



AUSTRALIAN RAIL TRACK CORPORATION LTD

Discipline: Engineering

Category: Procedure

# Control of Software Configuration for Signalling & Communications Systems

## PP-130

### Applicability

ARTC Network Wide		Western Jurisdiction	✓
New South Wales		Victoria	✓

### Document Status

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## 1 Purpose

The purpose of this procedure is to ensure that Signalling and Communications systems software configurations are adequately controlled by ARTC.

## 2 Scope

The scope of this procedure is limited to those activities conducted to establish and maintain control over the configuration of software for signalling and communications systems in the ARTC infrastructure.

## 3 Reference Documents

AS4292.4 Railway Safety Management – Signalling & Telecommunications Systems & Equipment Clause 3.3.2 System Configuration

## 4 Responsibility

The Manager Standards and Systems is responsible for the control of the configuration of software

## 5 Signalling & Communications Systems Software

Signalling and Communications systems software are employed by ARTC to control safety critical and safety related systems across the ARTC owned, leased or managed Network. ARTC requires a high level of confidence in the safe operation and function of signalling and communications systems, achieved by applying rigorous configuration control methods to the management of software.

Software configuration changes for Signal and Communications Systems are received at ARTC in a variety of ways. For example:

- An equipment manufacturer will forward a patch file to ARTC for an upgrade of a particular signal software version.
- The acquisition of new or modified signalling equipment will include a Factory Acceptance Test (FAT) at suppliers' sites, during which the software might be delivered to ARTC.
- Alliance Partners or other maintainers may already hold signalling software versions, in which case the configuration changes will be implemented in the field.

### 5.1 Configuration Management

ARTC receives and retains all signalling and communications systems software and the associated plans. Typically, the software is a site-specific application, for use with a particular system.

There are two methods available for control of software configuration changes:

- ARTC owns and controls the software (registration, acceptability, storage); or
- Alliance Partners and Contractors control the software.

Software changes are recorded in the ARTC Software Register.

Internal issue of software, from site to site, must be under cover of an ARTC Receipt & Transmittal notice.

Version control is achieved by submitting all proposed changes to the AMT for endorsement, and capturing the change data in the ARTC Software Register.

## 5.2 Approval of Configuration Changes

Corridor/Asset Managers approve all non-significant configuration changes, and recommend the acceptance of significant configuration changes to the Safety Committee. Corridor/Asset Managers should apply the following criteria when determining the technical acceptability of software configuration changes:

- Has a competent designer done the work?
- Has a competent engineer approved the design?
- Have third party validation and verification checks of the design been conducted?

## 6 Procedure

The process for controlling the configuration of signalling and communications system software is illustrated in the attached flow chart. The key steps are:

1. Suppliers and Asset Maintainers generate configuration changes resulting from modifications, enhancements and upgrades of software.
2. Corridor/Asset Managers determine the significance of the configuration change in terms of the physical integrity of the infrastructure.
3. Corridor/Asset Managers implement functional validation and verification procedures for changes to the configuration of safety critical software, in conjunction with independent third party advisers.
4. Corridor/Asset Managers approve the technical acceptability of all software configuration changes, on the basis of the independent third party check.
5. Corridor/Asset Managers record configuration changes in the Infrastructure Management System (IMS).
6. Corridor/Asset Managers report all configuration changes to the Alliance Management Teams (AMT) and ARTC Safety Committee.
7. Corridor/Asset Managers approve all non-significant configuration changes.
8. The Safety Committee approves all significant configuration changes.
9. The AMT endorses all proposed software configuration changes.
10. Alliance Boards formally accept the embodiment of all configuration changes.
11. Asset Maintainers implement configuration changes.
12. Asset Managers audit the implementation of configuration changes.
13. Asset Managers capture configuration change data and update the Software Register.

## 7 Flow Chart

Refer overleaf.

