NEW EQUIPMENT AND SYSTEM APPROVAL CERTIFICATE

Certificate No. NESA-S117	**Version No.1.0**
Certificate type	**Provisional**
Approval date	**17/07/2025**
Approved by	**Manager Engineering Services**
ARTC Inventory Product No.	**N/A**

This certificate is issued to

Supplier	Rail Safety Systems 17-19 Edison Road, Dandenong South, Vic 3175

In respect of

Manufacturer	Rail Safety Systems (RSS)
Product description	Rail Active Crossing System (RAXS) – Baseline 4.0
Supplier product no.	See Approved Items List
Application	For Active Level Crossing with Flashing Lights Only at Callaghans Lane, Quirindi, NSW
Relevant standards	AS1742.7 – Manual of Uniform Traffic Control Devices AS7658 – Level Crossings ESD-03-01 – Level Crossing Design ESC-03-01 – Level Crossing Construction ESD-05-05 – Level Crossing Monitoring Requirements RSS Design, Installation, Commissioning and Maintenance Manuals TFSNW Derogation

Conditions of Approval

General:

1. Approved only for the trial site at Callaghans Lane Level Crossing, Quirindi.
2. Duration of the trial is a minimum of 6 months.

3. The trial will remain in shadow mode until such time that signal maintenance and the operational technology teams are satisfied with the shadow mode performance and are comfortable continuing with the operational trial.
4. A general condition of approval is that the supplier remains accredited to ISO 9001 specifically for these products, and ARTC is advised on a 12-monthly basis that accreditation is current. ARTC reserves the right to conduct its own audit of the manufacture and supply of these components to AS 19011.
5. Any subsequent change to the design, materials or manufacturing process is not covered by this approval. The manufacturer should notify ARTC of any modifications or changes to obtain a valid certificate.

Project/Contractor:

6. The RAXS trial approval is provided based on two key assumptions:
   - The transition from RX5 active crossing to display an RX2 passive crossing treatment in the event of failure is safer than leaving the crossing uncontrolled.
   - RAXS operates as an RX5 active crossing and rarely shows RX2 only in the event of a critical failure.

   The trial shall gather further evidence to support these assumptions based on road user behavior.
7. TfNSW Human Factor Subject Matter Experts shall gather evidence of the road user behavior for the duration of the trial and prepare a report with justification for their acceptance or rejection of the full type approval.
8. All SRACs from the ISA reports and manufacturer (RSS) shall be followed and complied with in the trial installation.
9. All outstanding actions identified in the SASC report shall be resolved before the trial installation.
10. The RAXS passive mode (FTS/RX-2) signage and AEWS in passive mode shall be considered as temporary protection for the crossing. The maintenance team shall prioritise attending to the failure and restoring the RAXS to RX-5 mode as soon as possible.
11. Installers, Commissioning and Maintenance staff shall not approach closer than 20cm or touch an antenna while the equipment is powered. Power must be turned off in all cases when servicing antennas, cables and wireless cards.
12. High rail vehicles should not use the RAXS level crossing for accessing or leaving the tracks.
13. RAXS design, configuration, installation, testing, operations and maintenance shall be carried out in accordance with the relevant manufacturer’s manuals.
14. The design, installation, and testing of the Frauscher wheel sensors and system shall be carried out in accordance with Frauscher Technical manuals.
15. RSS to ensure that all alarms will be tested for the trial site as part of their testing and commissioning process.
16. RSS shall provide training to the ARTC maintenance staff responsible for the RAXS trial site maintenance.

17. RSS shall provide technical support to the ARTC maintenance staff if required for investigation of the RAXS system failure during the trial period, remotely or on-site as required.
18. RSS to provide the spares to the ARTC maintenance staff before the commissioning.
19. All staff required to manually operate the RAXS crossing should be familiarised with the RAXS.
20. Train driver to observe the advisory lights on the approach of the RAXS crossing. When RAXS is in passive mode (RX-2 or FTS), the train driver is to whistle the train when approaching the crossing.
21. RSS/Project may be required to create failure scenarios to FTS/RX2 mode to capture the road user behavior to support/reject the full approval.

ARTC:

22. ARTC staff to maintain the RAXS system as per ARTC RAXS Maintenance Plan and Service Schedule – ESW-03-01 and RAXS Maintenance Manual.
23. The maintenance team is to send the faulty item of the RAXS system to the supplier/manufacturer for the required repair or replacement of the item.
24. The maintenance team is to provide a monthly feedback report on the EGP2101F-02 and final feedback at the end of the trial with clear recommendations for acceptance or rejection.

Issue date 17/07/2025 **Expiry date** N/A

Issued by **ARTC Manager Engineering Services**

Attachments / Approved item list (if applicable):

Part Number	Description	Software Version	
RSS-H021-A#ATRSSC-1WD	ATRS-SC Sign		
RSS-H021-A#ATRS-1WD	ATRS Sign		
RSS-H022-A#TDN-1WD	Train Detection Node		
RSS-H022-A#RRN	Radio Relay Node		
RSS-H021-A#AEWS	Active Early Warning Sign		
RSS-H023-A#IEH	Main Processor Unit	4.0.28	
RSS-H026-A#IEH	Power Supply Unit		
RSS-H024-A#IEH	Inter Node Radio (LAIRD)		

RSS-H025-A#IEH	Sign Device Controller	1.5.0.0	
RSS-H029-A#DIN	FX30S Modem	1.1.0	
RSS-P022-A	Back Wiring Board for ATRS, ATRS-SC and AEWS Signs		
RSS-P023-A	Back Wiring Board for Train Detection Node		
RSS-H011-A	BP-PWR101-4 CONFIGURED FOR RAXS		
RSS-H013-A	COM-AdC101 CONFIGURED FOR RAXS		