



AUSTRALIAN RAIL TRACK CORPORATION LTD

Ref No:

S-01-10-109

Date: 2 February 2011

System & Equipment Approval

Subject: Frauscher Axle Counter –IMC006 Evaluation Board

1. INTRODUCTION

The manufacturer Frauscher and supplier Selectrix has requested approval of the IMC006 Axle Counter Evaluator Board for use in ARTC Signalling infrastructure as part of the Frauscher axle counter system. Approval has previously been given for the axle counter system with AMC001 evaluator board.

This report covers the approval for the IMC006 Axle Counter Evaluator Board.

1.1.Determination of Need

Issue of System & Equipment Approval documentation will allow the progression of new works projects incorporating the latest available technology widely used on rail infrastructure in Australia without requesting specific approval in each instance. The Frauscher axle counter system has been widely used on the ARTC network and is particularly useful in the Hunter Valley with high axle loads and on branch lines with infrequent rail traffic. The IMC006 Axle Counter Evaluator Board provides an improved performance and is able to reliably detect the smaller wheel of Hi-Rail vehicles.

1.2.Significant Change or Not

This change in System & Equipment Approval is assessed as **SIGNIFICANT**.

2. OUTCOME

The proposal involves the approval of the IMC006 Axle Counter Evaluator Board as an extension of the current approval. The unit has been trialled to determine its reliability for detecting the Hi-Rail vehicle wheels. The interface requirements, configuration settings and support equipment have been determined and the unit provides reliable operation.

2.1.Review Panel

The equipment review panel for the IMC006 Axle Counter Evaluator Board was:

- John Furness – Manager Standards
- Trevor Moore – Signalling Standards Engineer
- Mark Blaik – Signal Maintenance Engineer Hunter Valley

3. SAFETY

The equipment type, computer based signalling, is a part of the ARTC safety signalling. The equipment type is covered by ARTC Signalling standards



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- SPS 01 – Standard Requirements for Signalling Electronic Systems
- SPS 02 – 'Environmental Conditions
- SCP17 – Computer Based Interlocking Requirements

The axle counter system directly affects safety of the signalling system. It is required to handle the data communications without changing the data or interfering with the data sequence. The unit follows the relevant international standards and performs this task so as to meet the safety requirements. The current in service use of the units has satisfactorily demonstrated that it meets these requirements.

4. PERFORMANCE AND SUITABILITY

The equipment will be utilised in various location cases at trackside and signalling equipment rooms, but not track mounted, and in remote sites, and must therefore operate correctly as set out in ARTC Signalling Specification SPS 02 – 'Environmental Conditions'.

4.1. Use in other rail networks

The IMC006 Axle Counter Evaluator Board has been used in the Europe. It has independent safety approval in Europe. Refer to ACS2000_D10003-Independnet Safety Assessment.

4.2. Use in the ARTC network

The ARTC has trialled and tested the unit for use with Hi-Rail vehicles and it has met requirements. This has demonstrated the unit meets the ARTC requirements.

4.3. Issues arising from Usage of the equipment/system

There are no issues arising from the proposed use of the IMC006 as part of the axle counter system.

4.4. Changes required to infrastructure or systems for use of the equipment

No changes are required to infrastructure.

5. RELIABILITY

These existing axle counter system components have been in service extensively in ARTC with a good reliability record. ARTC has experienced no significant reliability problems with the Frauscher ACS2000 axle counter system when used in accordance with the relevant standards.

6. MAINTAINABILITY

The IMC006 Axle Counter Evaluator Board proposed for acceptance are current product and are generally available in Australia. No significant maintainability problems with the in service units have been recorded.



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7. PROCUREMENT & INVENTORY

There are no special requirements for procurement or spares holding for the unit.

Procurement of units for projects or as supplied spare parts is not expected to be an issue for the project teams. The supplier Selectrix has been providing the units for the past 5 years.

8. APPROVAL

Type Approval of the Frauscher IMC006 Axle Counter Evaluator Board for use with the ACS2000 axle counter system is recommended with conditions. These items are recommended to the ARTC Safety Committee for use in all jurisdictions of the ARTC.

8.1. Conditions for Approval

- i. For use in accordance with ARTC signals construction standards and signal design standards and guidelines.
- ii. The existing Type Approval be updated to include the IMC006 and the AMC001 be used only as a spare on existing systems.

Equipment Review Panel

Signed:

see email

Trevor Moore

Signalling Standards Engineer

4/2/2011

Date

see email

Mark Blaik

Signal Maintenance Engineer Hunter Valley

11/2/2011

Date

Approved

Signed:

[Signature]

John Furness

Manager Standards

Date *11/2/2011*

Approved by Risk & Safety Committee 21 Feb 2011



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Attachments

- 07007-0014-001-EN-01 - Small wheel Test Report
- ACS2000_D10003-Independnet Safety Assessment
- D10003-01 - Frauscher Axle Counter documents
- D10003-02 - Frauscher Axle Counter System Description
- D10003-03 - Frauscher Performance Data
- D10003-04 Frauscher Axle Counter Installation
- D10003-05 Frauscher Board types
- D10003-06 Frauscher Commissioning
- D10003-07 Frauscher Test acceptance
- D10003-08 Frauscher Maintenance
- D10003-09 Frauscher Diagnostics
- D10003-10 Frauscher Axle Counter Operation
- D10003-11 Frauscher Safety Regulations
- D10003-12 Frauscher Board Specifications
- IMC006_EN Frauscher techncial details