



Australian Government

Department of Education, Employment and Workplace Relations

ICPSU684C Determine and improve process capability

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to process capability, which is a statistical concept that allows a practitioner to assess required performance against the actual (as distinct from design) capability of the process.
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Application of the Unit

Application of the unit	<p>This unit would apply to a manager or technical expert support person. Process capability is typically calculated using standard deviations.</p> <p>In a typical scenario a manager (who may have as a job title section leader, production manager or similar) will be responsible for developing plans to improve process capability and following agreement the implementation of the plans to improve process capability. This unit comes from the Competitive Manufacturing Initiative group of competency standards.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units	

Employability Skills Information

Employability skills	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

ELEMENT	PERFORMANCE CRITERIA
1. Obtain data for process capability study	1.1. Identify the process requiring capability analysis 1.2. Obtain process capability data
2. Analyse data	2.1. Identify causes of systematic variation in liaison with relevant personnel 2.2. Develop solutions to eliminate/minimise systematic variation in liaison with relevant people
3. Take action to improve process capability	3.1. Develop plans to implement solutions 3.2. Liaise with relevant people to implement solutions 3.3. Gain necessary approvals as required 3.4. Monitor implementation and make adjustments as required 3.5. Determine new/revised process capability 3.6. Implement revised process capability regime

Required Skills and Knowledge

Required knowledge

- mathematical
- statistical methods
- communication
- negotiation
- planning
- analysis
- problem solving
- teamwork
- computer operation
- data collection methods
- data processing techniques
- 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

EVIDENCE GUIDE	
<p>The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> the manager should be able to implement and review a process capability system and make improvements to the process using process capability as a tool. Evidence should be available of the conducting of process capability studies, the improvement to process capability as a result of these studies and the implementation of a revised process capability regime one complex project or several simpler projects will be needed to gain sufficient evidence.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> assessment needs to occur in an organisation using process capability as a tool for process monitoring and improvement. It may also be assessed using a suitable project access to an organisation using process capability.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> ICPSU583C Troubleshoot and optimise the production process.

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.

Six sigma may include:

- a vision of quality which equates to only 3.4 defects per million opportunities for each product or service transaction
- six sigma is a statistical tool for recording defects and determining capability. Six sigma is also used as a general term covering a competitive manufacturing approach.

Three sigma may include:

- traditional statistical process control uses three sigma limits which equates to 3 defects per thousand opportunities for each product or service transaction.

Procedures may include:

- procedures includes 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, oral, 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 (eg Good Manufacturing Practice (GMP), Responsible Care) and government regulations.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Support
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Co-requisite units

Co-requisite units		