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Issue	2
Date	August 2003

Requirement Specification for 'Signals On' Controls for SSI Schemes (formerly RT/E/S/10131)

This temporary front sheet facilitates change to the new Network Rail Standards referencing nomenclature.

The Ref above will be formally allocated to this standard when it is next changed in the meantime the contents, date and issue number of this Network Rail Standard are UNCHANGED and with immediate effect it should be referred to as "(new ref) formerly (old ref)".

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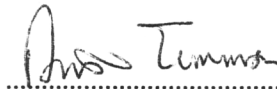


Network Rail Company Specification

Requirement Specification for Signals On Controls for SSI Schemes

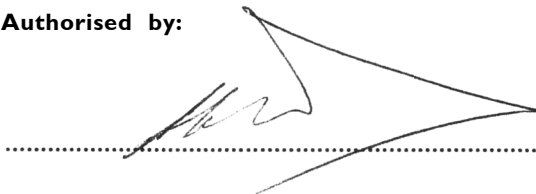
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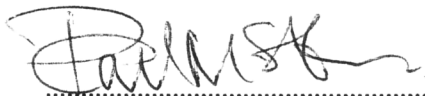
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Issue Record

Issue	Date	Comments
1	April 1999	Issued following Stakeholder Review
2	August 2003	Change to ensure requirements are applicable to non SSI schemes.

Implementation

The requirements specified in this document are mandatory for design and implementation work undertaken on new schemes for which the Signalling Scheme Plan is approved on or after 2nd August 2003 and which introduce new SSIs.

Regions shall assess the need for compliance with this specification for all other SSI schemes, including where SSI data is altered or the method of control is altered.

The requirements within this standard are mandated on schemes introducing non-SSI technology, see clause 1.2.2.

Compliance

This specification shall be complied with by suppliers of SSI signalling schemes and by those engaged in the acceptance or type approval thereof.

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I. INTRODUCTION

I.1 Purpose

- I.1.1 The purpose of this specification is to define the requirements for “Signals On” Controls for use with Network Rail infrastructure equipped with Solid State Interlocking (SSI).

I.2 Scope

- I.2.1 This specification applies to signalling schemes which make use of SSI but excluding Radio Electronic Tokenless Block systems .
- I.2.2 Non-SSI schemes shall address the requirements of this standard, although the proposed architecture and operation may, by necessity be different.
- I.2.3 All sections of this specification are mandatory with the exception of the desirable requirements listed in Section 4.

I.3 Background

- I.3.1 SSI was the first computer-based interlocking to be introduced on the United Kingdom rail network. There was concern that certain failure modes of computer-based systems could lead to a loss of control of the interlocking. This was particularly associated with concerns about software reliability.
- I.3.2 A requirement was therefore introduced to provide an independent Emergency Signals On Control (ESOC) which removed power from the Central Interlocking. This results in all signals being replaced to their most restrictive aspect. It is independent of the hardware, software or data within the Control System or the Central Interlocking. The requirement was initially introduced for use in IECC schemes. These arrangements are described in the document “Design of SSI Schemes”, SSI8500^[2.1], which forms part of the SSI Applications Manual
- I.3.3 The main problem associated with this implementation method is that the removal of power from the Central Interlocking also leads to a loss of data logging. The tape log would provide a valuable input to any investigation.
- I.3.4 Power removal is an excessive reaction to most incidents. In some cases it has caused hardware failures within the Central Interlocking. This has led to delays in restarting the Central Interlocking, and hence to train delays and maintenance costs.
- I.3.5 These hardware issues also cause problems with testing of the ESOC, since this too can cause train delays.