



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MSACMT450A Undertake process capability improvements**

**Revision Number: 1**

## MSACMT450A Undertake process capability improvements

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers the knowledge and skills required by a team leader/technical expert to analyse data from the process, develop improvements to eliminate variation due to assignable causes and then implement actions.
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### Application of the Unit

<b>Application of the unit</b>	<p>In a typical scenario, a person reviews a range of process capability data and information, makes some changes/arranges for changes to be made to <i>procedures</i>, equipment or process and then recalculates the process capability. Process capability may have been determined using either a <i>six sigma (6?)</i> or <i>three sigma (3?)</i> process.</p> <p>This unit primarily requires the application of skills associated with communication, information gathering and analysis. Initiative, enterprise and problem solving are also required to identify opportunities to improve process capacity. This unit also requires aspects of self management and learning to validate own analysis.</p>
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### Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

<b>Prerequisite units</b>	<i>MSACMT452A</i>	<i>Apply statistics to processes in manufacturing</i>
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## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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## Elements and Performance Criteria

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
1. Obtain required data	1.1. Identify process for study 1.2. Obtain/organise to obtain required data/information
2. Analyse information	2.1. Analyse past data and determine assignable causes 2.2. Develop possible improvements to eliminate assignable causes 2.3. Incorporate own experience and learning into proposed process improvements
3. Improve process capability	3.1. Liaise with relevant people to implement improvements 3.2. Obtain required authorities to implement improvements 3.3. Obtain/organise to obtain required data for improved process 3.4. Recalculate process capability 3.5. Implement revised data collection/processing and new capability information

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills:

- mathematical
- statistical methods
- communication
- negotiation
- planning
- analysis
- problem solving
- teamwork
- computer operation.

#### Required knowledge:

- data collection methods
- data processing techniques required
- variability and normal distribution
- three sigma or six sigma processes as relevant
- random and non-random results - 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.

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.	
<b>Overview of assessment requirements</b>	The person should be able to analyse a process and recalculate process capability/trial limits after changes have been made.
<b>What critical aspects of evidence are required to demonstrate competency in this unit?</b>	Evidence should be available of the analysis of process information and the recalculation of process capability/trial limits. The improvements made may be as a result of continuous improvement with the process capability being recalculated periodically, or the improvement may be as a result of an improvement project with the process capability recalculated as part of that project.
<b>In what context should assessment occur?</b>	Assessment may occur in an organisation which uses process capability to monitor its process and as a tool for improving its process or may occur using a specific project/projects to improve process capability.
<b>Are there any other units which could or should be assessed with this unit or which relate directly to this unit?</b>	<p>This unit may be assessed concurrently with a continuous improvement unit.</p> <p>This unit is related to:</p> <ul style="list-style-type: none"> <li>• <i>MSACMT250A Monitor process capability</i>, and</li> <li>• <i>MSACMT650A Determine and improve process capability</i> which apply to the lower and higher skill levels in CM respectively.</li> </ul> <p>It may also be appropriate to relate this unit to <i>MEM15008B Perform advanced statistical quality control</i> where the person is required to perform statistical manipulations (i.e. where these are not done automatically for the operator e.g. by a computer system).</p>
<b>What method of assessment should apply?</b>	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment.

<b>EVIDENCE GUIDE</b>	
	<p>Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit.</p> <p>The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace.</p> <p>The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.</p>
<b>What evidence is required for demonstration of consistent performance?</b>	<p>This should normally be a routine part of the team leader's job. Where improvements result from a continuous improvement/kaizen process, then a few rounds of improvement and capability recalculation should be required as evidence of competence. Where the improvements results from an improvement project, and this is a complex project and includes the recalculation and implementation of the revised process capability, then one project may be provide sufficient evidence.</p>
<b>What are the specific resource requirements for this unit?</b>	<p>Access to an organisation using process capability to control and improve its process.</p>

## Range Statement

### RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<b>Six sigma (6s)</b>	Six sigma is a statistical tool for recording defects and determining capability. Six sigma limits equate to 3.4 defects per million opportunities for each product or service transaction. Six sigma is also used as a general term covering a competitive manufacturing approach. Six sigma training typically covers several units of competency in this Training Package.
<b>Three sigma (3s)</b>	Traditional statistical process control uses three sigma limits which equates to 3 defects per thousand opportunities for each product or service transaction.
<b>Procedures</b>	Procedures include all work instructions, standard operating procedures, formulas/recipes, batch sheets, temporary instructions and similar instructions provided for the smooth running of the plant. They may be written, verbal, computer based or in some other form.  For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

## Unit Sector(s)

<b>Unit Sector</b>	CM Tools
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### **corequisite units**

<b>Corequisite units</b>	
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### **Functional area**

<b>Functional Area</b>	
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