



**Australian Government**

# **MSS405053 Manage application of six sigma for process control and improvement**

**Release: 2**

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## **Modification History**

### **Release 2. Updated pre-requisite code**

Release 1. Supersedes and is equivalent to MSS405053A Manage application of six sigma for process control and improvement

## **Application**

This unit of competency covers the skills and knowledge required to manage six sigma (or similar statistics based approach) in the workplace for the purposes of process control and process improvement.

This unit covers the skills and knowledge needed by a technical expert in managing the application of six sigma in an organisation in order to minimise defects and make improvements to processes and/or products. Depending on the need the expert will apply six sigma processes themselves or work with, and advise, other employees in applying six sigma processes.

This unit requires the application of skills associated with problem solving, initiative, enterprise, planning and organising in order to apply six sigma in the workplace. This unit requires skill in gathering, analysing and applying information and data.

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

## **Pre-requisite Unit**

MSS404054 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.

- |   |   |   |
|---|---|---|
| 1 | <b>Review process data</b>  | <ul style="list-style-type: none"> <li>1.1 Confirm area of responsibility/study with executive leaders and other stakeholders.</li> <li>1.2 Review statistical process control (SPC), process capability and other relevant data for area of responsibility/study.</li> <li>1.3 Identify shifts in process performance and processes requiring improvement.</li> <li>1.4 Quantify the shifts in performance which have occurred or which are desired.</li> <li>1.5 Determine cost of shift in performance and cost of intervention.</li> <li>1.6 Identify improvement priorities and degree of intervention.</li> </ul> |
| 2 | <b>Apply define, measure, analyse, improve, and control and standardise (DMAIC) process to priority areas</b> | <ul style="list-style-type: none"> <li>2.1 Define improvement project.</li> <li>2.2 Determine if a six sigma project team is to be established or project undertaken individually.</li> <li>2.3 Determine metrics and acquire initial data.</li> <li>2.4 Analyse data and determine possible causes of performance shifts/process improvements.</li> <li>2.5 Develop and trial improvement solutions.</li> <li>2.6 Control and standardise the improvement.</li> </ul>  |
| 3 | <b>Establish/review control strategies</b>  | <ul style="list-style-type: none"> <li>3.1 Determine sampling schedule.</li> <li>3.2 Analyse data to determine process capability.</li> <li>3.3 Develop process control strategy.</li> <li>3.4 Confirm strategy with all stakeholders.</li> <li>3.5 Identify skills required to implement and monitor process control strategy.</li> <li>3.6 Arrange training, where required, for employees in skills and techniques needed for process control strategy.</li> </ul>   |

- |   |                                       |     |   |
|---|---------------------------------------|-----|---|
| 4 | <b>Review and confirm improvement</b> | 4.1 | Calculate and document benefits.  |
|   |                                       | 4.2 | Ensure procedures and other relevant documentation is updated for improved procedure. |
|   |                                       | 4.3 | Review process data after an appropriate period and confirm the improvement.          |

## 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.

- DMAIC includes all of:**
- define
  - measure
  - analyse
  - improve
  - control and standardise.
- Definition of the project includes all of:**
- completed, verified and validated as in process map
  - suppliers, inputs, process, outputs, customers (SIPOC) diagram
  - discrepancies to current 'as is' process map
  - formation and briefing of project team
  - defining business case for project
  - problem statement
  - goal statement
  - project scope.
- Metrics includes one or more of:**
- key measures/attributes
  - sampling schedule for project
  - defect rate
  - other metrics required by the business.
- Analyse includes one or more of:**
- statistical analysis of data
  - root cause analysis (RCA)
  - failure mode and effects analysis (FMEA)
  - use of various other problem solving/analysis tools.
- Improve includes one or more of:**
- generating and testing of improvements
  - selecting appropriate improvements.
- Control and standardise includes all of:**
- documenting (in organisation approved format) outcomes and procedures for standardisation
  - transferring ownership of improved process.
- Sampling schedule includes one or more of:**
- sampling frequency
  - type of sample/sample method
  - sample location/type
  - type of test/data to be collected.

**Process control strategy includes one or more of:**

- degree of intervention/rules for resets
- SPC tools to be used.

## **Unit Mapping Information**

### **Release 2. Equivalent to Release 1**

Release 1. Supersedes and is equivalent to MSS405053A Manage application of six sigma for process control and improvement

## **Links**

Companion Volume implementation guides are found in VETNet -  
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>