CENTRE CMMI 1.2 Artifacts for Process Improvement

CENTRE™ (Common Enterprise Resource)

Systems and Software Engineering Platform designed for CMMI compliance

Capability Maturity Model Integration (CMMI) is a process improvement approach that provides organizations with the essential elements of effective processes. CMMI helps integrate traditionally separate organizational functions, set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes. (Software Engineering Institute, SEI web-site, www.sei.cmu.edu/cmmi/general/)

CENTRE is a software product designed, authored and produced by Integration Technologies Group Inc. CENTRE is composed of configurable modules intended to provide compliance with CMMI process areas and ISO clauses while increasing organizational efficiency, effectiveness and continual improvement.

Integration Technologies Group Inc. (ITG), www.itgonline.com, is a systems and software engineering company founded in 1984 and headquartered in Falls Church, Virginia, USA. ITG is ISO 20000-1:2005, ISO 9001:2008 and ISO 27001:2005 registered. As well, the company is an SEI member and partner and has been externally appraised twice at CMMI Level 3.

This document contains brief descriptions of CENTRE CMMI Software features which cover specific and generic evidence of compliance for practices required by CMMI for Development Version 1.2 process areas. As with all process improvement methodologies and industry best practices, management commitment, quality record collection, analysis and processing are required to achieve improvement objectives and successful appraisals and registrations.

CENTRE was developed to facilitate today's Best Practices Certifications and process improvement methodologies. By using CENTRE, businesses can increase efficiencies across key business processes and satisfy many of the requirements stipulated by the SEI and international standards boards. Some of the benefits that may be derived by implementing compliance with CMMI process areas are:

• Improved Quality of Output
• Increased Accuracy of Estimates
• Earlier Identification of Defects
• Accurate Measurements of Processes
• Higher Operational Efficiency
• Cost Reduction and Integration with Industry Standards

As a result, an organization using CENTRE will be recognized as delivering successful service to its clients and constituents with dependably high-quality and consistent methods and practices. The CENTRE CMMI Software 1.2 implementation includes 'CENTRE ISO 9001:2008' Quality Management System elements which are:

CENTRE - Document Control System (DCS)

CENTRE CMMI Version 1.2 Compliance Requirements Development - White Paper
Author: Michael P. Angelakis       DCS #999       Version: 4.0       Date: 04/13/10       Page 1 of 9

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CENTRE - Records Control System (RCS)
CENTRE - Human Resources
CENTRE - Meeting Management
CENTRE - Customer Satisfaction Surveys
CENTRE - Supply Chain Management
CENTRE - Ad-Hoc Report Writer

These elements are described in more detail in the CENTRE ISO 9001:2008 Compliance Package - White Paper.

Disclaimer
Use of CENTRE modules or similar software alone does not result in organizational CMMI conformance. Documented procedures, defined processes and work instructions, staff training and internal audits of Process Areas compliance are needed to prepare an organization for a CMMI appraisal. The ITG CENTRE Document Control System (DCS) contains documentation that describes the ITG Quality Management System and consists principally of the following documents:

• Business Quality Manual (BQM) in conformance with ISO 9001:2008,
• Information Technology Services Management manual (ITSM) in conformance with ISO 20000-1:2005,
• Information Security Management System manual (ISMS) in conformance with ISO 27001:2005,
• Corporate process workflow, Quality Procedures and Quality Work Instructions.
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CENTRE CMMI Specific & Generic Evidence Elements:

CENTRE – Requirements Development

SP 1.1 *Elicit stakeholder needs, expectations, constraints, and interfaces for all phases of the product lifecycle.*

**CENTRE Evidence:** While Stakeholders needs typically emerge from Statements of Work, the CENTRE Requirements Module, tightly integrated with the Change Management module, provides for the transformation and management of stakeholders needs into functional requirements and engineering specifications.

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**Requirement 1209 Expanded View**

```
Search Requirement

<table>
<thead>
<tr>
<th>Requirement ID</th>
<th>Program Name</th>
<th>Functional Area</th>
<th>Requirement Description</th>
</tr>
</thead>
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| 1209           | CENTRE       | Sales Orders    | 10/7/2009 8:29:33 PM Ordered by [Person], George on behalf of [Client] and P2: Change the Part Order detail and the Sales Order detail so that the following functionality is provided:
|                |              | Part Orders     | a. Split up the current field where a serial number is entered so that only one serial number is entered per line. Add a new field where the serial number may be entered as a text field.
|                |              | Change          | b. Add the following fields in the line item detail section: [Field1] = [Value1], [Field2] = [Value2], [Field3] = [Value3], where the calendar control is used to enter date.
|                |              | Requirement Data | The Change Request is as follows:
|                |              | Date Issued     | 10/7/2009 8:29:33 PM
|                |              | Approval        | 10/7/2009 8:29:33 PM
|                |              | Notes           | [Notes]

Change Request #: 275
```
As seen from the expanded view, this requirement is a result of change request 275.

Change Request 275

SP 1.2 Transform stakeholder needs, expectations, constraints, and interfaces into customer requirements.

CENTRE Evidence: The needs, constraints, expectations and interfaces are defined at the Change Request and Requirement levels.
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Change Request

Change Analysis

Design Document

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SP 2.1 Establish and maintain product and product component requirements, which are based on the customer requirements.

CENTRE Evidence: As seen above, the CENTRE Requirements module provides the direct evidence for this Specific Practice.

SP 2.2 Allocate the requirements for each product component.

CENTRE Evidence: CENTRE Requirements are allocated by release version and can be used as direct evidence for conformance with this Specific Process. The requirements need not be "software" but can be any type that may be applicable to a Project.

Selected Requirements of Release 4.6.8

Summary of release 4.6.8
SP 2.3 **Identify interface requirements.**

**CENTRE Evidence:** Interface requirements may be identified in the body of the functional requirement.

SP 3.1 Establish *and maintain operational concepts and associated scenarios.*

**CENTRE Evidence:** Direct evidence for this Specific Practice is contained in the Requirements module Modified Components/Deployment Integration Instructions text box. The CENTRE Document Control System contains documentation which provides guidance applicable to this Specific Practice.
Sample of process documentation included in the CENTRE Document Control System (DCS)

<table>
<thead>
<tr>
<th>DOCUMENT</th>
<th>TITLE</th>
<th>AUTHOR</th>
<th>DCS SUBMISSION DATE</th>
<th>DEFINED REVISED</th>
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<td>Procedure - Internal Audits, ITG QP-7 - Executive Management</td>
<td>Lamberta Karmina</td>
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<td>10/29/2008 2:29:09 PM</td>
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<td>806-V2</td>
<td>Procedure - Organizational Innovation and Deployment, ITG QP-18 - Executive Management</td>
<td>Michael Angelakis</td>
<td>5/10/2007 1:30:00 PM</td>
<td>10/20/2008 2:52:19 PM</td>
</tr>
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</table>

**SP 3.2 Establish and maintain a definition of required functionality.**

**CENTRE Evidence:** The required functionality description is typically contained in the Statement of Work and is transformed directly into functional requirements, or into change requests that once approved become functional requirements. The direct evidence for this Specific Practice is contained in the Change and Requirement descriptions text boxes.
SP 3.3 **Analyze requirements to ensure that they are necessary and sufficient.**

**CENTRE Evidence:** The direct evidence provided to satisfy this Specific Practice are the Change and Requirements approval processes, documented in the corresponding modules as well as in Management Meeting minutes.

<table>
<thead>
<tr>
<th>SELECT MEETING</th>
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<tbody>
<tr>
<td><strong>Meeting Name</strong></td>
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<td>ADPC 3 Program Meetings</td>
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<tr>
<td>CENTRE Release Training</td>
</tr>
<tr>
<td>CRMS Compliance Metric Review</td>
</tr>
<tr>
<td>Chief Process Meetings</td>
</tr>
</tbody>
</table>

SP 3.4 **Analyze requirements to balance stakeholder needs and constraints.**

**CENTRE Evidence:** The direct evidence provided to satisfy this Specific Practice are the Change and Requirements approval processes, documented in the corresponding modules as well as in Management Meeting minutes.

SP 3.5 **Validate requirements to ensure the resulting product will perform as intended in the user's environment.**

**CENTRE Evidence:** The direct evidence for Requirements Validation provided to support this Specific Practice is contained in the validation submenu selection of the Requirements Module.