

RAILTRACK

Safety & Standards

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| Briefing Notes for: | Safety Requirements for Cab Signalling Systems and associated Guidance Note. | |
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BACKGROUND

This standard contains the safety requirements for rail traffic management and control systems which use cab signalling. The principal building blocks of the System are expected to be the Network Management Centres (NMC) and Train Control Systems (TCS) currently being developed. Compliance with these safety requirements will ensure that the necessary level safety is achieved. The requirements mandated are the core safety requirements that have to be achieved. The requirements are intended to allow some freedom of innovation in the development process and not to restrict solutions to particular technologies.

The safety requirements cover both

- a) the train control system itself (the fixed infrastructure and train-borne elements), which performs high integrity safety functions,
and
 - b) the control centre systems, where a lower level of integrity may be appropriate.
- Together, these systems are referred to throughout the requirements as the “System”.

Clearly, there can be hazards present with the introduction of new technology for safety critical functions. Compliance with the requirements of the standard will help to ensure that the hazards are addressed during the systems engineering and developmental stages.

The System provides the opportunity to improve safety levels as compared with train control systems currently in use on the Railtrack network. A number of the significant accident scenarios that are controlled by the System are not controlled to as great an extent by conventional train control systems.

The structure of the requirements is based upon six key areas. These are:

- Modes of Operation
- Movement Authorities
- Train Speed Control
- Driver’s Man Machine Interface (MMI)
- Non-Driver Interfaces
- System Management

KEY FEATURES OF THIS RAILWAY GROUP STANDARD

The main functions/purpose of the System are:

- To facilitate the efficient use of the track for the purpose of moving trains;
- To facilitate achievement of the timetable and recovery from train service perturbations;
- To ensure safe control of train movements.

The System offers the potential to reduce the level of risk in some key areas compared with conventional signalling systems, notably:

- Passing the end of movement authority;
- Overspeeding;
- Exposure of trackside workers to hazards;
- Vandalism.

The System also offers the possibility of mitigating the effects of various hazards which are not directly within the scope of the System's purpose.

Conversely, the System could expose new hazards or areas of increased levels of risk. However, these areas are addressed by the safety requirements. In some cases such hazards or an area of increased level of risk are addressed explicitly within the requirements, whilst in other cases they are addressed implicitly.

GUIDANCE NOTE

A Railway Group Guidance Note (GE/GN8526) has been produced to support the Standard. The purpose of the Guidance Note is to provide guidance on, and explanation of, the safety requirements which are defined in the Standard. Both the Guidance Note and the Standard contain an introductory section (section 4) giving further information about the System.

COMPLIANCE REQUIREMENTS

The provisions of this Railway Group Standard are mandatory for design and implementation work on new Rail Traffic Management and Control Systems projects which use cab signalling, and which commence on or after 3 February 2001.

In addition, the provisions are also mandatory upon current projects that intend to use the forms of train control which are within the scope of this document.

Railway Group Standard GK/RT0040 will be withdrawn with effect from 3 February 2001.

The following sections of Railway Group Standard GK/RT0036 are superseded with effect from 3 February 2001:

- 4.2 part
- 4.4.1 part
- 4.4.2 part