



Australian Government

MSS405050 Determine and improve process capability

Release: 1

MSS405050 Determine and improve process capability

Modification History

Release 1. Supersedes and is equivalent to MSS405050A Determine and improve process capability

Application

This unit of competency covers the skills and knowledge required to determine the actual (as distinct from design) capability of a process and then to analyse that process to remove assignable causes and reduce random causes. This unit applies to an individual (who may be a production manager, plant/process engineer, technical specialist or similar) who is responsible for developing plans to stabilise and then improve process capability and following agreement the implementation of the plans to improve process capability. The organisation may use either a six sigma or three sigma process.

This unit primarily requires the application of skills associated with communication in gathering and analysing data and consulting with relevant personnel. Teamwork, problem solving, initiative and enterprise, and planning and organising are required to determine causes to variations and implement solutions. This is done in an environment using computer technology and also requires aspects of self-management and learning to ensure feedback and new learning is integrated into process improvements and operations management control systems.

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

Pre-requisite Unit

MSS404052 Apply statistics to operational processes

Competency Field

Competitive systems and practices

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|--|--|
| 1 | Obtain data for process capability study | <div>1.1 Identify the process requiring capability analysis, including relevant procedures.</div> <div>1.2 Identify customer specifications for product or service.</div> <div>1.3 Obtain process capability data.</div> |
| | | |
| 2 | Analyse data | <div>2.1 Identify assignable causes of variation in liaison with relevant personnel.</div> <div>2.2 Develop solutions to eliminate variation due to assignable causes in liaison with relevant personnel.</div> <div>2.3 Analyse random variations for possible causes in liaison with relevant personnel.</div> <div>2.4 Confirm causes of random variation.</div> <div>2.5 Develop solutions to reduce random variations in liaison with relevant personnel.</div> |
| | | |
| 3 | Take action to improve process capability | <div>3.1 Develop plans to implement solutions.</div> <div>3.2 Liaise with relevant personnel to implement solutions.</div> <div>3.3 Gain necessary approvals, as required.</div> <div>3.4 Monitor implementation and make adjustments, as required.</div> <div>3.5 Determine new/revised process capability.</div> <div>3.6 Implement revised process capability regime.</div> |

Foundation Skills

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

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.

Competitive systems and practices include one or more of:

- lean operations
- agile operations
- preventative and predictive maintenance approaches
- statistical process control systems, including six sigma and three sigma
- Just in Time (JIT), kanban and other pull-related operations control systems
- supply, value, and demand chain monitoring and analysis
- 5S
- continuous improvement (kaizen)
- breakthrough improvement (kaizen blitz)
- cause/effect diagrams
- overall equipment effectiveness (OEE)
- takt time
- process mapping
- problem solving
- run charts
- standard procedures
- current reality tree.

Process capability data includes one or more of:

- customer requirements for product or service
- process stability (control chart) performance
- other charts and data.

Procedures (written, verbal, visual, computer based, etc.) include one or any combination of:

- work instructions
- standard operating procedures (SOPs)
- safe work method statements
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS405050A Determine and improve process capability

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS405050 Determine and improve process capability

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability to determine and improve the capability of one (1) or more processes and to:

- obtain relevant data
- analyse the data to determine random and non-random variation
- develop solutions to reduce variation
- develop and monitor the implementation of plans aimed at reducing variation
- make further improvements as appropriate and determine capability of improved process.

Knowledge Evidence

Must provide evidence that demonstrates sufficient knowledge to interact with relevant personnel and be able to determine and improve capability, including knowledge of:

- statistical methods of processing and describing data
- data collection methods
- data processing techniques required to establish variability and normal distribution
- calculate three sigma or six sigma process capability, as relevant
- random and non-random results and processes for recognition of assignable causes
- causes of different types of non-random results
- causes of random variation
- process understanding sufficient to translate the data into variations in the process and determine methods of controlling them.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence is best done from a report and/or folio of evidence drawn from:
 - a single project which provides sufficient evidence of the requirements of all the elements and performance criteria
 - multiple smaller projects which together provide sufficient evidence of the requirements of all the elements and performance criteria.

- A third-party report, or similar, may be needed to testify to the work done by the individual, particularly when the project has been done as part of a project team.
- Assessment should use a real capability analysis and improvement project for an operational workplace.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

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