

The ATOC Guide to Vehicle Change

April 2008



Summary

This guide is intended to summarise the mechanisms by which GB Railway Undertakings manage vehicle change. It covers:

- New trains
- Modified trains
- Trains new to a route

It explains what a Railway Undertaking needs to do according to the law, contract, standards and good practice. It is not intended to fill in detail but rather to give an overview of, and pointers to, the various documents of law and guidance issued by the various authorities and how the new, simplified regime all fits together. More detailed guidance on the Interoperability and ROGS Regulations has previously been published by ATOC.

NB This guide is intended to be a living document. If you are reading this as a published hard copy, please check the ATOC website for any updates. (<http://www.atoc-comms.org/atoc-publications-and-factsheets.php>)

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Chapter 1 – The Context of Vehicle Change in Great Britain

1.1. The Shared System

GB train operations are part of the shared system that is the European railway system. Each of the many independent legal entities, Government, Infrastructure Manager, Railway Undertaking, which are involved in the management of the system have defined roles and responsibilities; the high-level processes defining those responsibilities are laid down in a series of European Directives:

- The Interoperability Directives (2001/16/EC and 96/48/EC, both amended by 2004/50/EC and 2007/32/EC)
- The Safety Directive (2004/49/EC)
- The Access Directive¹ (91/440/EC – amended several times)

There is no single authority “in charge”, responsible for the system, its integrity and safety; instead responsibility is shared between the actors. The Safety Directive defines the relationships and responsibilities. It states that:-

“Member States shall ensure that the responsibility for the safe operation of the railway system and the control of risks associated with it is laid upon the infrastructure managers and railway undertakings, obliging them to implement necessary risk control measures, where appropriate in cooperation with each other, to apply national safety rules and standards, and to establish safety management systems in accordance with this Directive.

Without prejudice to civil liability in accordance with the legal requirements of the Member States, each infrastructure manager and railway undertaking shall be made responsible for its part of the system and its safe operation, including supply of material and contracting of services, vis-à-vis users, customers, the workers concerned and third parties” (Article 4.3).

This makes it clear that:-

- Railway Undertakings (Train Operators) are solely responsible for their part of the system – their trains and their operation
- They must control their activities using a Safety Management System
- Where appropriate to control risk they must co-operate with each other and Infrastructure Managers
- The Member State is responsible for overseeing the system as a whole in their country

In respect of vehicle change, it is clear that RUs are responsible for ensuring that a change ensures vehicle integrity, compatibility with the rest of the railway system, and that performance is not compromised.

1.2. Safety Management Systems

The tool by which an RU maintains the integrity of its trains and their operation is its Safety Management System (SMS). The GB ROGS Regulations explicitly require a Railway Undertaking's SMS to:

“ensure the control of all categories of risk including new or existing risks associated with the operation in question which, without prejudice to the generality of the foregoing, shall include such risks relating to the—

¹ The Development of the Community's Railways (modified by Directives 2001/12/EC and 2004/51/EC)

(i) supply of maintenance and material;

(ii) use of contractors; and

(iii) placing in service of new or altered vehicles the design or construction of which incorporates significant changes compared to any vehicle already in use on the transport system and which changes would be capable of significantly increasing an existing risk or creating a significant safety risk;" (Regulation 5)

A GB RU must therefore include its vehicle change process within its SMS.

1.3. Safety Management in Shared Systems

Because no single legal entity is "in charge" of the system, maintaining the efficient ongoing integrity of the shared system as a whole depends upon co-operation between the actors.

In an integrated railway, that one single entity could define the parameters of the system and ensure compatibility within the system by means of a "System Safety Case"; a shared system cannot function in this manner, since no single entity has the ability or right to control the other entities in the system. It would be economically very inefficient for this to be attempted, with a case for safety being made based upon information from all other parties; additionally, the potential for confusion and mismatch makes this risky from a safety viewpoint, making it very unlikely to be accepted by government.

In shared systems, co-operation depends upon and is delivered by two mechanisms:

1. Mandatory compliance with prescriptive technical standards which define the common parameters of the system, its subsystems and especially the interfaces between assets managed by different entities.
2. Common operational procedures (such as the rule book) which define how the system and its subsystem parts are to be operated by the different entities.

Thus standards define how far apart the rails must be and how far apart the wheels must be. All parties know that safety is assured in respect of track gauge compatibility if all RUs and IMs comply with these standards. Similarly, a common process exists for train despatch. Cost and risk is minimised by all managers of stations and all the RUs using the same procedure.

A further advantage of the standards based approach to shared system management is that risk assessment need only be done once when compiling the standard rather than every time a change is made; changes can subsequently be made to assets by one party without the need to check or even consult with all the others.

Whilst it is not always practical, maybe for historical reasons, for all assets at all times to conform to all the latest standards, in order to maintain integrity and compatibility, such non-conformances should be eliminated over time through renewal and upgrading since non-conformity creates economic inefficiency and safety risk.

Quite literally, in a shared system:-

"A single standard is worth a thousand safety cases"

1.4. The Relationship between Mandatory Standards & Processes and Safety Management Systems

Notwithstanding the economic benefits of harmonisation, it is normal that compliance with standards and procedures is mandated (at least by government) only where it is necessary for the safe and efficient operation of the shared part of the system i.e. at the interface. Outside this domain, each entity is free to define its own specifications and processes.

The integrity of the system as a whole is maintained by the application of common standards and processes where it is necessary for every entity to "do the same thing" combined with the use of

company-specific specifications and procedures where it is not necessary for all entities to “do the same thing”.

In the context of vehicle change, an SMS has three important elements:-

1. It describes the mechanisms by which an entity ensures that it always complies with the common standards and processes mandated upon the participants in the shared system i.e. how it ensures that:
 - a. it complies with the TSIs plus national technical and safety rules it is required to comply with and was originally verified against)
 - b. its assets are maintained within the limits necessary to maintain ongoing compatibility
2. It describes how the risks associated with all the rest of the Railway Undertaking’s activities are safely managed i.e. those not covered by standards or relevant for compatibility.
3. It describes how it co-operates with others (perhaps by bi-lateral agreements) to manage any residual risks not already covered by 1 or 2 above (e.g. management processes for common fleets or shared maintenance or shared locations).

1.5. Management of the Railway System in GB – Roles & Responsibilities

European Commission (EC)

The EC has two key roles. Firstly it can propose the roles and responsibilities of the government, IMs and RUs, which are given legal force by the European Parliament and Council of Ministers in European directives and regulation.

Secondly, in the event of a Member State’s non-compliance with directives or a railway entity’s (RUs or IMs) non-compliance with regulation or a Member State’s non-implementation or non-enforcement of directives, it has substantial powers of “infraction” which it can use to levy heavy fines on recalcitrant Member States and other actors.

The Department for Transport (DfT)

In this context, the DfT is charged with:-

- Acting as the representative of UK government in the compilation and negotiation of directives and specifications
- Bringing the directives and specifications into force in the UK. This is normally achieved by means of legislation or regulation
- Appointing Notified Bodies (NoBos)

The Office of Rail Regulation (ORR)

Whilst the ORR is independent of DfT, it functions in three ways in this context:-

- The Safety Authority²
- The economic regulator
- The safety regulator

As **The Safety Authority**:-

² Defined in the ROGS Regulations Article 1 and the Interoperability Regulations Article 2(3)

- It ensures through the RUs' and IMs' Safety Management Systems meet the necessary requirements, and issues Safety Certificates/Safety Authorisations respectively
- Where required by law it authorises the placing of assets into service

As an **economic regulator** it oversees the arrangements governing the (monopoly) supply of train paths and infrastructure services by IMs to RUs to ensure that:-

- The rights of access of RUs are delivered by the IM
- The price charged for access is fair and non-discriminatory
- The supply of paths and infrastructure services is delivered in an economically efficient manner

It is the enforcer of both the safety and commercial (access) regulations. As an **enforcer** it is responsible for ensuring that the GB entities comply with the Interoperability and Safety regulations and standards.

As the **safety regulator**, it enforces other railway specific legislation and wider health and safety legislation.

The European Railway Agency (ERA)

The ERA is responsible for:-

1. Developing European Technical Specifications for Interoperability (TSIs) and procuring the supporting Euro Norms (ENs)
2. Developing Common Safety Indicators, Targets and Methods
3. Advising the EC on technical and safety matters

Railway Safety and Standards Board (RSSB)

The RSSB is the mechanism by which the GB RUs and Network Rail cooperate. It:

4. Identifies and produces national technical rules - Railway Group Standards - (RGS) that:-
 - a. fill the gaps in TSIs until they are complete³
 - b. cover geographical areas not (yet) covered by TSIs
5. Acts as the common forum (clearing house) for matters that involve the SMSs of all the UK RUs and Network Rail such as accident investigation and monitoring of ongoing safety performance

Notified Bodies

The Railways (Interoperability) Regulations 2006 (RIR) (amended by Statutory Instrument Number 3386) require that in certain circumstances authorisation from the ORR is required to place assets into service. The regulations require that in so doing, ORR takes account of independent verification. Notified Bodies are the verification agencies nominated by DfT to carry out such verification.

³ The list of national technical rules presently notified can be found on the DfT's website

Chapter 2 - The Mechanisms of Vehicle Change⁴

2.1 Stakeholders & Constraints

No Railway Undertaking in the GB rail industry can act alone and independently. In respect of vehicle change it faces the following constraints:-

Processes

Leasing agreements normally require owner's consent to change.

In order to gain a Safety Certificate, an RU's vehicle change processes must be documented in its SMS which must be accepted by ORR.

Standards

Where required by RIR, the changed subsystem must meet the "essential requirements" for a rail system by complying with TSIs (including any Notified National Technical Rules).

Where not covered by RIR, the project must meet Railway Group Standards.

Where necessary for compatibility with non-TSI compliant infrastructure, the project must also comply with relevant RGS (e.g. track circuit actuators).

Verification

RIR and ROGS (SV section) require that above a safety risk threshold, and for "major" projects, independent verification must be carried out.

Authorisation

Where required by RIR, authority must be obtained by the RU from ORR to place a vehicle into service.

If the change is such that *"the type or extent of an operation in respect of which a safety certificate has been issued is to be substantially changed"* (ROGS Regulation 8) (e.g. a regional diesel operator starting to operate new high-speed electric trains), the RU will need to get an amendment to their safety certificate accepted before they can commence operation.

Records

For projects covered by RIR, the NoBo must compile a Technical File. The technical file is the ongoing record of the subsystem's architecture, its compliance with standards and its compatibility with the rest of the railway system. It is a "living" document to be updated by the owner, as and when changes are to be made.

2.2 The Process of Bringing a Train into Service

There are three stages of Design Change to bringing rolling stock or infrastructure into use:

- a) Stage A – the rolling stock or infrastructure is demonstrated to conform to mandatory standards
- b) Stage B – the rolling stock or infrastructure is demonstrated to be compatible with the rolling stock and/or infrastructure with which it is to be integrated (i.e. the rest of the

⁴ Vehicle Change includes changes to both the design of a vehicle and its maintenance. Changes to maintenance arrangements are not covered by this document, but will be addressed by further guidance in future.

railway system)

- c) Stage C – commercial arrangements are put in place in respect of track access, vehicle change or network change, as appropriate

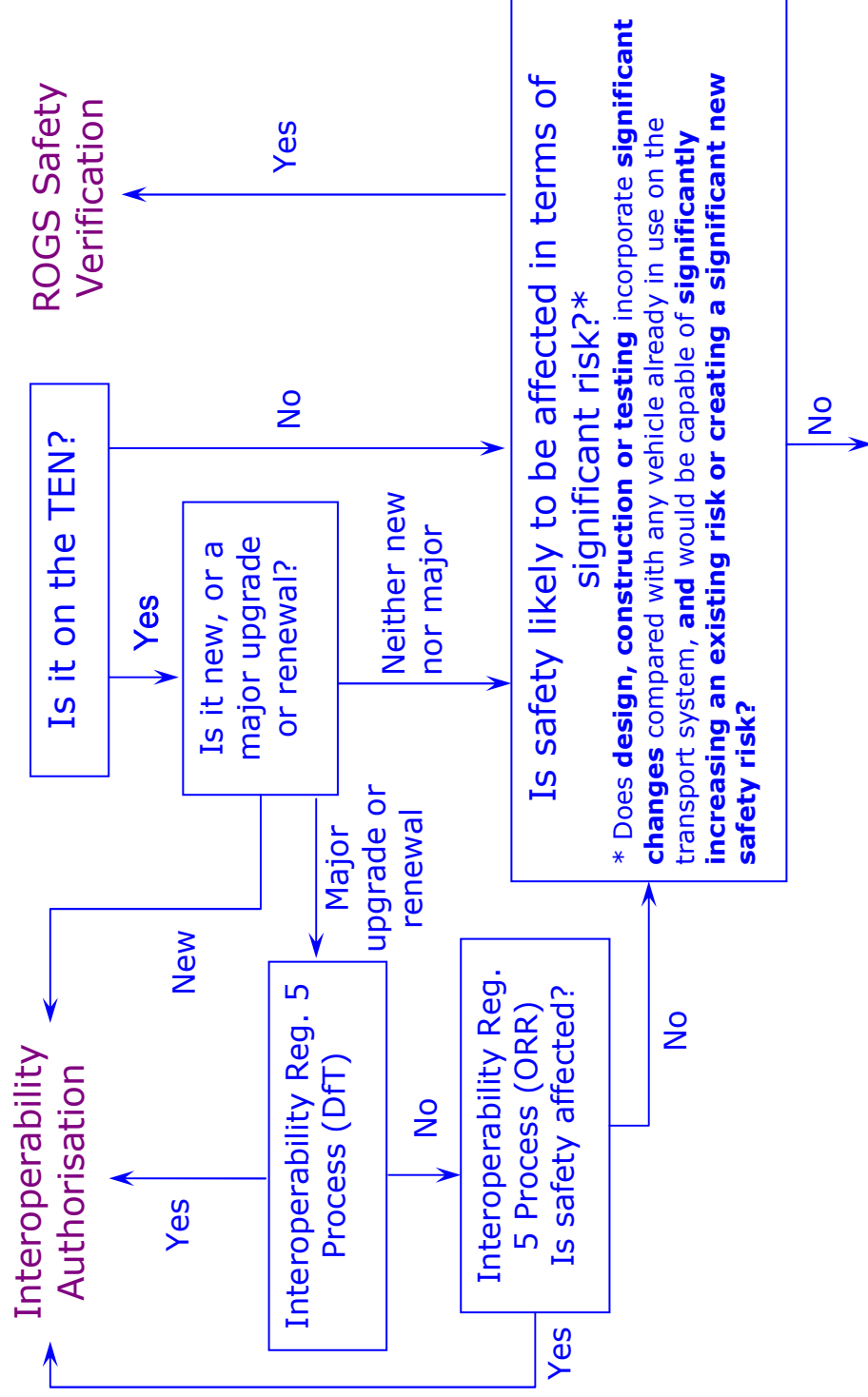
Stage A and Stage B are safety processes covered by the Interoperability and Safety Directives. Stage C is a commercial process described by The Railways Infrastructure (Access and Management) Regulations 2005.

It should be noted that this process applies in all circumstances, but RIR and ROGS require that for Vehicle Change above certain thresholds, stages A and B must involve independent verification. The process which ORR's inspectors are using to consider whether the requirement for independent verification is triggered is shown in the flowchart on the following page (Interoperability or ROGS?). For the exact words and guidance, see both sets of Regulations and their accompanying Guidance Notes.

The process to decide whether the requirement for independent verification is required is illustrated in the flowchart on the following page ("Which Process to Follow"). ORR's inspectors will use the same process to verify that the RUs/IMs are complying with the decision making processes in their SMS.

NB Achievement of the "essential requirement" of safety is satisfied by the standards compliance and compatibility check; a "Project Safety Case" is **not** required. Where standards are not prescriptive or interfaces are not compliant with clearances or fits contained within the standards, it may be necessary to carry out a risk assessment to establish safe limits for particular parameters.

Which Process to Follow?



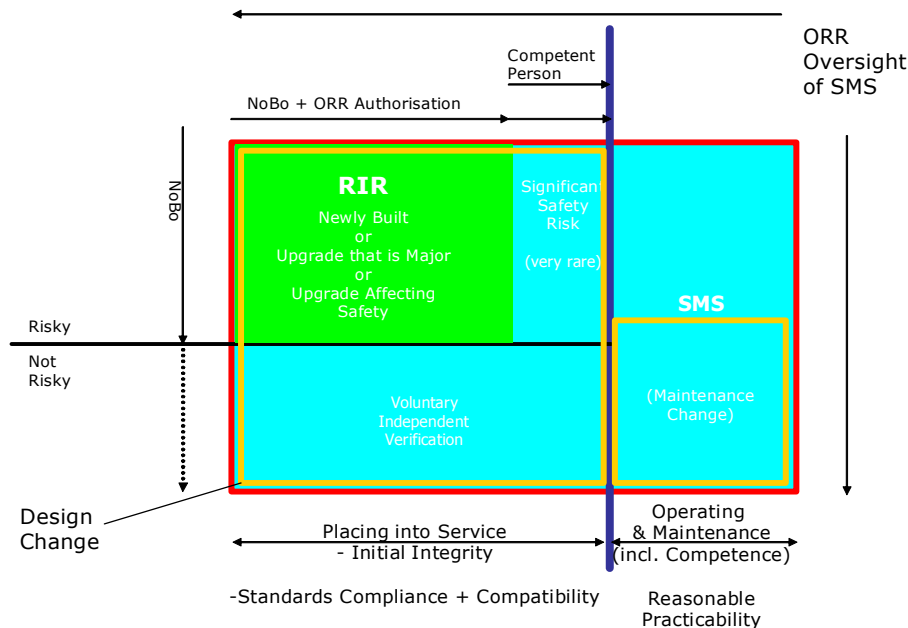
ROGS SMS
Engineering Change Management

The table below illustrates the level of independent verification required under both the Interoperability Regulations and the ROGS Regulations:

	New (Interoperability Regulations)	Major Upgrade/Renewal (Interoperability Regulations)	Risky (New to a route) (ROGS Regs Safety Verification)	Not risky (ROGS Regs , below SV threshold, but SMS management of change process control)
Compliance with Essential Requirements	Comply	Comply	Comply	Comply
Standards Checking Body	NoBo	NoBo	Competent Person	In-house/Voluntary Independent Verification
Standards which Apply	TSI + NNTR	TSI + NNTR	RGS	RGS
Compatibility Check	NoBo	NoBo	Competent Person	In-house/Voluntary Independent Verification
Authorisation to Place into Service	Member State Authorisation	Member State Authorisation	Not required	Not required
Effect on The Network	Network Code applies	Network Code applies	Network Code applies	Network Code applies

2.3 Integrating these requirements into an RU's SMS

The figure below illustrates the relationships between the requirements of an SMS, Safety Verification under ROGS and NoBo verification under RIR. The scope of the RU's SMS is bounded by the red line; the scope of Engineering Change, made up by the combination of Design Change and Maintenance Change is shown in **yellow**.



There are three discrete sets of activity⁵ to be carried out:-

- The RU may be making changes that are considered to be low risk and therefore below the "significant" threshold for compulsory Safety Verification. In this case a process of **voluntary independent verification**⁶ may apply (the bottom left-hand blue area of the diagram), depending upon the level of internal competence.
- Where the change is major⁷ in scale or it affects the overall level of safety the RU must gain **authorisation from the ORR** for placing the subsystem into service under the Railways Interoperability Regulations (RIR). This will be based upon the NoBo verification against the essential requirements and compatibility between the subsystem and the systems into which it is to be integrated (the green area on the diagram).
- Once placed into service, the subsystem will be **operated and maintained** under the auspices of the RU's SMS (the area to the right of the thick blue line). The SMS is checked by the ORR, but only **substantial** changes to the **type and extent** of activity come within the scope of ORR's formal process requiring an application to amend the RU's Safety Certificate. NB the test for formal amendment to the safety certificate is the scale and risk associated with the change in the scope of the RU's activity and not the scale of change to a vehicle.

⁵ It should be noted that there may be "irregular" activities such as building demonstration vehicles which may not trigger RIR but could involve significant risk, and hence trigger ROGS SV. Such activities are out of scope of this guidance.

⁶ For further guidance on VIV, see Annex C

⁷ "Major" is a defined term in the Interoperability Regulations

Activities to the right of the blue line are conducted according to the principle of So Far As Is Reasonably Practicable (SFAIRP), a risk-based approach documented in the SMS and monitored appropriately by the ORR whereas to the left of the line, standards compliance + compatibility is deemed ALARP by ORR.

The area of Voluntary Independent Verification (VIV) is an area where industry codes of practice such as ACOP1006 have been used for some time. The relationship between ACOP1006 and this document is the subject of a separate work stream. This document will be updated accordingly in future.

How do these three regimes activities fit together?

It is important to note that in order to ensure transparency and repeatability in general, the scope of requirements, the content and the processes of the RIR regime are clearly laid down in the regulations and the standards; RUs and NoBos are obliged to follow these procedures to verify that the essential requirements (including safety) have been met; ORR has to ensure that due process has taken place, and grant an authorisation to place into service. There is no need for the RUs to adopt, and there is a prohibition upon Member States applying, any form of other processes in parallel such as the compilation of a "Project Safety Case".

The Safety Verification requirements of ROGS and the Interoperability Regulations use different terminology and therefore can not be said to be exactly identical. However, they involve the same mechanisms and logic, so it is possible to satisfy all the requirements with a single vehicle change process in an RU's SMS.

This can be achieved by adopting three principles:-

1. Although separately and differently defined, the safety risk thresholds triggering the need for independent verification under RIR ("*affecting the overall level of safety*") and ROGS ("*incorporating significant changes compared to any vehicle already in use on the transport system and which changes would be capable of significantly increasing an existing risk or creating a significant safety risk*") can be taken as equivalent.
2. Utilising the same verification body (a NoBo) and the same verification process for circumstances where firstly a Competent Person is required (not new or upgraded but risky and new to a route) and secondly where the RU has elected to use voluntary independent verification under its SMS (not risky but no internal competence). The DfT has recently confirmed that this approach is in order – their letter is attached as annex A; ROGS Regulation 5 also explicitly permits it.
3. Recognising that something which meets the essential requirements and is therefore deemed "safe enough" as part of a train authorised under RIR, is "safe enough" when being used as part of vehicle change below the risky threshold or when a train is new to a route. This enables the essential requirements to be adopted as a single set of decision criteria.

This integrated approach using the same threshold, the same process, a single verification body and the same decision criteria is clearly more economically efficient than for an RU to operate parallel processes for ROGS and RIR. It also allows voluntary or Competent Person verification carried out under an SMS (e.g. tests and trials before placing into service) to be utilised as part of the subsequent formal NoBo verification. A Code of Practice for voluntary verification has been produced by ATOC in conjunction with the UK NoBos and is attached as annex C.

Finally it is important also to note that, unlike in previous regimes where the various parallel approval regimes covered both initial integrity and future use, there is also a clear division between the requirements in respect of placing into service (RIR) and use & maintenance of the equipment (SMS). This is marked by the vertical blue line on the diagram. This means that such issues as staff competence, defect monitoring etc. are covered by the SMS changes **only**, and form no part of the process of authorisation to place into service. Indeed it is quite conceivable that a major upgrade or new rolling stock could be fully authorised to place into service under RIR but not used

until later when staff have been trained, and maintenance processes have been put in place under the SMS.

2.4 Verification Scope

The Scope of Verification & Which Standards to Apply

Verification has two stages:-

- Verification of the essential requirements⁸
- Verification of compatibility

Verification of the Essential Requirements

The scope of verification is bounded as follows:-

- Only that which is changed and its integration into the rest of the system is to be verified.
- The "essential requirements", originally defined by the directives and now enshrined in the regulations, are "all the requirements to be met by the railway system, subsystems, interfaces and constituents". This means that the verification boundary is defined by the essential requirements and is confirmed by the fact that a Member State may not "prohibit restrict or hinder structural subsystems which meet the essential requirements."
- According to EC document DV05, the Interoperability Directives and now the GB regulations, the TSIs must deal "exhaustively with the essential requirements" and "where it has not been possible to do this the peculiarity must be identified in the TSI and be subject of a notification of the common national technical rules".
- DfT Rail have now published on their web site a list of all standards measures acting in lieu of TSIs or filling the "open points" in the TSIs which relate to the essential requirements. The lists identify the RGS measures that, in the absence of a complete TSI, cover the essential requirements and therefore gain NNTR status.

Thus the scope of verification necessary to confirm the meeting of the essential requirements is all the elements of the TSI related to the change made, including the RGS measures identified as NNTRs. This scope must be formally agreed between the RU and their NoBo.

Stage B - Verification of Compatibility

It is the responsibility of the NoBo to "verify the interface between the project subsystem and the rail system in which it will be placed in service" (RIR Regulation 9.2).

To do this, the NoBo will need to be provided with evidence presented by the RU. Railway Group Standard GE/RT8270 Issue 2 which came into force on 1st October 2007 describes the process to be used to establish compatibility and provide evidence for the NoBo.

2.5 Additional Verification

Standards such as ENs or RSSB Rail Industry Standards may contain a significant number of measures that are focussed upon the opening of supply marked and interoperability, over and above those required to meet the essential requirements. The definition of a common GSM-R Driver/Machine Interface (DMI) is an example.

In order to assure that these elements have been satisfactorily delivered it is good practice to extend the scope of NoBo verification to cover these measures.

⁸ The essential requirements apply at all times to all parts of the railway system, regardless of whether the Interoperability Regulations apply or not

2.6 Authorisation to Place into Service – Who Decides?

If a project is covered by the RIR, the ORR must give final authorisation to place into service. The placing of other authorisation requirements is neither required nor permitted by the directives. No further authorisation by the Member State is required if a project is covered by ROGS both above and below the Risky/Not Risky line.

It should be noted that the authority for any decisions in respect of safety or compatibility of rolling stock rests with the RU. The IM has no permissioning role. If the IM is not happy with the level of safety deriving from a Vehicle Change, it has neither obligation nor right to restrict or qualify access. The IM may choose to bring the matter to the attention of the RU and appeal to the ORR; the reverse applies in respect of changes to infrastructure, the RU has no authority to prevent network change on safety grounds. However, the industry's established processes should be used exhaustively to resolve such difficulties before considering the resort to ORR. RSSB has published guidance on the industry's cooperation processes, known as the "escalator".

2.7 Stage C – Track Access & the Network Statement

The Railways Infrastructure (Access and Management) Regulations 2005 require the Infrastructure Manager to publish and keep up to date a Network Statement which includes details of "the nature of the railway infrastructure and the conditions of access to it". This is the mechanism by which the RU would be expected to gain information about the characteristics ("nature") of the infrastructure in order to establish compatibility; the Infrastructure Manager is permitted to charge a fee for the production of a copy of this statement, but the fee can not be more than the cost of producing a copy.

The GB Network Code describes the contractual rights and obligations of RUs in respect of Vehicle Change.

Note that although an IM has no locus to refuse access on safety grounds under the Interoperability or ROGS Regulations, the Network Code gives Network Rail an agreed mechanism whereby they may refuse access if there is insufficient capacity. It also governs what they may charge for access.

Chapter 3 - References

Document	Web site
96/48/EC	http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1996/L/01996L0048-20040430-en.pdf
2001/16/EC	http://eur-lex.europa.eu/LexUriServ/site/en/oj/2001/l_110/l_11020010420en00010027.pdf
2004/50/EC	http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/l_220/l_22020040621en00400057.pdf
2004/49	http://europa.eu.int/eur-lex/LexUriServ/site/en/oj/2004/l_220/l_22020040621en00160039.pdf
	http://ec.europa.eu/transport/rail/interoperability/tsi_en.htm
91/440	http://ec.europa.eu/transport/rail/interoperability/taf_en.htm
	http://europa.eu/eur-lex/en/consleg/pdf/1991/en_1991L0440_do_001.pdf
SI 2006 No. 397	www.opsi.gov.uk
	www.dft.gov.uk
SI 2007 No.3386	www.opsi.gov.uk
European Commission Guidance Note DV05	See the Systems & Standards pages of the ATOC Engineering Extranet
SI 2006 No. 599	www.opsi.gov.uk
	www.rail-reg.gov.uk
	http://www.dft.gov.uk/pgr/rail/interoperabilityandstandards/interoperabilitystandards/nntrs/
SI 2005/3049	www.opsi.gov.uk

Chapter 4 - Annexes

Annex A DfT Letter Regarding NoBos, "Clarification of Notified Body Functions"

Annex B GE/RT8270 deleted. For the controlled version, see www.rgsonline.co.uk

Annex C Voluntary Independent Verification ATOC Code of Practice

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Our Ref: 070226 L ISCC NoBo Note CC TG

26 February 2007

Dear

RE: Clarification of Notified Body functions

At ISCC I undertook to confirm in writing my feedback to the committee on questions surrounding the role of Notified Bodies. ISCC asked a number of questions of DfT in relation to activities that could be undertaken by a Notified Body and the scope of their accreditation assessment.

- 1. Can DfT confirm that UKAS do not perceive it to be a problem for a NoBo to act as a Competent Person?**

My view is that there is nothing in regulation that would prevent a company that is a NoBo from also fulfilling the Competent Person role defined in ROGS. However when that company is carrying out safety verification, under ROGS, they are not acting as a NoBo. UKAS agree with DfT and have independently confirmed the competence of persons used by NoBo's to carry out assessment to national processes, NNTR's as well as TSI's and therefore their competence management system has the mechanisms in place to identify and select and deploy competent persons to applicable standards.

- 2. Can DfT provide a definitive statement that NoBos acting as Competent Persons will not affect their accreditation status?**

Given my response to the first question above I believe acting as CP should not affect their accreditation status. The CP under safety verification does not engage in design work etc.

UKAS agrees with DfT, the independence and impartiality requirements to be an appointed NoBo would not be compromised by undertaking safety verification work in the same respect that NoBo's use the same personnel to carry out VAB work and Independent Certification Services

3. The regulations say that the NoBo must verify compatibility, however it is not clear that NoBos have been assessed as competent to do so. Can DfT confirm the scope of UKAS assessment of NoBos includes their ability to verify compatibility?

I believe that the assessment process covers the full extent of the NoBo role. Looking at the regulations and the appointment conditions it seems clear to me that the NoBo assesses against TSIs, NNTRs and verifies the interface of the item with the existing rail system. I think this is in line with DTI guidelines on the role of Notified Bodies generally. Verifying the interface of the new with the existing is fundamental to the success of the system as a whole.

UKAS confirm that the scope of UKAS assessments is to confirm the NoBo's management system has processes for effective conformity assessment against standards as specified in the contractual agreements with a CE. This has in the past included assessment to national processes, NNTR's and TSI's, and therefore the interfaces between the subsystems have been included, which has, where defined in the contract been non-interoperable conformity assessment. The full extent of the NoBo role has always been assessed by UKAS over the on-going surveillance and where a project would require verification of compatibility between new and existing then UKAS would expect this to be identified in the NoBo's remit from the CE and so be audited by UKAS. UKAS can therefore confirm that the scope of the UKAS assessment of NoBo's includes their ability to verify compatibility.

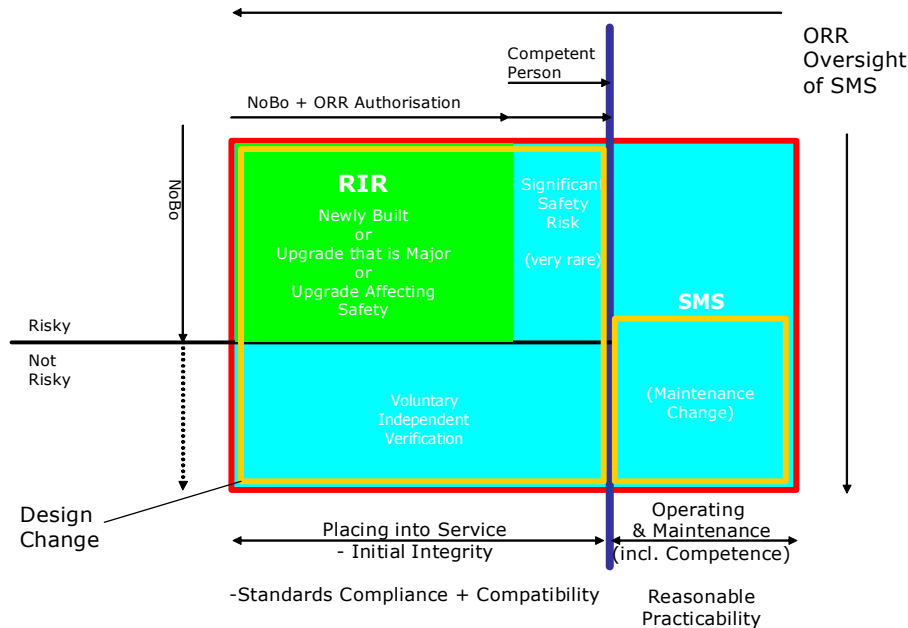
Yours faithfully,

Chris Carr

Annex C

ATOC Code of Practice: Voluntary Independent Verification (of T&RS)

The Regulatory Regime



The diagram above describes the regulatory regime. It is important to note that:-

1. Whilst they are specified in different sets of regulations, the safety risk thresholds for formal verification under interoperability and safety are so similar as to normally be considered the same.
2. Formal Safety Verification under ROGS in respect of existing trains new to a route is likely to be very rare because rarely are the route compatibility risks associated with an existing train new to a route so large as to

"incorporate significant changes compared with any vehicle already in use on the transport system, and which changes would be capable of significantly increasing an existing risk or creating a significant safety risk"

It is therefore most likely that route compatibility assessments of existing trains on new routes will fall below the ROGS formal Safety Verification risk bar.

3. The new regime replaces one that predominantly involved permissioning by HMRI, Network Rail and VABs as a result of "finished work inspection" with one where only projects triggering the verification threshold are formally inspected and authorised under the Interoperability Regulations; whilst a written Safety Verification (under ROGS) requires a degree of formality, no inspection or authorisation by 3rd parties or the Member State respectively is required. The risk relating to Engineering Change is now primarily controlled by the Operator's Safety

Management System; the ORR checks the robustness of the SMS, the RU's quality system, on an ongoing basis rather than inspecting and authorising each output/change.

Part A: Verification of Design Change⁹

Arrangement for Verification

Mandatory Verification

Where required by RIR, Notified Body verification plus Safety Authority Authorisation will be used to address initial integrity. This is demonstrated by the NoBo verifying firstly compliance with TSIs and Notified National Technical Rules (NNTRs) and secondly compatibility with the other systems. RGS GE/RT8270 Issue 2 is the normal process used to establish compatibility.

In order to be consistent (the same equipment and interface may be assessed under RIR or ROGS) and on the rare occasions it may be required, the option is available to use the same process and decision criteria for ROGS Safety Verification as for RIR verification; the TOC Engineering Directors declared this to be their policy at ATOC Engineering Council in early 2007. The ROGS Regulations permit the use of verification following the Interoperability Regulations to address the SV requirements. ROGS SV requires that the duty holder makes:

- "arrangements for the making and preservation of records showing—*
- (a) the examination and testing carried out to the new or altered vehicles or infrastructure prior to its being placed in service;*
 - (b) the findings of that examination and testing;*
 - (c) any remedial action recommended as a result of that examination and testing;*
 - and*
 - (d) any remedial action performed."*

All of (a) to (d) above should be recorded in the same manner that they would be if a Technical File, as required by the Interoperability Regulations, were being compiled.

Voluntary Independent Verification

Below the risk threshold which triggers the mandatory requirement for verification, the duty holder's SMS may indicate that, depending upon the nature and extent of the risk, and their internal competences they may choose to procure external verification as part of their SMS controls. Such external verification could be achieved using a body such as a company accredited as a NoBo, but not acting in their capacity as a NoBo.

The duty holder may also choose to procure external verification:

- a) As part of a staged approach leading up to mandatory verification e.g. to cover tests and trial activity before the equipment
- b) To enable it to be recognised by others (other RUs or IMs, ROSCOs)

In order to:

- c) be consistent - the same equipment may be assessed "above the line" as part of a new train or major upgrade or "below the line" as a modification
- d) enable the verification work to "count towards" later NoBo verification
- e) facilitate mutual recognition of verification between RUs (including that in respect of shared or pooled vehicles)

⁹ To the left of the blue line

f) benefit from government accreditation of the verification body¹⁰

The RUs¹¹ will normally use the same process and verification organisations for voluntary verification as they would under the RIR process. At their own discretion and depending upon the risk and purpose of the verification, they may limit or modify the scope of the verification they procure (previously known as the "NoBo lite" approach).

Verification Documentation

For mandatory verification the documentation required by the RIR process may¹² be used.

For voluntary independent verification, documentation of the same format as the RIR process may¹³ be used. However, to reflect the different status of the verification body, the certificates may be entitled:

"Interim EC Declaration of Verification"

or

"Letter of Verification"

The Interim Declaration or Letter must clearly describe the scope of the verification, its completeness in comparison with the verification that would be carried out had mandatory verification been required and the verification modules used.

Project/Technical File

The verification body shall draw up a project file. Its status and content will be equivalent to that of the Technical File required under RIR and it will become part of the ongoing technical file for the sub-system. The scope and content of the project file will be specified by the duty holder taking due account of the level of novelty, complexity and risk associated with the project.

¹⁰ No bodies, whether NoBo, former VAB or ISA are "accredited" as a Competent Person under ROGS. However, NoBos are accredited as competent for the purposes of RIR. See Annex A.

¹¹ Only applies to RUs - NR's draft SMS indicates they will use different, parallel processes

¹² May, not will, to reflect the fact that NR have chosen not to use this

¹³ May, not will, to reflect the fact that NR have chosen not to use this

Part B: Verification of Maintenance Change¹⁴

Arrangement for Verification

The mandatory requirement for a certificate of conformance for RU's maintenance policy has been displaced by the ORR scrutiny and acceptance of the RU's SMS. RUs are no longer required to seek VAB or third party approval to changes to maintenance schedules. The RU's SMS will have within it suitable arrangements to manage risks associated with changes to duty cycles or maintenance schedules (including deferral), and for its review.

Under the auspices of an RU's SMS, depending upon the level of risk and internal competence, an RU may choose to procure external assessment in respect of proposed changes to maintenance policy or schedules. The degree of independence and competence required to assess a change will vary on a case by case basis according to the resources of the RU and of the nature of the change proposed.

As there are very few common prescriptive standards covering tolerances, limits and maintenance intervals, designs differ between suppliers and operating regimes vary between RUs. Where RUs seek external assessment of changes to maintenance regimes, it will be validated using risk assessment and unlike NoBo certification, will not therefore be automatically transferable. Changes to maintenance arrangements should only be considered with reference to the assumptions made in the design process, which must be stated in the Technical File. The results and rationale for change will be preserved in the technical file for the rolling stock so that they may be taken account of by future operators of the stock.

The activity of assessing maintenance changes is not directly accredited as part of NoBo accreditation. It remains to be established if there is a demand for common accreditation of engineering consultancies assessing maintenance changes. If there is, it is probable that the service of consultancy could be accredited using the RISAS process. ACOP1003 provides mechanisms for choosing such suppliers.

Historical Rolling Stock Approval Processes

The following mandatory requirements have been disapplied on the basis that they duplicate or conflict with RIR and ROGS regulation:

- GM/RT2000 – Engineering Acceptance of Rail Vehicles
- GM/RT2001 – Design Scrutiny for Engineering Acceptance
- GM/RT2004 – Requirement for Rail Vehicle Maintenance (Parts B1-B6)

To enable registration on the Rolling Stock Library to continue, pending changes to the relevant RGS, RUs are now empowered to issue Certificates of Engineering Acceptance to the Rolling Stock Library. This means that the requirements to hold Certificates of Engineering Acceptance and Certificates of Conformance for maintenance are removed and existing certificates may be allowed to lapse.

Where certificates are dated it is expected that the RU will assess the risks associated with the vehicle remaining in service past the expiry date and will continue to manage those risks in the same way it did before the expiry date.

¹⁴ To the right of the blue line