

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 CMMI Version 1.2 Compliance, Technical Solution - White Paper

Author: Michael P. Angelakis DCS #1039 Version: 3.0 Date: 04/13/10 Page 1 of 7

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CENTRE CMMI 1.2 Artifacts for Process Improvement

CENTRE - Document Control System (DCS)
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.

CENTRE CMMI 1.2 Artifacts for Process Improvement

CENTRE CMMI Specific & Generic Evidence Elements:

CENTRE – Technical Solution

SP 1.1 *Develop alternative solutions and selection criteria.*

CENTRE Evidence: Alternative solution and selection criteria direct evidence are found as Decision Analysis and Resolution (DAR) records. Additionally, alternative solutions may be included at the Change Analysis and Design Document selections of the Change and Requirements management modules. These records may be offered as evidence of compliance with this Specific Practice.

Requirement

Workflow Status [Not Initiated]

Program Name: ITG CENTRE

Version Release Number: 4.6.8

Functional Area/Screen: Projects

Requirement Description: Add controls in the system to prevent Task start and end dates from falling outside the parent project's duration and project durations from falling outside the related contract period of performance. The same holds true when going the other way, i.e. the system should ensure that the contract expiration date is not before the Project end date and the Project end date is not before the end date in any of the related Tasks to ensure validity and consistency. Also consider adding the ability to create predecessor relationships between tasks and implement the appropriate control on the start dates of affected tasks. This will provide critical paths.

See the details provided in the uploaded document of the Research Initiative related to this requirement.

Requirement Rationale: Change Request # 142

This Change Request is related to one of the Research Initiatives assigned to Spyro Pangalo.

Uploaded Documents: Change Request #: 142

Tasks: 1

OVERVIEW

Issued By: Hadjikyriakou, George

Date Issued: 2/2/2008 4:18:26 PM

Approved By: SW Review Board

Approved Date: 2/8/2008 11:58:11 AM

Assigned To: Pangalos, Spyro (n)

Estimated Hours: 36.88958

Actual Hours: 56.25

Planned Start Date: 7/8/2008 9:00:00 AM

Planned End Date: 7/14/2008 6:00:00 PM

Projected End Date: 8/1/2008 6:00:00 PM

Type: New Functionality

Impact: NONE

Implementation Severity: NONE

Preceding Requirement ID: 0

Implementation Order: 0

Applied 508 Rules: Yes

Documentation Updated: No

Actual Start Date: 7/8/2008 6:07:29 PM

Actual End Date: 7/31/2008 5:16:26 PM

Production Server Updated: YES

Verification Log:

DB updated 8/30/2008 11:26:25 AM Entered by: Pangalos, Spyro (n)

7/31/2008 5:13:20 PM Entered by: Coutoulakis, Emmanuel

Tested extensively against the requirements and the feature seems that is working as it supposed. The projected dates on the edit task screen may need to be indicated as mandatory.

Verification test = Passed

7/30/2008 7:03:46 PM Entered by: Coutoulakis, Emmanuel

On Edit project

*Planned Start Date: = correct according to

Pre-Release Defects: 1

Verification Tests: Passed

Modified Components/Deployment-Integration Instructions:

Tables:

New Table -ProjectGroup-

CREATE TABLE [ProjectGroup] ([ProjectGroupID] [int] IDENTITY (1, 1) NOT NULL , [ProjectID] [int] NOT NULL , [ProjectGroupName] [text] COLLATE SQL_Latin1_General_CP1_CI_AS NULL , CONSTRAINT [PK_ProjectGroup] PRIMARY KEY CLUSTERED ([ProjectGroupID]) ON [PRIMARY]) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY] GO

Modify Table -Task-

Post-Release Defects: 1

Post-Release Defect Estimated Hours: 0.00

Requirement Design Document

EDIT DESIGN SPECIFICATION FOR REQUIREMENT [1102]

Date Created: 2/2/2008 4:18:26 PM Created By: Hadjikyriakou, George

Date Last Updated: 5/12/2008 11:17:18 AM Last Updated By: Hadjikyriakou, George

Description:

Modify the business logic and generate Java script messages upon Save to prevent inconsistencies of date ranges between Projects and Tasks on the following ASPs:

NewTask.asp
EditTask.asp
EditProject.asp

and COMs:

BO_Task
BO_Project

DA_Task
DA_Project

If there is a Predecessor Task make sure that the Start Date starts after the end of the End Date of the Predecessor Task.

The following Columns should added to Table Task:

GroupNumber small int
SequenceNumber small int

The Tasks of a Project with the same GroupNumber assigned, should be linked through the PrivTaskID. The SequenceNumber will be updated to reflect the order of the tasks (through traversing the link list) any time the PrivTaskID is updated.

Peer Review Performed:

Reviewed By: Hadjikyriakou, George

Issue Identified:

Date Reviewed: 5/7/2008 9:30:58 AM

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Change Request Record

New	Affected Departments	Affected Contracts	Change Analysis	Process Areas	Post Implementation Review
VIEW CHANGE REQUEST [82]					
Workflow Status [Not Initiated]					
Change Request Name: Change Quality Procedure #12 to reflect "Tailoring Guidelines"					
Category: Minor Change		Desired Completion Date: 4/11/2007			
Change Type: Documentation					
Change Authority: Executive Management					
Proposed Change:		Include a "Tailoring Guidelines" sub-process within QP-12			
Description of current or potential non-conformance/justification:		Process improvement and CMMI requirement			
Root Cause:		New Requirement			
Change Request Documents					
Issued By: Angelakis, Michael P.				Date Issued: 4/11/2007 4:40:25 PM	

Change Analysis Record

VIEW ANALYSIS FOR CHANGE REQUEST [82]	
Describe the potential risks, impacts, and business benefits associated with the change request:	There are no risks associated with this change. The benefits include better awareness of contract implementation procedures, and improved stakeholder involvement.
Identify and describe a methodology for reverting or remedying the change if found unsatisfactory after implementation:	Revert to previous version of QP 12
Track Changes:	

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SP 1.2 *Select the product component solutions that best satisfy the criteria established.*

CENTRE Evidence: The direct evidence supporting compliance with this specific Practice is contained in DAR records.

Project

Project

Back to Main Menu | New Project | Search Project | **DAR** | Observations | Risk Management | Item | Tasks | Project

Help

EDIT PROJECT

*The mandatory editing fields are indicated with an asterisk **

*Project Name: Remote Warehouse

Project Description: 6/27/07
After reviewing the DAR and taking into consideration all comments provided by relevant stakeholders it has

*Project Category: Professional Services | OPPM Rate: | *Planned Start Date: 05 05 2005 = 00 00
*Project Type: External | Sunday Rate: | *Planned End Date: 06 27 2008 = 00 00
*Contract: 5260-000 | PPM Rate: | Actual Start Date: 5/5/2005
*Point of Contact Name: Abel Medina | Billable: | Actual End Date:
*Point of Contact Phone: 703-698-8282 | Ext: 351 | Taxable: | Projected Start Date:

DAR Record

VIEW DAR FOR PROJECT [Remote Warehouse]

DAR Type: Business Continuity Plans
DAR Date: 6/27/2007

Scope / Desired Outcome: Purpose:
The purpose of this DAR is to evaluate the usage and effectiveness of the RW program.

Scope: The evaluation will cover RWs with at least one year of operation using guidelines under OP - 14

Evaluation Criteria: Evaluation Criteria:
RW usage will be evaluated under contract 8068-000 (6) during a 1 year period between 5/1/06 through 5/1/07 on the following criteria:

Remote Warehouses 8068-000 Service Calls w/POs Service Calls using RW parts

Options: Identified Options:

1. Continue Using RWs: Due to the limited impact on cost of inventory associated with RWs the continued use is desirable due to indirect benefits.
2. Reduce the number of RWs: Due to the limited usage four of the RWs (3, 4, 5 and 6)

Peer Review: Tentative Recommendations:

- Continue using the RW program while seeking to improve the RW processes. Evaluate the RW program on case by case basis and determine validity of each RW as needed.
- Discontinue using RWs 3 through 6 due to low utilization percentages.
- Re-evaluate the RW inventories of 1 and 2 and continue using until the end of 2007 at

Comments: Lefteris Karmiris and Tom Reilly

Decision/Justification: Decision and Justification:
6/27/07
After reviewing the DAR and taking into consideration all comments provided by relevant stakeholders it has been decided to continue using the remote warehouses as is except for one

Records:

SP 2.1 *Develop a design for the product or product component.*

CENTRE Evidence: As seen in response to Specific Practice 1.1, the direct evidence is contained in the design document of each CENTRE Requirement record.

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SP 2.2 *Establish and maintain a technical data package.*

CENTRE Evidence: The direct evidence demonstrating compliance with this Specific Practice is contained in Chance, Requirements, and DAR records.

SP 2.3 *Design product component interfaces using established criteria.*

CENTRE Evidence: Interface specifications, documents, selection criteria and rationale for selected options are contained in the Change Analysis, Design document and DAR records and to the extent that the appraised project contains such requirements may be used as direct evidence for compliance with this specific practice.

SP 2.4 *Evaluate whether the product components should be developed, purchased, or reused based on established criteria.*

CENTRE Evidence: Work Product evaluations that may be used as direct evidence for compliance with this Specific Practice are contained in DAR records.

SP 3.1 *Implement the designs of the product components.*

CENTRE Evidence: Direct evidence for compliance with this Specific Practice is contained in Projects and Requirements/Release records.

Project Records

MANAGE PROJECTS														
SHOW	Active	PROJECTS	Refresh											
Project Name		Contract Number	Status	Priority	Plan Start Date	Actual Start Date	Planned End Date	Actual End Date	POC	DAR	View Project Summary	View Tasks	View Hours	View Gantt
8026-000 Depot Billing	Search Survey	8026-000	Active	1	6/9/2006 8:00:00 AM	6/9/2006 8:00:00 AM	7/31/2009 6:00:00 PM		Jason Dudley	NO	SUMMARY	TASKS		
8032-000 Depot Billing	Search Survey	8032-000	Active	1	6/5/2006	6/5/2006	10/14/2011		Jason Dudley	NO	SUMMARY	TASKS		
8055-002 Depot Billing	Search Survey	8055-002	Active	1	6/6/2006 8:00:00 AM	6/6/2006 8:00:00 AM	9/30/2013 5:00:00 PM		Jason Dudley	NO	SUMMARY	TASKS		
8068-000 Depot Billing	Search Survey	8068-000	Active	1	6/5/2006	6/5/2006	12/29/2011		Jason Dudley	NO	SUMMARY	TASKS		
8076-000 Contract Billing	Search Survey	8076-000	Active	1	6/5/2006	6/5/2006	11/30/2008		Jason Dudley	NO	SUMMARY	TASKS		
8102-555 LGB Best Practices Management consulting	Search Survey	8102-555	Active	1	3/20/2006	3/20/2006	6/20/2006		Michael Angelakis	NO	SUMMARY	TASKS		
					7/1/2008	7/1/2008	6/30/2009							

Implemented Requirement Records

Software Requirements Score Card per Release														
Line Item	Program	Release	Status	Total Requirements	Total Estimated Hours	Total Actual Hours	% Variance	Absolute % Variance	Total Defects Pre-Release Chart	Total Defects Post-Release Chart	Total Defect Requirements with High Impact Or High Severity	Percent Defect Requirements with High Impact Or High Severity	Total Defect Requirements with Medium/Low Impact Or Medium/Low Severity	Percent Defect Requirements with Medium/Low Impact Or Medium/Low Severity
0	PCS	PCS 1.1	Pending	1	63.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	Government Response	GRI 2.0	Pending	2	4.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	ITG CENTRE	4.6.9	Pending	19	172.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	ITG CENTRE	4.6.8	Open	35	1178.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	ITG CENTRE	4.6.7	Closed	31	775.68	825.75	-6.46	29.65	16	8	1	3.23	0	0
5	ITG CENTRE	4.6.6	Closed	33	1330.68	1196	10.12	14.06	36	5	1	3.03	1	3.03
6	DCMA Migration Technical Solution	1.0	Closed	1	218	375.5	-72.25	72.25	1	0	0	0	0	0
7	DCS	DCS 1.0	Closed	2	55.25	56	-1.36	2.56	1	0	0	0	0	0
8	ITG CENTRE	4.6.5	Closed	53	1010.16	920.25	8.9	14.64	24	6	2	3.77	9	16.98
9	ITG CENTRE	4.6.4	Closed	41	808.64	896	-10.8	31.13	23	9	4	9.76	6	14.63

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SP 3.2 *Develop and maintain the end-use documentation.*

CENTRE Evidence: Documentation records provided as direct evidence for compliance with this Specific Practice are contained in the **CENTRE Document & Records Control** module.

DOCUMENT#	TITLE	AUTHOR	DCS SUBMISSION DATE	DR INFO REVISED		
319-V1	ITG CENTRE Updates Included in Release 3.2, Description - Software Engineering	George Hadjikyriakou	10/25/2004 12:14:00 PM	10/29/2008 10:32:26 AM	View	Edt
509-V1	ITG CENTRE Updates Included in Release 3.3, Description- Software Engineering	George Hadjikyriakou	4/12/2005 10:31:00 AM	10/29/2008 10:32:39 AM	View	Edt
510-V1	ITG CENTRE Updates Included in Release 3.4, Description- Software Engineering	George Hadjikyriakou	4/12/2005 10:36:00 AM	10/29/2008 10:33:10 AM	View	Edt
511-V1	ITG CENTRE Updates Included in Release 3.5, Description- Software Engineering	George Hadjikyriakou	4/12/2005 10:50:00 AM	10/29/2008 10:33:27 AM	View	Edt



ITG CENTRE Updates included in Release 4.6.8 - 08/31/2008

Please note the implemented changes in CENTRE as a result of the following software requirements in CENTRE Release 4.6.8.

Requirement 1097 – Stakeholders: BDM, Project Managers

New Functionality
 Identify and invoke a means to secure access to DCS documents. The CENTRE DCS repository is accessed by ITG employees, subcontractors, outside companies, customers, and, others. To satisfy ISO 27000 requirements, this access is to be controlled.

Add the ability to set/assign to a DCS document a classification level (1 to n, with n being the most confidential). This means that changes are required in many of the DCS screens where this new field will be displayed, including the select screens where a list of documents is displayed as well as any screen that displays document specific information. Part of the design should identify all of the screens that will be modified for this functionality to be implemented.

In addition, the same DCS document a classification level (1 to n, with n being the most confidential) will be assigned to each Users Group in CENTRE. Therefore, the UsersGroup screens will need to be modified as well to enable this function.

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