



Transport
Asset Standards
Authority

Application of Common Signals and Control Systems equipment requirements specification

Greg Hockings, Principal Engineer Electronic Systems



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COTS equipment framework

COTS Commercial Off The Shelf

Equipment a physical item that provides functionality including its firmware and essential software

Framework a structure designed to support
in this case a structure to support the use of COTS
equipment as part of the Signalling and Control
systems

COTS equipment framework

Who

AEO authorised for S&CS design and install

What

Commercial Off The Shelf equipment that meets the criteria

When

Equipment selection in the design phase

How

AEO process followed by registration with ASA

Why

To improve process efficiency

COTS equipment framework - who

‘An **AEO** approved for all of the signals and control systems detailed life cycle activities for design and install is **delegated** authority to evaluate and manage the **type approval** of a subset of **COTS equipment** in accordance with the specified requirements for the equipment.’

COTS equipment framework - who

Extracts from:

T MU MD 00009 F1 AEO Engineering
Services Matrix Template

Acquire							Operate and maintain		
Design	Material procurement	Manufacturing or fabrication	Construction or installation	Subsystem integration	Testing and commissioning	Acceptance services	Plan asset maintenance	Maintain or upgrade assets	Conduct asset condition surveys

Signalling and control systems	Supervisory and control systems
	Interlocking systems
	Trackside systems (including cabling)

COTS equipment framework - what

Note: The equipment requirements include recommendations and constraints from the supplier and type approval of the signals and control systems equipment the COTS equipment is being used with.

All requirements need to be identified and complied with.

Example:

The Generic Application Safety Case (GASC) for a Computer Based Interlocking has constraints on COTS equipment used as part of a CBI installation.

COTS equipment framework - what

‘This delegation is limited to COTS *equipment* that meets all of the following criteria:

- i. Not specific to any particular industry.
- ii. Not selected to control any *functional safety* related failure modes.
- iii. Similar equipment is available from three or more suppliers.
- iv. Replacement of one brand equipment with another brand's similar equipment is able to be completed in 30 minutes by first line maintenance personnel with a design covering interface terminal wiring only. The equipment can be preconfigured and tested prior to the replacement.
- v. The equipment is made to an International standard.
- vi. All of the equipment interfaces conform to an International standard.
- vii. The equipment type is in widespread use.
- viii. The specific equipment item is in commercial production with delivery in less than six weeks from purchase request.’

COTS equipment framework - how

Confirm COTS equipment meets requirements for the application

Register approval:

‘AEO type approvals under this framework shall be provided for registration in accordance with T MU MD 00005 GU.’

Registration could be done by:

1. as individual type approval register entry allocated each time
2. AEO having one type approval register entry allocated and they maintain a schedule of items for the type approval
3. another approach ...

If the registration is not supported by the Lead Engineer Signals and Control Systems then type approval process to be used will be determined based on standard compliance and risk.

COTS equipment framework - why

- Improve efficiency of type approval process whilst maintaining an assurance process
- Increased adoption of COTS equipment provides opportunities to innovate and improve the Signals and Control Systems

Off-line support tools

off-line support tool tool only used during the plan or acquire asset life cycle phases to plan, design, construct, install or test and commission equipment.

Note: Tools used for training during the operate/maintain life cycle are categorized as off-line support tools as they are not used in association with the in-service equipment.

Note: Tools that are used during both acquire and operate/maintain life cycle phases in association with equipment before it is commissioned and while it is in-service are considered to be on-line support tools.

on-line support tool tool used during the operate/maintain asset life cycle phase in association with the in-service equipment.

Off-line support tools

Who

An AEO in accordance with their authorisation

What

Tools (equipment, software, systems and processes) that are not deliverable as part of a maintained asset

When

Design and Install phases

How

AEO processes in accordance with AEO Governance framework and CMAAC

Why

Clarify boundary's between AEO governance, Configuration management and type approval