

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, Integrated Project Management - White Paper

Author: Michael P. Angelakis DCS #1032 Version: 3.0 Date: 04/13/10 Page 1 of 9

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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.

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CENTRE CMMI Specific & Generic Evidence Elements:

CENTRE Integrated Project Management

SP 1.1 *Establish and maintain the project's defined process from project startup through the life of the project.*

CENTRE Evidence: CENTRE modules provide for Project life-cycle management. Records demonstrating Project/Contract initialization, Resource Allocation, Change and Configuration Management, Supply Chain Management, Vendor and Subcontracting Management, Financial and Asset Management.

The screenshot displays the CENTRE software interface for 'Marine' Version 4.6.8. The interface features a navigation bar at the top with tabs for Home, IT Service Management, Change & Configuration Management, Supply Chain Management, Measurement & Analysis, Problem Management, Project & Financial Management, Contract, Risk & SLA Management, Document & Record Control, and Administrative. Below the navigation bar, there are several data tables:

My Change Requests As the Issuer	
Active Records of Interest	3
with Status Issued	2

My Change Requests As the Assignee	
Active Records of Interest	1

My Service Records As the Issuer	
Active Records of Interest	20
with Status Open	19
Not Dispatched	20

My Purchase Orders As the Issuer	
Active Records of Interest	2

My Part Orders As the Issuer	
Active Records of Interest	3
Not Shipped	3

My Active Workflows	
Pending Actions	0
Initiated	0
Cancelled	0
Completed	0
Expired	0

New Service Records Not Yet Assigned	
Active Records of Interest	1
Created by Remote Users	1

Change Requests of Interest	
Active Records of Interest	6
with Status Issued	4
with Status Approved	1

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Notwithstanding the plethora of direct evidence provided for conformance with this Specific Area, relevant documentation such as Procedures and Work Instructions would be required to ensure compliance.

SP 1.2 *Use the organizational process assets and measurement repository for estimating and planning the project's activities.*

CENTRE Evidence: Processes and resultant records to satisfy the requirements of this Specific Practice is present in the Project and Requirements/Release Management modules of CENTRE.

At the Project level, the Financials sub-system calculates the accuracy of the estimator for the previous ten projects and provides a "System Recommended Estimate" which the estimator may accept or reject.

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VIEW PROJECT FINANCIALS BY CATEGORY

SUMMARY

Calculate Estimates

Cost Category Name	Enter value to set all future months for category items	System Predicted Estimate	Average Estimate Deviation Percentage	Estimated Current month	Budgeted Current month	Actual Current month	Variance Current month	Budgeted Year To Date	Actual Year To Date	Variance Year to Date
MATERIAL HANDLING COST	0.00			3,083.00	3,083.00	0.00	-3,083.00	33,913.00	0.00	-33,913.00
MAINTENANCE LABOR COST	0.00			79,583.00	79,583.00	0.00	-79,583.00	875,413.00	0.00	-875,413.00
DIRECT LABOR COST	0.00			71,599.00	71,599.00	0.00	-71,599.00	787,589.00	0.00	-787,589.00
MAINTENANCE PARTS COST	0.00			37,571.00	37,571.00	0.00	-37,571.00	413,281.00	0.00	-413,281.00
CONTRACT REVENUE	0.00			400,000.00	400,000.00	0.00	400,000.00	4,000,000.00	0.00	4,000,000.00
NET MARGIN	0.00			119,115.00	119,115.00	0.00	-119,115.00	1,310,265.00	0.00	1,310,265.00
FREIGHT COST	0.00			6,720.00	6,720.00	0.00	-6,720.00	75,790.00	0.00	-73,920.00
TRAVEL COST	0.00			4,600.00	4,600.00	0.00	-4,600.00	50,600.00	0.00	-50,600.00
COMMISSIONS	0.00			2,990.00	2,990.00	0.00	-2,990.00	32,890.00	0.00	-32,890.00
OTHER DIRECT COST	0.00			2,362.00	2,362.00	0.00	-2,362.00	25,982.00	0.00	-25,982.00
NATIONAL SUPPORT CENTER COST	0.00			59,055.00	59,055.00	0.00	-59,055.00	649,605.00	0.00	-649,605.00
INSTALLATION COST	0.00			1.00	1.00	0.00	-1.00	11.00	0.00	-11.00
EQUIPMENT COST	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00
GOVERNMENT PROGRAMS COST	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00
TEMPORARY SERVICES COST	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00
INTERNATIONAL COST	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00
FRINGE BENEFITS	0.00			21,480.00	21,480.00	0.00	-21,480.00	236,280.00	0.00	-236,280.00
OVERHEAD	0.00			24,505.00	24,505.00	0.00	-24,505.00	269,555.00	0.00	-269,555.00
GENERAL & ADMINISTRATIVE	0.00			59,784.00	59,784.00	0.00	-59,784.00	657,624.00	0.00	-657,624.00
CUSTOMER SATISFACTION	0.00			95.00	95.00	0.00	-95.00	1,045.00	96.85	-948.15
NUMBER OF CALLS	0.00			1,263.00	1,263.00	143.00	-1,120.00	13,893.00	11,248.00	-2,645.00

Cost Category Name	Enter value to set all future months for category items	System Predicted Estimate	Average Estimate Deviation Percentage	Estimated Current month Average	Budgeted Current month Average	Actual Current month Average	Variance Current month Average	Budgeted Year To Date Average	Actual Year To Date Average	Variance Year to Date Average
COST PER CALL	0.00			319.00	319.00	0.00	-319.00	319.00	229.30	89.70
COST PER INSTALLATION	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00

This module permits the user to establish the estimate with the assistance of “Calculate Estimate,” set a “Budget Percentage of Estimate” integer and complete the budgeting process based on the provided estimates. All system generated calculations can be manually adjusted to reflect life-cycle expectations.

At the Task level CENTRE provides a more granular estimating process, enabling a Task Manager to set task financial expectations.

Project

MANAGE PROJECTS

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
CLIN V Desktop Refresh	8068-005	Active	1	7/1/2008 9:00:00 AM	7/1/2008 8:00:00 AM	12/18/2008 8:00:00 PM		Sheri Mendez	NO	SUMMARY	TASKS		

Tasks

Task Name	Planned Start Date	Planned End Date	Actual Start Date	Actual End Date	Projected End Date	Status	% Planned Completed	% Actual Completed	Resources	Hours Worked	Copy
Albany office	9/26/2008 8:00:00 AM	9/30/2008 5:00:00 PM			11/17/2008 5:00:00 PM	Planning	100%	0%			
Arbitration Office	12/1/2008 9:00:00 AM	12/1/2008 10:30:00 AM			12/1/2008 10:30:00 AM	Planning	0%	0%			
Atlanta	9/29/2008 8:00:00 AM	10/9/2008 5:00:00 PM			12/5/2008 5:00:00 PM	Planning	100%	0%			
Bozeman (UIP)	9/23/2008 10:00:00 AM	9/23/2008 2:00:00 PM			10/29/2008	Planning	100%	0%			

- New Task
- Assign Resources
- Resource Hours
- Work Estimate
- Risk Management
- Manage Projects
- Manage Tasks

Detail-Work-Estimate

VIEW ESTIMATE DETAIL FOR TASK [Albany office]

Work Description: Scheduled 46 desktop installations.

Estimate Detail ID	Work Product Name	Work Product Description	WP Estimate Minimum Hours	WP Estimate Likely Hours	WP Estimate Maximum Hours	Quantity	Custom Modifier	Complexity Level	Proficiency Level	Assigned Developer WVP Average Estimate	Total Minimum Hours	Total Likely Hours	Total Maximum Hours	Estimated Hours	Quantity Completed	Edit	Add/Delete
2188	5 Desktop/Laptop migrations	Migration of 5 desktops/laptops at a staging area. This takes approximately 9 man hours. (9 hours per man x 3 men)	6.00	9.00	12.00	9	1.00	1.00 (Low)	1.00 (Proficient)	0.00 ()	54.00	81.00	108.00	81.00	0	Edit	-
2189	1 Desktop/Laptop migration	Migration of 1 laptop/desktop	0.50	1.00	1.50	1	1.00	1.00 (Low)	1.00 (Proficient)	0.00 ()	0.50	1.00	1.50	1.00	0	Edit	-
TOTALS:											54.50	82.00	109.50	82.00			

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SP 1.3 *Establish and maintain the project's work environment based on the organization's work environment standards.*

CENTRE Evidence: In the context of automated systems for data collection, processing and reporting the CENTRE evidence provided for meeting the requirements of this Specific Practice are displayed in response to SP 1.1. Installation, Operation and related manuals are contained in the Document Control System. Surveys and results, usage, performance and maintenance records are stored and processed at the ITSM and Projects modules.

The screenshot shows the CENTRE Version 4.6.8 dashboard. The top navigation bar includes: Home, IT Service Management, Change & Configuration Management, Supply Chain Management, Measurement & Analysis, Problem Management, Project & Financial Management, Contract, Risk & SLA Management, **Document & Record Control** (circled in red), and Administrative. Below the navigation bar, the dashboard displays various metrics and reports:

- My Change Requests As the Issuer:** Active Records of Interest: 3 (with Status Issued: 2), My Change Requests As the Assignee: Active Records of Interest: 1
- My Service Records As the Issuer:** Active Records of Interest: 20 (with Status Open: 19, Not Dispatched: 20)
- My Purchase Orders As the Issuer:** Active Records of Interest: 2
- My Part Orders As the Issuer:** Active Records of Interest: 3 (Not Shipped: 3)
- My Active Workflows:** Pending Actions: 0 (Initiated: 0, Cancelled: 0, Completed: 0, Expired: 0)
- New Service Records Not Yet Assigned:** Active Records of Interest: 1 (Created by Remote Users: 1)
- Change Requests of Interest:** Active Records of Interest: 6 (with Status Issued: 4, with Status Approved: 1)

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SEARCH FOR DOCUMENT

Document #: -V

Title:

Abstract:

File Names:

Owner:

Classification Level:

Authors	Departments	Document Type	Document Keywords
Abel Medina	Accounting	Business Quality Manual	508
Alicia Reilly	Business Development	Charts	A+
Andreas Tzoumas	Electronic Repairs	CMMI	Accessibility
ASG Administrative Account Executiv	Executive Management	CMMI Training	Accounting
ASG Administrative Support ASG Adr	Government Programs	Contracts/Agreements	Acknowledgement
ASG Purchasing Specialist ASG Purc	International Programs	Decision Analysis and Resolution	Action
ASG Technical Support ASG Technic	ITG-SP	External Document	Active Directory
ASG Training Coordinator ASG Trainir	Labor Resources	Internal Training	Activity
Asia English	Logistics	Job Descriptions	ADMC2
BDM BDM	National Support Center	Manuals	Administrative
Bill Fowkes	Network Administration	Marketing Material	Advance
Bill Halladay	Program Management Office	Marketing White Papers	Affidavit
Call Operations Supervisors & Manag	Purchasing	Other	Agency
Carlos Almonte	Quality Assurance	Policy Documents	Agreement
Ceely, George Ceely, George	Software Engineering	Process Performance Models	Analysis

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SP 1.4 Integrate the project plan and the other plans that affect the project to describe the project's defined process.

CENTRE Evidence: Project integration plan direct evidence is specific to individual projects. The Project staff may demonstrate compliance with this Specific Area by:

- Selecting the Project defined processes from CENTRE DCS,
- Engaging the relevant stakeholders and maintain minutes and action items in the CENTRE Management Meeting module,
- Conducting peer reviews and maintain records in the CENTRE Requirements module Peer Review record,
- Defining task objectives and other parameters in the CENTRE Projects module.

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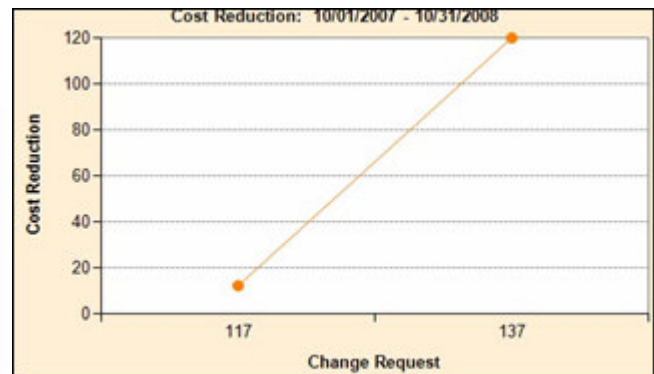
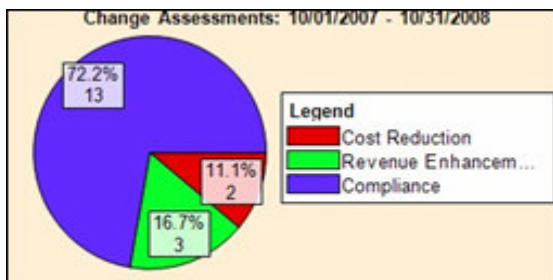
SP 1.5 *Manage the project using the project plan, the other plans that affect the project, and the project's defined process.*

CENTRE Evidence: The direct evidence for satisfying the requirements of this Specific Practice are the presence of project defined processes and records across all CENTRE relevant modules. They include collected measures and project reports, requirements, change requests and plans.

Sample Measurements

MEASUREMENT & ANALYSIS	
Service Record Type	<input type="radio"/> Find Records of Selected Service Record Type by Contract
Subcontractor	<input type="radio"/> Find Subcontractor Service Record Percentage <input type="radio"/> Find Subcontractor Service Record Percentage By Hour
Project	<input type="radio"/> Find Tasks Exceeding Planned Period of Performance <input type="radio"/> Find Project Cost Categories Exceeding Year To Date Budget <input type="radio"/> Project Financial Performance

Type of Change Assessments



SP 1.6 *Contribute work products, measures, and documented experiences to the organizational process assets.*

CENTRE Evidence: The Organizational Process Library provided as a CENTRE module is the Document and Records Control Module. As well the Measurements and Analysis module and its related Ad-Hoc Report generator are used to provide evidence for compliance to this Specific Practice. Corresponding Risk, Problem, Change, Project, Task, Supply Chain, Service, QA and Financial records and documents are accessed and assessed for contribution to Organizational process improvements.

SP 2.1 *Manage the involvement of the relevant stakeholders in the project.*

CENTRE Evidence: The direct evidence for compliance with this Specific Practice are contained in the form of Project related recorded minutes, agendas and action items in the

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Meeting Management module, as well as Change and Requirements records in the corresponding modules.

SP 2.2 *Participate with relevant stakeholders to identify, negotiate, and track critical dependencies.*

CENTRE Evidence: The direct evidence for compliance with this Specific Practice are contained in the form of Project related recorded minutes, agendas and action items in the Meeting Management module, as well as Change, Contract, Project, Task and Requirements records in the corresponding modules.

Meeting Management Records

SELECT MEETING					
Meeting Name	Number of Sessions	Open Action Items	Closed Action Items	Action Items On Hold	Cancelled Action Items
ADMC-2 Program Meetings	3	3	23	1	1
CENTRE Release Training	1	0	0	0	0
CMMI Compliance Matrix Review	22	3	30	0	2
CMMI Process Meetings	3	0	0	0	0
DCMA Daily Meeting	3	0	0	0	0
Hellenic Land Registry	1	0	0	0	0
House of Representatives Red Team	1	0	0	0	0
Management Review Board, Best Practices	26	10	44	1	2
...	2	0	0	0	0

Change Management Records

SELECT CHANGE REQUEST							
Change Request #	Change Request Name	Change Authority	Proposed Change	Issued Date	Issuer	Approved Date	Priority
22	Configuration Items	Best Practices MRB	Define all items deemed as "Configuration Items" and make them available through a drop down menu selection. Further, define the appropriate change authority for each item and populate automatically the "Change Authority" field. Permit the selection o	12/11/2008 10:22:36 AM	Angelakis, Michael P.	12/20/2008 4:03:26 PM	HIGH
23	Risk Management	Software Engineering MRB	Enable Contract, Project and Task screens to record multiple potential risks and related mitigations	12/11/2008 10:34:39 AM	Angelakis, Michael P.	3/26/2007 10:24:36 AM	LOW
26	Departmental Data Normalization	Software Engineering MRB	Please update the selection of "Affected Departments" list with all the valid departments within ITG. Please use the Organizational Chart to verify Department number and names.	12/11/2008 12:51:54 PM	Angelakis, Michael P.	12/26/2008 11:56:55 AM	IMMEDI
29	Service Call Get Subcontractor	Software Engineering MRB	In the Service Call screen when a TAM is selecting a Subcontractor he goes to GET SUB; the Subcontractor Profile comes up in Edit	12/14/2008 4:27:28 PM	Medina, Abel F.	12/26/2008 4:27:28 PM	HIGH

SP 2.3 *Resolve issues with relevant stakeholders.*

CENTRE Evidence: The direct evidence for compliance with this Specific Practice is contained in the form of Action Item, Change and Requirements records within the corresponding modules.

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SEARCH MEETING

Meeting Name:

Select Desired Meeting:

View Action Items

Meeting Name	Number of Sessions	Open Action Items	Closed Action Items	Action Items On Hold	Cancelled Action Items
<input checked="" type="radio"/> ADMC-2 Program Meetings	3	3	23	1	1
<input type="radio"/> CENTRE Release Training	1	0	0	0	0
<input type="radio"/> CMMI Compliance Matrix Review	22	3	30	0	2
<input type="radio"/> CMMI Process Meetings	3	0	0	0	0
<input type="radio"/> DCMA Daily Meeting	5	0	0	0	0
<input type="radio"/> Hellenic Land Registry	1	0	0	0	0
<input type="radio"/> House of Representatives Red Team	1	0	0	0	0
<input type="radio"/> Management Review Board, Best Practices	26	10	44	1	2
<input type="radio"/> ...	7	0	0	0	0

Select Specific Meeting Date

SELECT MEETING MINUTES FOR [[ADMC-2 Program Meetings](#)]

Meeting Date	Issued By	Status	Approved By
<input checked="" type="radio"/> 7/13/2006 11:00:00 AM	Gardner, Murray G.	Approved	Gardner, Murray G.
<input type="radio"/> 6/14/2006 10:30:00 AM	Rexin, Judy (K)	Approved	Gardner, Murray G.
<input type="radio"/> ...	Gardner, Murray G.		Gardner, Murray G.

View Minutes

VIEW MEETING MINUTES FOR [[ADMC-2 Program Meetings](#)]

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

*Meeting Date and Time:

*Meeting Minutes:

Time: 11:00 AM

Attendees: Glenn, James, Catrina, Dave, Bill, Judy

Items Discussed

Due to re-protest by Gateway, task due dates can slip until notice to proceed has been delivered from the Army but continue with forward momentum

Telephone Set-Up - T-1 line has been installed at ITG. Determine where in-house phones will be placed, at salesman desk, call operators, TAM, Glenn's desk?

Incorporate into GovConnect training session, scripts for transfer of service calls from GovConnect to ITG w/ the Army customer on the line with emphasis on the need to inform call participants as to

*Issued By:

Approved By:

Meeting Action Items

SELECT ACTION ITEM FOR [[ADMC-2 Program Meetings](#)]

ID	Start Date	Issue	Suggestions	Action Items	Owner	Outcome	Due Date
<input type="radio"/> 180	4/24/2006 1:14:13 PM	Establish formal subcontract with GovConnection, Prism Points, LOB, Bethune, Cookman, Four Points	DaveW and BillH will work with Dave Cohen to complete this task	2: This task has been broken into a separate Action Item for each subcontractor agreement. Progress will be tracked on the Action page of the Project Workbook located at \\itg_central\common\Team_Halladay\Contracts\8103-999-ADMC-2\Project Workbook ...GG 1 - 06/14/06 - Glenn to call Prism Points and get them to send their version of subcontract agreement to us. BillH says when we have that.	Wilson, David M.	2: This task has been broken into a separate Action Item for each subcontractor agreement. Progress will be tracked on the Action page of the Project Workbook located at \\itg_central\common\Team_Halladay\Contracts\8103-999-ADMC-2\Project Workbook. This Action Item will be closed when all subcontracts are in place. ...GG 06/14/06: Candidate College is Johnson C. Smith Univ. Dave is talking w...	6/30/2006 1:14:13 PM
<input type="radio"/> 180	6/14/2006 3:42:43 PM	Establish process for live transfer of service sales calls from GovC to ITG.		1: 06/14/06 - Dave to set up meeting with GovC to define situations requiring live transfer to a sales person at ITG, and establish the flow of activity when such situations arise. ...GG	Wilson, David M.	08/31/06: This issue was not addressed at the lunchlearn on Aug 29. The process has not been determined at this time. Bill, Dave and Mike are discussing and will let me know how they want it set up. ...GG 07/13/06: Dave adding to training a clear explanation for GovC self-... "concerning h...	6/30/2006 4:09:34 PM