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Module

Chapter B: Principles and Examples 1 & 2

For endorsement, authorisation and issue record of this document, please refer to the SSI Applications Manual Contents, NR/L2/SIG/17002.

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User information

This Network Rail standard may contain requirements that are colour-coded according to the following Red–Amber–Green classification.

Red – Mandatory requirements

- **Requirements** that **will** be complied with, and achieved under all circumstances.
- Accountability for the efficacy of these requirements lies with the Professional Head/Standard Owner.
- These requirements are monitored for compliance.
- Local non-compliances, discovered through engineering verification visits, will be reported and monitored through the quarterly Engineering Verification Report.
- Corrective actions will be enforced where local non-compliances remain open beyond the agreed mitigation plan dates.
- These are presented in a red box **and with the word “shall” or a direct instruction.**

Amber – Conditional requirements

- **Requirements** that **will** be complied with unless deviation has been approved.
- Accountability for the efficacy of these requirements lies with the Professional Head/ Standard Owner, or their nominated Delegated Authority.
- These requirements are monitored for compliance.
- Derogations **may** be permitted; which are to be approved by Standard Owner in advance.
- Derogations and Temporary Non-Compliances **may** be granted through the existing Delegated Authority arrangements.
- These are presented with an amber sidebar **and with the word “shall” or a direct instruction.**

Green – Guidance

- Guidance based on good practice; representing supporting information, based on good practice, to help achieve **RED** and **AMBER** requirements.
- This guidance is **not mandatory** and is not monitored for compliance.
- Alternative solutions may be used, which do not need to be formally approved.
- Decisions made by a competent person to use alternative solutions should be backed up by appropriate evidence/documentation.
- This is presented with a dotted green sidebar **and with the word “should” (usually in notes).**

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Issue record

Issue	Date	Comments
6	April 2008	6 th Issue
7	03/03/2012	7 th Issue

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 03/03/2012.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 3 (Option Selection) to continue to comply with the issue of any relevant Network Rail standards current when GRIP Stage 3 was completed and not to comply with requirements contained herein, unless stipulated otherwise in the scope of this standard.

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1 Introduction

Where the overlap from a signal extends over one or more sets of points, the trailing points in the overlap are locked but the facing points are not locked so long as there is a valid overlap over the points in both directions. This allows the points to be moved to swing the overlap when other routes are set in the area. Providing for this additional flexibility adds to the complexity of the geographic data in a number of areas. This document sets out the basic rules for the preparation of data for swinging overlaps, based on Signalling Principles Standard [GK/RT0060](#) [1] and current practice. It also gives examples of the data for varying complexities of layouts with one or two facing points in the overlap.

In this chapter, Section 2 sets out the principles and Sections 3 & 4 give the data techniques for simpler examples.

In Chapter C, Section 1 & 2 give the data techniques for more complicated examples.

In Chapter D:

- Section 1 provides alternative data techniques, mainly for where data processing times are a problem.
- Section 2 provides for preferred overlaps.
- Section 3 provides for Non-Permitted Overlaps, i.e. where overlaps are not allowed to be set through one direction of facing points.
- Section 4 covers the special checks which are required when using Alternative Execution Clauses in the swinging overlap application.
- Section 5 covers Route-selective Restriction on Overlap Swinging, i.e. where route setting swings an existing overlap onto a further set of facing points, and one position of the overlap through these points may conflict with the route being set.

Chapter E includes various additional data methods for setting and swinging overlaps that expand on that shown in the earlier Chapters:

- Section 1 addresses the setting and swinging of parallel overlaps, whether by points key, forward flank route setting or other overlap setting.
- Section 2 expands on methods of swinging overlaps onto further facing points.
- Section 3 provides methods of dealing with potentially opposing overlaps.
- Section 4 covers the swinging of combinations of full and restricted overlaps.
- Section 5 covers swinging overlaps across boundaries.
- Section 6 covers swinging overlaps through a crossover with split detection.
- Section 7 covers optionally track locking overlap hinge points in the event of a SPAD.

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2 Principles

2.1 Initial Setting of an Overlap

When a route requiring an overlap over facing points is set, one of the possible overlap options shall be chosen according to a defined set of conditions, and the facing points called and the overlap locked in the correct direction. When checking the availability of the route, it is necessary to test for the availability of the overlap in both directions over the facing points.

The conditions for availability of the overlap in a given direction shall include:

- (i) These facing points shall be controlled in, or free to move to, this direction.
- (ii) An overlap shall be available beyond these facing points in this direction, taking into account any further facing and trailing points and opposing overlaps.
- (iii) There may be special situations where at times an overlap is prevented from being set in one direction. Thus (i) and (ii) will be checked for this direction when conditions permit. An example of this is where an overlap in one direction is only available when the route ahead is set, e.g. into a siding.
- (iv) There may be special situations where an overlap is not provided in one direction. (i) and (ii) will still be checked for the allowed direction, but as the facing points cannot swing the overlap, they are to be treated as trailing points for overlap purposes. Examples of an overlap being prevented from leading onto a line are where:
 - Signalling Principles Standard [GK/RT0064](#) [2] or operational reasons require that an overlap is not provided, or
 - there is no forward route.

Chapter D Section 3 covers the application of (iv) in more detail.

The availability of any fixed portion of the overlap, i.e. that between the start of the overlap and the first facing points, exclusive, that can swing the overlap, is also checked.

If an overlap is available and the other conditions for setting the route are satisfied, then one of the available overlap options shall be chosen and locked. If more than one of the options is available, i.e. (iii) or (iv) above does not apply, the choice of which overlap is set will be determined by the order in which the data is written.

There are two alternative criteria for determining this choice:

- a) To minimise point operation, the overlap should set in the direction in which the facing points are already controlled. If the points are not controlled in either direction, then an arbitrary choice of direction may be made (this will only occur immediately after an Interlocking Mode 1 or 2 start-up).
- b) Occasionally there may be specified in the Control Tables an order of preference of directions in which the overlap should be set if available.

Chapter D, Section 2 covers the application of option (b). Option (a) is assumed elsewhere.