

SSI Applications Group

Approved Discussion Document

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TPWS Zero

Issue 1

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Approved by:



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This document forms SSIAG's interim guidance on this topic pending the production of an update to the relevant chapter(s) of the SSI Applications Manual.

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1. Document Status

This document has been prepared for the SSI Applications Group (SSIAG). It been approved for use subject to minor amendments incorporated in this version.

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3. Purpose

This document has been produced to specify the implementation and data solution for two Zero OSS units provided within the Gatwick Area Signalling Renewals (GASR) scheme.

The solution provided is based upon the document 'Use of Zero OSS Version 4 04-04-2011' which is provided as appendix A.

4. Glossary

GASR	Gatwick Airport Station Re-development
NX	Entrance Exit (Panel)
OSS	Overspeed Sensor System
PMUX	Panel Multiplexer
ROL	Restricted Overlap
SSI	Solid State Interlocking
SSIAG	SSI Applications Group
SSL	Signalling Solutions Limited
TFM	Trackside Functional Module
TPWS	Train Protection and Warning System

5. Introduction

There are two possible applications of Zero OSS; the first provides protection against start away spads, and the second application uses Zero OSS to create a virtual ROL. Within the GASR scheme, only the first application (to protect against start away spads) will be provided. Information on these applications is contained in 'Use of Zero OSS Version 4 04-04-2011' (Appendix A).

The Zero OSS will be energised when its signal is at red and the overlap locking ahead of the signal is free, either because it has not been set, for example in the case of a permissive route, or because it has been released after a time (proving that the train has come to a stand at the platform). The Zero OSS will be inhibited when the sub-overlap ahead of the signal is locked or the signal is off.

The layout at GASR differs slightly to the layout in 'Use of Zero OSS Version 4 04-04-2011' in that the 10/12 car stop marker board is in advance of the Zero OSS. As the Zero OSS is only 18 metres from the 10/12 car stop board a train taking a permissive route will not be able to pass over the energised Zero OSS as it will either be underneath or beyond the stationary first train. It is essential to ensure that a train taking a route that does not lock the overlap is not able to pass over the (energised) Zero OSS.

The failure indication of the Zero OSS will be combined with the failure indication of the other TPWS units for the same signal. Where the signal is at red with the overlap free and the Zero OSS de-energised, the lamp proving of the controlling signal will be removed. The removal of the lamp proving will convey to the signaller that there is a possible failure with the TPWS for the controlling signal.

Although the failure indication of the Zero OSS has been combined with the failure indication of the other TPWS units for the same signal, it will have no effect on routes up to this signal. This is because call on class routes to this signal will not prove that the TPWS is effective, and main and warning class routes will set the overlap and inhibit the Zero OSS.

Failure reporting of the Zero OSS will also be via the diagnostic processor comparing the Zero OSS input against the corresponding control output, this will raise a critical alarm.

