



**Australian Government**

# **MEM29002 Commission a cyber-physical system**

**Release: 1**

# MEM29002 Commission a cyber-physical system

## Modification History

Release 1. New unit.

## Application

This unit describes the skills and knowledge to commission a cyber-physical system.

Cyber-physical systems (CPS) are integrations of computation, networking, and physical processes. Embedded computers and networks monitor and control the physical processes, with feedback loops where physical processes affect computations and vice versa.

The unit requires the ability to prepare for and apply commissioning procedures for a cyber-physical system before completing and reporting on the outcomes. This unit does not cover commissioning activities covered by electrical licensing requirements in a state or territory.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Competency Field

Applied technologies

## Elements and Performance Criteria

| Elements                                         | Performance Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes.        | Performance criteria describe the performance needed to demonstrate achievement of the element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1. Prepare to commission a cyber-physical system | <ul style="list-style-type: none"><li>1.1 Identify features and characteristics of the cyber-physical system to be commissioned</li><li>1.2 Review commissioning requirements from design specifications and other approved resources</li><li>1.3 Identify workplace health and safety (WHS) procedures and risk control measures relevant to cyber-physical system commissioning</li><li>1.4 Confirm cyber security requirements associated with commissioning cyber-physical system</li><li>1.5 Prepare commissioning plan for cyber-physical system that reflects identified requirements'</li><li>1.6 Submit cyber-security commissioning plan for approval according to workplace procedures</li></ul> |

| Elements                                        | Performance Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes.       | Performance criteria describe the performance needed to demonstrate achievement of the element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. Commission a cyber-physical system           | <p>2.1 Check required tools and equipment for serviceability and rectify or report any faults prior to commencement</p> <p>2.2 Implement commissioning plan isolation and access control measures</p> <p>2.3 Perform commissioning procedures according to plan</p> <p>2.4 Monitor commissioning for non-conformances with commissioning plan and rectify or seek assistance according to scope of role and plan risk procedures</p> <p>2.5 Test operation of cyber-physical system after commissioning and rectify or report non-conformances according to workplace procedures</p> |
| 3. Complete cyber-physical system commissioning | <p>3.1 Liaise with relevant personnel to confirm that the system complies with relevant cyber security protocols and planned user experience</p> <p>3.2 Produce required documentation and reports in line with organisational policies and procedures</p> <p>3.3 Obtain approval for cyber-physical system operational status according to workplace procedures</p>                                                                                                                                                                                                                 |

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Other approved resources for commissioning requirements include one or more of the following:

- documentation from cyber-physical system and component suppliers
- factory acceptance testing (FAT) reports
- task list and work requests for the cyber-physical system

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- existing equipment and software specifications
- relevant expert personnel

Commissioning non-conformances include one or more of the following:

- system operations inconsistent with input commands or manufacturer guidelines on safe operating limits
- machinery faults and breakdowns
- data corruption or non-transmission
- cyber-security non-compliances.

## Unit Mapping Information

No equivalent unit.

## Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>