

# RAXS - Maintenance Plan and Service Schedule

ESW-03-01

## Applicability

Only for RAXS Trial Site at Callaghans Lane, Quirindi

## Publication Requirement

Internal / External

## Primary Source

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## **1 Introduction**

### **1.1 Purpose**

The purpose of this document is to provide the maintenance plan and service schedule to the maintenance staff for the Rail Active Level Crossing System (RAXS).

### **1.2 Scope**

This document applies to the trial location of Callaghan's Lane, Quirindi, only for the duration of the trial.

### **1.3 Document Owner**

The Manager Engineering Services is the Document Owner. Queries should be directed to [standards@artc.com.au](mailto:standards@artc.com.au), in the first instance.

### **1.4 Responsibilities**

The Signalling maintenance staff is responsible for undertaking the maintenance activity as per this document at the trial site level crossing of Callaghan's Lane, Quirindi.

### **1.5 Reference Documents**

The following documents support this procedure:

- RAXS Maintenance Manual - RAXS2.0-PM-0034 v12.0
- ESW-26-01 – Signalling Service Schedule (SX7421)

## 2 Maintenance Plan

Maintenance Plan	Frequency	Comments
The first 2 months from the date of commissioning	14 days	<ul style="list-style-type: none"> <li>- First installation on the ARTC network.</li> <li>- Will provide an opportunity for the maintenance staff to get familiarised</li> <li>- Will help to identify and act on issues following trial installation commissioning if any in consultation with the Original Equipment Manufacturer (RSS).</li> </ul>
Remaining period of the trial	28 days	<ul style="list-style-type: none"> <li>- Ongoing until the trial concludes.</li> </ul>

## 3 Service Schedule

SIGNALLING TECHNICAL MAINTENANCE PLAN	
RAXS Level Crossing Maintenance	
<ol style="list-style-type: none"> <li>1. Advise the network controller before commencing work</li> <li>2. Observe the requirements of the safe work method statement</li> <li>3. Observe the appropriate network rules and procedures</li> <li>4. Perform pre-work safety brief</li> </ol>	
<p><b>MAINTENANCE ACTION:</b> Reference - RAXS Maintenance Manual (RAXS2.0-PM-0034 v12.0)</p> <p><b>ATRS, ATRS-SC, and AEWS:</b></p> <ol style="list-style-type: none"> <li>1. Check the operation of the bells and flashing lights at the front and rear of the signs, including the side white lights, by operating the manual activation panel. There are two panels, each mounted behind a cover on the rear face of the ATRS or ATRS-SC signs. Either panel can be used for manual activation. Contact the Network Controller to ensure that no train is on the approach and the tracks are clear before this task. Refer to PPR013 of the RAXS Maintenance Manual.</li> <li>1. Check that the ATRS and ATRS-SC signs and pillar hooks are correctly in place according to the RAXS Maintenance Manual (Refer to PPR002).</li> <li>2. Clean the front window and rear lights. Check the condition and if damaged or covered with graffiti, clean it as per RAXS Maintenance Manual (Refer PPR006)</li> <li>3. Clean the covers. If covers are damaged or have graffiti, clean them as per the RAXS Maintenance Manual (Refer PPR010).</li> <li>4. Contact the Network controller and advise them the test will generate an alarm on their screen. Check the shutter operation of the RAXS according to the RAXS Maintenance Manual (Refer to PPR011). Confirm with the controller that alarms were raised and restored to ensure that the monitoring system is working correctly.</li> <li>5. Check the shutter cable and brackets according to the RAXS Maintenance Manual (Refer to PPR012).</li> <li>6. Check that the advisory lights of ATRS and ATRS-SC signs are working correctly. If not, repair or replace as required.</li> <li>7. Check that ATRS and ATRS-SC signs are upright and not leaning over to one side. Take necessary action as required and stay clear of the sign in case it is leaning over.</li> </ol>	

8. Ensure the instructions for the manual activation panel on the rear of the ATRS and ATRS-SC signs are present and legible.

**All nodes:**

9. Check the structure of the signs and poles are free of rust, and foundation bolts are not loose. Ensure there is no structural damage to the signs and poles. Refer to PPR001 of the RAXS Maintenance Manual.
10. Check all antennas according to the RAXS Maintenance Manual (Refer to PPR004).
11. Clean the interior of the housing. Check for ant or vermin activity and apply controls if required. Check for water damage and the sub-rack cabinet for any water condensation. Refer to PPR005 of the RAXS Maintenance Manual.
12. Carry out a visual inspection of solar panels from ground level. Arrange for the cleaning of solar panels if required due to dirt or grime buildup. Refer to PPR007 of the RAXS Maintenance Manual.
13. Clear the surrounding area of signs, including grass, vegetation, insect nets, etc., according to the RAXS Maintenance Manual (Refer to PPR008).
14. Check for overhanging vegetation in the wireless path between TDN and ATRS signs. The line of sight shall be clear of growing vegetation, 5m clearance band is to be maintained to ensure wireless performance is not impacted. Refer to PPR009 of the RAXS Maintenance Manual.
15. Check the battery at all nodes as per PPR018 of the RAXS maintenance manual.
16. Inspect hydrogen breather tubes on all batteries. Check for any degradation, blockage, or damage and replace if necessary. Refer to PPR020 of the RAXS maintenance manual.

**Axle Counter at TDN and ATRS:**

17. Perform the Axle Counter maintenance as per SX7421.

**General:**

18. From the RCMS logs, confirm that there are no active faults related to the batteries or solar panels. Confirm main battery and alert battery voltages are within the acceptable operating range ( $9V < V < 14.8V$ ) and confirm the PV array's voltage and charge current ( $5A < I < 12A$ ) are within the acceptable operating range. If any problems are found, refer to the Corrective Actions section of the RAXS Maintenance Manual and follow the relevant actions/procedures.
19. Ensure all circuit breakers are turned on and not tripped. If tripped, identify the cause, rectify it, and restore power.
20. Ensure all road markings and delineators are present and in good condition.
21. Check the condition of the test box located next to the ATRS-SC sign. Ensure the manual panel key is present and the system control key is present inside the inner box.
22. Closed all housing doors and panels. Ensure all padlocks are securely locked.

**REINSTATEMENT ACTION:**

1. Record maintenance action by closing off the MST / work order
2. Advise the network controller that maintenance action is complete
3. Repairs or adjustments are to be affected immediately or recorded in the WMS as a corrective action
4. Dispose of all components, batteries, soiled rags, papers, etc, appropriately