

# Management of Shared **Information** Systems

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## Synopsis

This document defines the requirements for managing shared **information** systems that process **information** used for the safe operation and interworking of trains.

## Submitted by

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# Management of Shared Information Systems

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## Part A

### A1 Issue record

Issue	Date	Comments
One	June 2002	Original document. Supersedes GO/RT3435

This document will be updated when necessary by distribution of a complete replacement.

### A2 Implementation of this document

The publication date of this document is June 2002.

This document comes into force on 3 August 2002.

The dates by which compliance with the requirements of this document is to be achieved are set out in Part B2. Where those dates are later than the date on which this document comes into force, this is to give Railway Group members additional time to plan and commence implementation so as to achieve full compliance by the dates set out in Part B2.

This document supersedes the following Railway Group Standards, either in whole or in part as indicated:

Railway Group Standard	Issue No.	Title	RGS sections superseded by this document	Date(s) as of which sections are superseded
GO/RT3435	One	Management and Development of Railway Group Safety-Related Computer Information Systems	All	7 June 2003

The superseded document GO/RT3435 Issue One, listed above, is withdrawn from 7 June 2003.

### A3 Scope of Railway Group Standards

The overall scope of Railway Group Standards is set out in Appendix A of [GA/RT6001](#). The specific scope of this document is set out in Part B2.

### A4 Responsibilities

Railway Group Standards are mandatory on all Railway Group members \* and apply to all relevant activities that fall into the scope of each individual's Railway Safety Case. If any of those activities are performed by a contractor, the contractor's obligation in respect of Railway Group Standards is determined by the terms of the contract between the respective parties. Where a contractor is a duty holder of a Railway Safety Case then Railway Group Standards apply directly to the activities described in the Safety Case.

\* The Railway Group comprises Railtrack PLC, Railway Safety, and the train and station operators who hold railway safety cases for operation on or related to infrastructure controlled by Railtrack PLC.

Railtrack PLC is known as Railtrack.

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### A5 Health and safety responsibilities

In issuing this document, Railway Safety makes no warranties, express or implied, that compliance with all or any documents published by Railway Safety is sufficient on its own to ensure safe systems of work or operation. Each user is reminded of its own responsibilities to ensure health and safety at work and its individual duties under health and safety legislation.

### A6 Technical content

The technical content of this document has been approved by:

Richard Evans, Technical Principal, Operations, Railway Safety

Enquiries to be directed to Railway Safety – Tel: 020 7904 7518.

### A7 Supply

Controlled and uncontrolled copies of this document may be obtained from the Industry Safety Liaison Dept, Railway Safety, Evergreen House, 160 Euston Road, London NW1 2DX.

Railway Group Standard

**GE/RT8054**

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## Part B

### B1 Purpose

This document defines the requirements for managing shared **information** systems that process **information** used for the safe operation and interworking of trains.

### B2 Application of this document

#### B2.1 To whom the requirements apply

This document contains requirements which are applicable to Railway Safety and the duty holders of the following categories of Railway Safety Case:

- a) infrastructure controller
- b) station operator
- c) train operator

Under the Railways (Safety Case) Regulations 2000, the duty holder at a station (as defined in those Regulations) is responsible for ensuring that the requirements of Railway Group Standards are complied with. At a station, contractual arrangements (including a lease) do not of themselves relieve the duty holder of his obligations under those Regulations.

#### B2.2 Compliance requirements

This document specifically applies to shared **information** systems where the **information** they process or hold is used by more than one Railway Group member. These **information** systems will usually be computer based. See section B2.3 for exclusions.

All shared **information** systems that are commissioned after 3 August 2002 shall comply with all the requirements of this document from the date they are commissioned.

All shared **information** systems commissioned on or before 3 August 2002 shall comply with the requirements of this document by 7 June 2003, except that all shared RTIS catalogue systems commissioned on or before 3 August 2002 shall comply with all requirements of this document by 3 August 2002.

The identification of all shared **information** systems, as required by section B5 of this document, shall be completed by 3 August 2002.

Until the compliance dates above, or the date by which compliance is achieved (if earlier), the applicable requirements of GO/RT3435 Issue 1 shall continue to be met.

After the compliance dates, or after the date by which compliance is achieved (if earlier), Railway Group members shall not deviate from the requirements set out in this document.

Where it is considered not practicable, or not reasonably practicable, to comply with the requirements set out in this document, authorisation not to comply shall be sought in accordance with [GA/RT6001](#), [GA/RT6004](#) or [GA/RT6006](#).

#### B2.3 Exclusions from the application of this document

The requirements of this document do not apply to:

- a) real time control systems, where the effect of the **system** on the railway is immediate, that is, without the intervention of people
- b) computer systems used by one Railway Group member only.

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### B3 Definitions

#### Computer system

A set of application code, together with the supporting hardware and operating arrangements used to perform a particular set of tasks.

#### Integrity

Conformity of data with its definition.

#### Information system

A **system** containing one or more computer systems, that accepts and provides data where all data change is automatic and non-manual, together with its supporting business processes and procedures for operational change, maintenance, input and output.

#### Input data

Alphabetic or numeric **information** that a computer needs to undertake its function and hence provide output data.

#### RTIS Catalogue System

A **system** covered by the Systems Code and listed in the Systems Catalogue.

#### Safety implication

The safety effect on the operation and inter-working of trains, of the use of an item of data or process contained in an **information system**.

#### Safety Implication Statement

Documented evidence stating for each Railway Group member or their agents using an **information system**, whether any use of the **system** has a material safety implication, and if so how the Safety Implication Statement is kept up-to-date.

#### Shared information system

Any **information system** where more than one Railway Group member uses the **system**, and at least one Railway Group member inputs data to the **system**, and at least one Railway Group member extracts data from the **system**.

#### System Management Group

A formally constituted group of people who represent the users of an **information system** to assist their proper management of change, support and access to that **information system**.

#### System Safety Case

Documented evidence of risk assessment, the existence of a safety management **system**, and the maintenance and operational arrangements, for an **information system** which has an identified material safety implication, compliance with which is required of any users of that **information system**.

#### User

An organisation, or its agent, which inputs data to, or extracts data from, an **information system** whether directly, or by automatic or non-manual means through another **information system**.

### B4 General requirements

Railway Group members shall:

- a) identify those shared **information** systems which they use
- b) co-operate in creating and maintaining a **System** Safety Implication Statement for each shared **information system** that they use. They shall also ensure that records are retained to demonstrate that the requirements of the **System** Safety Implication Statement are being met

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- c) co-operate in the arrangements of a **System** Management Group for each shared **information system** that they use
- d) for each shared **information system** they use, and which has a material safety implication, co-operate in creating and/or maintaining a suitable and sufficient **System** Safety Case for that **system**. They shall also ensure that records are retained to demonstrate that the requirements of the **System** Safety Case are being met
- e) ensure that the **System** Safety Implication Statement and (where appropriate) the **System** Safety Case are accepted by a formally constituted acceptance body
- f) ensure that where the shared **information system** has a material safety implication, the **system** management arrangements described in the **System** Safety Case are applied
- g) co-operate in applying the requirements of this document to the development of new **information** systems.

### B5 Shared **information system** identification

Railway Group members shall identify and document the shared **information** systems that they use, including **information** systems that:

- a) they use directly, and which other Railway Group members also use directly
- b) they use directly, and which supply data to other **information** systems where it is then used by other Railway Group members
- c) they use indirectly through another **system** and which are used either directly or indirectly by other Railway Group members.

### B6 **System** Safety Implication Statements

Shared **information** systems shall be assessed by each user to determine whether any of that organisation's use of the **system** has a safety implication and, if so, whether this is a material safety implication.

This assessment shall encompass both direct uses of the **system** and uses through other systems fed by that **system**. If any one Railway Group member assesses their use of a **system** as having a material safety implication, the complete **system** shall be regarded as having a material safety implication.

The results of the assessment shall be documented in a **System** Safety Implication Statement. The **System** Safety Implication Statement shall be produced whether or not a **system** is found to have a material safety implication. The **System** Safety Implication Statement shall be agreed by all Railway Group members using the **system** and endorsed by the applicable **System** Management Group (see section B7).

The **System** Safety Implication Statement shall identify:

- a) all uses and users, including users of other systems that are not shared but use data supplied by the **system**
- b) those uses which are relevant to safety but do not have a material safety implication
- c) those uses which have a material safety implication

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- d) how the **System** Safety Implication Statement is reviewed (frequency shall be not less than annually) and is kept up-to-date in respect of changes in organisation and business processes which have the potential to affect the materiality of the safety implication.

Users shall ensure that there are suitable arrangements in place to review and update the **System** Safety Implication Statement, as necessary, to reflect changes in the **system** or its use.

Where the **System** Safety Implication Statement identifies a material safety implication by any Railway Group member using that **system**, whether as a direct use of the **system** or through other systems fed by that **system**, a **System** Safety Case shall be developed. In these circumstances the **System** Safety Implication Statement shall be maintained under the **System** Safety Case arrangements (see section B8).

### B7 **System** Management Group

#### B7.1 Formation

**System** users shall establish a **System** Management Group for each shared **information system**. Shared **information** systems may be grouped together within a single **System** Management Group for this purpose, but each **system** within any such grouping shall not be considered by more than one **System** Management Group.

#### B7.2 Membership

Membership of a **System** Management Group shall be representative of the users of the shared **information system**, to ensure the requirements to change, support, and manage access to **information** are correctly managed.

#### B7.3 Remit

The **System** Management Group shall:

- a) assist the safe usage, maintenance and development of the shared **information system**
- b) co-operate in establishing appropriate arrangements for the production and maintenance of **System** Safety Implication Statements and **System** Safety Cases
- c) review and endorse **System** Safety Implication Statements (see section B6)
- d) review and endorse **System** Safety Cases (see section B8)
- e) endorse change to **System** Safety Implication Statements or **System** Safety Cases
- f) assist users to identify and manage problems with the **system** and its data
- g) liaise with other **System** Management Groups, and the users of other systems using **information** from a shared **system**, as necessary, to ensure associated systems work effectively together
- h) assist in identifying **system** controls required to improve the **system's** fitness for the purposes, including safety, to which its users put it.

The **System** Management Group shall establish clear procedures that enable activities a) to h) in this section to be completed.

The **System** Management Group shall have no authority over the business processes generating or using **information**. The safety responsibility shall remain with the user organisation.

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## B7.4 Independent advice

Where agreement cannot be reached within a **System** Management Group or between **System** Management Groups, on issues of substance, independent advice or arbitration shall be sought.

## B8 System Safety Case

For those shared **information** systems with a **System** Safety Implication Statement that identifies a material safety implication, the following shall be documented in a **System** Safety Case:

- a) the risks to be managed with regard to the shared **information system**
- b) the **system** management arrangements, identifying the roles and responsibilities of the various parties involved, ie owner, supplier and/or maintainer, and users
- c) the roles, responsibilities and rights for operation and use of a shared **information system**
- d) the controls, supporting processes and procedures important to managing the risks
- e) the arrangements to ensure that those with responsibilities for the operation of processes and procedures, important to the safe usage and development of the **system**, perform as required
- f) the arrangements that ensure that users are aware of the degree of integrity with which the **system** and its data can be expected to perform
- g) the processes for review and improvement of the **information system**
- h) the processes for review and improvement of the **system** management arrangements
- i) the processes for review of the **System** Safety Case.

The **System** Safety Case shall demonstrate that the processes and procedures the **system** contains are suitable and sufficient for the safety reliance placed upon the **system**, and that there are adequate arrangements in place to ensure that the integrity of the **system** will continue to match the reasonable expectations of users.

The **System** Safety Case shall be agreed by users who are Railway Group members, whose agreement shall not be unreasonably withheld. Agreement shall constitute acceptance that the processes and procedures are suitable and sufficient for the safety purpose to which that user puts the **system**, and that they will comply with the processes and procedures specified.

Railway Group members shall also ensure that others who are not Railway Group members, but who they commission or involve in using a **system** covered by a **System** Safety Case, understand and accept the requirements of this document for that **system**.

The **System** Safety Case shall then be endorsed by the **System** Management Group. Such endorsement shall be recorded.

Endorsement of a **System** Safety Case by the **System** Management Group signifies that the **System** Safety Case records a correct representation of the management arrangements for the **system**, and that an adequate process to achieve agreement by users has been executed.

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### B9 System change arrangements

Changes to shared **information** systems with material safety implications shall not be made unless:

- a) change is supported by an assessment of the safety implication
- b) the **System** Management Group agree that the proposed change is acceptable from a safety point of view
- c) the **System** Safety Implication Statement and the **System** Safety Case (if any) are amended, if necessary
- d) arrangements for change set out in the **System** Safety Case (if any) are followed
- e) where there is a possibility that the change may affect a safety use, whether directly or indirectly, any potentially affected users are notified.

Where a change is made to a shared **information system** that does not have a material safety implication, but the change means that the **system**, as altered, will have a material safety implication, then a **System** Safety Case shall be produced for that **system**.

### B10 Information system acceptance

After endorsement by the **System** Management Group, all **System** Safety Implication Statements and **System** Safety Cases shall be submitted for approval to a formally constituted acceptance body.

The function of the acceptance body shall be to grant approval on the basis of the shared **information system**'s management arrangements being suitable and sufficient to ensure the **system**'s fitness for the safety purposes to which users put it.

### B11 Security and incident management

Each shared **information system** with a material safety implication, and its contained computer systems and associated equipment, shall have applied to it arrangements for:

- a) computer **system** security
- b) controlling access to the **system**
- c) recording safety-related incidents, together with recovery action taken
- d) controlling and responding to planned and unplanned non-availability outages.

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Railway Group Standard

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## References

- GA/RT6001** Railway Group Standards and other Railway Group Documents  
Railway Group Standards Change Procedures
- GA/RT6004** Temporary Non-Compliance with Railway Group Standards
- GA/RT6006** Derogations from Railway Group Standards
- GE/RC8554** Recommendations for the Management of Shared **Information** Systems

The Catalogue of Railway Group Standards and the Railway Group Standards CD-ROM give the current issue number and status of documents published by Railway Safety.