Interagency Comprehensive Plan (ICP)

System Design Document



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Version 0.8

Department of Veterans Affairs

Revision History

| Date | Version | Description | Author |
| --- | --- | --- | --- |
| 12/23/2015 | 0.8 | * Addressed technical comments * Updated Service Oriented Architecture section | Booz Allen |
| 12/14/2015 | 0.7 | * Updated Introduction to mirror other project documents * Section 1.1 – Added TSPR Link * Added notes | Technatomy Team |
| 12/11/2015 | 0.6 | Updated Draft to latest template | Booz Allen Team |
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Artifact Rationale

The System Design Document (SDD) is a dual-use document that provides the conceptual design as well as the as-built design. This document will be updated as the product is built, to reflect the as-built product.

When to Complete Each Section of the SDD

| Section | Completed On or Before PMAS Phase | Rationale |
| --- | --- | --- |
| 1 – Introduction | MS 0 Review; updated thereafter | Conceptual design should inform evaluation of investments |
| 2 – Background | MS 0 Review; updated thereafter | Conceptual design should inform evaluation of investments |
| 3 – Conceptual Design | MS 0 Review; updated thereafter | Conceptual design should inform evaluation of investments |
| 4 – System Architecture | MS 0 Review; updated thereafter | Conceptual design should inform evaluation of investments |
| 5 – Data Design | MS 1 Review; updated thereafter | Design details should be elaborated upon during PMAS Planning phase and prior to development |
| 6 – Detailed Design | MS 1 Review; updated thereafter | Design details should be elaborated upon during PMAS Planning phase and prior to development |
| 7 – External System Interface Design | MS 1 Review; updated thereafter | Design details should be elaborated upon during PMAS Planning phase and prior to development |
| 8 – Human Machine Interfaces | MS 1 Review; updated thereafter | Design details should be elaborated upon during PMAS Planning phase and prior to development |
| Attachments | MS 1 Review; updated thereafter | Design details should be elaborated upon during PMAS Planning phase and prior to development |

A product’s system design should be defined conceptually prior to the allocation of personnel and resources that occur at project initiation. This gives the enterprise an opportunity to evaluate IT investments before project teams are stood up and funding is allocated. Sections 1- 4 which discuss the high level design should be completed prior to MS 0. All sections should be completed and updated before MS 1. Projects will need to address all SDD approval constraints prior to the MS 2 review. In addition, the SDD should reflect the as-built product going into the MS 2 review.

Table of Contents

[1. Introduction 7](#_Toc438713519)

[1.1. Scope 7](#_Toc438713520)

[1.1.1. Phase 1 and 2 Scope 7](#_Toc438713521)

[1.2. User Profiles 9](#_Toc438713522)

[2. Background 10](#_Toc438713523)

[2.1. Overview of the System 10](#_Toc438713524)

[2.2. Overview of the Business Process 11](#_Toc438713525)

[2.3. Overview of the Significant Requirements 12](#_Toc438713526)

[2.3.1. Overview of Significant Functional Requirements 13](#_Toc438713527)

[2.3.2. Overview of the Functional Workload/Performance Requirements 13](#_Toc438713528)

[2.3.3. Overview of the Operational and Support Requirements Overview 14](#_Toc438713529)

[2.3.4. Overview of Pivotal Technical Requirements 15](#_Toc438713530)

[2.3.5. Overview of the Security and Privacy Requirements 16](#_Toc438713531)

[2.3.6. Overview of System Criticality, High Availability, and Reliability Requirements 17](#_Toc438713532)

[2.3.7. Overview of Single Sign-On Requirements 18](#_Toc438713533)

[2.3.8. Overview of Use of Enterprise Portals 19](#_Toc438713534)

[2.3.9. Overview of Special Device Requirements 19](#_Toc438713535)

[3. Conceptual Design 19](#_Toc438713536)

[3.1. Conceptual Application Design 19](#_Toc438713537)

[3.1.1. Application Context and FCMT Interfaces 20](#_Toc438713538)

[3.1.2. High-Level Application Design 20](#_Toc438713539)

[3.1.2.1. FCMT System 20](#_Toc438713540)

[3.1.2.2. ICP Module 20](#_Toc438713541)

[3.1.3. Application Locations 22](#_Toc438713542)

[3.2. Conceptual Data Design 23](#_Toc438713543)

[3.2.1. Project Conceptual Data Model 23](#_Toc438713544)

[3.2.2. Database Information 24](#_Toc438713545)

[3.2.3. User Interface Data Mapping 24](#_Toc438713546)

[3.2.3.1.1. Level 3 ICP tree structure – Category Activity and Activity Data 24](#_Toc438713547)

[3.2.3.2. Application Screen Interface 24](#_Toc438713548)

[3.2.3.2.1. ICP Plan Navigation Screen 24](#_Toc438713549)

[3.2.3.3. Application Report Interface 24](#_Toc438713550)

[3.3. Conceptual Infrastructure Design 25](#_Toc438713551)

[3.3.1. System Criticality and High Availability 25](#_Toc438713552)

[3.3.2. Special Technology 25](#_Toc438713553)

[3.3.3. Technology Locations 26](#_Toc438713554)

[3.3.4. Conceptual Infrastructure Diagram 27](#_Toc438713555)

[3.3.4.1. Location of Environments and External Interfaces 27](#_Toc438713556)

[3.3.4.2. Conceptual Production String Diagram 28](#_Toc438713557)

[4. System Architecture 28](#_Toc438713558)

[4.1. Hardware Architecture 28](#_Toc438713559)

[4.2. Software Architecture 29](#_Toc438713560)

[4.3. Network Architecture 29](#_Toc438713561)

[4.4. Service Oriented Architecture / ESS 29](#_Toc438713562)

[4.4.1. MSCRM\_CONFIG Database 29](#_Toc438713563)

[4.4.2. Base and Extension Base Tables 31](#_Toc438713564)

[4.5. Enterprise Architecture 31](#_Toc438713565)

[4.5.1. COTS Components of the Solution 31](#_Toc438713566)

[4.5.2. VIMT Integration Layer 31](#_Toc438713567)

[4.5.3. Core Architectural Principles 31](#_Toc438713568)

[4.5.4. Integration Phasing 32](#_Toc438713569)

[5. Data Design 33](#_Toc438713570)

[5.1. DBMS Files (N/A) 33](#_Toc438713571)

[5.2. Non-DBMS Files (N/A) 33](#_Toc438713572)

[5.3. Data View (N/A) 33](#_Toc438713573)

[6. Detailed Design 33](#_Toc438713574)

[6.1. Hardware Detailed Design 33](#_Toc438713575)

[6.2. Software Detailed Design 33](#_Toc438713576)

[6.2.1. Conceptual Design 33](#_Toc438713577)

[6.2.1.1. Product Perspective 33](#_Toc438713578)

[6.2.1.1.1. User Interfaces 33](#_Toc438713579)

[6.2.1.1.1.1. ICP Tree Component 33](#_Toc438713580)

[6.2.1.1.1.2. ICP Navigation Tree Structure 35](#_Toc438713581)

[6.2.1.1.2. Level 1 and Level 2 (Domains and Domain Categories) 35](#_Toc438713582)

[6.2.1.1.2.1. ICP Category Detail display 37](#_Toc438713583)

[6.2.1.1.2.2. ICP UI Panels 38](#_Toc438713584)

[6.2.1.1.2.3. The Category Activity Detail Panel 38](#_Toc438713585)

[6.2.1.1.2.4. Activity Checklist items 38](#_Toc438713586)

[6.2.1.1.2.5. ICP Activity Patterns 39](#_Toc438713587)

[6.2.1.1.2.6. Activity Tracked or Tracking Items 40](#_Toc438713588)

[6.2.1.1.2.7. ICP User Groups 41](#_Toc438713589)

[6.2.1.1.2.8. ICP Teams 41](#_Toc438713590)

[6.2.1.1.3. Hardware Interfaces 41](#_Toc438713591)

[6.2.1.1.4. Software Interfaces 41](#_Toc438713592)

[6.2.1.1.5. Communications Interfaces 45](#_Toc438713593)

[6.2.1.1.6. Memory Constraints 45](#_Toc438713594)

[6.2.1.1.7. Special Operations 45](#_Toc438713595)

[6.2.1.2. Product Features 46](#_Toc438713596)

[6.2.1.3. User Characteristics 46](#_Toc438713597)

[6.2.1.3.1. User Characteristics 46](#_Toc438713598)

[6.2.1.3.2. Service Members and Veterans Access 46](#_Toc438713599)

[6.2.1.3.3. User Roles and Security Rights 47](#_Toc438713600)

[6.2.1.4. Dependencies and Constraints 48](#_Toc438713601)

[6.2.2. Specific Requirements 49](#_Toc438713602)

[6.2.2.1. Database Repository 49](#_Toc438713603)

[6.2.2.2. System Features 49](#_Toc438713604)

[6.2.2.2.1. Overview 51](#_Toc438713605)

[6.2.2.2.2. Hierarchical Structure 51](#_Toc438713606)

[6.3. Network Detailed Design 52](#_Toc438713607)

[6.4. Security and Privacy 52](#_Toc438713608)

[6.4.1. Security 52](#_Toc438713609)

[6.4.2. Privacy 52](#_Toc438713610)

[6.5. Service Oriented Architecture / ESS Detailed Design 52](#_Toc438713611)

[6.5.1. Service Description for Consumed Service 52](#_Toc438713612)

[6.5.2. Service Design for Master Veterans Index (MVI) 53](#_Toc438713613)

[6.5.2.1. Introduction 53](#_Toc438713614)

[6.5.2.1.1. Purpose and Scope of Service 53](#_Toc438713615)

[6.5.2.1.2. Links to Other Documents 53](#_Toc438713616)

[6.5.2.2. Service Details 53](#_Toc438713617)

[6.5.2.2.1. Service Identification 53](#_Toc438713618)

[6.5.2.2.2. Service Versions 53](#_Toc438713619)

[6.5.2.2.3. Summary of Design and Platform Details 53](#_Toc438713620)

[6.5.2.2.3.1. SOA Pattern(s) Implemented 53](#_Toc438713621)

[6.5.2.2.3.2. COTS Platform vendor names and versions for hosting platform 53](#_Toc438713622)

[6.5.2.3. Dependencies 53](#_Toc438713623)

[6.5.2.4. Service Design Details 53](#_Toc438713624)

[6.5.2.4.1. Interface Technical Specs 53](#_Toc438713625)

[6.5.2.4.1.1. Service Invocation Type 53](#_Toc438713626)

[6.5.2.4.1.2. Service Interface Type 53](#_Toc438713627)

[6.5.2.4.1.3. Service Name 53](#_Toc438713628)

[6.5.2.4.1.4. Interfaces 54](#_Toc438713629)

[6.5.2.4.1.5. End Points 54](#_Toc438713630)

[6.5.2.4.1.6. Operations or Methods 54](#_Toc438713631)

[6.5.2.4.1.7. Messages 54](#_Toc438713632)

[6.5.2.4.1.8. Class Diagram and Description of Entities Involved 55](#_Toc438713633)

[6.5.2.4.1.9. Mappings from ELDM to Standards Based Schemas 55](#_Toc438713634)

[6.5.2.4.2. Behavior Model (AKA Use Case Realization) 55](#_Toc438713635)

[6.5.2.5. Gap Analysis 58](#_Toc438713636)

[7. External System Interface Design 59](#_Toc438713637)

[7.1. Interface Architecture 59](#_Toc438713638)

[7.2. Interface Detailed Design 59](#_Toc438713639)

[8. Human-Machine Interface 59](#_Toc438713640)

[8.1. Interface Design Rules 59](#_Toc438713641)

[8.2. Inputs 59](#_Toc438713642)

[8.3. Outputs 59](#_Toc438713643)

[8.4. Navigation Hierarchy 59](#_Toc438713644)

[9. Attachment A – Approval Signatures 60](#_Toc438713645)

[Appendix A: Additional Information 61](#_Toc438713646)

[A.1. Identification of Technology and Standards 61](#_Toc438713647)

[A.2. Constraining Policies, Directives and Procedures 62](#_Toc438713648)

[A.3. Requirements Traceability Matrix 62](#_Toc438713649)

[ICP Requirements Traceability Matrix (RTM) is accessible via the following link: 62](#_Toc438713650)

[A.4. Packaging and Installation 62](#_Toc438713651)

[A.5. Design Metrics 62](#_Toc438713652)

[Appendix B: Definitions 63](#_Toc438713653)

[Appendix C: Acronyms 64](#_Toc438713654)

# Introduction

The Department of Veteran Affairs (VA) Interagency Comprehensive Plan (ICP) project establishes the Federal Case Management Tool (FCMT) as the standard platform for Veteran case management and the exchange of the Interagency Care Plan. The ICP, a care plan managed in FCMT, will allow multiple case managers (CMs) to collaborate on patient status and goals information outlined in the ICP. Initially, the ICP will allow collaboration between Veterans Health Administration (VHA) and Veterans Benefit Administration (VBA) CMs however, as required, interobability will be established between the VA and Department of Defense (DoD) ICP’s.

The implementation and sharing of ICP will enable the VA and DoD to meet the Secretary of VA and the Secretary of Defense directive to develop an ICP. ICP directly supports the Interagency Care Coordination Committee (IC3) purpose to provide a more synchronized VA/DoD process to deliver care, benefits, and services to wounded, ill, and injured Warriors, Veterans, and their families.

## Scope

The integrated Business Requirements Document (iBRD) can be found on the [ICP Technical Service Project Repository (TSPR) page](http://your_srver.domain.ext/warboard/anotebk.asp?proj=1776&Type=Active).

This document covers the overall high-level descriptions of the ICPs functions including characteristics, constraints, assumptions, and dependencies, as outlined below in Section 3.

While ICP will inherit functionality currently built into the existing FMCT case management system (V.2.1), the core scope of work will be around, functionally, to do the following:

1. Support the creation, coordination, and execution of a SM/Vs Interagency Comprehensive Plan (Increment 1)
2. Enable the DoD and VA’s ICP systems to seamlessly communicate and exchange SM/Vs ICP data. (Increment 2)

### Phase 1 and 2 Scope

Phase 1 design of ICP will accommodate the future requirements of Phase 2. In particular, the ability for VA and DoD to seamlessly exchange ICP data between the two agencies. The following represents the core capabilities of the system:

Table 1: ICP Scope Inclusions

| Theme | Need | Phase |
| --- | --- | --- |
| Assessment of SM/V Needs | Ability for authorized users to capture and compile a list of SM/V clinical and non-clinical needs to be addressed. | Phase 1 |
| Create Plan | Ability for authorized users to create and develop an Interagency Comprehensive Plan | Phase 1 |
| Execute a set of defined activities | Ability for authorized users to execute the activities in a plan in an effort to help the SM/V meet their identified need. | Phase 1 |
| Collaborate and Coordinate during Plan execution | Ability for authorized users, together with the participation of the SM/V, to collaborate and coordinate activities during the execution of an Interagency Comprehensive Plan | Phase 2 |
| Update Plan | Ability for care coordinators to update the Interagency Comprehensive Plan as required | Phase 1 |
| Plan Feedback | Ability for authorized users to provide feedback on the success of a particular Interagency Comprehensive Plan implementation and identify potential improvements to the ICP. | Phase 2 |
| Reports and Metrics | Ability for DoD and VA to get reports and metrics about any Interagency Comprehensive Plan process. | Phase 1 |
| Alerts and Notifications: | Ability for authorized users to receive reminders when the execution of an Interagency Comprehensive Plan process must be conducted in a timely manner. | Phase 2 |
| User Access | Ability for authorized users to assign specific responsibilities and access rights to members of the authorized user community. | Phase 1 |
| Case Management | Ability to manage, track , monitor and report on ICP cases | Phase 1 |
| Person Search | Ability for care coordinators to search for SM/Vs | Phase 1 |
| Scheduling and Appointments | Ability for care coordinators to schedule and manage case appointments | Phase 2 |
| Care Coordination | Ability for care coordinators across multiple disciplines to collaborate and coordinate care for enrolled SM/Vs | Phase 1 |
| **MVI Integration** | Integration with MVI (Master Veteran  Index) for enterprise person search and identity management | Phase 1 |

## User Profiles

The Care Coordinator team – who are a group of medical professionals including physicians, nurses, social workers, rehabilitation specialists, and other specialists who are responsible for caring for and assisting a Veteran in their recovery. The ICP intended user base includes the following roles:

Table 2: Users

| Name | Role | Profile Description | Access |
| --- | --- | --- | --- |
| Primary User | Federal Recovery Coordinators (FRCs) | * Receive or identify referrals * Initiate contact with Veteran * Conduct Veteran assessment against ICP * Create an ICP with plans and objectives * Oversee, monitor and make modifications to the ICP * Coordinate activities and actions, benefits, and services to achieve goals | Create Plan, Update Plan, Assign and re-assign cases |
| Primary User | Case Managers | * Accountable for reviewing and managing the ICP for the Veteran * Coordinate exchange of the plan with the DoD * Assin ICP care team staff responsible for execution of care activities * Create ICP Plan * Oversee, monitor and make modifications to the ICP * Review case for accuracy and work with care staff to make changes * Coordinate activities and actions, benefits, and services to achieve goals * Report Case Status | * Create Plan * Update Plan * Assign and re-assign cases * Review Plan * Update plan notes and comments |
| Primary User | Lead Coordinators (LCs), Health Care Provider (HCP), Non-Clinical Case Manager (NCCM), Command Representative (CR), Joint Recovery Consultant (JRC) | * Review established ICP * Coordinate care activities with the Veteran based on established ICP guidelines * Make updates to the ICP based on care status * Complete ICP goals and communicate ICP status to the Case Managers * Report care activity status | * Update Plan * Complete Activites and Goals |
| Secondary User | System Administrators | Full Control | Full Control, can’t grant others as administrator |
| Secondary User | Super Administrator | Full Control | Full Control, can grant administrator access |

# Background

## Overview of the System

The Federal Case Management Tool (FCMT) is a Web application that was rolled out to the Federal Recovery Coordination Program (FRCP) in 2012 with a roadmap to be shared amongst several Department of Veterans Affairs (VA) programs. Service member information is transferred from the Defense Enrollment Eligibility Reporting System (DEERS), a Department of Defense (DoD) personnel record system to FCMT during the client registration process. Additional information is added to FCMT by users depending on their program requirements and information available from the client engagement.

The core of the effort for this project is the enhancement to the FIRP module which is currently built in the FCMT system version 2.1.

A critical element of the work in increment 1 is to establish the conceptual architecture for ICP so that the exchange of ICP plans between VA and DoD can be designed and built in increment 2. ICP will be a full-featured “electronic case management support”[[1]](#footnote-2) solution to facilitate creation of a common operational picture of the SM/V, which will:

* Enable the Community of Practice to synchronize and integrate the SM/V’s care, benefits, and services
* Serve as a place to share a single ICP that is patient/family centric and assists in managing an SM/V with his/her goals for recovery, rehabilitation, and reintegration
* Support changing business processes across the numerous programs serving our SM/Vs that result from the new ability to effectively communicate and share data

Further, this product will be an interoperable solution to managing all DoD and VA ICPs for complex care coordination of SM/Vs, including the transition processes from DoD to VA and vice-versa, from VA to DoD. The interoperable solution will:

* Allow care plan managers to capture care plan needs and documentation in one place.
* Share SM/V care information electronically between DoD and VA;
* Identify Care Management Team (CMT) membership and actions completed or underway;
* Facilitate the transition of care plan data to VA when an SM/V and family or caregiver reach the end of active service, such that care plans accompany an individual through the entire recovery process, and
* Support robust reporting capabilities for higher headquarters accountability and quality control efforts.

In April 2015, VA selected FCMT as the System of Record (SOR) for VA’s implementation of the ICP and will serve as the solution’s primary component.

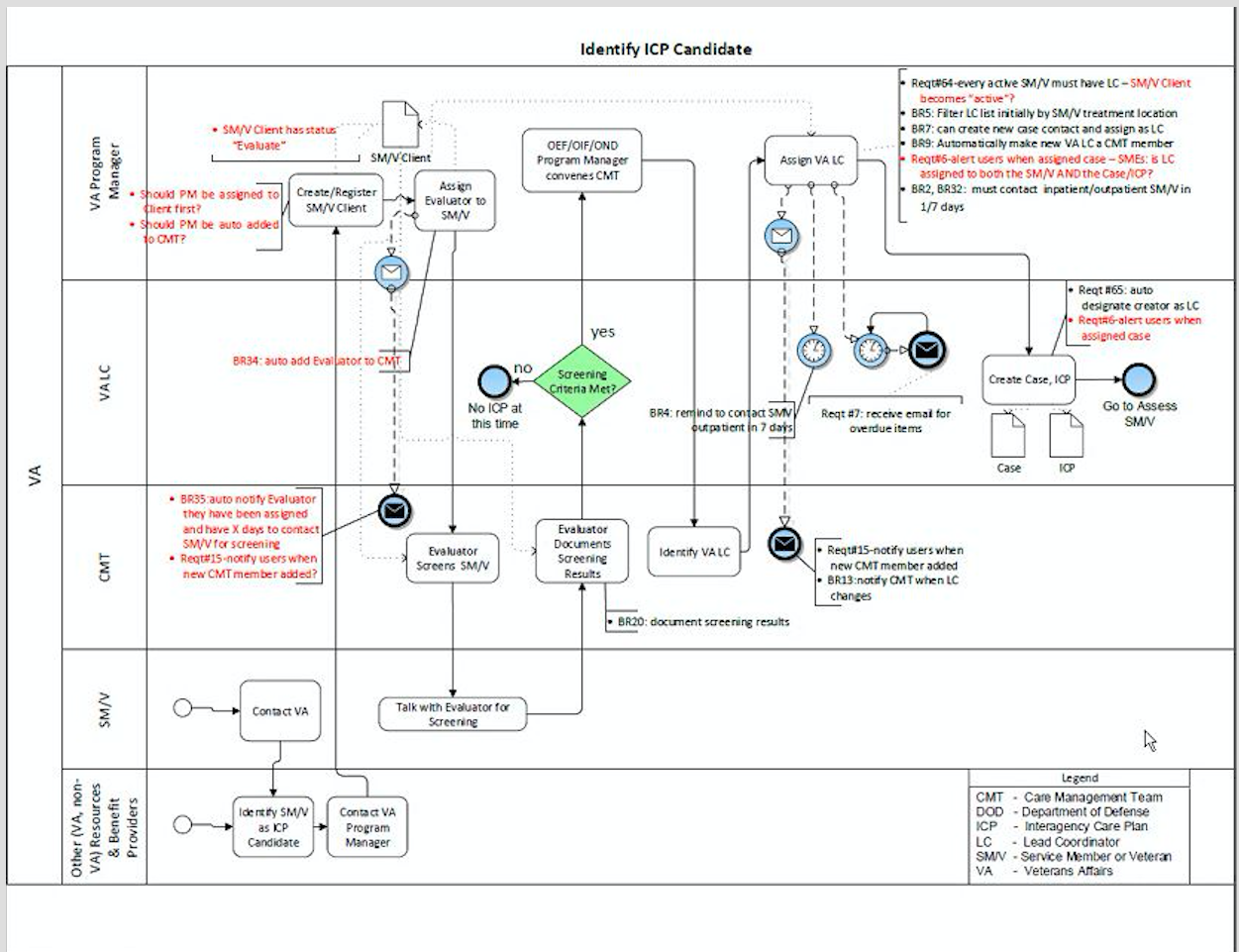
## Overview of the Business Process

The following is the core business processes that this application will support. Please reference the ICP RSD for more information.

Table 3: Business Processes

|  |  |  |  |
| --- | --- | --- | --- |
| Phase | Description | Status | System |
| Create new FRC Case | SM/V is added to the FRC Case Type | Exists | Capability available in FCMT |
| Evaluate FRC Case | Care coordinator evaluates case | Exists | Capability available in FCMT |
| Accept FRC Case | Care coordinator accepts or rejects case | Exists | Capability available in FCMT |
| Assess FRC Case | IF accept then Care coordinator creates an ICP Plan and uses ICP tool to assess and create plan | Enhancement | Enhance FIRP system to meet ICP needs |
| Approve FRC case ICP Plan | Plan is sent to SM/V for approval | Enhancement | Enhance FIRP system to meet ICP needs |
| Track , update and Monitor ICP Plan | Care coordinator starts to track, update and monitor plan | Enhancement | Enhance FIRP system to meet ICP needs |
| Close FRC Case | IF all activities are completed case is closed | Enhancement | Enhance FIRP system to meet ICP needs |

Figure 1 : ICP High-Level Business Process



## Overview of the Significant Requirements

The content in this section is not to replace either the existing functional or technical requirements documents, nor serve as the basis for the Requirements Traceability Matrix, but only to inform non-project personnel reading this document of the basis for the design.

Below is an overview of the pivotal functional requirements for the new ICP module which is an enhancement of the FIRP module. The goal is not to include the full set of functional and non-functional requirements in this document, but to identify the major functions to be performed.

These requirements are from the Business Requirements Document (BRD) and Requirements Traceability Matrix (RTM) which may be found on the. [ICP TSPR page.](http://your_srver.domain.ext/warboard/anotebk.asp?proj=1776&Type=Active)

### Overview of Significant Functional Requirements

Table 4: Significant Functional Requirements Overview

| **Theme** | **Requirement** |
| --- | --- |
| ICP Plan | The system will enable users to create and update an ICP Plan. The ICP Plan is an enhancement to the FIRP module. |
| ICP Plan | The system will enable users to track, update, and monitor Plans. |
| Reports | The system shall provide for real time and transactional reporting. |
| Validation | The system will incorporate the business rules to prevent certain types of data from being entered in fields where they are not valid. |
| Auto-Population | The system will where required shall provide the ability to auto populate form fields eliminating human error and increasing productivity, efficiency, and accuracy. |
| FIRP to ICP modifications | The FIRP tree library will be modified to accommodate the new ICP library structure. |
| ICP Data Exchange | Establish the conceptual architecture for ICP so that the exchange of ICP plans between VA and DoD can be designed and built in increment 2. |

### Overview of the Functional Workload/Performance Requirements

Table 5: Functional Workload/Performance Requirements Overview

| **Theme** | **Requirement** |
| --- | --- |
| Performance Metrics | The system will measure all performance metrics specified in the Non-Functional Requirements section of the Requirements Traceability Matrix (RTM). |
| Performance Metrics | The system will have the ability to measure reporting requirements for Responsiveness, Capacity, and Availability as defined in the non-functional requirements section of the RTM. |
| Performance Measures | The performance measurements will be made available to the Information Technology (IT) Performance Dashboard to enable display of “actual” system metrics to customers and IT staff. |
| Real-Time Monitoring | The system will provide a real-time monitoring solution to report agreed / identified critical system performance parameters. |
| Performance Parameters | The system will capture business performance parameters such as: transaction speed, response time for screen display / refresh, data retrieval to support metric reporting and support the OI&T performance dashboard display for Service Level Agreements (SLA) monitoring. |
| Data Quality | The system will provide a monitoring process to ensure that data is accurate and up-to-date and provides accurate alerts for malfunctions while minimizing false alarms. |
| Info-button Query Responder | The system will provide an Info-button Query Responder on all platforms with a response time of less than .5 seconds. |
| Lost Data | The system shall recognize, report, and retransmit data lost, with less than 0-1% chance of incomplete patient records. |
| Patient Data | The system will provide patient data (for data within the system) transactions (e.g., capture, search, request for data) within .5 seconds. |
| UI Controls | The system will ensure that Mouse or key-based UI controls, e.g., menus, checkboxes shall provide instantaneous responsiveness (<90ms). |
| Screen Refreshes | The system will ensure that part-screen refreshes after user action shall be completed within a pro-rated interval between 200 ms and 1200 ms times a percentage of the screen area being refreshed. For example, a component 10% of the screen area would refresh in (1200 – 200) \* 0.10 + 200 = 300 ms. |
| Performance Metrics | The system will provide reports on performance metrics as specified in the VistA 4 Effectiveness and Value / Benefits Framework on a bi-weekly basis. |
| Performance Metrics | The system will provide national, regional, and local reports on performance metrics as specified in the VistA 4 Effectiveness and Value / Benefits Framework. |
| Performance Metrics | The system will provide performance metrics (from request for information to receipt of information on the screen) monitored by the system and system administrators so they know what the user experience is like without users having to call them and tell them the system is running very slow. |

### Overview of the Operational and Support Requirements Overview

Table 6: Operational and Support Requirements Overview

| **Theme** | **Requirement** |
| --- | --- |
| Configuration | The system shall have software configuration and problem resolution. |
| Certification | The system shall meet and receive Department of Defense Information Assurance Certification and Accreditation Process (DIACAP) certification. |
| VPN Access | The system shall be accessible through a DoD/VA Virtual Private Network (VPN). |
| Backups | The system shall perform regular data backups as defined by the business and OI&T. |
| Defects | It is expected that the system will not have any critical bugs, which are defined as:   * Inability to process incoming data * Significant or minor items that DO NOT have a viable / acceptable work-around * Items identified during testing – TBD |
| Response Times | The system response times and page load times for normal local processing shall be consistent with Technical IT and systems development standards. |
| Response Times | The system response times and page load times for getting and displaying queries processing shall be consistent with VA Technical IT and systems development standards. |
| Enterprise SLA | The system will be designed to comply with the applicable approved VA Enterprise SLA. |
| Backups | The system will comply with the VA Data protection measures based on the categorization of the system by VA such as : routine (30 day restoration), mission essential (72 hour restoration), or mission critical (12  The protection measures will consider back-up intervals and redundancy |
| Record Management | The system will comply with VA Directive 6300 Records and Information Management and with VHA Records Control Schedule (RCS) 10-1, in general and specifically with Electronic Final Version of Health Record: Destroy/Delete 75 years after last episode of patient care, or longer (if specified). |
| Alerts | The system will provide alerts (that extend beyond system messages to external systems like mobile devices) for malfunctions, while preventing false alarms for local, regional, and national evaluations in real time. |
| Reports of Usage | The system will provide the ability for VHA and IT staff to create standard and ad-hoc reports of usage, bandwidth, response time, login time, and other variables with a verification process for measuring the capabilities of the system. |
| Training | The system will provide end-user training on how to generate the various system performance reports (e.g., in standard file formats such as Comma Separated Values [CSV], Portable Document Format [PDF], or Excel) depending on the user's needs. |
| Disaster Recovery | The system will be available for Disaster Recovery Plans (DRP) and Continuity of Operations Plan (COOP) to be tested semi-annually to address the VistA 4 product (see National Security and Homeland Security Presidential Directive: National Continuity Policy. NSPD-51/HSPD-20, May 9, 2007. |

### Overview of Pivotal Technical Requirements

Table 7: Pivotal Technical Requirements Overview

|  |  |
| --- | --- |
| **Theme** | **Requirement** |
| Infrastructure | The system shall be capable of supporting Ports, Protocols and Services Management (PPSM). |
| Data Retrieval | The system shall ensure that data is retrievable by industry standards. |
| Scalability | The system shall be scalable to meet dynamic user base. |
| Messaging and Middleware | The System will provide and or use standards based messaging and middleware infrastructure needed to support both Legacy Veterans Health Information Systems Technology Architecture (VistA) and future VistA 4 deployments. |
| HL7 and FHIR | The system shall support all recognized health system standards i.e., Health Level 7 (HL7), Fast Healthcare Interoperability Resources (FHIR). |
| Heterogeneous | The system must be heterogeneous and agnostic for operating systems and code bases. |
| File Transfers | The system must provide the ability to securely transfer large files (of 4-8 gigabyte) from the system to any VA systems. |
| Remote Access | The system must provide the ability to access to the system over a remote access solution. |
| Help | The system will provide user prompts and screen help and embed these into the system to guide the use of the solution. |

### Overview of the Security and Privacy Requirements

Table 8: Security and Privacy Requirements Overview

| **Theme** | **Requirement** |
| --- | --- |
| MAC II | The system shall be capable of being Integrated in a DoD Mission Assurance Category (MAC) II system. |
| Secure Web Connection | The system shall be accessible through a secure Web connection per federal regulation. |
| PK and PKI | The system shall comply with Public Key Infrastructure (PKI) and Public Key (PK) enabling requirements. |
| Assurance | The system shall provide DoD/VA-compliant Information Assurance (IA) controls to identify (mark) and restrict access to sensitive data. |
| Security | The system will adhere to all VA security requirements.  FCMT recommends a MODERATE security categorization based on Federal Information Processing Standard (FIPS) 199 and National Institute of Standards and Technology (NIST) SP 800-60. |
| Security, Privacy, and Identity | The system will ensure the proposed solution meets all Veterans Health Administration (VHA) Security, Privacy, and Identity Management requirements including VA Handbook 6500 (see the Enterprise Requirements section of the RTM). |
| Audit | The system will provide audit capabilities for system access and usage with settings that are configurable to support internal and external audits based on federal and VHA mandates. |
| Attestation | The system will provide the management of electronic attestation of information including the retention of the signature of attestation (or certificate of authenticity) associated with incoming or outgoing information. |

### Overview of System Criticality, High Availability, and Reliability Requirements

Table 9: System Criticality, High Availability, and Reliability Requirements Overview

| **Theme** | **Requirement** |
| --- | --- |
| Maintenance | The system shall send scheduled maintenance notifications no less than 48 hours prior to the event. |
| Maintenance | Scheduled maintenance shall be limited to off peak timeframes. |
| Maintenance | The system shall provide availability 24/7 and remain fully operational 99.9% of the time, with exceptions for routine maintenance activities during non-peak hours. |
| Backup | A back-up plan shall be provided when the system is taken off-line for maintenance or technical issues/problems. |
| Reliability | The system reliability is based upon the assumption that the system is maintained by CRM Cloud Hosting team. ICP will be dependent on the FCMT architecture and systems as well as access points. |
| Maintenance | The system maintenance, including maintenance of externally developed software incorporated into the ICP and FCMT application(s), shall be scheduled during off peak hours or in conjunction with relevant maintenance schedules. |
| Maintenance | The business owner should provide specific requirements for establishing system maintenance windows when planned service disruptions can occur in support of periodic maintenance. |
| Response Time Degradation | The system shall send information about response time degradation resulting from unscheduled system outages and other events that degrade system functionality and/or performance shall be disseminated to the user community within 30 minutes of the occurrence. |
| Response Time Notification | The system shall send a response time notification which shall include information described in the current Automated Notification Reporting (ANR) template maintained by the VA Service Desk. The notification will specify the specific business impact which will enable OIT to provide accurate data in the service impact notice of the ANR. |
| Maintenance Notification | The system will provide Notification of scheduled maintenance periods that require the service to be offline or that may degrade system performance. |
| Maintenance Notification | The system will send scheduled maintenance Notification to the business user community a minimum of 48 hours prior to the scheduled event |
| Scheduled Maintenance | The system will perform updates and scheduled maintenance during off-peak hours. |
| Scheduled Maintenance | The system will provide data related to maintenance events, both routine and exceptional, including the following key metadata:   * Predicted routine work * Occurrences where maintenance is completed, including restart from down time * Identity of the organization performing maintenance * User performing maintenance (if available) * Identity of the system * Date/time, physical location * Systems impacted * Does it affect patient care * Non-urgent or emergent |
| Reliability | The system will ensure the following system reliability:   * Level 1 severity = <1 failure per month * Level 2 severity = <2 failures per month * Level 3 severity = <3 failures per month |
| System Statistics | The system will provide the ability to view system statistics (e.g., information on the specific network environment) and identify areas that are having issues or are beyond capacity, in near-real-time (to be quantified at a later time). |
| SLA | The system will designed to comply with the applicable approved Enterprise SLAs of 995% Availability |
| Data protection | The system will provide Data protection measures, such as back-up intervals and redundancy shall be consistent with systems categorized as mission critical (1hr restoration, 2hrs backup recovery). |
| Monitoring | The system will ensure that system failures will be monitored on a near real time basis. |
| Response Time Notification | The system will provide the ability to set thresholds and notification type (e.g., email or text alerts) when alerting the user about response time degradation and unscheduled outages. |

### Overview of Single Sign-On Requirements

Table 10: Single Sign-On Requirements Overview

|  |  |
| --- | --- |
| Theme | Requirement |
| SSO | The system will use the SSO capability currently built in FCMT to provide access to systems used by ICP end-users. |

### Overview of Use of Enterprise Portals

Table 11: Use of Enterprise Portals Overview

|  |  |
| --- | --- |
| Theme | Requirement |
| Use of Enterprise Portals | The system will provide API’s that will enable VA portals; eBenefits and My Healthy Vet, to get veteran ICP related data such as status, appointment reminders , access to ICP documents. |

### Overview of Special Device Requirements

Table 12: Special Device Requirements Overview

|  |  |
| --- | --- |
| Theme | Requirement |
| Special Device Requirements | NA |

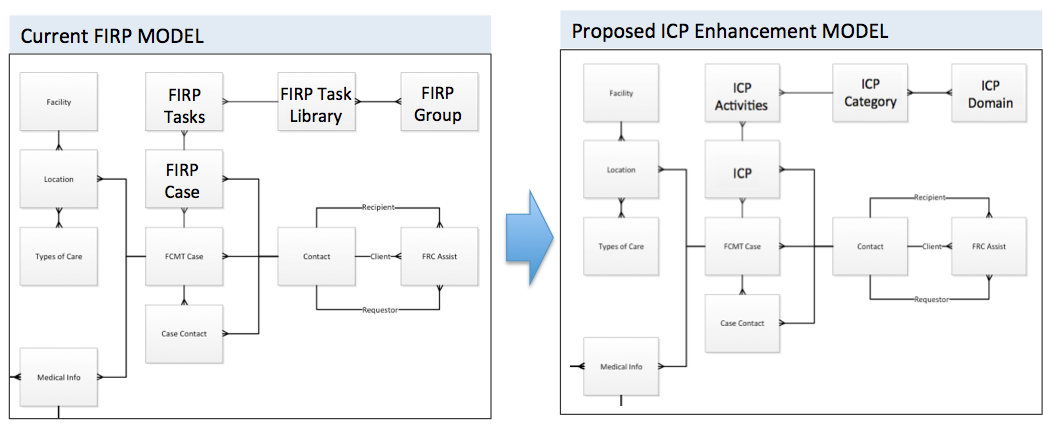
# Conceptual Design

## Conceptual Application Design

The design proposes that the current existing FRC FIRP plan module be enhanced to meet the FRC ICP plan in the following way:

* 1. The FIRP Library structure will be modified to accommodate the NEW ICP library model
  2. The Contents of the ICP tree will be added to the new structure
  3. The activity data elements will be added for each activity

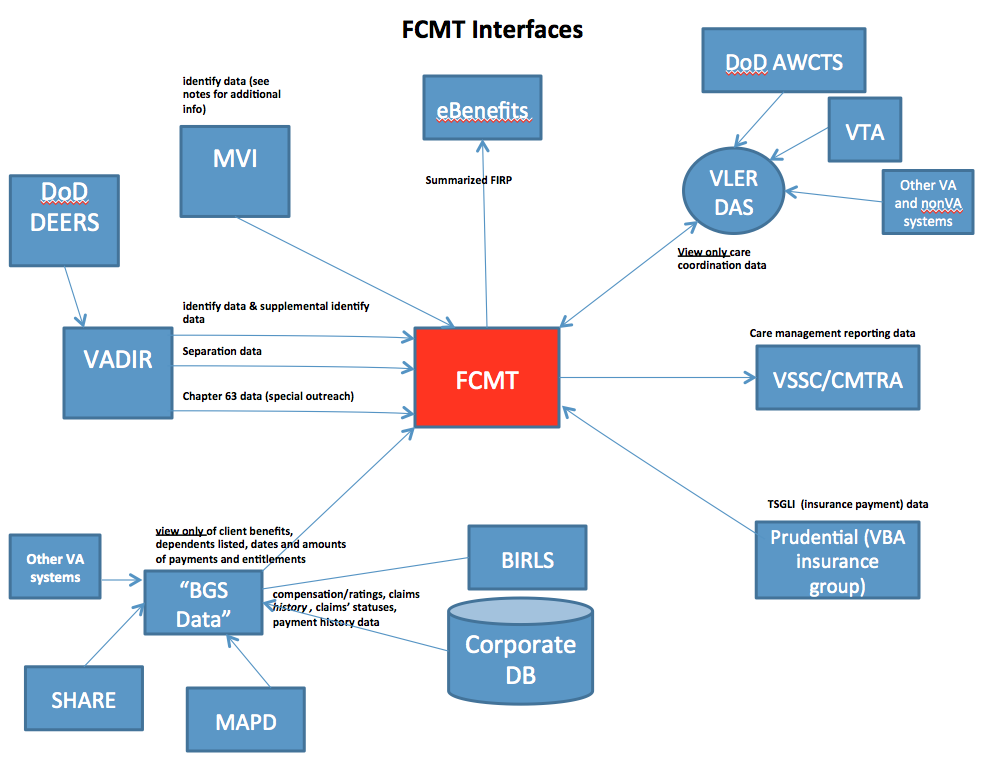
Figure 2: Application Context Diagram



### Application Context and FCMT Interfaces

FRC users rely on data from FCMT and a variety of external data sources that are the systems of record for information such as: Identity, Medical info, Military info, compensation info etc.

Figure 3: Application Context Diagram



### High-Level Application Design

The ICP module is housed within the FCMT case management system and leverages all of FCMTS capability and interfaces.

#### FCMT System

For information about the high-level Application Design for FCMT, please refer to the FCMT technical design documents listed in Section 1.14.

#### ICP Module

ICP is an internal module to FCMT and all services and interfaces are controlled within the FCMT application.

The main design work is the enhancement of the FIRP Plan module to accommodate the NEW ICP Plan model.

Figure 4: High-level Application Design

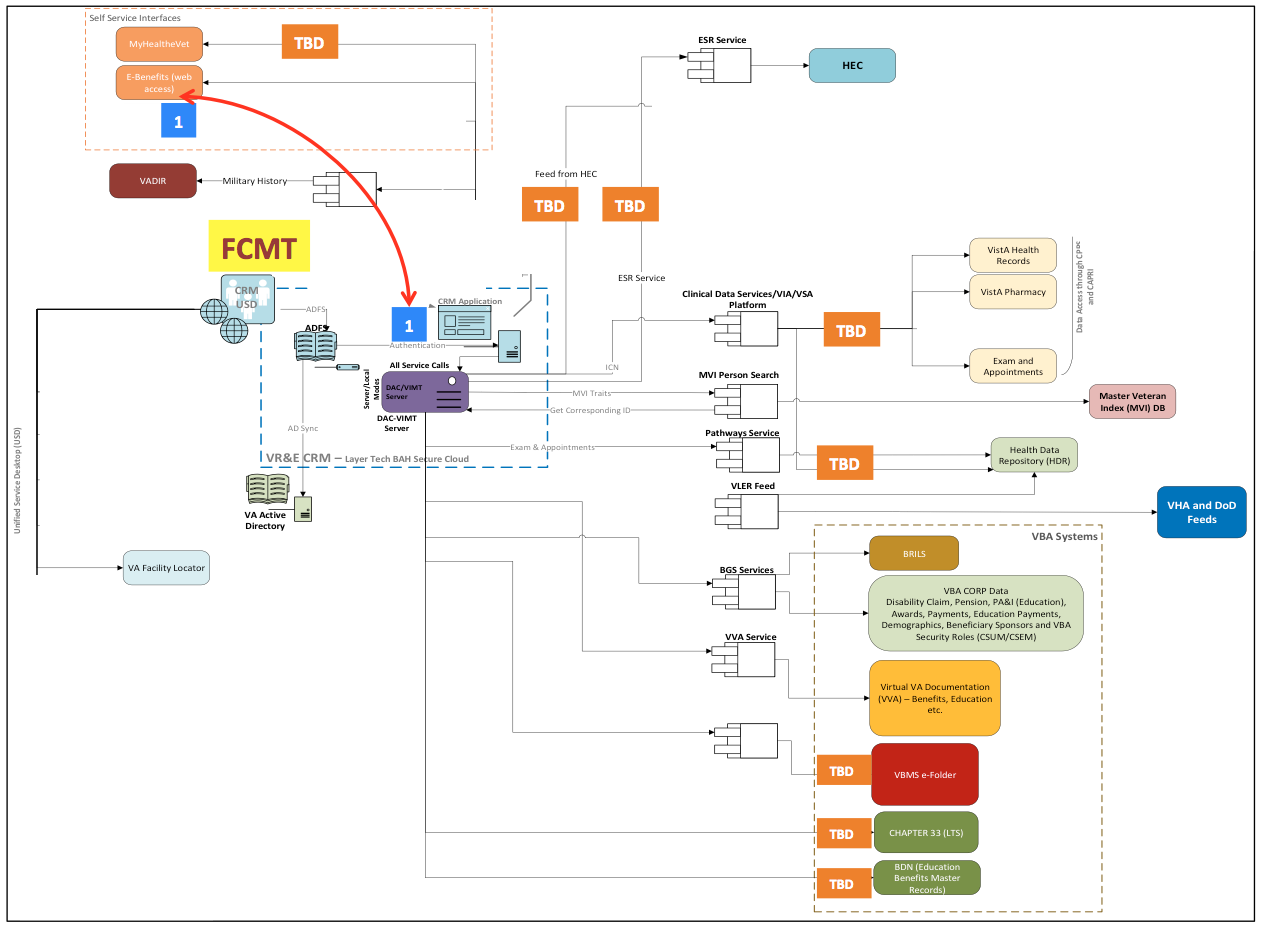


Figure 5: Example of the ICP Domain > Category > Activity model

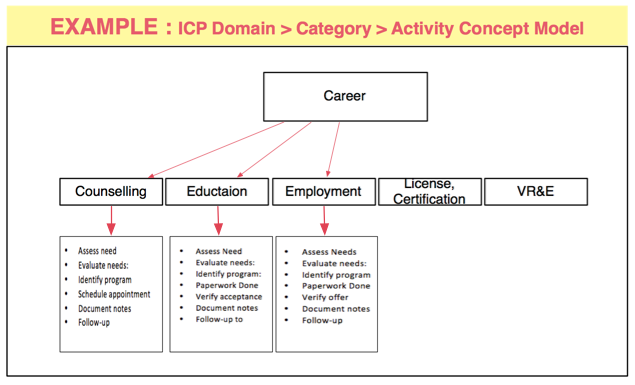


Table 13: Objects / Components to be Built or Modified

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | Name | Description | Service or Legacy Code | External Interface Name | External Interface ID | Internal Interface Name | Internal Interface ID | SDP Sections 1&2 |
|  | ICP Module | ICP Plan Module | Modification of the FIRP Module | NA | NA | NA | NA | NA |

Table 14: Objects in the High Level Application Design

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Name | Data Stored | Steward | Access |
|  | FCMT Data Store | ICP library data, ICP Activity data for each client | FCMT | Create, Read, Update Delete |

### Application Locations

The ICP module is housed in the FCMT CRM Case Management system that is hosted on the BAH VA CRM cloud environment. For further information, please refer to the OCP deployment plan document.

Table 15: Application Locations

|  |  |  |  |
| --- | --- | --- | --- |
| Application Component | Description | Location at Which Component is Run | Type |
| ICP | The ICP Module | VRM CRM Cloud platform environment | VA Dedicated Private Hosting Environment |

Table 16: Application Users

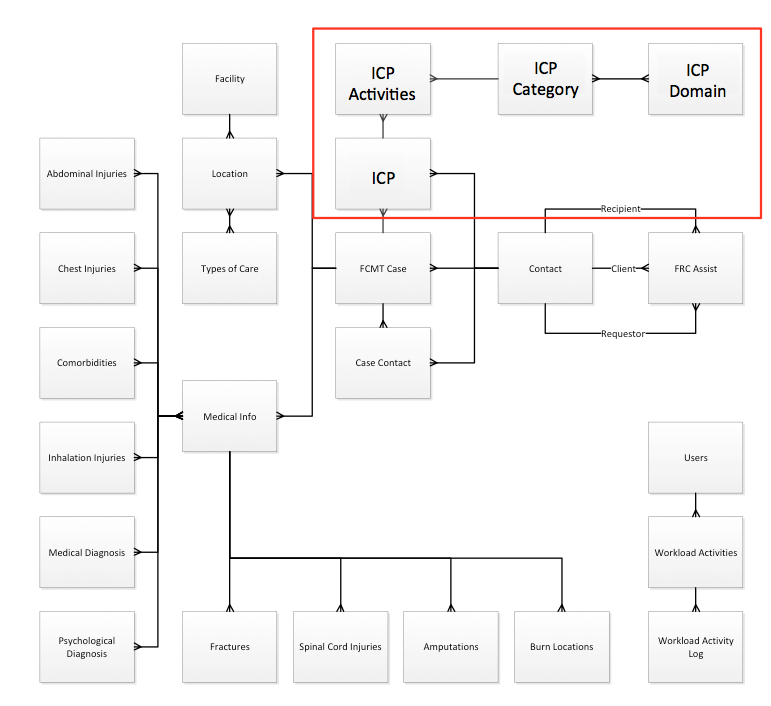
|  |  |  |
| --- | --- | --- |
| Application Component | Location | User |
| ICP | FCMT | Lead Coordinator, Care Coordinator teams, LC Care Managers |

## Conceptual Data Design

### Project Conceptual Data Model

The ICP data model is an enhancement of the FIRP data model. The structure of the FIRP model will be modified to accommodate the ICP data model.

Figure 6: Sample Project Conceptual Data Mode



### Database Information

Table 17: Database Inventory

|  |  |  |  |
| --- | --- | --- | --- |
| Database Name | Description | Type | Steward |
| NA | NA | NA | NA |

### User Interface Data Mapping

Users will use the ICP Module to create, manage, and monitor ICP Plans. The main user interfaces for the ICP Module is the Tree View of the ICP data and the view of the ICP activity data elements.

##### Level 3 ICP tree structure – Category Activity and Activity Data

Category activity data is defined in the document DoD VA ICP Data Dictionary which can be found on the [ICP SharePoint Site](file://vaww.yourserver.domain/DavWWWRoot/Collaboration/interagency/ic3/Shared%20Documents/Project%20Documents/System%20Design%20Document%20(SDD)/SEDR_AVL).

#### Application Screen Interface

The main ICP screens expose the ICP plan functionality. The rest of the functionality used by the ICP user will be the current FCMT screens.

Sample ICP Plan screens below show the tree structure and activity data elements:

##### ICP Plan Navigation Screen

Figure 7: ICP Plan Navigation screen

#### Application Report Interface

ICP users will use the current FCMT reporting features and functions to generate and view reports. There will be no design changes to the FCMT report module. Additional reports will be generated to support analysis of the following metrics:

**Metrics where data will be sourced from RCP-SS/DoD-CMS and FCMT:**

* 6.1 New and cumulative count of SM/V transfers
* 6.3 % of SM/Vs contacted by his or her LC within 168 hours (one week) of notification of transfer for outpatient, and 24 hours for inpatient
* 6.5 % of SM/Vs who achieve their goals in their care plans
* 7.2  % complex care population with an LC Checklist and Care Plan
* Population: number of SM/Vs requiring care coordination (Total DoD, Total VA, Total overlap)

**Minimum data required for metrics calculations:**

1. Indicator that SM/V is included in complex care population
2. Time and date stamps for the following events:
   1. SM/V is referred for LC assignment
   2. LC is assigned
   3. LC is transferred
   4. ICP is developed
   5. SM/V no longer requires LC assignment
3. Indicator of ICP goal achievement

**Minimum Demographic Data required for more detailed analysis:**

1. Gender
2. Age
3. Zip code
4. Disability rating (service connected & non-service connected)
5. Type/severity of injury (not sure what fields already exist for this)
6. Rank
7. Service branch
8. Service era

## Conceptual Infrastructure Design

### System Criticality and High Availability

ICP, when implemented, will have a GUI front-end to FCMT system. As such, ICP will have a system availability of 99.999% achieved 24 hours per day, 7 days per week outside of regularly scheduled down time required for maintenance.

### Special Technology

There will not be any special technology for ICP.

### Technology Locations

Table 18: Technology Location Details

| **Technology Component**  **Production 1** | **Location** | **Usage** |
| --- | --- | --- |
| Workstations | VA Network | To support end user needs to access FCMT |
| Special Hardware | CRM Cloud Hosting Solution – Primary Site in Sterling, VA | Hosting Provider to support the Development and Production environments of the application |
| Interface Processors | HTTPs | Secure connection between application users and production environment |
| Legacy Mainframe | Not Applicable |  |
| Legacy Application Server | Not Applicable |  |
| Legacy Databases | Not Applicable |  |
| Other | Not Applicable |  |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Production 2 (Recovery Site)** | **Location** | **Usage** |
| CRM Cloud Hosting DR Site | Chicago, IL | Provides secondary site / warm back-up facility to continue to support operation in an event of primary site failure |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Certification** | **Location** | **Usage** |
| CRM Cloud Hosting Solution | Sterling, VA  Chicago, IL | Provides authentication of users, and ensures application security |
| VA ADFS | VA internal access only | Provides end-user authentication of staff accessing VA network |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Education** | **Location** | **Usage** |
| CRM Cloud Hosting Solution – Pre-Prod Environment | VA internal access only | Enables end-users to conduct training and demos w/o accessing Production Data |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Test** | **Location** | **Usage** |
| CRM Cloud Hosting Solution – Test Environment | VA internal access only | Provides a testing environment to test application components |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Development** | **Location** | **Usage** |
| CRM Cloud Hosting Solution –DEV Environment | VA internal access only | Provides a development environment to support application development activities |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Education** | **Location** | **Usage** |
| CRM Cloud Hosting Solution – Training Environment | VA cleared access | Enables end-users to conduct training and demos with various end-user groups cleared by VA staff (e.g. DoD care coordinator team) |

### Conceptual Infrastructure Diagram

#### Location of Environments and External Interfaces

Sample Conceptual Networks and EnvironmentsSample Conceptual Networks and EnvironmentsSample Conceptual Networks and EnvironmentsThis SDD will be updated to include external interfaces and diagrams showing the environment that will be supported.

Figure : Sample Conceptual Networks and Environments

#### Conceptual Production String Diagram

Refer to 3.1.2 (Figure 8: Sample Conceptual Networks and Environments).

# System Architecture

ICP resides on and uses the underlying existing FCMT application and infrastructure. There are no new hardware and software components for ICP system architecture. For a detailed overview of the components associated with the physical and logical layout of FCMT, see FCMT v2.1 Release 2 System Design Document.

## Hardware Architecture

FCMT/ICP reside in a private cloud environment that consists of the following environments: development, non-production (quality assurance, integration, pre-production and data migration), performance testing, production, and management.

ICP will integrate with the following systems:

* VLER Data Access Services (DAS)
* Federal Case Management Tool (FCMT)
* Veteran Identity/Eligibility Reporting System (VIERS)
* Care Management Tracking Recording Application (CMTRA)
* Recovery Coordination Program Support Solution (RCP-SS)
* Army Warrior Care & Transition System (AWCTS)
* Marine Corps Wounded Ill and Injured Tracking System (MCWIITS)\*
* Homeless Operations and Management Evaluation System (HOMES)\*
* Blind Rehabilitation (BR) 5.0\*
* Veterans Appeals Control and Locator System (VACOLS)
* Mental Health Suite\*
* Armed Forces Health Longitudinal Technology Application (AHTLA)\*
* Primary Care Management Module (PCMM) Veterans Health Information Systems and Technology Architecture (VistA)\*
* Health Data Repository/ Common Information Interoperability Framework (HDR/CIIF) [Health Data]\*
* Bi-Directional Health Information Exchange (BHIE)\*

The ICP will be shared between VA and DoD in a two-way exchange. It will establish a common picture of the SM/V and their needs. The ICP sharing ensures that the new care team, including a new Lead Coordinator, is fully informed and provides continuity through the transition process.

Figure : High-Level Association of ICP and ICP Interfaces

**Sys 2**

**Sys 1**

**Sys 3**

**ICP**

**Sys 1**

**Sys 2**

**Sys 3**

**ICP**

**VA**

**DoD**

**ICP transfers to the new Lead Coordinator as the SM/V transitions**

## Software Architecture

ICP resides on and uses the underlying existing FCMT application and infrastructure, which is implemented using Microsoft Dynamics CRM products. FCMT and ICP will reside in the CRM cloud hosting infrastructure solution. FCMT and ICP utilize the following components Microsoft Dynamics CRM 2011 (Rollup v.18)

For details on FCMT Dynamics CRM components, please refer to CRM Cloud Hosting SDD.

## Network Architecture

CRM Cloud Solution physical architecture is designed with fully dedicated hardware that is not shared with any other customer or agency. This design provides full benefits of a cloud environment, without the security risks and exposure. The CRM Cloud Solution features include:

1. Dedicated physical application & database server hardware for the CRM Cloud Solution and the VRM Projects it hosts;
2. Dedicated physical storage hardware for the CRM Cloud Solution and the VRM Projects it hosts;
3. Dedicated DR - geographically-remote disaster recovery infrastructure for the CRM Cloud Solution and the VRM Projects it hosts.

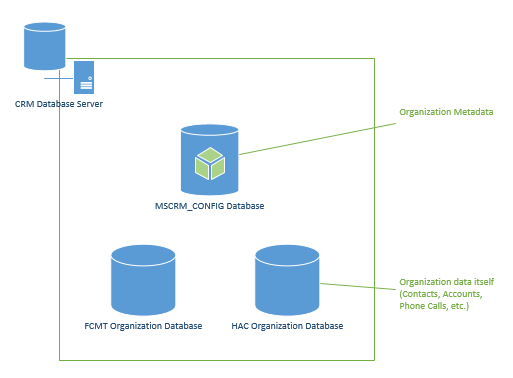
Network, switch, router, server, and storage hardware are deployed exclusively for CRM Cloud Solution, providing a physical layer boundary for heightened security and protection, as well as providing a shield against performance degradation from other program utilization. The environment supports SSL transactions as well as other interfaces with other Government organizations to provide the secure transfer of data to and from the VRM private cloud through VA’s TIC.

## Service Oriented Architecture / ESS

### MSCRM\_CONFIG Database

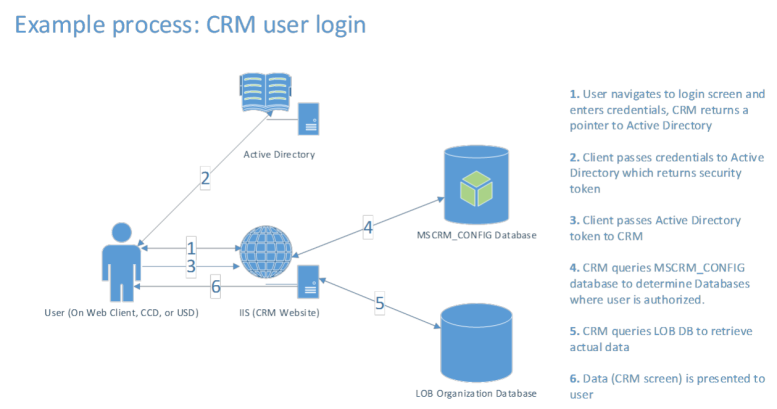
The MSCRM\_Config database is an integral part of the multitenant operation of Dynamics CRM. This database stores organization metadata about all tenants in the environment, specifically how any give User is mapped to one or more Organization databases. The data in this database enables CRM to properly authenticate and secure users and data and permit access to multiple sources on a single login.

Figure 10: The MSCRM\_Config database in context



The process of authentication follows the diagram below. Users submit their credentials to CRM which provides a pointer to Active Directory. The client then submits the credentials to Active Directory which (upon authentication) returns a security token. That token is then passed by the client back to the CRM server which uses it to identify the individual in the MSCRM\_Config Database. That identification tells the CRM server which organization databases the user is authenticated to, at which point CRM queries the Organization Database for the actual data to present.

Figure 11: User Authentication through the MSCRM\_Config Database



### Base and Extension Base Tables

The CRM server requires users to define the data structure through the CRM user interface. Direct modifications to the data structure are strictly unsupported and potentially extremely damaging to the CRM database. For almost every Entity that is created in CRM, whether out of the box or custom, one table is created in the Database; a table which contains the common data elements found on every record (GUID, Name, Date Created, etc.) as well as all the custom attributes which are assigned to the Entity.

## Enterprise Architecture

### COTS Components of the Solution

End-to-end, the CRM solution contains multiple COTS products.

The following components are included as part of the solution:

Table 19: COTS Components

|  |  |
| --- | --- |
| Component | TRM Status |
| .NET framework 4.5.2 |  |
| Microsoft SQL Server 2014 | Approved |
| Microsoft Dynamics CRM 2015 | Approved |
| Microsoft Windows Server 2012 | Approved |

### VIMT Integration Layer

As a central component of the ICP project, Microsoft has constructed a sophisticated integration layer for linking VA CRM systems to external systems in a standardized and redeployable fashion. This layer is referred to as the VRM Integration Middle Tier (VIMT). The information below describes the design and intentions of this integration layer, specifically the measures being taken to assure the stability and future extensibility of the solution.

### Core Architectural Principles

1. Single Point-of-Entry: All messaging MUST go through the integration layer, especially those messages destined for external systems. Application specific interfaces should NOT be developed by application teams.
2. Canonical Data Model: All VRM applications will “speak a common language” to the integration layer. The data model for messaging will be derived from industry standards, such as Electronic Data Interchange (EDI) and Health Level Seven (HL7). Custom messages will be avoided.
3. Black Box: The integration layer is a “black box” to the application development teams. All needed functionality for applications to communicate with applications external to themselves will be provided through the integration APIs.
4. Asynchronous: Because of the legacy nature of the VA’s systems, messaging will be asynchronous in nature. The integration team will provide the necessary APIs to implement Microsoft standard asynchronous development patterns. It is the responsibility of the application to implement any logic necessary for synchronous business workflows.
5. Workflow Driven: The services provided by the integration layer are intended for use by all VRM applications and will be workflow driven. This means that services are provided for workflow events, not for each individual application. Applications are expected to use common services unless no service will fit the business process / event.
6. Atomic Transactions: Messages are considered atomic transactions. All data necessary to complete the workflow event should be sent in each transmission. Applications should not expect the integration layer to retrieve data necessary to complete a work event.
7. Fully Transactional: Transactional processing and synchronization will be handled by the interface layer. Applications will receive message responses once the entire transaction is processed. Applications should handle transactional exceptions returned by the integration layer.
8. Centralized Data Validation: The integration layer will implement a standard set of validation rules based on the data definitions defined by the data model. This ensures that a common set of rules are applied across applications. Applications may implement more restrictive rules, but cannot override the rules defined in the integration layer.
9. Extensible: The integration framework will incorporate extensibility best-practices. Multiple client types will be supported through a “client plug-in” model. Components which evaluate rules and perform translations will utilize configuration patterns rather than custom coding.
10. Leverage IP: To the fullest extent possible, the integration team will leverage existing Microsoft products and services as well as MCS intellectual property (IP) in the development of the integration layer.

### Integration Phasing

While operating within the Microsoft Agile project management methodology, the integration team will deliver integration components in a phased approach, staggering multiple integration efforts to ensure an even distribution of workload and frequent delivery of functional integration components. The objective phases are as follows:

1. Planning
2. Initial Interface Development
3. Messaging Engine Development
4. End-to-End Unit Testing
5. System Integrated Testing
6. Performance/Load Testing
7. Deployment

# Data Design

The ICP data model will be implemented in the MS Dynamics CRM SQL DB where the current FIRP data model has been created.

## DBMS Files (N/A)

This section is not applicable.

## Non-DBMS Files (N/A)

This section is not applicable.

## Data View (N/A)

This section is not applicable.

# Detailed Design

The detailed requirements are captured in the ICP RTM listed in section 1.14 and, at all times, this document should be used as the authoritative source.

This section deals with the key elements of the ICP module. All requirements that are primarily configuration changes to FCMT are not considered here.

This SDD focuses on the main characteristics of the ICP Module design which is the FIRP enhancement. The RTM is the system of record for all the ICP requirements that will require configuration changes in FCMT rather than programmatic changes, for example, alerts, notifications, etc.

A critical element of the work in increment 1 is to establish the conceptual architecture for ICP so that the exchange of ICP plans between VA and DoD can be designed and built in increment 2.

## Hardware Detailed Design

ICP is housed in FCMT which is currently hosted in the VA CRM cloud. ICP functionality does not require any hardware changes to FCMT.

## Software Detailed Design

### Conceptual Design

#### Product Perspective

##### User Interfaces

This module has the following components:

* ICP Tree
* ICP Category Detail Display

###### ICP Tree Component

ICP has a tree structure with the following functionality:

* A hierarchical view of the Tree elements similar to a directory folder structure
* The Tree will have a maximum of 4 levels with only 2 being used in phase 1
* When a user clicks on a branch that is collapsed, the system will expand and display the sub branches
* When a user clicks on a branch that is expanded, the system will collapse and hide the sub branches
* When the user clicks on the “expand all” the system will display all the branches and sub branches

Figure 12: ICP Structure – Tree and Category Information Panels

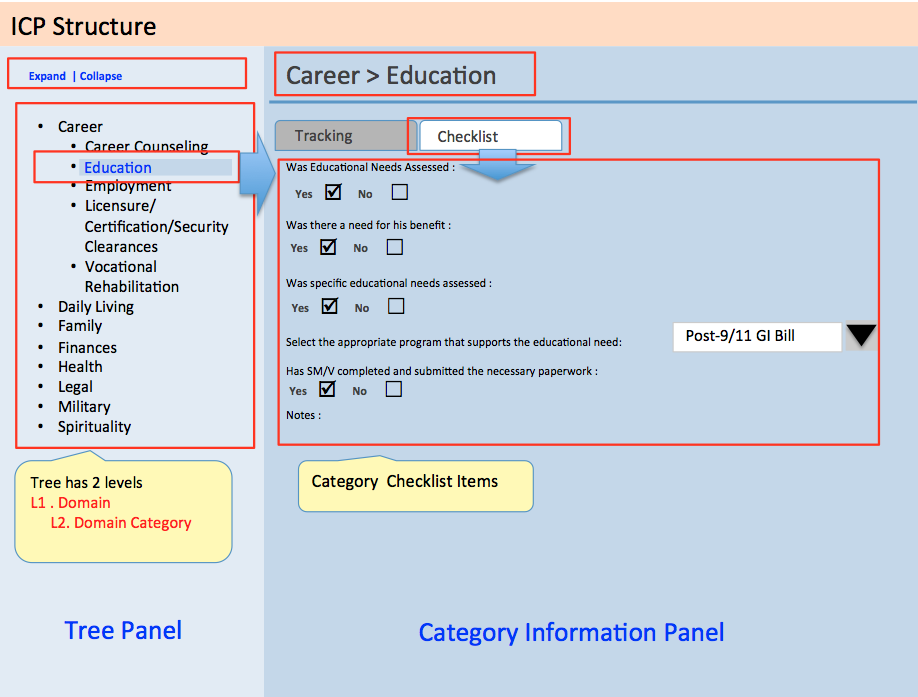
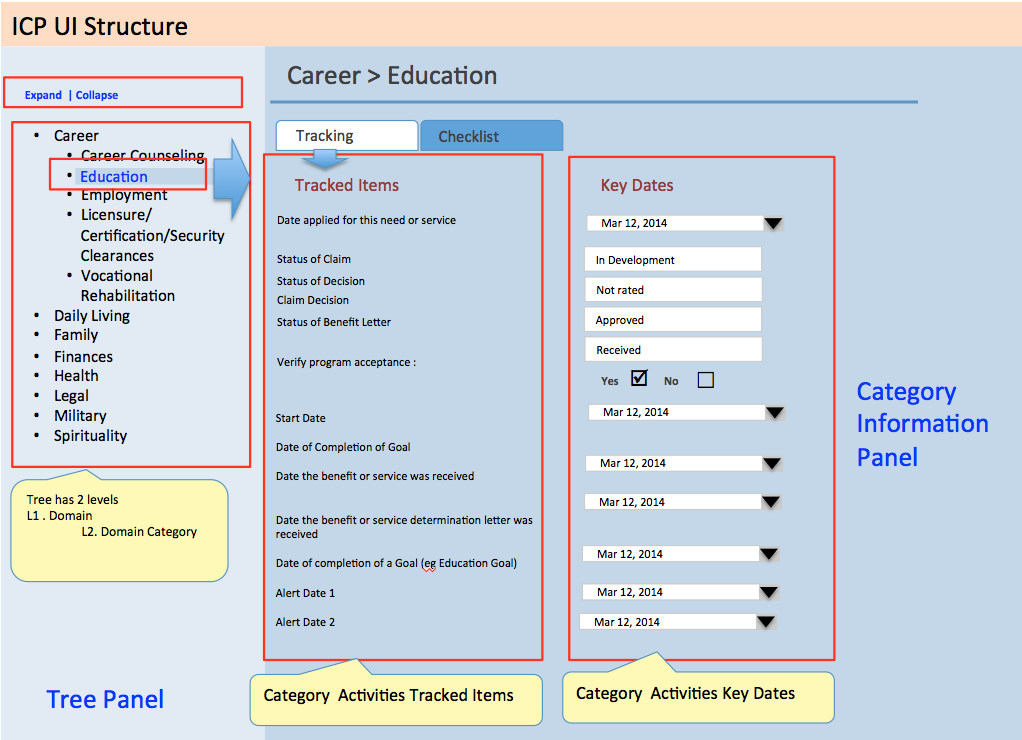
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Figure 13: ICP UI Structure

****

###### ICP Navigation Tree Structure

ICP Module will use the same tree navigation model as the current FIRP model. The tree structure has 3 levels. The first 2 levels of the ICP tree structure is as follows:

##### Level 1 and Level 2 (Domains and Domain Categories)

Table 20: Level 1 and Level 2 of the ICP Tree Structure

|  |  |
| --- | --- |
| **ICP Domain** | **ICP Category** |
| Career | Career Counseling |
| Career | Education |
| Career | Employment |
| Career | Licensure/Certification/Security Clearances |
| Career | Vocational Rehabilitation and Employment [VBA, VHA, Compensated Work Therapy, Education and Employment Initiative (E2I), Operation Warfighter (OWF), Military Adaptive Sports Program (MASP)] |
| Daily Living | Assistive Technology |
| Daily Living | Auto Grant |
| Daily Living | Automobile Adaptive Equipment |
| Daily Living | Clothing Allowance |
| Daily Living | Communication and Translation |
| Daily Living | Community Re-integration (NGO/VSOsupport etc.) non-governmental organization and veteran service organization) |
| Daily Living | Driving Status |
| Daily Living | Emergency and Disaster Planning |
| Daily Living | Home Care Services |
| Daily Living | Housing (Permanent) |
| Daily Living | Housing Adaptation (SAH/SHA/HISA) |
| Daily Living | Independent Living |
| Daily Living | Self-Care (Personal Well Being) |
| Daily Living | Transportation |
| Family | Caregiver Support |
| Family | Death |
| Family | Dependent Care |
| Family | Family Self-Care (Personal Well-Being) |
| Family | Family Assistance |
| Family | Family Medical Leave Act |
| Family | Respite Care |
| Family | Spouse/Family Orders (Lodging, Travel, Meals, etc.) |
| Finances | Benefits Counseling (VBA) |
| Finances | Disability Compensation (Short/Long-Term Disability) |
| Finances | Emergency Financial Relief Resources |
| Finances | Federal and State Income Tax |
| Finances | Fiduciary |
| Finances | Financial Counseling and Plan |
| Finances | Health Insurance |
| Finances | Life Insurance |
| Finances | Military Combat Specialty Pay & Pay and Allowance Continuation (PAC) |
| Finances | Military Pay |
| Finances | Non-Medical Financial Issues |
| Finances | Property Taxes |
| Finances | Social Security Benefits |
| Finances | Special Compensation for Assistance with Activities of Daily Living (SCAADL) |
| Finances | Transition From Military to VA Compensation |
| Finances | Unemployment Compensation |
| Finances | Veteran's Compensation and Pension & VA Claims (not IDES) |
| Health | Authoritative Healthcare Documents |
| Health | Behavioral Health |
| Health | Complimentary Alternative Medicine (CAM) / Integrative Medicine |
| Health | Dental Care |
| Health | Hearing/Audiology |
| Health | Nutrition |
| Health | Pain Care |
| Health | PDHA/PDHRA (Pre-Deployment Health Assessment/Post Deployment Reassessment) |
| Health | Prosthetic Equipment and Durable Medical Equipment (DME) |
| Health | Recreation Therapy and Adaptive Sports/ Reconditioning |
| Health | Vet Center |
| Health | Rehabilitation |
| Health | Spinal Cord Injuries/Disorder Care |
| Health | Therapy and Service Dogs |
| Health | Transition to VA Healthcare |
| Health | Traumatic Brain Injury Care (TBI) |
| Health | Vision |
| Legal | Citizenship |
| Legal | Civilian Court |
| Legal | Conservatorship (Property) |
| Legal | Family Court |
| Legal | Guardianship |
| Legal | Power of Attorney (Non-Medical POA) |
| Legal | Military Court |
| Legal | Veterans Service Organizations (VSO) |
| Legal | Veteran's Court |
| Military | Awards and Decorations |
| Military | Continue on Active Duty or Active Reserve |
| Military | Integrated Disability Evaluation System (IDES) |
| Military | Line of Duty |
| Military | Military and Personal Belongings |
| Military | Retirement & Separation |
| Military | Other Military Considerations |
| Military | Promotions |
| Military | Service Member Orders |
| Military | Reserve/Guard (Transition Assistance Advisors) |
| Spirituality | Chaplain/Religious Services |
| Spirituality | Counseling |
| Spirituality | Retreats |
| Spirituality | Support Groups |

###### ICP Category Detail display

When the user clicks on a domain category, for example Career > Education, the activity information associated with that Domain Category is displayed on the right details panel.

###### ICP UI Panels

The ICP UI panel has 2 sections:

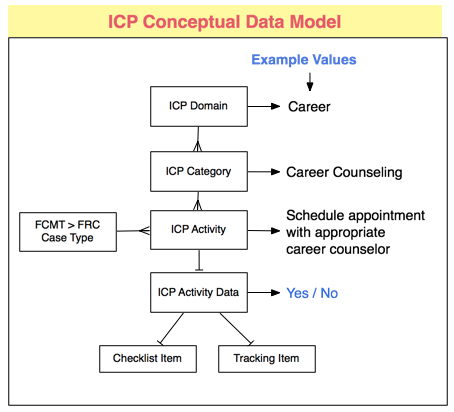
* The Tree Section Panel
* The Category activity details panel

###### The Category Activity Detail Panel

The category activity detail panel will have 2 classes of data that can be displayed in a single screen or under 2 tabs. These are:

* Activity Checklist items and
* Activity Tracked, or tracking items

Figure 14: ICP Conceptual Data Model



* Each ICP Domain will have one or more ICP categories associated.
* Each ICP category will have one or more ICP activities associated.
* Each ICP activity will have only one data value associated.
* Each FCMT > FRC case type has one or more ICP activities associated.

###### Activity Checklist items

Each Domain Category has one or more Checklist item. Checklist items have a description field and one and only one of the following:

* A checkbox selection with values Yes, No or blank OR
* Selection from a lookup list OR
* Status field with status values that can be selected OR
* Text field with max number of characters = 3,000

Some Activity items with Yes or No value will have some logic associated. Example:

* For the activity: Is there a need for this benefits or service?
* IF response = ‘Yes’ then user needs to capture a description of the assessment of the need
* System will flag a field with a marker IF a response is required and no response has been submitted.

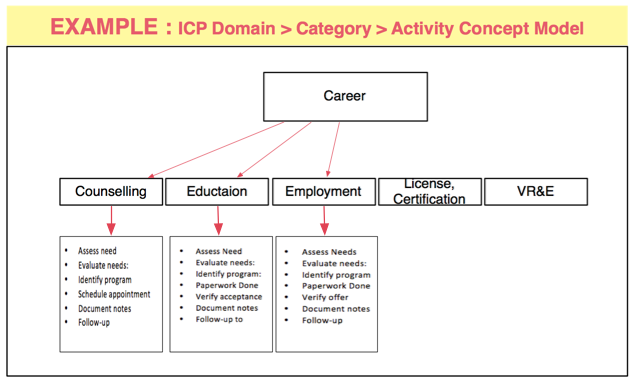
###### ICP Activity Patterns

The ICP structure has:

* 8 Domains
* 95 Domain Categories
* 1500 + Category activities

Each category has associated data with description and values. However the 1500 + Category activities conform to some patterns across the checklist type, and the tracking items type. Below is an example of what the activity patterns look like for the domain career:

Figure 15: Example: ICP Domain > Category > Activity Concept Model



ICP Checklist Activities have a pattern:

Table 21: ICP Activity Patterns

| ICP Activity pattern type | Example ICP Category Activity | Example Response |
| --- | --- | --- |
| Question type with a Yes / No response | * Is there a need for this benefits or service * Have they received the benefit or service | Yes or No |
| Status question with a Status response   * selected from a Status look up field or * pulled from a SOR using a web service * entered manually | * Status of a claim or decision * Status of the benefit or service determination letter | * Claim received * Claim In Development * Denied or Approved |
| Claim Decision with a response   * selected from a look up field or * pulled from a SOR using a web service * entered manually | Claim Decision | * Denied * Approved |
| Notes Pattern. User will enter notes on the activity | Notes | Text written by the care coordinator |
| Names Pattern  Many activities have references to people who are   * Referrers of an SM/V * Assigned the task | Name of Referral parties ( person and organization) | * Person Name * Organization name |

###### Activity Tracked or Tracking Items

Each Domain Category has one or more tracking items. Tracking items are used to track one or more of the following:

* Start dates of an action
* Date of an appointment
* Due date of an item
* Alert 1 date of an item
* Alert 2 date of an item

Activity tracking items have a description field and one and only one of the following:

* A checkbox selection with values Yes, No or blank OR
* Selection from a lookup list OR
* Status field with status values that can be selected OR
* Text field with max number of characters = 3,000

Some Activity items with a Yes or No value will have some logic associated. Example:

* For the activity: Is there a need for this benefits or service?
* IF response = ‘Yes’ then user needs to capture a description of the assessment of the need
* System will flag a field with a marker IF a response is required and no response has been submitted.

The following are the actions and behavior that the users can perform while accessing the ICP

* Browse Tree
* Select tree elements
* Input data at the activity level
* Save changes
* Print the ICP plan
* Generate a PDF of the plan
* Email the PDF to ICP users or SM/V and contacts
* Close plan

###### ICP User Groups

Please see Section 1.2 for ICP User Groups.

###### ICP Teams

ICP users belong to Care Coordinator teams with the lead coordinator having the main responsibility and care coordinators from different programs managing the service delivery to the SM/V for their specific program.

Table 22: ICP Teams

|  |  |  |
| --- | --- | --- |
| Person | Team Role | Program |
| Person A | Lead Coordinator | FRC |
| Person B | Care Coordinator | Compensation Benefits |
| Person C | Care Coordinator | Education |
| Person D | Care Coordinator | DoD |

##### Hardware Interfaces

The following is a list of hardware that will be used with the ICP CRM solution built by the hosting vendor to specifications that are finalized during the design and integration sessions with the Technical Integration team that is part of the Member Services Project:

* CRM Application Server
* IIS Server v7
* CRM Database Server
* Data Access Component Server *(optional)*
* Web Server
* CRM Email Server

##### Software Interfaces

ICP is a component / module of FCMT. All of its library data is housed in the FCMT repositories. ICP leverages FCMT for all its case management and related functionality. FCMT does rely on integration efforts with a host of other systems and uses VA web services to access data from VA systems of record. ICP application utilizes multiple interfaces from external applications/systems or legacy DoD/VA systems currently built into FCMT. For more information on the FCMT application context, see the FCMT v2.1 Release 2 System Design Document. The ICP module is part of a set of components, modules and services that together provides the functionality needed by Case Managers and Care Coordinators.

Figure 16: Modules, Components and Services

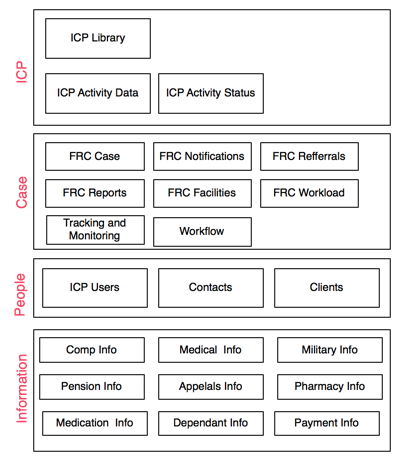
****

Table 23: FCMT Interfaces

| **Name** | **Description** | **Interface Name** | **Interface System** |
| --- | --- | --- | --- |
| MVI Enterprise Person Search | Master Veteran Index Services and Database provides the VA lines of business ability to search for a customer that is currently getting a benefit or using VA services. | Master Veteran Index (MVI) Service | Vista National Databases |
| Vista Appointments and Exams | Vista Appointments and Exams are accessed through a VA Web-Services | Pathways Exam and Appointments | Health Data Repository (HDR) |
| VLER Feed | Veteran Life Type Electronic Record delivers certain patient health and case information from VHA and DoD. | Health and DoD data | VLER DAS |
| HEC | Health Eligibility Center – Information is provided to HRC about the new enrollees | HEC Data | Eligibility System Redesign (ESR) Service |
| eBenefits | VA Self Service secure portal | eBenefit | Identify and Access Management (IAM) Proxy Service |
| My HealtheVet | VA secure portal for patients to access PACT and health information | MyHealtheVet API/Service | TBD |
| Beneficiary Identification Records Locator Subsystem (BIRLS) | Beneficiary Identification Records Locator Subsystem (BIRLS) provides VA military history, benefits, demographic and death records | BIRLS DB | Benefit Enterprise Portal (BEP) |
| VBA CORP DB | VBA Corp Database is the repository of the VBA benefit data including disability, education and pension data | VBA CORP access through Benefit Enterprise Portal (BEP) |  |
| VVA Database | Virtual VA Document Repository | Virtual VA | VVA Service |
| VBMS | Veteran Benefit Management System is a web-based benefit intake, development and award system. | BEP Benefit Services | Benefit Gateway Services (BGS) |
| VADIR | Veteran Affairs/Department of Defense Identity Repository (VADIR) is a VA/DoD database for Veteran info, demographics and military history | VADIR | Member Services Technical Integration (MSTI) VADIR Service |
| SATORI | Address verification tool | CRM | CRM |

Table 24: Interfaces External to OIT

| **Name** | **Related Object** | **Input Messages** | **Output Messages** | **External Party** |
| --- | --- | --- | --- | --- |
| MVI Enterprise Person Search | MVI Enterprise Person Search | IAM MVI Input Search Parameters and minimum required ID traits (Examples: FNAME, LNAME, DOB, SS# etc.) | Veteran or Beneficiary identification Information | DoD |
| VADIR | VADIR | Veteran SSN & Service Record Data – authoritative source for Veteran Data | N/A | DoD |
| VISTA Health | VISTA Health | MVI Integration Control Number (ICN) and Vista Station ID | Various VISTA records based on the target module | VHA |
| Vista Appointments and Exams\*\*\* | Vista Appointments and Exams\*\*\* | MVI ICN # | Exam and Appointment data | VHA |
| eBenefits | eBenefits | Benefits Inforamtion | Benefit Data | VBA |
| Beneficiary Identification Records Locator Subsystem (BIRLS) | Beneficiary Identification Records Locator Subsystem (BIRLS) | Veteran and Beneficiary SS# | Benefit Data | VBA |
| VBA CORP DB | VBA CORP DB | Veteran and Beneficiary SS# or CORP Participant ID | Benefit Data | VBA |
| VVA Database | VVA Database | Veteran and Beneficiary SS# | Benefit Data | VBA |
| VBMS | VBMS | Veteran and Beneficiary SS# or CORP Participant ID | Benefit Data | VBA |
| Education Benefit | Part of the VBA benefits | Education Benefit Information | N/A | VBA |
| VA Facility Locator | VA Facility Locator | Online Facility Location Service | N/A | NA |

This Integration Plan applies directly to the following FCMT interfaces:

* VLER DAS
* Veterans Affairs Department of Defense Identity Repository (VADIR)
* Care Management Tracking Recording Application (CMTRA)
* eBenefits
* Servicemembers’ Group Life Insurance Traumatic Injury Protection Program (TSGLI)
* VA Simple Mail Transfer Protocol (SMTP)
* VA Active Directory Federation Service (ADFS)
* Veteran Identity/Eligibility Reporting System (VIERS)
* Master Veteran Index (MVI)
* VistA
* Health Data Repository (HDR)
* DoD systems (through VLER DAS or VADIR) to include Theater Medical Data Store (TMDS)

Table 25: Externally Shared Data Stores

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Name | Data Stored | Owner | Access |
| 1 | eBenefits | FCIP sends the Contact Summary Data to eBenefits | FCMT | This a view only data set sent to eBenefits |

##### Communications Interfaces

MS Dynamics CRM uses web services to access and manipulate data resources from outside data repositories and interact with enterprise tiered platform services. These services allow implementers to write applications using MS Visual Studio or other development tools by referencing the platform’s web services. The MS Web Services are interoperable with Non-MS platforms. The MS Dynamics CRM SDK includes the following Web Services:

* Discovery Web Service - The Discovery Web Service is a mechanism to find the correct endpoint for the organization web service.
* Metadata Web Service -The Metadata web services provide methods to read and write metadata for an organization including definitions for entities, attributes, and relationships.

Extensible Markup Language (XML) Web and Software Services:

* Simple Object Access Protocol (SOAP) - SOAP is the communication protocol for XML Web Services. SOAP defines the XML format for messaging. SOAP also enables MS Dynamics CRM to perform remote procedure calls for applications built on Common Object Model (COM) or Common Object Request Broker Architecture (CORBA) instead of the latest and more flexible document style messaging where SOAP is a wrapper around an XML document.
* XML Web Services - MS Dynamics CRM uses XML Web Services as a building block for distributed computing. XML Web Services are a flexible and interoperable vehicle to integrate and communicate with other applications regardless of the language or platform and is a key ingredient in a SOAP-based web-services environment.
* XML/SOAP Security - MS Dynamics CRM uses WS Security while using SOAP to exchange data via XML documents supporting various security models and encryption technologies. In brief, SOAP Security Web Services provide a vehicle for security related information targeted at a specific receiver using WS Routing.
* Web Services Description Language (WSDL).

Client Side Scripting:

* Java Script - Client-side scripting includes the capabilities to perform business logic and actions from the MS Dynamics CRM Web or Outlook clients. It also includes capabilities to add the user interface elements to integrate MS Dynamics CRM with other applications.

Other Protocols:

* Hypertext Transfer Protocol (HTTP)/Hypertext Transfer Protocol Secure (HTTPS) - HTTP functions as a request-response protocol in the client-server computing model. HTTPS is a secure HTTP connection.

##### Memory Constraints

Please refer to Section 6.2.1.4 for Dependencies and Constraints.

##### Special Operations

This section is not applicable.

#### Product Features

The system will be primarily used by Care Coordinators from various VA LOBs who will be working with the lead coordinator to plan, manage, and collaborate to achieve the goals and objectives documents in the SM/V’s ICP. The users will expect the following from the system:

* Access to a common operational picture of the SM/V,
* Access to a wide range of data on the veteran such as health, military history, dependent info, VBA benefit information etc. user
* Ability to track and get reminders on activities and to-dos
* Ability to add notes, comments and provide feedback on the SM/V and their progress
* Ability to modify ICP plans
* SSO access to other critical VA systems during the process of executing ICP plans

#### User Characteristics

##### User Characteristics

The users of this application will be VA employees. All users will need to be registered in the FCMT system to gain access to the FCMT and ICP module. FCMT will leverage CSUM, CSEM and VHAs access model to ensure users will only gain access to records that match their sensitivity level. Users will use their standard VA access and credentials to gain access to the FCMT / ICP system. The target users will be:

* Lead Care Coordinators
* Care Coordinators
* Supervisors / managers

##### Service Members and Veterans Access

The FCMT system will be available only to VA employees. Data captured in the ICP and case management status and appointments will be made available to SM/Vs via the eBenefits portal.

##### User Roles and Security Rights

Table 26: FRCP Programs

|  |  |  |  |
| --- | --- | --- | --- |
| Program | Security Role | Description | Security Rights |
| FRCP Security Roles | Federal Recovery Coordinator (FRC) | Federal Recovery Coordinator (FRC) users - “Base” business role for the FRC Program business unit | 1. Cannot delete any entity data  2. Can deactivate the following: a. Summary Notes  3. Can Create, Read and Edit the following: a. Contacts b. Federal Individual Recovery Plan (FIRP) Tasks c. Locations d. Workload Activity Log e. Summary Notes associated with FRCP Cases  4. Can Read and Edit the following: a. Clients b. Assists c. FRCP Cases d. Medical Information e. FIRP Tasks f. Activities associated with FRCP Cases including: i. Tasks ii. Summary Notes  5. Can Read (but not Edit) the following: a. VHA Referrals b. Chapter 63 Cases c. Casualty Cases d. Summary Notes entered by other Users  6. Can Print |
| FRCP Security Roles | ICP Lead Coordinator | Assigned Lead coordinator for an SM/V creating and managing their ICP plan | * Make an FRC SM/V active * Create an ICP plan * Update Plan * Assign other care coordinators to activities * Print and send Plan * Contact SM/V |
| FRCP Security Roles | FRC Case Status Approver | Required for approving FRCP Case Status changes, conversions to Assist, and Extension Requests | 1. Can approve Case status changes |
| FRCP Security Roles | FRCP Senior Manager | For FRC Program Senior Manager Users | 1. Can Reassign Clients and their related records 2. Can run FRCP reports 3. Can export FRCP data |

#### Dependencies and Constraints

This SDD relates only to the ICP portion and leverages existing FCMT application and infrastructure architecture. All requirements that are primarily configuration changes to FCMT are not considered in the SDD. For constraining policies, directives, and procedures, please refer to the FCMT SDD.

The design was performed with a tight timeframe. Further reviews might be necessary as this is a living document.

The ICP system will be architected and designed around the following known business, regulatory, technical and policy dependencies and constraints. The following list includes items that may limit the developer’s options:

Table 27: Dependencies and Constraints

| Type | Description | Status |
| --- | --- | --- |
| Regulatory policies | FCMT shall comply with all known PII regulations, for the use and disclosure of individually-identifiable information and individual’s rights in regards to PII data; this includes state, federal, and DoD laws, rules and regulations. | In Place |
| Hardware limitations (for example, signal timing requirements) | There are currently no known hardware limitations on the CRM Cloud Hosting Solution | In Place |
| Interfaces to other applications | * FCMT must use Active Directory Federation Services (ADFS) as the user authentication method. | In Place |
| Parallel operation | FCMT shall have parallel operation. | In Place |
| Audit functions | At a minimum the system must capture the following audit information to ensure information security:   * Audit logs for user access * Audit logs of changes made to case content * Audit logs for access and retrieval of case documentation * Role-based access | In Place |
| Control Functions | * Active Directory Federation Services (ADFS) * Single Sign On * PIV card | In Place |
| Higher-order language requirements | * .Net * JavaScript * HTML * XSLT files | In Place |
| Reliability and Performance requirements | * FCMT must share its Web server with other applications. | In Place |
| Criticality of the application | This application is considered a MODERATE criticality tool | In Place |
| Safety and security considerations | * The system shall maintain user management for existing and new applications and shall include role-based access and security permissions with appropriate authentications. * System must comply with Privacy Rules contained in DoD 6025.18-R when maintaining, using, and disclosing individually-identifiable health information for Service members. * The development of any tools, repositories, or applications in support of the transmission of the release of health information to and between DoD and VA must adhere to the DoD and VHA Healthcare Identity Management (IdM) enterprise requirements. This ensures the highest level of integrity of the patient correlations, and VHA patient information experiences no degradation. * The development of any tools, repositories, or applications in support of the transmission of the release of health information to and between DoD and VA must adhere to the DoD and VHA Healthcare Identity Management (IdM) enterprise requirements. This ensures the highest level of integrity of the patient correlations, and VHA patient information experiences no degradation. | In place |
| Usability (including 508 compliance) | The application will be designed using the CRM Dynamics 2015 COTS out-of-the-box functionality to ensure adherence to development best practices, and improve system usability by the end users | In Place |

### Specific Requirements

#### Database Repository

The ICP data model will be implemented in the MS Dynamics CRM SQL DB where the current FIRP data model has been created. Please refer to section 3.1.2. High-Level Application Design and the RSD for the project’s logical database design.

#### System Features

This section provides the functional requirements for the ICP solution derived from the ICP Business Requirements Document (BRD).

Note: Functional specifications relating to Increment 1 are described in the ICP RTM. **Any updates to the RTM after this document is created will be contained in the ICP RTM.**

ICP Increment 1 will focus on development of the following:

* ICP Alerts and Notifications - Provide the ability to enable authorized users to receive reminders when the execution of an ICP process must be conducted in a timely manner.
* Assess SM/V for ICP - Provide the ability to enable an assessment of the SM/V to determine his/her needs that will be met via implementation of the ICP. Input is obtained from authorized users to compile a mutually agreeable list of needs to be addressed.

Details of the functional specifications for Increment 1 are described in Table 5.

Table 28 - Functional Specifications and Business Need Per Interagency Comprehensive Plan (ICP) Integrated Project Team (IPT) Integrated Business Requirements Document (iBRD) Version 2.0

|  |  |  |
| --- | --- | --- |
| Stage Number | Name | Description |
| 0 | Business Need | A single solution that is interoperable and generates a common operating picture for case care management of SM/V and family or caregiver across DoD/VA. |
| 1 | Owner Requirement | An IT solution that supports the construct of the ICP and allows authorized users the ability to input, view and exchange information across DoD/VA, supporting care, benefits and services to the SM/V and family or caregiver. |
| 2 | Functional Requirement | Refer to the ICP Requirements Tracability Matrix (RTM). |
| 3 | Decomposed Functional Requirement | Refer to the ICP Requirements Tracability Matrix (RTM). |

High level requirements provided by the stakeholders as functional capabilities of the proposed ICP system are outlined in Table 6.

Table 29 - Proposed Functional Capabilities

| Capabilities | Description |
| --- | --- |
| Assess SM/V | This capability enables an assessment of the SM/V to determine his/her needs that will be met via implementation of the ICP. Input is obtained from authorized users to compile a mutually agreeable list of needs to be addressed. |
| Develop ICP | This capability enables authorized users to work with the SM/V to identify needs that will establish goals and objectives that comprise the ICP. |
| Implement ICP | This capability allows coordination of an ICP execution with the participation of the SM/V and authorized users. This process includes updates to the ICP as required, from one LC to another. |
| Evaluate ICP | This capability enables authorized users to provide feedback on the success of a particular ICP implementation. The purpose of this process is to identify potential improvements to the overall plan. |
| Reporting | This capability enables DoD/VA to obtain necessary information about any ICP process as per desired time period and in desired output format. |
| Alerts and Notifications | This capability enables authorized users to receive reminders when the execution of an ICP process must be conducted in a timely manner. |
| User Access | This capability enables authorized users to assign specific responsibilities and access rights to members of the authorized user community. |

##### Overview

ICP will use and leverage the following as built functionality available in FCMT for Increment 1:

* Custom Objects
* Libraries
* Common Entities
* Clients and Contacts
* Client Data
* Case Management
* Dashboards
* Roles and Responsibilities
* Referrals
* Forms
* Reports
* Security model
* Web service based Data Access

Most of the functionality built in FCMT required to support the ICP users will be unchanged.

##### Hierarchical Structure

The ICP case will have a hierarchical structure of: Domain > Category > Attribute. Each domain will have one or more categories associated with it. Currently, there are 95 categories defined and spread across the 8 domains. The Categories are also supported by various attributes.

Table 30 – ICP Domain Structure

| Domain | Sample Categories | Sample Attributes |
| --- | --- | --- |
| Career | * Career Counseling * Education * Employment * Licensure/Certification/Security Clearances | * Counselor Name and Address * School Name * Clearance Status |
| Daily Living | * Assistive Technology * Automobile Adaptive Equipment * Communication and Translation | * Special Needs |
| Family | * Marital Status * Number of Dependents * Next of Kin | * Address of the NoK |
| Finances | * Auto Grant * Clothing Allowance | * Grant amount * Payment due date |
| Health | * Health Records * VA Facility Assignment | * VA Hospital Facility address * Care coordinator |
| Legal | * Current Legal Standing | * Legal counselor name |
| Military | * Branch of Service * Service Status | * Dates of Service * Number of Deployments |
| Spirituality |  | * Spiritual Counselor Name |

The full list of the domain, domain category and category attribute model is described in the DoD-VA Master Comprehensive Plan Document dated 6/27/14.

## Network Detailed Design

ICP GUI communicates with various servers within the VA intranet via TCP/IP. Existing VA intranet WAN backbone is leveraged as needed by any software component or service within the application. Type of traffic over TCP/IP includes, RPC Broker, HTTP and HTTPS.

## Security and Privacy

### Security

ICP security specifications will conform to those standards currently in place for FCMT application. FCMT security features should include mechanism for the following:

* Authentication and Authorization
* Auditing
* Backup and Recovery
* Archiving
* Reporting

### Privacy

FCMT is designated as the System of Record (SOR). When fully integrated, ICP will have a shared VA/DoD interoperability platform to provide access to SM/V data for care coordination. The following privacy approach should be in place:

* ICP compliance with privacy controls per NIST 800-53 as documented in SSP
* Only accessible from VA network
* API protected by a policy enforcement/policy decision point
* Data encryption at rest for any partition where PII/PHI will be contained
* Data encryption in transit using TLS on any network traffic beyond the local enclave
* Software security program built into the software development lifecycle (SDLC) to ensure vulnerabilities are found and remediated during development.

## Service Oriented Architecture / ESS Detailed Design

### Service Description for Consumed Service

This section is not applicable.

### Service Design for Master Veterans Index (MVI)

#### Introduction

##### Purpose and Scope of Service

The purpose of this service to exchange Veteran’s personal identity information between ICP and MVI in order to create or update FCMT case file information.

##### Links to Other Documents

ICP MVI interface information can be found in the FCMT Interface Documentation.

#### Service Details

##### Service Identification

The name of the service is MVI Web Service Interface.

##### Service Versions

This is the first version of the ICP MVI interface.

##### Summary of Design and Platform Details

###### SOA Pattern(s) Implemented

Please refer to the FCMT Interface Documentation for this information.

###### COTS Platform vendor names and versions for hosting platform

The MVI Web Service Interface is hosted by Booz Allen on the Microsoft Dynamics Customer Relationship Management (CRM) Cloud Hosting solution located in Sterling, VA.

#### Dependencies

The MVI Web Service Interface is dependent on the existing FCMT services and interfaces.

#### Service Design Details

##### Interface Technical Specs

###### Service Invocation Type

The ICP MVI interface will use SOAP protected by TLS.

###### Service Interface Type

ICP will interface with MVI via a web service.

###### Service Name

ICP will use the existing FCMT interface with Master Veteran Index (MVI), described below.

Upon initial Client search, if a SM or Veteran record returned from MVI is selected to use for registration, MVI data is used to create a new SM Client record within FCMT. This data is also refreshed each time the Client record is opened (maximum one time per day). This interface was introduced as part of FCMT 2.1.2.

If a SM or Veteran is registered from MVI, supplemental data is also pulled from VADIR to complete registration since limited data is currently available from MVI. If a search returns a Client to register from MVI, the record will be pre-filled with a combination of MVI and VADIR data (if both are available). If search returns a Client to register fromVADIR, the record will be pre-filled with VADIR data only.

###### Interfaces

This information can be found in the FCMT Interface Documentation.

###### End Points

|  |  |
| --- | --- |
| MVI | End Points |
| Dev | <https://yourserver.domain> |
| Int | Not defined |
| QA | Not defined |
| Pre | Not defined |
| Perf | Not defined |
| Prod | Not defined |

Table 31: MVI End Points

###### Operations or Methods

This information can be found in the [FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence).

###### Messages

Message requests to the MVI Web Service will be made by using a fully qualified (meaning four-part) Source ID. Fully qualified Source ID can be found in the extension attribute of the ID element. More information about message requests can be found in the [FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence).

|  | | **Interface** | **MVI** |
| --- | --- | --- | --- |
|  | | **Data pulled into ICP (FCMT)** | **At initial registration and refreshed when client is opened** |
| **Form Section / Case Information** | **Field** |  |
| General | First Name | ✓ |
| Middle | ✓ |
| Last Name | ✓ |
| Gender | ✓ |
| Date of Birth | ✓ |
| Mobile Phone |  |
| Home Phone | ✓ |
| Work Phone |  |
| Branch of Service |  |
| Rank |  |
| Additional Client Information | Component Status |  |
| Death Date If Deceased | ✓ |
| Character of Discharge |  |
| Separation Date |  |
| Duty Status |  |
| Administration | EDIPI | ✓ |
| SSN | ✓ |
| Addresses | Address Type | ✓ |
| Street 1 | ✓ |
| City | ✓ |
| State/Province | ✓ |
| ZIP/Postal Code | ✓ |
| Country/Region | ✓ |

Figure 17: ICP (FCMT) Interfaces Data Model

###### Class Diagram and Description of Entities Involved

This information can be found in the [FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence).

###### Mappings from ELDM to Standards Based Schemas

This information can be found in the [FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence).

##### Behavior Model (AKA Use Case Realization)

There are two specific business processes that will take advantage of the FCMT /MVI integration. The interactions between FCMT and MVI are depicted in Figure 18, Figure 19, and Figure 20. These diagrams also depicts at a high level how ICP will use the identifiers provided to query external systems. For additional information, refer to the [FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence).

Figure 18: ICP-MVI Integration Search and Register Activity Diagram Activity Diagram



Figure 19: ICP-MVI Integration Refresh Existing Record Activity Diagram



Figure 20: ICP-MVI Integration Chapter 63 Outreach Activity Diagram



#### Gap Analysis

* The policy is to follow the PMAS Version 2
* ProPath Version 7 processes and documentation
* National Institute of Standards and Technology (NIST) Special Publication 800-60 standards
* HL7v3.0 XML over Simple Object Access Protocol (SOAP) Web Services per MVI-SDD

# External System Interface Design

## Interface Architecture

System interface design is not part of increment 1.

## Interface Detailed Design

Not applicable.

# Human-Machine Interface

## Interface Design Rules

ICP user interface design follows all Graphical User Interface (GUI) design standards set by VA. Specifically, Section 508 of the Rehabilitation Act Amendments of 1973 as amended by the Workforce Investment Act of 1998, requires that when Federal agencies develop, procure, maintain, or use electronic and information technology that ensures that the electronic and information technology allows persons with disabilities to have access to, and use of, information and data that is comparable to the access to, and use of, information and data by persons who are not individuals with disabilities, unless an undue burden would be imposed on the agency.

## Inputs

This information can be found in the FCMT v2.1 Release 2 System Design Document ([FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence)).

## Outputs

This information can be found in the FCMT v2.1 Release 2 System Design Document ([FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence)).

## Navigation Hierarchy

This information can be found in the FCMT v2.1 Release 2 System Design Document ([FCMT Interface Documentation](https://webmail.bah.com/owa/redir.aspx?SURL=.&URL=http%3a%2f%2fvaww.yourserver.domain%2fsites%2fFCMT%2ffcmtworkspace%2fShared%2520Documents%2fForms%2fAllItems.aspx%3fRootFolder%3d%252Fsites%252FFCMT%252Ffcmtworkspace%252FShared%2520Documents%252F15%2520ISI%26FolderCTID%3d0x012000A5692AAC6312F14DA89164885133C601%26View%3d%257bF1309D13-6106-4163-9065-0CAEBD5CC0B9%257d%26InitialTabId%3dRibbon%252EDocument%26VisibilityContext%3dWSSTabPersistence)).

# Attachment A – Approval Signatures

This section is used to document the approval of the System Design Document. The review should be conducted face to face where signatures can be obtained ‘live’ during the review. If unable to conduct a face-to-face meeting then it should be held via LiveMeeting and concurrence captured during the meeting. The Scribe should add /es/name by each position cited. Example provided below.

The Business Sponsor and Project Manager are required to sign.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

M.S. CRC, Business Sponsor Date

Director, Management Operations & IC3 Support

Office of Interagency Care & Benefits Coordination

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

, Project Manager & Integrated Project Team (IPT) Co-Chair Date

Interagency Coordination, Interagency Comprehendive Plan Phase 1

Office of Information and Technology, Product Development

Appendix A: Additional Information

* 1. Identification of Technology and Standards

The following standards and regulations will apply to the design of this system:

* C.5 VAAR 852.219-10 VA NOTICE OF TOTAL SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS SET-ASIDE (DEC 2009)
* Federal Information Security Management Act (FISMA) of 2002
* Federal Information Processing Standard (FIPS) Pub 201, Personal Identity Verification for Federal Employees and Contractors, February 25, 2005
* VA Directive 6102, Internet/Intranet Services
* VA Handbook 6102, Internet/Intranet Services
* Electronic and Information Technology Accessibility Standards (36 CFR 1194)
* Office of Management and Budget (OMB) Circular A-130
* Sections 504 and 508 of the Rehabilitation Act (29 U.S.C. § 794d), as amended by the Workforce Investment Act of 1998 (P.L. 105-220), August 7, 1998
* VA Directive 6500, Information Security Program
* VA Handbook 6500.3, Certification and Accreditation
* VA Handbook 6500.5, Incorporating Security and Privacy into the System Development Life Cycle
* Office of Enterprise Development (OED) ProPath Process Methodology http://vaww.webdev.oed.oit.domain/process/propath/
* PMAS portal http://vaww.yourserver.domain/pmas/Pages/default.aspx
* Technical Reference Model (TRM)
* National Institute Standards and Technology (NIST) Special Publications
* VA Information Technology (IT) Program Management (VA Handbook 6062), no date
* VA Facility Directory <http://www.appc1.domain/directory/guide/home.asp?isFlash=1>
* VA Enterprise Architecture (EA) - The P/PMS Contractor shall ensure that all projects adhere to the one VA EA <http://vaww.domain/oit/ea_internal/EAS/index.asp#EA>
* The Program Managers’ Guide to the Integrated Baseline Review Process (Office of the Undersecretary of Defense), April 2003 [G]
* FISMA <http://csrc.nist.gov/groups/SMA/fisma/index.html>

Any regulations related to security may impose access restrictions or other protection related limitations on the system.

* 1. Constraining Policies, Directives and Procedures

The ICP solution shall conform to relevant, federally-mandated continuity programs, policies, and directives. For further specification, the following references are available:

* DoD Directive 3020.26 Department of Defense Continuity Programs January 9, 2009 <http://www.dtic.mil/whs/directives/corres/pdf/302026p.pdf>
* DoD 8910.1-M Procedures for Management of Information Requirements June 1998 <https://acc.dau.mil/adl/en-US/33667/file/6834/DoD%208910.1-M%20Procedures%20for%20Mgmt%20of%20Info%20Reqmts.pdf>
* Performance parameters for the system are outlined as follows:National Security and Homeland Security Presidential Directive: National Continuity Policy. NSPD-51/HSPD-20, May 9, 2007 http://www.fas.org/irp/offdocs/nspd/nspd-51.htm
  1. Requirements Traceability Matrix

ICP Requirements Traceability Matrix (RTM) is accessible via the following link:

<http://vista.domain.ext/pasdocs/traceability/20131006%20ICP%20RTM.xlsx>

* 1. Packaging and Installation

This section is not applicable.

* 1. Design Metrics

The following metrics are being tracked and reported during design:

* Baselined Requirements
* Requirements mapped to Test Cases
* Requirement Volatility by Month = (Requirements added to the baseline + Requirements removed from the baseline + requirements modified) / Total Baseline Requirement
* Total Test Scripts
* Scripts to be executed
* Scripts currently passed
* First time passed
* Defects submitted
* Defects fixed
* Currently open

Appendix B: Definitions

|  |  |
| --- | --- |
| **FCMT Taxonomy** | Definition |
| Information | Requirements that focus on getting and displaying data including summary data, and dashboard information. |
| Transactions | Requirements that focus on a user performing some task in a process that transforms some authoritative data (e.g., change of address, change of email, Add a dependent, etc.). |
| Tasks | Requirements that focus on a user performing some task that does not transform data (e.g., ID Proof, classifying call, starting a SR). |
| Routing/Queue | Requirements that focus on the assigning, routing or referral of a SR. |
| Administrative | Requirements that focus on Admin functions (e.g., manage call types or Areas, adding workflow, etc.). |
| Global | Requirements that are system-wide across all Lines of Business (LOB) - to include First Party, Health Benefits, Help Desk, and Pharmacy Customer Care. |
| Reporting | Requirements that focus on reports and analytics (e.g., daily, weekly, monthly reports, etc.). |
| Quality control | Requirements that focus on Quality Control issues. |
| Audit and Logging | Requirements that focus on auditing and logging system and user actions within the Veteran Contact Record. |
| Master Veteran Index | Requirements that focus on MVI search and identity. |
| Correspondence | Requirements that focus on letters (templates, building, etc.). |
| Knowledge Base | Requirements that focus on KB scripts that can be accessed via search engine. |
| Requests | Requirements that focus on Service Requests, VAI Requests. |
| Notifications/Alerts | Requirements that focus on notices, flags, flashes and on-screen alerts or confirmation. |
| Notes | Requirements that focus on Case Notes. |
| Identity and Access | Requirements that focus on single sign on, Person Search, Roles and Responsibilities. |

Appendix C: Acronyms

| Acronym | Acronym Meaning |
| --- | --- |
| A&A | Aid & Attendance |
| ADFS | Active Directory Federated Services |
| Ajax | Asynchronous JavaScript and XML |
| API | Application Programmer Interface |
| ASOIT | Assistant Secretary Office of Information & Technology |
| BDN | Benefits Delivery Network |
| BEP | Business Enterprise Platform |
| BGS | Benefits Gateway Services |
| BIRLS | Beneficiary Identification and Records Locator Subsystem |
| BPE | Business Partner Extranet |
| BVA | Board of Veterans’ Appeals |
| C&A | Certification and Accreditation |
| C&P | Compensation and Pension |
| CADD | Change of Address |
| CAPRI | Compensation and Pension Records Interchange |
| CCT | Care Coordination Telehealth |
| CEVN | Clinical Enterprise Video Teleuser12encing Network |
| CHAMPVA | Civilian Health and Medical Program of the Department of Veterans Affairs |
| CMP | Configuration Management Plan |
| COLA | Cost of Living Adjustment |
| COOP | Continuity of Operations Plan |
| CORP | Corporate |
| COTS | Commercial Off-The-Shelf |
| CPAC | Consolidated Patient Accounts Centers |
| CPRS | Computerized Patient Record System |
| CRM | Customer Relationship Management |
| CRM/UD | Customer Relationship Management/Unified Desktop |
| CSS | Common Security Services |
| CSS | Cascading Style Sheets |
| CSV | Comma Separated Values |
| CTI | Computer Telephony Integration |
| CVT | Clinical Video Telehealth |
| DAC | Data Access Component |
| DB | Database |
| DD | Direct Deposit |
| DEERS | Defense Enrollment and Eligibility Reporting System |
| DFN | Data File Numbers |
| DHTML | Dynamic Hyper Text Markup Language |
| DIC | Dependency and Indemnity Compensation |
| DMC | Debt Management Center |
| DOM | Document Object Model |
| DSS | Decision Support System |
| EA | Enterprise Architecture |
| ECC | Education Call Center |
| EFT | Electronic Funds Transfer |
| EIE | Enterprise Infrastructure Engineering |
| EOD | Enter On Duty |
| ESE | Enterprise Systems Engineering |
| ESM | Enterprise Systems Management |
| EVR | Eligibility Verification Report |
| FAS | Finance and Accounting Services |
| FID | Fiduciary |
| FIPS | Federal Information Processing Standard |
| FISMA | Federal Information Security Management Act |
| FNOD | First Notice of Death |
| FTC | Facility Telehealth Coordinator |
| GB | Gigabyte |
| GUI | Graphical User Interface |
| HRC | Health Administration Center |
| HDS | Health Data Systems |
| HEC | Health Eligibility Center |
| HIS | Integrated Hospital System |
| HRC | Health Resource Center |
| HTML | Hypertext Markup Language |
| I/O | Input/Output |
| IAM | Identity Access Management |
| IBM | International Business Machines |
| ICN | Integration Control Number |
| IIS | Internet Information Services |
| IPT | Integrated Project Team |
| IRIS | Inquiry Routing and Information System |
| IT | Information Technology |
| IVM | Income Verification Match |
| IVR | Interactive Voice Response |
| JSON | JavaScript Object Notation |
| KM | Knowledge Management |
| LAN | Local Area Network |
| LDD | Logical Data Design |
| LDM | Logical Data Model |
| MAP-D | Modern Award Processing Development |
| MOD | Month of Death |
| MOU | Memorandum of Understanding |
| MS | Microsoft |
| MVC | Model-View-Control |
| MVI | Master Veteran Index |
| N/A | Not Applicable |
| NCA | National Cemetery Administration |
| NCC | National Call Center |
| NIST | National Institute of Standards and Technology |
| NMOC | New Models of Healthcare |
| NOD | Notice of Disagreement |
| NOK | Next of Kin |
| O&M | Operations and Maintenance |
| OED | Office of Enterprise Development |
| OEF | Operation Enduring Freedom |
| OHI | Office of Health Information |
| OI&T | Office of Information and Technology |
| OIF | Operation Iraqi Freedom |
| OIT | Office of Information and Technology |
| OMB | Office of Management and Budget |
| PACT | Patient Aligned Care Team |
| PCR | Public Contact Representative |
| PCT | Public Contact Team |
| PCTC | Public Contact Team Coach |
| PDF | Portable Document Format |
| PGF | Parent Guardianship File |
| PIF | Pending Issue File |
| PII | Personally Identifiable Information |
| PMAS | Program Management Accountability System |
| PMC | Presidential Memorial Certificate |
| PMP | Project Management Plan |
| POA | Power of Attorney |
| POW | Prisoner of War |
| PTSD | Post-Traumatic Stress Disorder |
| QA | Quality Assurance |
| RAM | Random Access Memory |
| RBPS | Rules Based Processing System |
| RIA | Rich Internet Applications |
| RO | Regional Office |
| RQM | Rational Quality Manager |
| RRC | Rational Requirements Composer |
| RSD | Requirements Specification Document |
| RTC | Rational Team Concert |
| RTM | Requirements Traceability Matrix |
| SCA | Sensitive Case Advisory |
| SCOM | Systems Center Operations Manager |
| SDD | System Design Document |
| SDK | Software Development Kit |
| SOA | Service Oriented Architecture |
| SOAP | Simple Object Access Protocol |
| SOC | Statement of Case |
| SOJ | Station of Jurisdiction |
| SQL | Structured Query Language |
| SSA | Social Security Administration |
| SSIS | SQL Server Integration Services |
| SSN | Social Security Number |
| SSOC | Supplemental Statement of Case |
| SSP | System Security Plan |
| SVG | Scalable Vector Graphics |
| TAR | Technical Analysis Review |
| TAS | Technical Analysis Summary |
| TBD | To Be Determined |
| TCT | Telehealth Clinical Technician |
| TLS | Transport Layer Security |
| TRM | Technical Reference Model |
| TS | (VHA) Telehealth Services |
| TSA | Telehealth Service Agreement |
| TSPR | Technical Services Project Repository |
| TSS | Telehealth Scheduling System |
| UD | Unified Desktop |
| UI | User Interface |
| URL | Uniform Resource Locator |
| VA | Department of Veterans Affairs |
| VACOLS | Veterans Appeals Control and Location System |
| VADIR | VA/Department of Defense Information Repository |
| VAI | Veterans Assistance Inquiry |
| VAM | Voice Access Modernization |
| VAMC | Veterans Affairs Medical Center |
| VBA | Veterans Benefits Administration |
| VBMS | Veterans Benefits Management System |
| VCC | Virtual Call Center |
| VERA | Veterans Equitable Resource Allocation |
| VETSNET | Veterans Service Network |
| VHA | Veterans Health Administration |
| VHA | Veterans Health Administration |
| VIERS | Veteran Identity and Eligibility Reporting System |
| VIP | Veterans Information Portal |
| VISN | Veteran Integrated Service Network |
| VistA | Veterans Health Information Systems and Technology Architecture |
| VM | Virtual Machine |
| VML | Vector Markup Language |
| VRM | Veterans Relationship Management |
| VSO | Veterans Service Organizations |
| VVA | Virtual VA |
| WF | Workflow Foundation |
| WFM | Work Force Management |
| WS | Web Service |
| WSDL | Web Services Description Language |
| XML | Extensible Markup Language |

Template Revision History

| Date | Version | Description | Author |
| --- | --- | --- | --- |
| June 2015 | 2.10 | Changed Heading 1 default setting to eliminate page break before | Process Management |
| May 2015 | 2.9 | Edited for Section 508 conformance and remediated with Common Look Office tool | Process Management |
| February 2015 | 2.8 | Incorporates revisions from PMAS Reform Lockdown; namely removing requirements for information that can be obtained from other PMAS authoritative sources. | , Office of Technology Strategies |
| September 2014 | 2.7 | Adds Enterprise Shared Services terms and requires AERB Compliance Certificate attachment. | Process Management |
| August 2014 | 2.6 | Signature block update authorized by AERB CR\_018934 | Process Management |
| March 2014 | 2.5 | Section 508 repairs to new version approved by AERB Chair approved | Process Management |
| August 2013 | 2.3 | Replaced the Service Architecture sub-section with new sub-sections for consumed and provided services. Also applied miscellaneous feedback from VA team. | ASD Enterprise Shared Services (ESS) Work Group |
| June 2013 | 1.3 | Upgraded to MS Office 2007-2010 format | Process Management |
| June 2013 | 1.2 | Address inconsistencies in Section 3, Conceptual Design, Correct headings | Process Management |
| March 2013 | 1.1 | Formatted to documentation standards and edited for Section 508 conformance | Process Management |
| January 2013 | 1.0 | Initial Document | PMAS Business Office |

See TOGAF® 9.1, Part III: ADM Guidelines & Techniques, Gap Analysis on TOGAF website at <http://pubs.opengroup.org/architecture/togaf9-doc/arch/chap27.html>

1. An electronic management support capability is a system or collection of systems and technologies for a specific purpose, such as sharing care management information. From “DoD/VA Interagency Care Coordination Committee (IC3) ICP FOC Statement of Scope” – see Appendix B References. FOC = Full Operating Capability [↑](#footnote-ref-2)