

SSI Signalling Principles Group

Approved Discussion Document

DIS161

Directional Interlocking Cross Boundary Relay Interface and Internal Datalink

Issue 2

Authors:

S. Keys & S.A. Taylor, Atkins Rail



Approved by:

Chairman, SSI Signalling Principles Group

This document contains 10 pages and was approved at Issue 1 by SSISPG at its meeting of 21/10/2009 subject to minor amendments now incorporated in Issue 2. It should be read in conjunction with DIS137 "Directional Interlocking", Issue 3.

Distribution: (this issue only)

D Bardwell
M Twigg
J Alexander
A C Dumbill
S Taylor
K Ireland
P Matthews
N T Smith
J Cooper
Chairman and Secretary
A Hunt
B Young
S Crocker
R Gammon
L Twigge

Network Rail, London
Network Rail, Manchester
Network Rail, London
DeltaRail Group, Derby
Atkins Rail, Birmingham
Invensys Rail, York
Signalling Solutions, Derby
Invensys Rail, Chippenham
Signalling Solutions, Birmingham
Lloyd's Register Rail, Derby
SCSWG Secretary, Network Rail
SPG Secretary, Network Rail
Network Rail STPE, Birmingham
Network Rail FT&OCS, London
Network Rail, York

This page is intentionally blank.

20160327 22:01:09 MDT

SSI Signalling Principles Group

Directional Interlocking Cross Boundary Relay Interface and Internal Datalink

1 DOCUMENT STATUS

This document has been prepared for the SSI Signalling Principles Group (SSISPG). Issue 1 was approved at the SSISPG meeting of 21/10/09, subject to minor amendments which have been incorporated in this issue.

2 TABLE OF CONTENTS

1	DOCUMENT STATUS	1
2	TABLE OF CONTENTS	1
3	PURPOSE	1
4	INTRODUCTION	2
5	DIRECTION CONTROL DATA EXAMPLE	2
5.1	Layout	2
5.2	Direction Control Request.....	2
5.3	Route and Signal Controls	10
5.4	Indications	10
6	REFERENCES	10

3 PURPOSE

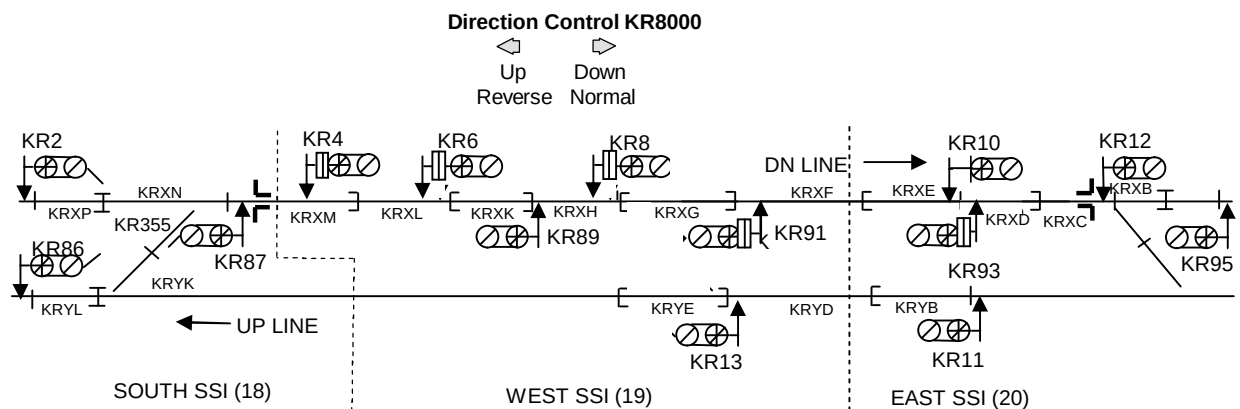
The purpose of this paper is to obtain approval from SSISPG for the data to control bidirectional sections that cross the relay boundary between Nuneaton and Trent Valley Four Track interlockings and also, cross an internal datalink boundary (IDL).

4 INTRODUCTION

DIS137 describes how to apply the direction controls between multiple interlockings, for IDL boundaries and TFM (relay interfaced) boundaries. The example in this paper considers where the direction control traverses both types of boundary. West SSI is the master interlocking, with East SSI being a TFM (relay interface) boundary and South SSI being an IDL boundary.

5 DIRECTION CONTROL DATA EXAMPLE

5.1 Layout



5.2 Direction Control Request

Setting the direction-control will need to prove conditions in all interlockings. Each adjacent interlocking will be accessed in turn from West.

East SSI (via the TFM relay interfaced boundary) will be accessed first followed by South SSI via the IDL.

The up and down routes proved normal, will be sent from East SSI to West SSI as shown in DIS137 Section 8 Cross Boundary Example via TFMs. These will be stored in LKR8000(UP)NL and LKR8000(DN)NL in West SSI. The up and down routes proved normal in South SSI, do not need to be sent to West on telegram bits as these will be tested in a cross-boundary request shown later.

Track sections in South SSI will be sent to West SSI and stored in TKR8000-1.

Track sections just in West SSI will be summated in TKR8000-2.

Track sections in East SSI will be sent to West SSI and stored in TKR8000-3.

TKR8000-1, 2 and 3 will all be combined in West SSI using the track combination special in combined identity TKR8000.

When setting the direction control to the up direction, the principle of operation is as follows.

In West SSI, the direction control request data QRKR8000(UP) will first test that the technician's control and reminder device is not applied and that no down direction route is set in West and East SSI. It will then set a latch, LKR8000(DN)CAN which will turn off the slot output to East SSI, preventing East SSI from setting a down-direction route. Any current cancellation in the up direction will be stopped by unsetting