the main line equipment where required |
| Office of Rail and Road - | Safety Regulator for all rail transport.<br>Economic regulator for mainline railways, issuer of Operator Licences and arbiter of disagreement between Train Operators and Network Rail<br>The issue of Approvals under the Railway Interoperability Regulations<br>Regulatory enforcement of compliance with the Railway Vehicle Accessibility Regulations and any local Acts. |
| RSSB - | Facilitates and manages the Railway Group Standards and the Standards Committees that determine Deviations therefrom |
| UKTram - | The light rail industry body that issues guidance and manages the Tramway Requirements such as RSP2 previously issued by the ORR. |

### 5.1.5 Railway Undertaking

The Train Operator (Railway Undertaking) is usually the promoter or the agent of the promoter if the new vehicle and service is proposed by the Local Transport Authority that lets the concession to a train/tram operator for its introduction.

The train operator is responsible for leading the process to “Put the Vehicle into Use”.

### 5.1.6 Network Rail

Network Rail is responsible for the provision of railway infrastructure in accordance with its Network Licence”. Network Rail is required to act fairly to any licenced operator wishing to use the railway network where capacity exists. As owner and maintainer of the infrastructure it has developed many processes to manage its role and these are described in section 6 of this report.

# 6 Role of Network Rail

## 6.1 Introduction to the roles and responsibilities of the Infrastructure Manager.

Network Rail as Infrastructure Manager for the main line network has a significant role in the approvals process, granting access, and infrastructure alterations and has safety responsibilities.

There will a number of key Network Rail people required to facilitate the development of any proposed scheme requiring access to and operation over the National Rail Network. Early engagement is essential.

## 6.2 Proposed Service and Route

The early engagement will need to look at the issue that would be affected by the proposed service and the part of the main line network that will be used. This will need to consider

- the proposed routing and where the service will join and leave the main line
- The type of vehicle proposed to be used
- The type of access agreement such as whether the service will form part of a Franchise or as an Open Access Operator.
- How the service will integrate with existing traffic and whether there is adequate line capacity
- Whether the service is proposed to operate over freight only or closed lines as this may require some upgrading to be suitable for passenger services.
- Engagement will also be required if the proposed service runs beside the main line infrastructure and other systems such as LUL or other metros, as there may be system issues to be considered.

## 6.3 Key Network Rail personnel

### 6.3.1 Route Customer Services Manager

This is the key contact for all issues relating to the route including the introduction of new services, reopenings etc. They will link the proposers of the scheme with the relevant personnel within Network Rail. They will normally be first point of contact for the track access agreement and timetable development

### 6.3.2 Route Planners

The route planners are responsible for the development of all lines in their territory and assess whether the proposed scheme can be accommodated.

### 6.3.3 Route Director

Under the Route Businesses organisation, the Route Director is responsible for both enhancement and day to day performance of the route over which the proposed service will operate. If propose service crosses an NR route boundary then liaison with each route directorate will be required

### 6.3.4 Sponsor

Once the project has been accepted for development a sponsor will be appointed who will be the primary liaison between the client and the project team and other NR internal departments through all stages to completion

#### 6.3.5 Route Asset Managers (RAM)

Route Asset managers are responsible for the condition and performance of the assets on the route and need to agree changes to the proposed in any scheme including any potential restrictions that might be imposed on other traffic by the proposed operation

#### 6.3.6 Timetable planners

Responsible for developing and publishing the timetable for all operators on the network. They will model proposed service from performance characteristics of the proposed vehicles to demonstrate what, if any, impact there may be on the other services operating along the proposed route.

#### 6.3.7 Operations managers

Responsible for all aspects of the operational interface including any changes to operational procedures, and if required, any changes to the Rule Book

#### 6.3.8 Maintenance teams

Maintain the infrastructure over which the vehicles will operate and will need to understand any changes that the introduction of the new vehicles will require

#### 6.3.9 Technical specialists

Usually from the STE directorate providing specialist advice for safely introducing the vehicles on to the network eg, wheel/rail interface, EMC, product acceptance/approval

#### 6.3.10 ASPRO (Asset Protection) team

Asset protection team responsible for working with client to ensure that introducing the new vehicle poses minimal risk to NR assets on the proposed line of route

#### 6.3.11 Infrastructure Projects (IP)

IP is the organisation within Network Rail that delivers enhancements on behalf of the routes, which will include any new infrastructure required for the operation of the proposed vehicles. This will usually be done in conjunction with their call off design and construction contractors

### 6.4 Strategic overview of the proposed route

The Customer Services Manager and Route Planners will need to review the proposed service in light of future plans for the route are and confirm that it can be accommodated eg proposed route capacity, electrification, signalling and other major infrastructure enhancements, other proposed services (freight and passenger)

### 6.5 Feasibility study

Review the capability of the infrastructure for the proposed vehicle and service and the identification of any work required such as enhancements to track quality, linespeed, signalling, stations etc. This should lead to a outline systems design and specification for any required enhancements.

### 6.6 Assessments using CSM RA

Network Rail and other stakeholders will need to be party to the CSM RA and compatibility assessment described above as part of the approvals process under ROGS

### 6.7 Regulatory Process

Network Rail will lead the Regulatory change process including consultation with affected stakeholders

### 6.7.1 Station change

Required if any modifications are required to existing stations or new stations are to be opened as part of the project. This will also require a Diversity Impact Assessment to be carried out.

### 6.7.2 Vehicle change

Required for the introduction of the new vehicles

### 6.7.3 Network Change

Required if there are any changes to the network infrastructure

## 6.8 Approved suppliers

To work with Network Rail a supplier has to be on the approved list. If the proposal requires bringing in new suppliers then the approval process will need to be undertaken as early as possible

## 6.9 Access charges

The Variable Track Access charge is set by ORR based on vehicle characteristics on advice from Network Rail.

# 7 Cost and Timescales that need to be allowed.

The costs and timescales required to comply with these regulations should not be underestimated and will vary dependant on the size of the project and its location.

The current Tram Train Pilot between Sheffield City Centre and Rotherham Parkgate will provide outline guidance on both costs and schedule as part of the learning exercise which are core to the project. The experience gained by this project has indicated that any introduction of non-mainline vehicles will require careful and collaborative planning and execution. The Pilot should demonstrate where deviations from mainline standards are considered acceptable and may lead to a set of derived standards that can be used for future vehicle introductions in accordance with the set guidelines.

The proposer will need to cover all the costs of the introductions including all the vehicle, infrastructure and verification costs.

There will be ongoing cost from Network Rail in the form of “Access Charges”. If the train operator is using the “Open Access” process, only the variable track access charge specific for the vehicle will be charged. Additional charges may be applicable if the infrastructure changes are financed through Network Rail and recouped through the access charges. These access charges are regulated by the ORR and may vary for each Network Rail Control Period.

# 8 Conclusions

Any promoter wishing to introduce non-mainline vehicles onto the national railway network owned and managed by Network Rail will need to undertake several processes to gain approvals to operate.

- The Operator of the vehicles will need to be a Licensed Train Operator with Safety Certificates issued by the Office of Rail and Road.
- The Operator will need a Track Access Agreement with Network Rail.
- The Vehicle and any specific non-mainline equipment will need to be excluded from the Railway Interoperability Regulations by the DfT where the regulations allow.
- The vehicle will need to go through the "Placing into Service" process that will give a form of Type Approval.
- The Operator will need to demonstrate that the vehicle is compatible with the section of the railway network where it will operate under the "Putting into Use" process.
- These processes require that the vehicle is demonstrated to be safe to operate and compatible with the infrastructure and that the necessary safety assessments and verifications have been undertaken in accordance with ROGS and the Safety Directive (CSM-RA). It has been demonstrated for the Sheffield Rotherham Tram Train that ROGS and CSM-RA can be combined into a single process.
- The Equalities Act requires that the vehicles and infrastructure is accessible in accordance with the "Railway Vehicle Accessibility Regulations" and Department for Transport/Transport Scotland "Design Standards for Accessible Railway Stations". This will require Diversity Impact Assessments to be carried out and reviewed for Network Rail, other promoting authorities may have a similar process in place which will need to be followed.

There will be a need for several organisations to work together to enable the project to proceed successfully and in a timely manner.

The proposer will need to discuss with Network Rail to determine whether the proposed service would be feasible in terms of:

- Track Capacity – can the proposed service be accommodated on the line of route without adversely affect existing users of the line?
- Compatibility – Is the line technically suitable for the proposed vehicle type and service and what changes will be required?
- Network Costs – what works would need to be undertaken to make the route compatible and an estimate of the costs. eg route clearance, signalling immunisation, raised check rails.
- Enhancement cost – what new infrastructure will be required to enable operation of the new service and an estimate of costs. eg connections, stations platforms, power supply, signalling changes – TPWS on every signal, new signals, signal moves, signal sighting etc.

The proposer (client) should set out a clear set of requirements at the start of the project.

The main project partners, Proposer, Train Operator and Network Rail will need to enter into agreements to develop the proposals and set up a project team. It is recommended that a Project Board is set up as part of the project governance to oversee the whole programme.

The Project Board would set the Objectives and Success criteria for the project. The Project Board would agree who would the Project Entity that would procure the Vehicles and undertake the "Placing into Service" Process.

The Train Operator, as Railway Undertaking would lead the "Putting into Use" process to demonstrate compatibility with the infrastructure.

Independent organisations or individuals will need to be engaged by all project partners to undertake safety assessments and verification.

The Vehicle Manufacturer and the infrastructure contractors and their designers will need to work with the assessment and verification bodies to ensure compliance which will be confirmed during testing and commissioning.

Further assistance and guidance can be obtained from the UKTram Centre of Excellence.

Full details of the processes and the regulatory framework is described in RSSB publication

**Operating non-mainline vehicles on mainline infrastructure**
**Guidance on the regulatory requirements**

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