Joint Legacy Viewer-Get the Data Back (JLV-GTDB)

**System Design Document**



August 2015

**Version** 1.1

**Department of Veterans Affairs**

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 6/1/2015 | 0.1 | Initial Working Draft |  |
| 6/9/2015 | 0.2 | Draft Modification Based on PM  comments |  |
| 6/30/2015 | 0.3 | Updates from Technical and Context  Review |  |
| 8/13/2015 | 0.4 | Updates from SDE review |  |
| 8/17/2015 | 1.1 | Updates/clarification in response to reviewer comments |  |

**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 ........................................................................................ 6**

**1.1. Scope ................................................................................................................ 7**

**1.2. User Profiles..................................................................................................... 8**

**2. Background ........................................................................................ 8**

**2.1. Overview of the System .................................................................................. 8**

**2.2. Overview of the Business Process ................................................................ 9**

**2.3. Overview of the Significant Requirements .................................................... 9**

**3. Conceptual Design........................................................................... 11**

**3.1. Conceptual Application Design .................................................................... 12**

**3.1.1. Application Context ............................................................................... 13**

**3.1.2. High-Level Application Design ............................................................. 15**

**3.1.3. Application Locations ........................................................................... 19**

**3.2. Conceptual Data Design................................................................................ 21**

**3.2.1. Project Conceptual Data Model ............................................................ 21**

**3.2.2. Database Information ............................................................................ 21**

**3.2.3. User Interface Data Mapping ................................................................ 22**

**3.3. Conceptual Infrastructure Design ................................................................ 43**

**3.3.1. System Criticality and High Availability............................................... 43**

**3.3.2. Special Technology ............................................................................... 43**

**3.3.3. Technology Locations........................................................................... 44**

**3.3.4. Conceptual Infrastructure Diagram...................................................... 45**

**4. System Architecture ........................................................................ 46**

**4.1. Hardware Architecture .................................................................................. 46**

**4.2. Software Architecture.................................................................................... 47**

**4.3. Network Architecture..................................................................................... 48**

**4.4. Service Oriented Architecture / ESS ............................................................ 49**

**4.5. Enterprise Architecture ................................................................................. 49**

**5. Data Design ...................................................................................... 49**

**5.1. DBMS Files ..................................................................................................... 49**

**5.2. Non-DBMS Files ............................................................................................. 49**

**5.3. Data View ........................................................................................................ 49**

**6. Detailed Design ................................................................................ 50**

**6.1. Hardware Detailed Design............................................................................. 50**

**6.2. Software Detailed Design .............................................................................. 51**

**6.2.1. Conceptual Design ................................................................................ 51**

**6.2.2. Specific Requirements .......................................................................... 59**

**6.3. Network Detailed Design ............................................................................... 78**

**6.4. Security and Privacy...................................................................................... 79**

**6.4.1. Security................................................................................................... 79**

**6.4.2. Privacy .................................................................................................... 79**

**6.5. Service Oriented Architecture / ESS Detailed Design ................................ 79**

**6.5.1. Service Description for <Consumed Service Name>.......................... 79**

**6.5.2. Service Design for <Provided Service Name> .................................... 80**

**7. External System Interface Design................................................... 85**

**7.1. Interface Detailed Design .............................................................................. 85**

**8. Human-Machine Interface ............................................................... 85**

**8.1. Interface Design Rules .................................................................................. 87**

**8.2. Inputs .............................................................................................................. 88**

**8.3. Outputs ........................................................................................................... 88**

**8.4. Navigation Hierarchy ..................................................................................... 88**

**8.4.1. Screen [x.1] ............................................................................................ 88**

**8.4.2. Screen [x.2] ............................................................................................ 88**

**8.4.3. Screen [x.3] ............................................................................................ 88**

**9. Attachment A – Approval Signatures ............................................. 88**

**A. Additional Information ..................................................................... 89**

**A.1. Identification of Technology and Standards ............................................... 89**

**A.2. Constraining Policies, Directives and Procedures ..................................... 89**

**A.3. Requirements Traceability Matrix................................................................. 89**

**A.4. Packaging and Installation............................................................................ 89**

**A.5. Design Metrics ............................................................................................... 89**

**1. Introduction**

David Waltman, Senior Advisor to the Under Secretary for Health and Dr. Theresa Cullen, Chief Medical Information Officer, are requesting solutions intended to mitigate the risk of fragmentation of care and low utilization levels of health records (e.g., consult reports)

exchanged between Department of Veterans Affairs (VA) and non-VA providers, for example: community hospitals, Third Party Administrators (TPA), vendors, and individual non-VA providers. The Veterans Access, Choice, and Accountability Act of 2014 (VACAA) (Public Law

113-146) Section 101 required VA to establish a temporary program (“the Choice Program”) to improve Veterans’ access to health care by allowing eligible Veterans to use eligible health care providers outside of the VA system (non-VA care). The launch of the Choice Program places heightened importance and responsibility on VA to more efficiently and effectively receive, store, and utilize returning consult reports and Veteran Electronic Health Record (EHR) data from non-VA providers. Regular growth of Non-VA Medical Care (NVC) over the last ten years, coupled with VACAA’s expansion in Veteran eligibility for non-VA care, demands seamless communication between all parties rendering care for our Nation’s Veterans, irrespective of whether care was rendered internal or external to VA’s provider network. In order to meet the demands of the Choice Program, solutions are needed to provide

• VA providers with access to patient information and/or health data received from non- VA providers;

• non-VA providers the ability to send medical documents and/or data to VA; and

• non-VA providers the ability to access Veterans’ EHR as authorized by the patient and on a “need to know” basis, to review existing consults/referrals, orders and/or progress reports, or other relevant health record data (e.g., Joint Legacy Viewer [JLV]).

Currently, the majority of Veterans’ administrative (e.g., NVC authorization and non-VA provider correspondence) and/or clinical documentation (e.g., NVC consult/referral radiology reports, health summaries, operative reports) exchanged between VA and non-VA providers for both NVC (purchased) and self-selected care are faxed, mailed, sent via courier, or manually uploaded and downloaded via a web portal (e.g., Patient-Centered Community Care [PC3]/TPA). When the documentation is received at VA, it is manually sorted, reviewed, uploaded, and scanned (Chief Business Office Purchased Care [CBOPC] or Health Information Management [HIM] owners) into the “Scanned Medical Record” (SMR) system of the Computerized Patient Record System (CPRS). This requires VA staff to access the scanned documentation through a different portal (SMR). Due to the fragmentation of the current system (multiple system

interfaces needed such as the Veterans Health Information Systems Technology Architecture [VistA], Fee Basis Claims System [FBCS], CPRS, VistA Imaging, etc.) and storage/retrieval issues, the scanned clinical documentation is not readily available to the VA providers. Even though the clinical documentation is made available and the VA provider is electronically alerted, the VA provider is, at times, not aware of the existence of SMR due to a lack of standardized processing of this incoming documentation and/or the abundance of clinical view alerts sent to the VA provider.

By providing solutions to enable automated mechanisms and secure data exchange supported by standardized policies and governance over what data is shared and when, Veterans’ EHR data

could be more effectively utilized by both VA and non-VA providers for improved care coordination and continuity of care.

**1.1. Scope**

The scope of this effort involves these areas of functionality:

**1.1.1.** Implement JLV-Community (JLV-C) Pilot for proof-of-concept testing with test data with 2 VA sites targeted by 9/30/2015 and with live production data targeted by 10/31/2015.

This pilot will exist until 10/31/2015 or until successful provisioning and proof-of access of Non- VA providers has been demonstrated. Both proof-of-concept testing implementations will

include the same infrastructure configuration:

a. Copy of JLV application interface to allow a non-VA provider a view-only capability of one or more designated Veterans healthcare information; this view will exclude the patient’s corresponding DoD information.

b. Copy of JLV infrastructure (hosted at the Austin, TX enterprise (AITC)) to support one-way, read-only feed of an authorized Veteran healthcare record, after JLV-C Pilot.

c. Adds a new JLV Administration Module (JAM) to provision user accounts for non- VA providers to both the JLV-C application and the JLV-GTDB system.

**1.1.2.** Implement JLV-C expansion system targeted by September 2016.

a. This implementation will utilize the proposed Pre-Production and Production infrastructure configuration of ten (10) servers for Pre-Production and 16 (sixteen) servers for production (equal to the content and configuration of one JLV stack).

b. This will expand on the JLV-C Pilot (4 servers) and begin transformation of incoming healthcare record information.

c. This implementation will establish and support the exchange of designated Veterans healthcare record information from secure communications with non-electronic health record information.. This implementation will include the ability to manually incorporate new patient treatment data into the VA patient record. This phase will last approximately six (6) months from start. This implementation will be hosted in the AITC as described thoughout this document.

**1.1.3.** Implement JLV-GTDB intake system targeted by March 2017 to support bi- directional exchange of designated Veterans healthcare record information. This implementation will include upload of new patient record in to the VA patient record. At the point of acceptance JLV-GTDB will transition into sustainment (Around April 2017). This implementation will the be hosted in AITC. System redundancy, backup and Contingency Operations will be hosted in the Philadelphia (PITC).

**1.1.4.** This scope does not provide an association/integration of its capabilities to eHMP for long term support to understand the boundaries between this project's deliverables versus associated systems (JLV and eHMP systems).This document will cover only what is a part of the project, and will not address what is not a part of this project.

All documents for this project can be found in the JLV-Get the Data Back SharePoint site at:

You will be directed to the Business Requirements Document by clicking this [BRD link](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/PMAS%20Documentation/Milestone%201/Business%20Requirements%20Document%20(BRD)/20150303_VE%20Get%20the%20Data%20Back%20Non%20VA%20Provider%20Clinical%20Consults_BRD.docx).

**1.2. User Profiles**

The following Table contains the intended user based for the Joint Legacy Viewer – Get the Data Back (JLV-GTDB) System. Full Access is defined as elevated roles and permissions that enable the User direct rights to resources related to information and computer security, in general and

the control over rules to establish access requests from (authenticated) consumers. Full Control relates to the permissions established for the user which enables them to read and write to databases, system code, interface configuration, etc. Full control is generally provided to system developers.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **User**  **Level** | **Role** | **Responsibilities** | **Access Level** | **Reference** | |
| Primary  Users | Non-VA Providers | 1. At direction and authorization of Patient, provides consult reports and/or Patient EHR data to VA.  2. Send back related information regarding the treatment and healthcare provided to the Patient. | 1. Limited-time Read-Only access to Patient EHR for the JLV Community Pilot.  2. Secure Communication capacity to send data back to VA for incorporation into patient records. | A&A (Refer to [Access Guidelines](https://vaww.vaco.portal.domain/sites/vacoit/AS/Telework%20Forms%20and%20Documents/Telework%20Agreement%20Forms/VARemoteAccessGuidelines.doc))  (SDD Table  3, Section  3.1.2)  SSP (Refer to [SSP Template](https://vaww.vaco.portal.domain/sites/OSP/IOCIT/irtfwcollab/Shared%20Documents/VA%20SSP%20Template%20v2%200.doc)) | |
| Primary  Users | VA Referral  Administrators | 1. Provision Non-VA Providers system access, assign patients, assign consults, specify access duration to patient’s EHR  2. Access control via VistA menus and provisioning process | Full Access | A&A (Re to [Acces Guidelin](https://vaww.vaco.portal.domain/sites/vacoit/AS/Telework%20Forms%20and%20Documents/Telework%20Agreement%20Forms/VARemoteAccessGuidelines.doc)  (SDD Ta  3, Sectio  3.1.2)  SSP (Ref to [SSP Template](https://vaww.vaco.portal.domain/sites/OSP/IOCIT/irtfwcollab/Shared%20Documents/VA%20SSP%20Template%20v2%200.doc) | fer [s](https://vaww.vaco.portal.domain/sites/vacoit/AS/Telework%20Forms%20and%20Documents/Telework%20Agreement%20Forms/VARemoteAccessGuidelines.doc)  [s](https://vaww.vaco.portal.domain/sites/vacoit/AS/Telework%20Forms%20and%20Documents/Telework%20Agreement%20Forms/VARemoteAccessGuidelines.doc))  ble n  er  ) |
|  |
| Secondary  Users | VA IT Support / System Administrators | Access to system database, servers, etc. to execute defect repair, patches, and system updates related to the current build. | Full Control |  | |

[e](https://vaww.vaco.portal.domain/sites/vacoit/AS/Telework%20Forms%20and%20Documents/Telework%20Agreement%20Forms/VARemoteAccessGuidelines.doc)

**2. Background**

**Table 1. User Profiles**

**2.1. Overview of the System**

The Joint Legacy Viewer - Community Pilot, and the Joint Legacy Viewer-Get the Data Back, herein combined as the JLV-GTDB, is architecturally and functionally identical (baselined from the JLV system, but adds a component to application layer and modifications to support external

user capabilities to the DoD/VA Joint Legacy Viewer and is a patient-centric, presentation system that pulls information from disparate health-care systems in real time for viewing in a web browser. The web application provides the ability to view specific clinical data within patients’ longitudinal health records stored in electronic medical record systems available to the Veterans Administration (VA) and the Department of Defense (DoD). A differentiating, future feature of the JLV-GTDB in comparison to the JLV system is the addition of a standardized method for 3rd Party, Non-VA providers to submit treatment documentation to the VA for integration into the patients Electronic Health Record (EHR).

The benefits to developing this system provide:

• Increased Access to care for Veterans and VA beneficiaries.

• Provides access to a patient’s EHR, to enable Non-VA Providers a clinical decision support system in order to provide continuation of treatment and care when a Veteran is seen by an assigned, via an approved referral, to a Non-VA Provider.

• Uses the abilities in the JAM (Reference SDD Scope) to limit the exposure patient data outside of the VA

• Increases the availability of health information data sources (Non-VA Provider returned progress notes and treatment records) to capture care administered outside the Veterans Health Administration facilities.

The user Profile table in Section 1.2 above, identifies the participants in this effort.

**2.2. Overview of the Business Process**

• This project will produce a JLV Adminstrative Module (JAM) to support the VA Referral Administrator’s process of assigning Non-VA Providers with secure accounts to access JLV-GTDB User interfaces, patients, and patient consults for a determined period of time.

• The business processes supported include:

o Provide Non-VA providers the ability to access Veterans’ EHR as authorized by the patient and on a “need to know” basis, to review existing consults/referrals, orders and/or progress reports, or other relevant health record data (e.g., Joint Legacy Viewer [JLV]).

o Provide Non-VA providers the ability to send medical documents and/or data to

VA.

o Provide documentation of care veterans received from outside the DoD and/or

VHA Healthcare Networks.

• Enhance clinical decision making support to assist Non-VA Providers with the necessary information to effectively administer patient’s care.

**2.3. Overview of the Significant Requirements**

You will be directed to the Business Requirements Document by clicking this [BRD link](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/PMAS%20Documentation/Milestone%201/Business%20Requirements%20Document%20(BRD)/20150303_VE%20Get%20the%20Data%20Back%20Non%20VA%20Provider%20Clinical%20Consults_BRD.docx).

You will be directed to the Requirements Specification Document by clicking this [RSD link](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/PMAS%20Documentation/Milestone%201/Requirements%20Specification%20Document%20(RSD)/JLV-Community_Requirements_Specification_Document(RSD)_v2_7-28-2015.pdf). Overview of significant functional requirements

• JLV – Community - The application shall include a modern Graphical User Interface that allows the user to view data from multiple sources. Refer to Section 3.2.3.1.1. through

3.2.3.1.3.

o Integrated Display

o Rich data visualization

o Ability to switch views

o Ability to interact with displayed data

o User customizable components

• The application must provide for advanced and up-to-date searching.

o Fast search

o Search history

• JLV – Community - The application must provide for advanced filtering capabilities.

o Filtering of data tables

o Filtering of search results

• JLV – Community - The application will provide Community Pilot Feature Set with multiple functional requirements. Refer to Section 3.2.3.1.

o The JLVAdministrative Module (JAM) will be developed as a JLV Provider

Portal widget

o Validate the VA Referral Administrator credentials

o Provider Portal option

o Non- VA Community Provider Account

o Assign patients to a Community Provider

o Assign settings to the Comunity Provider's access

o Display the Patient record in the Patient Portal

• GTDB functionality (INC3) Details for these requirements are not yet designed, but will be complete prior to the start of Increment 3.

o View complete data from one appointment to the next

o Update patient records from scanned documents

o Documents conversion into editable output formats

o Search incoming data and extract data from a scanned document

Send secure email to create a note

• Administrative Functional Specifications Refer to Section 3.2.3.1.4 through 3.2.3.1.10.

o Allow VA Referral Administrators to provision 3rd party providers

o Assign 3rd party provider to a patient

o Limit Time frame of Historical clinical data

o Display a specific set of patient name(s) accessible

o Allow VA data to be seen by Non-VA providers

o Automatically discontinue provider access to patient record

o Assign Access Time frames

Overview of the functional workload/performance requirements

• Will have the functional workload/performance capabilities of the Joint Legacy Viewer. SDE EO will be able to provide workload and performance capabilities based on the agreed upon services identified in its Service Level Agreement Modification (SLAM) for the JLV-GTDB project deliverables.

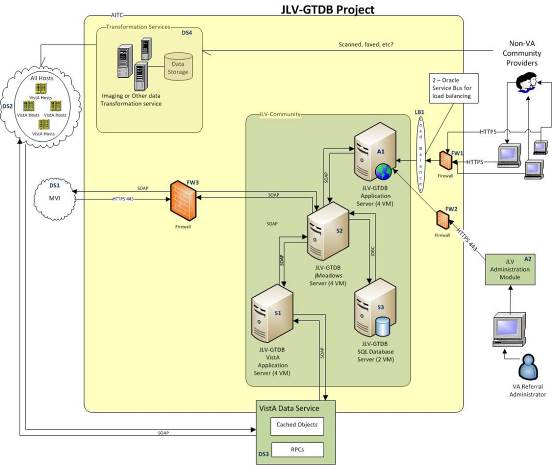
o Refer to RSD section 2.9

• Full workload requirements will be determined prior to the FOC/March 2017

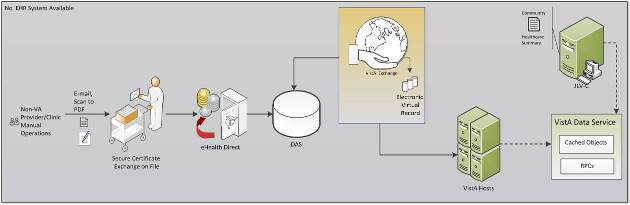
Overview of special device requirements – NA, mobile devices will not be utilized. Refer to

Section 6.2.1.4 for dependencies and constraints.

**3. Conceptual Design**



**Figure 1: JLV-GTDB Stack**



**Figure 2: JLV-GTDB Concepts**

**3.1. Conceptual Application Design**

This is a new development and as such does not have an “As Is” conceptual design. A copy of the DoD Joint Legacy Viewer (JLV), Release 2.3, is the foundation on which the new development will occur. DoD does not follow PMAS documentation so the [JLV System Design Document](https://vaww.vaco.portal.domain/sites/OHIA/HI/JLVprojectTeam/JLV%20Development/JLV%202.3.1%20Technical%20Documentation/JLV_2.3.1_System_Design_Document.pdf) that depicts JLV will not have the same diagrams but adequately describes our foundation. The application design involves two development efforts to achieve the Proof of Concept, ie. Community Pilot for demonstration of the Presentation efforts to provide health information on patients assigned to Non-VA Providers and the second being the intake and transformation efforts to Get the Data Back from Non-VA Providers documenting patient treatment. The development of the JLV-GTDB system builds upon the completion of the JLV- Community Pilot development. Labels referring to JLV Community Pilot components are also applicable to JLV-GTDB components.

The JLV-GTDB system is designed to run within both IPv4- and IPv6-based environments. WebSphere Application Server and WebLogic Server are IPv4 and IPv6 compliant, and JLV- GTDB does not use IP addresses in its configurations.

JLV-GTDB implements session management and keeps track of a user’s activity across sessions of the system. Session management allows the state of application(s) that are running to be saved and remembered. A session audit log will be stored in the application layer to support the user session. Refer to Section 3.2.3.2.1.

JLV-GTDB implements session state on the server-side for managing state. Each time a web application goes to the server to get the next request, the server has to know much of the last web page needs to be “remembered” when the new information is sent to the web page. The process

of knowing the values of controls and variables is known as state management. Session state is server side. In session state, a special session ID is stored on the server. This session ID identifies a specific application. The session ID is assigned to the calling browser.

Greater detail on session management to iclude A&A and security information assurance can be found in Section 6.4.1. ans Section 6.5.2.4.1.1.

**3.1.1. Application Context**

The JLV Community Pilot Application Context Design *(Figure 3)* represents the VA Referral Administrators flow to connect to the JLV-COMMUNITY Pilot System through the Joint Legacy Viewer Administation Module (JAM) and the flow for the Non-VA Provider to Login to the JLV-COMMUNITY Pilot System to retrieve patients assigned, their consults, and health records. This context diagram is applicable to both the JLV Community Pilot and the JLV- GTDB login.



























A3

DS2

DS1

II3

II2

Provider Portal

A1 IE1

JLV-COMMUNITY PILOT

II1

A2

**Figure 3: User Application Login Context Diagram for JLV Community Pilot**

*Table 2* describes the information in the JLV Community Pilot Application Context Diagram

**Table 2 (Grouping): JLV Community Pilot Application Context Description**

**Object**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Name** | **Description** | **Interface**  **Name** | **Interface**  **System** |
| A1 | User Web  Browser | This object is the starting point for a  Non-VA Provider to access the URL and submit the Username and Password for Authentication | User Portal | JLV-  COMMUNITY Application server |
| A2 | JLV  Administrator  Module  (JAM) | This module is used by the VA  Referral Adminstrator to create new Non-VA Provider accounts, assign patients, assign consults, and specify access timeframe. These will be stored in the JLV-GTDB User Table | Provisioning  UI | JLV-  COMMUNITY Application server |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Name** | **Description** | **Interface**  **Name** | **Interface**  **System** |
| A3 | Any number  of Local VistA Hosts currently available to Providers. | There are over 130 local VistA hosts  that are accessed by VA Providers for the purpose of viewing and entering patient episodic health information. | SOAP | JLV-  COMMUNITY VistA Data Service (VistA application server) |

**Interfaces External to OI&T**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Name** | **Related Object** | **Input Messages** | **Output**  **Messages** | **External**  **Party** |
| IE1 | Non-Va  Provider web- browser – Request for Access (RFA) | JLV-  COMMUNITY Logon Page | Enter your  UserName, Enter your Password | Access Denied  (access-codes incorrect), Display Provider Portal (access-codes correct) | Non-VA  Provider |

**Interfaces Internal to OI&T**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Name** | **Related Object** | **Input**  **Messages** | **Output**  **Messages** | **External**  **Party** |
| II1 | Joint Legacy  Viewer  Administrator Module User Interface | JLV  Administrator  Module (JAM) | Upon entry of the  Non-VA  Provider, patients assigned, consults assigned, duration of access, depth  of record retrieval, click  “Save” | Saved | VA Referral  Administrator |
| II2 | jMeadows  Data Service | MVI | Submitted Patient  for Identification codes | Patient codes  (ICN, VistA Sites) returned | Non-VA  Provider |
| II3 | VistA Data  Service | VistA Hosts | ICN and VistA  sites submitted | Patient  electronic helath record returned | Non-VA  Provider |

**Externally Shared Data Stores**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Name** | **Data Stored** | **Owner** | **Access** |
| DS1 | Master  Veteran  Index | Personal identifying demographic  information on the Veteran to include  Name, SSN, EPIDI | Veterans  Administration | Read |
| DS2 | VistA Local  Instance | Virtual Patient Record data stored in  the VistA local host database | Veterans  Health  Administration | Read |

**3.1.2. High-Level Application Design**

The descriptions of the objects in these diagrams are found in Table 3.

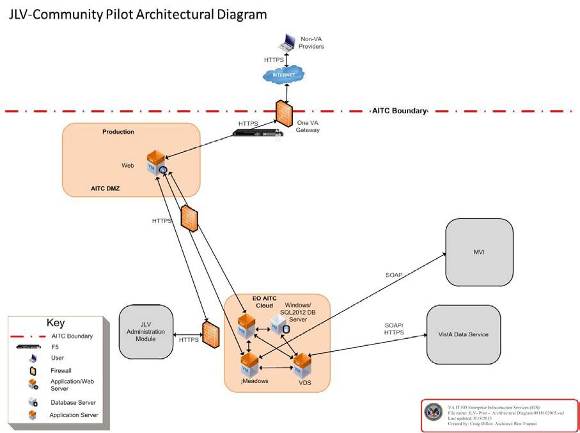
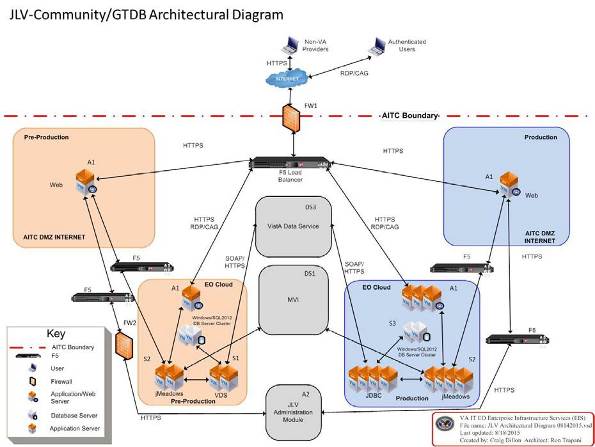


Figure 4. JLV Community Pilot Design

Figure 5. JLV-GTDB Design



**Table 3: JLV-GTDB Deliverables**

**Objects / Components to be Built or Modified**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name** | **Description** | **Service or**  **Legacy** | **External Interface Name** | **External**  **Interface ID** | **Internal Interface Name** | **Internal**  **Interface ID** | **SDP Sections**  **1&2** |
| A1 | JLV-  COMMUNIT Y/GTDBAppli  cation web  servers | The JLV-  COMMUNITY/G TDB Web  Application is the  browser-based client system  where clinical data  is displayed. | JLV | Authent  ication, Access  Control  UI | II1 | Portal  GUI | TDB | Submitted |
| S1 | JLV-  COMMUNIT Y/GTDB VistA application servers | A web service that  retrieves VA data from all VistA host systems. | JLV | NA | NA | Token | TDB | Submitted |
| S2 | JLV-  COMMUNIT Y/GTDB  jMeadows  server | A web service that  aggregates patient and provider data  for clinical  domains. It is an essential component of the JLV GUI framework, which uses Java-based web services technology and request- and response-driven transactions for its  web service system interfaces. | JLV | NA | NA | Remote  Procedure  Callup | TDB | Submitted |
| S3 | JLV-GTDB  database server | A SQL Server  2012 Database and is used to store  user profile  information and audit records. | JLV | NA | NA | JDBC | TDB | Submitted |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Name** | **Description** | **Service or**  **Legacy** | **External Interface Name** | **External**  **Interface ID** | **Internal Interface Name** | **Internal**  **Interface ID** | **SDP Sections**  **1&2** |
| FW1,  2, 3 | Firewall | Hardware and  Software developed to control access to the network | JLV | NA | NA | Security | TDB | Submitted |
| A2 | JLV  Administrative  Module | This is the VA  Referral  Administrator’s application to  create new Non-  VA Providers, in the User DB, assign patients, consults, and access duration to Non-VA Providers participating in the program. | NA | TBD | TBD | Remote  Procedure  Callup | TDB | Submitted |
| LB1 | Load  Balancers | Software designed  to balance user access so as to not  overwhelm the  conection (ie. Bandwidth) for use of the system. | JLV | URL  director | TDB |  |  | Submitted |

**Internal Data Stores**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Name** | **Data Stored** | **Steward** | **Access** |
| S3 | JLV-  COMMUNITY/GTDB Database Store | User Table of the Non-  VA Providers created to access JLV- COMMUNITY | VA Referral  Administrators | Through the JAM  User Interface |

**3.1.3. Application Locations**

**Table 4: Application Locations**

|  |  |  |  |
| --- | --- | --- | --- |
| **Application**  **Component** | **Description** | **Location at Which**  **Component is**  **Run** | **Type** |
| JLV-  COMMUNITY/GTDB Application Web Server | The JLV-  COMMUNITY/GTDB Web Application is the browser-based client system where clinical data is displayed. | AITC EO Cloud | Presentation |
| JLV-  COMMUNITY/GTDB Data Service Server (VistA) | A web service that  retrieves VA data from all VistA host systems. | AITC EO Cloud | Data Storage |
| JLV-  COMMUNITY/GTDB Data Service Server (jMeadows) | A web service that  aggregates patient and provider data for clinical domains. It is an essential  component of the JLV GUI framework,  which uses Java-based  web services technology and  request- and response-  driven transactions for its web service system interfaces. | AITC EO Cloud | Abstraction |
| JLV-  COMMUNITY/GTDB SQL Database Server | A SQL Server 2012  Database and is used to store user profile  information and audit  records. | AITC EO Cloud | Data Storage |
| Firewall | Hardware and  Software developed to control access to the network | AITC EO Cloud | Security |
| Load Balancer | A Service that  regulates user connection exchanges  with the JLV-  COMMUNITY Web  Application | AITC EO Cloud |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Application**  **Component** | **Description** | **Location at Which**  **Component is**  **Run** | **Type** |
| User Access | A web browser URL  for the Non-VA Provider to request  connection to JLV- COMMUNITY Web  Application Server | User Web-browser | External Web Application |
| JLV Administration  Module (JAM) UI | A web browser URL  for the VA Referral Administrator to request connection to JLV-COMMUNITY Web Application Server | User Web-browser | External Web Application |

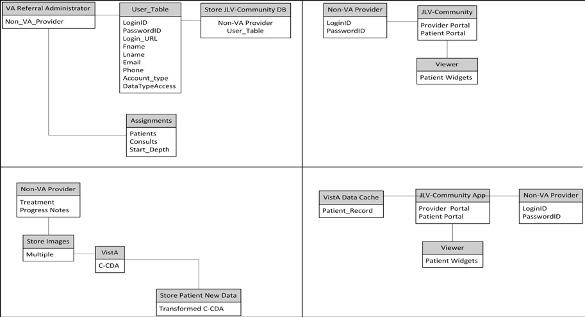
**Table 8: Application Users**

|  |  |  |
| --- | --- | --- |
| **Application Component** | **Location** | **User** |
| JLV-COMMUNITY/GTDB Web  Application | AITC (EO Cloud) | IT support, System Administrators |
| JLV Administration Module | User Facility (VA) | VA Referral Administrator |
| JLV-COMMUNITY/GTDB Access  and Control | AITC | Non-VA Provider |

**3.2. Conceptual Data Design**

**3.2.1. Project Conceptual Data Model**

Figure 6 illustrates the project CDMs. The upper left quadrant represents the JAM model. The upper right quadrant illustrates the JLV-Community Pilot and standard view only model. The lower left quadrant shows the conceptual get-the-data-back transformation model. The bottom right quadrant is the JLV-Community/GTDB model to demonstrate incorporate and complete patient information to the Non-VA Provider.



**Figure 6: JLV-COMMUNITY/GTDB Project Conceptual Data Mode**

**3.2.2. Database Information**

**Table 5: Database Inventory**

|  |  |  |  |
| --- | --- | --- | --- |
| **Database Name** | **Description** | **Type** | **Steward** |
| JLV-GTDB database | Store user profile  information and audit records. | Create | Veterans Heatlh Affairs |

|  |  |  |  |
| --- | --- | --- | --- |
| **Database Name** | **Description** | **Type** | **Steward** |
| Master Veteran Index  (MVI) | Holds more than 17  million unique patient identity  entries, populated  from all VA  facilities nationwide. Provides the Integration Control Number (ICN) | Interface | Veterans Administration |

**3.2.3. User Interface Data Mapping**

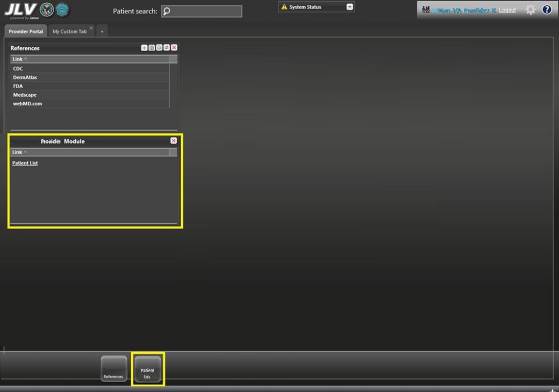
**3.2.3.1. Application Screen Interface**

**3.2.3.1.1. Provider Portal**

Figure 7: Provider Portal Screen represents the screen that is presented to the

Non-VA Provider to select patients or links to specific references available to the

Non-VA Provider Table 6 describes it.



**Figure 7: Provider Portal Screen**

**NOTE: There will be no DoD data retrieved, accessed, or displayed on any JLV- Community/GTDB system interfaces, nor stored in any JLV-Community/GTDB VM, database, or other forms of memory or information storage.**

**Table 6: Provider Portal Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Patient List | Patient\_T | JAM\_P | A list of Non-VA Provider  assigned patients |
| Links | Lnk\_T | Lnk\_IDX | Various Non-VA Provider  shortcuts |
| CDC | CDC\_T | CDC\_IDX | Link to CDC |
| DermAtlas | TBD | TBD | Link to DermAtlas |
| FDA | FDA\_T | FDA\_IDX | Link to FDA |
| Medscape | MED\_SCAPE | MS\_IDX | Link to Medscape |
| WebMD.com | N/A | Hyperlink | Link to WebMD |
| Provider Information | PROV\_INFO | JAM\_PI | Information retrieved from  Non-VA Provider Profile record in JLV-  COMMUNITY Database |
| Patient List Widget | N/A | PPS | Redirect Non-VA Provider  to the Patient List selection  GUI screen |
| Reference Widget | N/A | PPS | Redirect the Non—VA  Provider to the Reference  GUI screen |

**3.2.3.1.2. Patient List**

Figure 8: Patient List Screen represents the screen that List the Patients assigned

to the Non-VA Provider as a result of the consults submitted; Table 7 describes it.



**Figure 8: Patient List Screen**

**NOTE: There will be no DoD data retrieved, accessed, or displayed on any JLV- Community/GTDB system interfaces, nor stored in any JLV-Community/GTDB VM, database, or other forms of memory or information storage.**

**Table 7: Patient List Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Patient Name | Patient\_T | Determined during  DataBase config | The Name of the Patient  assigned |
| Consult No. | CON\_T | Determined during  DataBase config | Link to Consult |
| Consult | CON\_T | Determined during  DataBase config | Link to Consult Name |
| Provider | TBD | Determined during  DataBase config | Provider preparing the  consult request |

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Consult Status | CON\_T | Determined during  DataBase config | Status of the Consult,  Inactive Status Consults will not appear on this tab |
| Close Button | SYS\_TBL | CLOSE | To Close this screen and  revert to the previous screen |

**3.2.3.1.3. Patient Portal**

Figure 9: Patient Portal Screen represents the specific Patient information available to the Non-VA Provider; Table 8 describes it.



Figure 9: Patient Portal Screen

**Table 8: Patient Portal Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphica l User Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Patient Last Name, First Name | See Reference\* | Determined during  DataBase config |  |
| Address | See Reference\* | Determined during  DataBase config |  |
| Rank | See Reference\* | Determined during  DataBase config | Rank will display for “Primary” patient  only and will not display for sponsored patients. |
| FMP | See Reference\* | Determined during  DataBase config | FMP (Family Member Prefix) is a two-  digit code representing the patient’s relationship to the sponsor.  Code 20 represents the patient is the  service member. |
| Insurance | See Reference\* | Determined during  DataBase config | Data normalization for insurance  information is displayed in the  standalone window opened after clicking the Insurance link in the **Demographics**  widget. Insurance information is  normalized to the X12 Health Insurance  Type Standard. |
| EDIPI | See Reference\* | Determined during  DataBase config | EDIPI (10-digit code) will be displayed  if available in the patient record. |
| DOB | See Reference\* | Determined during  DataBase config |  |
| Race | See Reference\* | Determined during  DataBase config | The local term for Race will be  displayed. Hover text for data normalization (National Standard CDC Race) is also provided. |
| Phone | See Reference\* | Determined during  DataBase config | Multiple phone numbers where present  in the patient record will be displayed. |
| Gender | See Reference\* | Determined during  DataBase config | M/F abbreviation is displayed. |
| Admission  s Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date | Consult Order\* | Status | Site  **Expanded:** Date | Consult Order\* | Provider† | Provider Specialty† | Status | Site |

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphica l User Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Allergies  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Discharge Date | Type | Site  **Expanded:** Discharge Date | Type | Provider† | Provider Specialty† | Location | Visit/Adm Date | Status | Site  Note: Data in the Provider Specialty column is  populated with VA data only. |
| Appointm  ents  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date (Details\* |Note\* ) | Clinic |  Provider† | Diagnosis† | Site  **Expanded:** Date (Details\* |Note\* ) | Clinic | Status | Type | Provider† | Provider Specialty† |  Reason | Diagnosis† | Standardized Diagnosis† |  Site |
| Clinical  Reminders  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date | Vaccine Name† | Reaction |  End  **Expanded:** Date | Vaccine Name† | Standardized  Vaccine Name† | Series | Reaction | End |
| Consults  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date | Order/Results\* | Site  **Expanded:** Collection Date |Order/Results\* | Sample | Site |
| Discharge  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date | Lab Test\*† |Result\* | Site  **Expanded:** Date | Lab Test\*† |Standardized Lab  Test\*† | Type | Specimen | Result\* | Units | Ref  Range |Site |
| Encounter  s Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Last Fill | Prescription† | Status |  Stop Date | Site  **Expanded:** Last Fill | Prescription† | Standardized Prescription† | Status | Ordering HCP† | Ordering HCP Specialty† | Stop Date | Schedule | Quantity | Site |
| Immunizat  ions  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Last Fill | Prescription† | Status |  Expires | Site  **Expanded:** Last Fill | Prescription† | Standardized  Prescription† | Sig | Quantity | Days Supply | Refills | Status | Ordering HCP† | Ordering HCP Specialty† | Expires | Site |
| Lab  Orders/ Panel  Results  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Order Date | Description† | Status |  Type† | Site  **Expanded:** Order Date | Description† | Status | Type† | Standardized Type† | Provider† | Provider Specialty† | Site |
| Lab  Results  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** ICD9† | Onset | Problem  Description† | Updated |Status | Site  **Expanded:** ICD9† | Onset | Problem Description†  | Standardized Prescription† | Updated |Severity | Status | Site |
| Inpatient  Medicatio ns Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date/Time | Location | Provider† |  Procedure Description† | Site  **Expanded:** Date/Time | Location | Provider† | Provider Specialty† | CPT Code | Procedure Description† | Standardized Procedure Description† | Site |

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphica l User Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Outpatient  Medicatio ns Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date | Document Type/Title\*† |  Provider† | Site  **Expanded:** Date | Document Type/Title\*† | Standardized Document Type/Title† | Provider† | Provider Specialty† | Clinic | Site |
| Orders  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date | Exam\*†| Image | Site  **Expanded:** Date | Exam\*†| Standardized Radiology Exam†| CPT Description† | Status | Image | Site |
| Problem  List  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date Reported | Type | Findings† |  Status | Site  **Expanded:** Date Reported | Type | Findings† | Standardized Findings† | Comments | Status | Site |
| Procedures  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date Taken | Type† | Result | Units |  Site  **Expanded:** Date Taken | Type† | Standardized  Type† | Results| Units | Site |
| Progress  Notes  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date | Consult Order\* | Status | Site  **Expanded:** Date | Consult Order\* | Provider† | Provider Specialty† | Status | Site |
| Radiology  Exams  Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Discharge Date | Type | Site  **Expanded:** Discharge Date | Type | Provider† | Provider Specialty† | Location | Visit/Adm Date | Status | Site  Note: Data in the Provider Specialty column is populated with VA data only. |
| Social,  Family, and Other Past Histories Widget | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | **Minimized:** Date (Details\* |Note\* ) | Clinic |  Provider† | Diagnosis† | Site  **Expanded:** Date (Details\* |Note\* ) | Clinic | Status | Type | Provider† | Provider Specialty† | Reason | Diagnosis† | Standardized Diagnosis† | Site |
| Docs Tab | See Reference \*\* | Identified with  contractor by end of  Sept. 2015 | Link to View Patient Documents |
| \* | Refer to MVI glossary at | | |
| \*\* | Refer to | | |

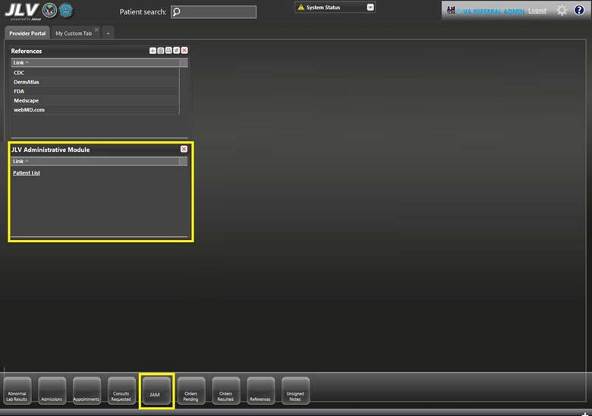
**3.2.3.1.4. JLV Administrator Module (JAM)**

Figure 10: JAM Portal Screen represents the screen that VA Referral

Administrator will use to assign New Non-VA Providers, assign Patients to Non-

VA Providers, assign Consults, and limit duration and depth or record retrieval for

Non-VA Providers; Table 9 describes it.



**Figure 10: JAM Portal Screen**

**Table 9: JAM Portal Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Patient List | This will be a new  Table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | A list of Non-VA Provider  assigned patients |
| Links | This will be a new  Table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Various Non-VA Provider  shortcuts |
| CDC | This will be a new  Table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Link to CDC |

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| DermAtlas | This will be a new  Table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Link to DermAtlas |
| FDA | This will be a new  Table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Link to FDA |
| Medscape | This will be a new  Table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Link to Medscape |
| WebMD.com | This will be a new  Table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Link to WebMD |
| Provider Information | This will be a new  Table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Information retrieved from  Non-VA Provider Profile record in JLV-  COMMUNITY Database |
| JAM Widget | This will be a new  Table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | This is the widget that the  VA Referral Administrator selects to enter User  Provisioning |

**3.2.3.1.5. JAM Provisioning**

Figure 11: JAM Provisioning Screen represents the screen that VA Referral

Administrator utilizes to search for existing Non-VA Providers already in JLV-

GTDB database or Add new Non-VA Providers to the JLV-GTDB database; Table 10 describes it.



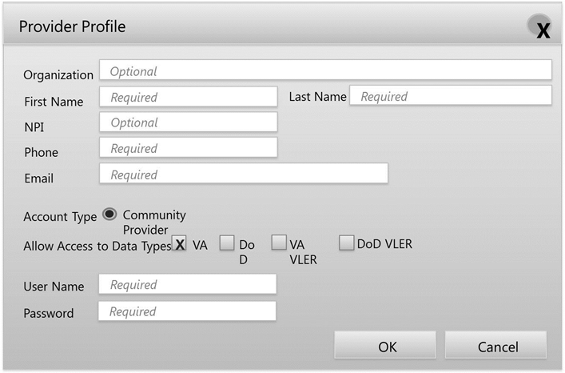
**Figure 11: JAM Provisioning Screen**

**Table 10: JAM Provisioning Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Non-VA Provider  Name | This will be a new  Table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Will display the Non-VA  User after a search or after adding the new Non-VA  Provider to the Provider  List |

**3.2.3.1.6. Provider Profile**

Figure 12: Provider Profile Screen represents the screen that displays the Non-VA Provider information and allows edits for existing Non-Va Providers or input the required information for new Non-VA Providers; Table 11 describes it.



**Figure 12: Provider Profile Screen**

NOTE: In Figure 12, once the Community Provider Radio Button is selected, “Allow Access to

Data Types” will automatically be selected . No DoD data types will be allowed.

**Table 11: Provider Profile Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| First Name | This will be a new  User\_Table stored within the JLV-  Community/GTDB  database server. | This will be a new  field within the JLV- Community/GTDB  systems User\_Table | Required |
| Last Name | This will be a new  User\_Table stored within the JLV- Community/GTDB database server. | This will be a new  field within the JLV- Community/GTDB systems User\_Table | Required |

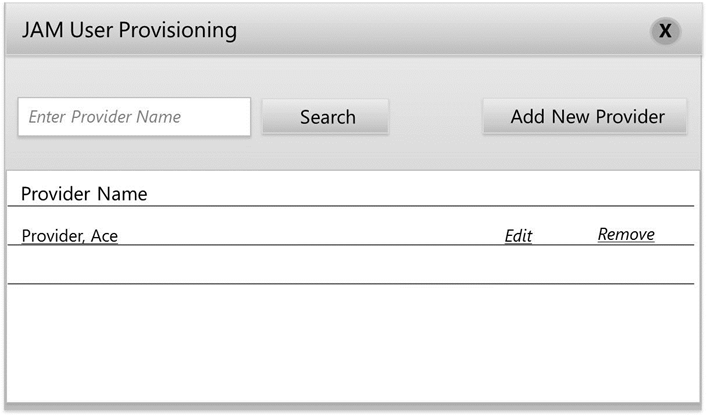
|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Email | This will be a new  User\_Table stored within the JLV-  Community/GTDB  database server. | This will be a new  field within the JLV- Community/GTDB  systems User\_Table | Required |
| Phone | This will be a new  User\_Table stored within the JLV-  Community/GTDB  database server. | This will be a new  field within the JLV- Community/GTDB  systems User\_Table | Required |
| Login Name | This will be a new  User\_Table stored within the JLV-  Community/GTDB  database server. | This will be a new  field within the JLV- Community/GTDB  systems User\_Table | Required |
| Password | This will be a new  User\_Table stored within the JLV- Community/GTDB database server. | This will be a new  field within the JLV- Community/GTDB systems User\_Table | Required |
| Account Type | This will be a new  User\_Table stored within the JLV- Community/GTDB database server. | This will be a new  field within the JLV- Community/GTDB systems User\_Table | Required |
| Data Type Access | This will be a new  User\_Table stored within the JLV-  Community/GTDB  database server. | This will be a new  field within the JLV- Community/GTDB  systems User\_Table | Required |
| National Provider  Identifier | This will be a new  User\_Table stored within the JLV-  Community/GTDB  database server. | This will be a new  field within the JLV- Community/GTDB  systems User\_Table | Optional |

**3.2.3.1.7. Patient Assignment**

Figure 13: JAM User Provisioning Selection Screen represents the screen that the

VA Referral Administrator will use to select a Non-VA Provider and perform

various actions to include removing the provider from JLV-GTDB database; Table 12 describes it.



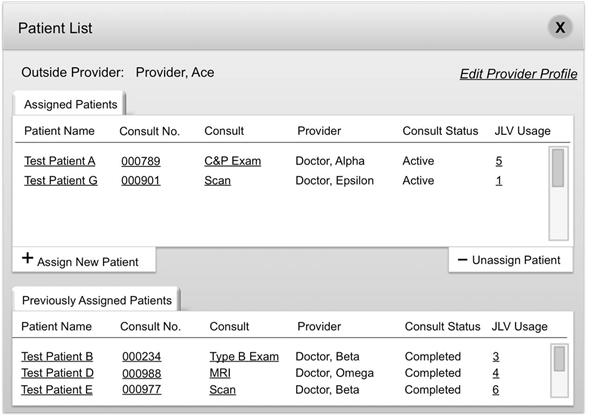
**Figure 13: The JAM User Provisioning Non-VA Provider Selection Screen**

**Table 12: The JAM User Provisioning Non-VA Provider Selection Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Search for Non-VA  Provider | This will be a new  table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Used once a large number  of Non-VA Providers are currently assigned to expedite Non-VA Provider assignments |
| Edit Non-VA Provider  assignments | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Link to begin the Non-VA  Provider assignments screens |

**3.2.3.1.8. Edit Provider Profile**

Figure 14: JAM User Provider Edit Screen represents the screen that is used to assign Patients to NoN-VA Providers; Table 13 describes it.



**Figure 14: The JAM User Provisioning Edit Provider Profile Screen**

**Table 13: Edit Provider Profile Screen Description**

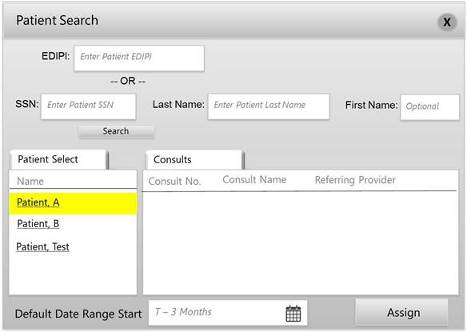
|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Assign New Patient | This will be a new  table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Add new patients to assign  to the displayed Non-VA Provider |
| Unassign a Patient | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Remove Patients currently  assigned to the displayed  Non-VA Provider |
| Patient Name | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Link to review patients  activley assigned to the displayed Non-VA  Provider |
| Consult Number | This will be a new  table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Link to review patient  consults actively assigned to the displayed Non-VA Provider |

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Previously Assigned  Patients and Consults | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Displays the Previously  assigned patients to the displayed Non-VA  Provider |

**3.2.3.1.9. Assign New Patients**

Figure 15: Assign New Patient Screeen represents the screen that the VA ReferralAdministrator utilizes to assign new patients to Non-VA Providers; Table

14 describes it.



**Figure 15: Assign New Patients Screen**

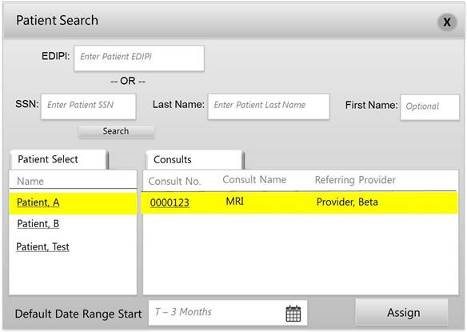
**Table 14: Assign New Patients Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| EDIPI | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | A specific personal  identification number unique to the individual  patient |
| SSN | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Last Name | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table |  |
| First Name | This will be a new  table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | This is conditional upon  the use of a Last Name, If Last Name not blank, input a first name |

**3.2.3.1.10. Assign Consults**

Figure 16: Assign Consults Screen represents the screen that the VA Referral Administrator will utilize to assign new consults to a Non-VA Provider, for a specific assigned Patient; Table 15 describes it.



**Figure 16: Assign Consults Screen**

**Table 15: Assign Consults Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Patient Select | This will be a new  table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Display the selected  patient for that Non-VA Provider |

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| Consults | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Displays the available  consults for selection |
| Default Date Range  Start | This will be a new  table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Consists of two parameters  (earliest patient record to latest patient record) for that patient consult |
| Assign Button | This will be a new  table within the JLV- Community/GTDB systems | This will be a new  field within the JLV- Community/GTDB systems Table | Completes the Consult  assignment to the Non-VA Provider |

**3.2.3.1.11. Non-VA Provider Login**

Figure 17: Non-VA Provider Login Screen represents the screen that the Non-VA Provider will use to login into the JLV-COMMUNITY/GTDB application; Table

16 describes it.



**Figure 17: Non-VA Provider Login Screen**

**Table 16: Non-VA Provider Login Screen Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Graphical User**  **Interface (GUI) Field** | **Table (Database Table that field connects to)** | **Field (Field in Table that the GUI field connects to)** | **Comments** |
| User Name | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Non-VA Provider will  have received their  UserName from the VA Referral Administrator |
| Password | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Non-VA Provider will  have received their  Password from the VA Referral Administrator |
| Login Button | This will be a new  table within the JLV- Community/GTDB  systems | This will be a new  field within the JLV- Community/GTDB  systems Table | Selected after the  UserName and Password are entered by the Non-VA  Provider |

**3.2.3.2. Application Report Interface**

There are limited requirements for reporting at this time. Those currently needed are audit type reports. The ability to access and run these reports will follow VA Security Processes and establish the extended, enhanced priviledges as required by security policies and practices. Current audit reports are inherited from the JLV 2.3 Release and will be included in the process of replicating software for the JLV-Community Pilot.

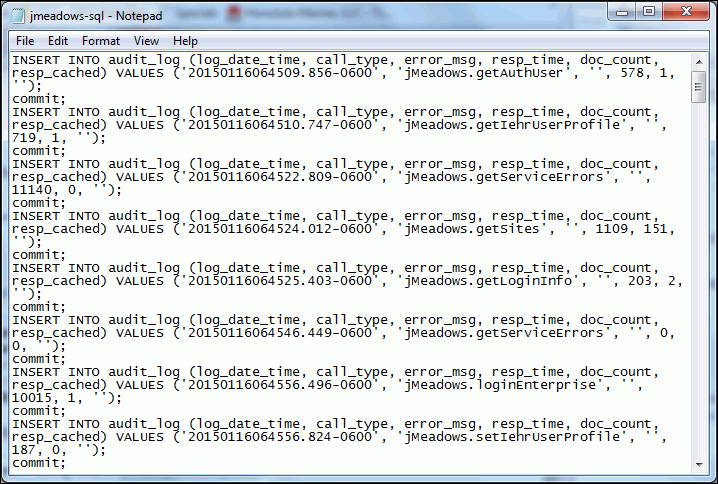
Data will be captured and recorded in the JLV system and will be accessible by the JLV- Community/GTDB system administrator to ensure secure access:

• IP Address will be captured for Access location.

• Eventually the capture of the Access Device will be implemented after Increment 3 is complete.

**3.2.3.2.1. Report Name**

Figure 18 represents the Query Time Log File Report.



**Figure 18: Query Time Log File Report**

Table 17 describes the User Session Audit Log Report; Figure 19 is a sample of that report.

**Table 17: User Session Audit Log Report Description**

|  |  |
| --- | --- |
| **Column Item** | **Data Type** |
| ID or auditID | The unique ID of each entry |
| entryDate | The date at which the audit was entered |
| startDate | Works with “endDate” to set the date range for the data request |
| endDate | Works with “startDate” to set the date range for the data request |
| systemID | The user’s login site identifier.  On the VA side, systemID specifies the VistA host system to which the userID is associated. |
| userNPI | The user’s NPI (National Provider Identifier) |
| userID | The user’s identifier.  On the VA side, userID is the VistA IEN of the VistA host system that is associated with the user’s Access/Verify codes. |

|  |  |
| --- | --- |
| **Column Item** | **Data Type** |
| userName | The name of the user |
| patID | The patient’s EDIPI (Electronic Data Interchange Personal Identifier) |
| category | The query action (e.g., login, , clinical domain data) |
| queryType | The application name (JLV or unit\_test) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **entryD**  **ate** | **startD**  **ate** | **endD**  **ate** | **syst emI D** | **userI D** | **use rNP I** | **userName** | **patID** | **category** | **query**  **Type** | **car dID** | **ipAddr ess** |
| 513 | 8/6/13  15:24 | NULL | NULL | 556 | 8321  3 |  |  |  | login | JLV | 626  060 | 10.170.  56.18 |
| 514 | 8/6/13  15:24 | 7/23/1  3 0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderOrdersPending | JLV | NU LL | NULL |
| 515 | 8/6/13  15:24 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderAdmissions | JLV | NU LL | NULL |
| 516 | 8/6/13  15:24 | 8/6/13  0:00 | 8/20/1  3 0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderAppointments | JLV | NU LL | NULL |
| 517 | 8/6/13  15:24 | 7/23/1  3 0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderConsultsRequested | JLV | NU LL | NULL |
| 518 | 8/6/13  15:25 | 7/23/1  3 0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderUnsignedNotes | JLV | NU LL | NULL |
| 519 | 8/6/13  15:25 | 7/23/1  3 0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderAbnormalLabResults | JLV | NU LL | NULL |
| 520 | 8/6/13  15:25 | 7/23/1  3 0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderConsultsReceived | JLV | NU LL | NULL |
| 521 | 8/6/13  15:25 | 7/23/1  3 0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderOrdersResulted | JLV | NU LL | NULL |
| 522 | 8/6/13  15:25 | 6/23/1  3 0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | ProviderOrdersPending | JLV | NU LL | NULL |
| 523 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | NULL | SelectPatientMVI^VA^NCH^203572 | JLV | NU LL | NULL |
| 524 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatDemographics | JLV | NU LL | NULL |
| 525 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatAllergies | JLV | NU LL | NULL |
| 526 | 8/6/13  15:25 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatAdmissions | JLV | NU LL | NULL |
| 527 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatProblemList | JLV | NU LL | NULL |
| 528 | 8/6/13  15:25 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatAdmissions | JLV | NU LL | NULL |
| 529 | 8/6/13  15:25 | 4/8/13  0:00 | 9/5/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatAppointments | JLV | NU LL | NULL |
| 530 | 8/6/13  15:25 | 8/6/12  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatVitals | JLV | NU LL | NULL |
| 531 | 8/6/13  15:25 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatEncounters | JLV | NU LL | NULL |
| 532 | 8/6/13  15:25 | 8/6/12  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatMedications | JLV | NU LL | NULL |
| 533 | 8/6/13  15:25 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatLabs | JLV | NU LL | NULL |
| 534 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | patientFlags^VA^NCH | JLV | NU LL | NULL |
| 535 | 8/6/13  15:25 | 5/12/1  3 0:00 | 5/14/1  3 0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | AdmissionDetail^VA^NCH^May 13,  2013 01:28 PM | JLV | NU LL | NULL |
| 536 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | encounterDetail^VA^NCH^2013-04-  10T18:48:00 | JLV | NU LL | NULL |
| 537 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | labResults^VA^NCH^130725 BCH  1735 | JLV | NU LL | NULL |
| 538 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | AllergyDetail^VA^NCH^57054 | JLV | NU LL | NULL |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **entryD**  **ate** | **startD**  **ate** | **endD**  **ate** | **syst emI D** | **userI D** | **use rNP I** | **userName** | **patID** | **category** | **query**  **Type** | **car dID** | **ipAddr ess** |
| 539 | 8/6/13  15:25 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | ProblemDetail^VA^NCH^422208 | JLV | NU LL | NULL |
| 540 | 8/6/13  15:26 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatAdmissions | JLV | NU LL | NULL |
| 541 | 8/6/13  15:26 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatProgressNotes | JLV | NU LL | NULL |
| 542 | 8/6/13  15:26 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatEncounters | JLV | NU LL | NULL |
| 543 | 8/6/13  15:26 | 8/6/12  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatRads | JLV | NU LL | NULL |
| 544 | 8/6/13  15:26 | 4/8/13  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatLabs | JLV | NU LL | NULL |
| 545 | 8/6/13  15:26 | 8/6/12  0:00 | 8/6/13  0:00 | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | PatMedications | JLV | NU LL | NULL |
| 546 | 8/6/13  15:26 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | RadiologyReport^VA^NCH^accNum:  12000762 | JLV | NU LL | NULL |
| 547 | 8/6/13  15:26 | NULL | NULL | 556 | 8321  3 | NU LL | DOCTOR, ALPHA | 1606228852 | ProgressNoteDetail^VA^NCH^Jul 29,  2013 01:00 AM | JLV | NU LL | NULL |

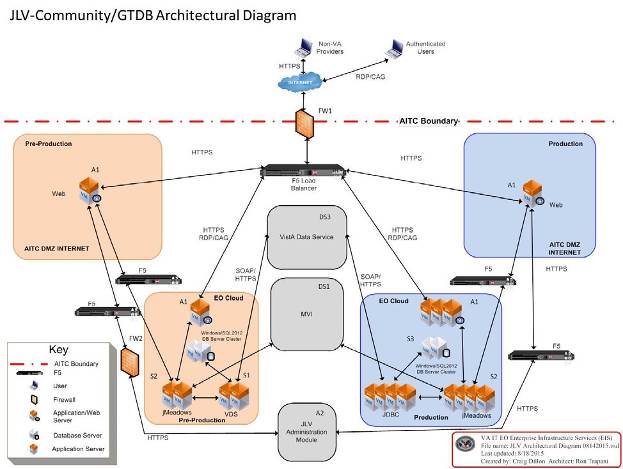
**Figure 19: Sample Audit Log for a User Session Report**

**3.2.3.3. Unmapped Data Element**

Data element mapping has yet to be developed and names of the data elements of origin (JLV) to be used in JLV-COMMUNITY/GTDB may be relabeled. This should be planned to start at the beginning of increment 2.

**3.3. Conceptual Infrastructure Design**

Figure 20 identifies concept for the JLV-GTDB stack and does not depict a complete data return concept.



**Figure 20: Conceptual Infrastructure Design**

**3.3.1. System Criticality and High Availability**

Initially there are no immediate plans developed for recovery, redundancy, and backup until the first release is deployed to production and passed the User Acceptance Criteria for the JLV-C Pilot. The proposed schedule, that includes replication and recovery, will not occur until Increment 2, to get the data back from Non-VA Providers. All system redundancy and replicated storage considerations be planned, established, requested, and implemented.

**3.3.2. Special Technology**

There is no Special Technology expected for this project.

**Table 18: Special Technology Requirements**

|  |  |  |  |
| --- | --- | --- | --- |
| **Special Technology** | **Description** | **Notional Location** | **TRM Status** |
| None | NA | NA | NA |

**3.3.3. Technology Locations**

This technology will be deployed in AITC unless indicated otherwise in Table 19.

**Table 19: Technology Location Details**

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Production 1 (JLV Community Pilot)** | **Location** | **Usage** |
| Workstations | Non-VA Provider  Offices | Used to evoke the web-browser to access the JLV-COMMUNITY login GUI and perform the JLV Community Pilot “Proof of Concept” for the presentation of patient health information as designed |
| Special Hardware | NA | NA |
| Interface Processors | AITC | Web logic |
| Legacy Mainframe | NA | NA – This will be a new VM |
| Legacy Application Server | NA | NA – All application servers will be new |
| Legacy Databases | NA | NA |
| Veterans Health  Administration Network PCs | VA Referral Administrators Office | Used to evoke the web-browser to access the JLV- COMMUNITY/GTDB JAM GUI and initate Non-VA Provider access for the JLV Community Pilot |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Production 2 (JLV-GTDB)** | **Location** | **Usage** |
| Copy of Technology  Components of Production set 1 | Same as in  Production Set 1 | Used for the get the data back feature functionality on top of the code based developed for the JLV Community Pilot |
| VistA Local Hosts | Non-VA Provider as Local Host Sites (approx. 130 sites) | Used to evoke the web-browser to access the JLV- COMMUNITY/GTDB login GUI |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Certification** | **Location** | **Usage** |
| N/A - requires further work |  |  |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Education** | **Location** | **Usage** |
| N/A - requires further work |  |  |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Test** | **Location** | **Usage** |
| N/A – all test components in  AITC as in Production set 1 |  | P |

|  |  |  |
| --- | --- | --- |
| **Technology Component**  **Development** | **Location** | **Usage** |
| Client Side Technologies | AITC | To build the client-side of the system |
| Server Side Technologies | AITC | To build the server-side of the system |

**3.3.4. Conceptual Infrastructure Diagram**

**3.3.4.1. Location of Environments and External Interfaces**

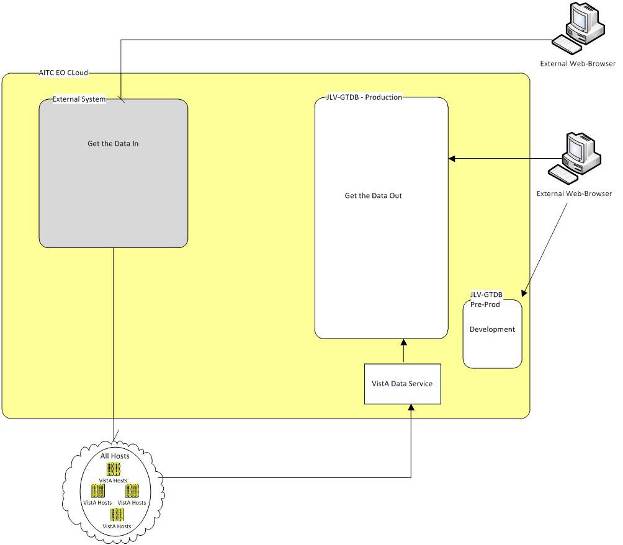
N/A – the Intake 10657 has been submitted and ROM and SLAM under development. Expected completion date is end of August 2015.

• There will be a Production Environment

• There will be a Pre-Prod Environment for development and internal testing

• The JLV-Community Pilot will not require load-balancing for 3 users, but the JLV- GTDB Production environment will utilize load balancing and potentially the use of F5 firewalls which may negate a requirement for separate load balancers due to the F5 functional capabilities.

**3.3.4.2. Conceptual Production String Diagram**



**Figure 21: Conceptual Production String Diagram**

**4. System Architecture**

Final system architecture has not been approved but is under review. Estimated disposition of the review is early October 2015.

**4.1. Hardware Architecture**

All Servers, firewalls, and connections to the system are in the AITC EO Cloud. Currently, discussion is underway with AITC to provide a traditional VM service. The architecture appears to be a better fit for traditional over EO Cloud. Expect decision in early August 2015.

AITC

JLV-Community

**LB1**

L o a d

2 – Oracle Service Bus for load balancing

**FW3**

SOAP

SOAP

**A1**

JLV-Community Application Server (4 VM)

B

a **FW1**

l

a

n

c Firewall

e

r

**FW2**

Firewall

**S2**

Firewall

JDBC

JLV-Community jMeadows Server (4 VM)

SOAP

**S3**

**S1**

JLV-Community VistA Application Server (4 VM)

JLV-Community SQL Database Server (2 VM)

**Figure 22: JLV-GTDB Production Hardware Architecture Diagram**



























**4.2. Software Architecture**

In all cases the most current version of the following technologies are used to build the client-side of the JLV-COMMUNITY/GTDB system and will be accessed as the primary extension to the JLV- COMMUNITY/GTDB:

• **Asynchronous JavaScript v1.8 and XMLv1.1 (Ajax)** is the set of techniques used to create web pages with elements that can be independently updated with new content in response to a user’s mouse click or some other event without having to reload the entire page.

• **Cascading Style Sheets (CSS)v\_3** is the language for describing the presentation (i.e., the

formatting and layout) of an HTML document. CSS is designed to enable the separation of document control from the details of how it should be presented, including the typography,

positioning, colors, and margins. This separation improves content accessibility and provides more flexibility in controlling presentation characteristics.

• **eXtensible Markup Language (XML)v1.0,5th edition** is a set of rules for marking up documents.

It is widely used to transmit arbitrarily structured data in mixed client/server environments. XML and HTML are compatible members of a family of markup languages called Standard Generalized Markup Language (SGML). HTML is an SGML language with a specific Document Object Model (DOM) focused on describing hypertext documents.

• **Extensible Stylesheet Language (XSL) Transformations (XSLT)v\_2.0** is a language used with

XML documents to transform XML documents into other formats or objects.

• **Ext JSv\_5.0** is a JavaScript UI library that uses HTML and CSS to build its UI controls and widgets. Ext JS has a complete suite of layout management tools that allow full control over organizing and manipulating the UI as requirements dictate.

• **Flotv\_0.8.3** is a pure JavaScript plotting library for jQuery utilized in JLV for on-screen graph displays.

• **HyperText Markup Language (HTML)v\_4.01** is a markup language for web pages that provides

a means to create structured documents using semantic tags. Images and other media objects can be embedded and can be used to create interactive forms.

• **JavaScript**v\_1.8is an object-oriented scripting language. Although JavaScript has other uses, it is

client-side JavaScript—the version that runs inside a user’s browser and manipulates HTML page elements—that is being used. Client-side JavaScript is used to turn static HTML documents into interactive web applications.

• **JavaScript Object Notation (JSON)v\_3** is a language-independent system for representing data objects, although it is based on JavaScript. It is simpler than XML and is often used as an alternative to XML in Ajax applications to transfer data objects between a server and a script running in a user’s browser.

• **jQueryv\_2.1.4** is a feature-rich JavaScript library and easy-to-use API that that works across a multitude of browsers and simplifies development with HTML document traversal and manipulation, event handling, animation, and Ajax.

• **RoboHelp 11** from Adobe is an online help authoring tool used to generate the WebHelp system launched from the JLV-COMMUNITY portal pages. WebHelp is an uncompiled help output type that can be viewed from web-based or desktop applications through multiple browsers and platforms.

Data Flow Diagrams are not currently prepared for this effort.

**4.3. Network Architecture**

The following technologies are used to build the server-side of the JLV-COMMUNITY system:

• **Grails MVC** is an open source web application framework that has been designed according to the model-view-controller (MVC) paradigm. MVC is a software architectural pattern that isolates domain logic (i.e., the application logic for the user) from the user interface (i.e., input and presentation).

• **REST (Representational State Transfer)** relies on a stateless, client-server, cacheable

communications protocol and, in virtually all cases, the HTTP protocol is used. RESTful applications use HTTP requests to post data (create and/or update), read data (e.g., make queries), and delete data. REST uses HTTP for all four create/read/update/delete operations.

• **SOAP (Simple Objects Access Protocol)** version 2.0 is utilized as the messaging protocol that communicates between the systems. When SOAP requests are initiated from the Grails MVC framework running on the JLV Server, the system waits for a response, as the request is synchronous. If the response is not given with a finite period of time (default is 100 seconds), the connection terminates, the user receives a connection error message, and the system will not initiate any new requests until action is taken by the user. All SOAP messages are digitally signed.

Refer to Figure 20 for graphical relationships of this network architecture.

**4.4. Service Oriented Architecture / ESS**

This product is independent and not a component of larger system, at this time. The JLV Community Pilot will be a stand-alone system for proof-of-concep, This system results will be used to establish a separate stand-alone JLV-GTDB stack, consisting of Pre-Production and Production configurations. The JLV-GTDB Stack may eventually be consumed by VistA Evolution and consume application functions that are being resigned.

**4.5. Enterprise Architecture**

The VA Technical Reference Model (TRM) is being developed with the assistance of the

Artchitecture, Strategy, and Design (ASD) team. We expect an initial model by Mid September

2015.

**5. Data Design**

Data Design has not yet been determined as metadata models to get the data back (in) are still under discussion. However, as the JLV-COMMUNITY Pilot is an identical copy of the Joint Legacy Viewer, their data design practices will be modified to conform to the needs of JLV- COMMUNITY data designs. Upon completion of the proof-of-concept from the JLV Community Pilot, the JLV Community Pilot software will be migrated to the JLV-GTDB Pre- Prod and Production Hardware/Software and the JLV Community Pilot System will be decommissioned in October 2015.

**5.1. DBMS Files**

Extensive work is required for the new data element incorporation. Modified practices derived from the Joint Legacy Viewer DBMS application will be utilized. Modified practices are composed of denormalizing combined DoD and VA health information currently concatenated by the DoD/VA Customer-managed JLV enterprise, into distinct VA data elements. Estimated completion is after the JLV Community Pilot proof-of-concept and prior to

development of the first Feature set of Increment 1, approximately the end of September 2015.

**5.2. Non-DBMS Files**

N/A - analysis has not been completed at this time. Estimated completion is late August 2015.

**5.3. Data View**

The Data View has not yet been designed but will include an Entity Relationship Diagram

(ERD). Estimated completion is early August 2015.

**6. Detailed Design**

Design must be applied against an EO cloud environment of re-engineered components derived from the VA Joint Legacy Viewer (JLV), most current Release 2.3, utilizing identical code language, interfaces, data exchange processes, and general user interfaces (GUI). The scheduled date of execution cannot be finalized until the project until Leadership from OI&T organizations have approved the plan and approach.

These will be captured in the [Requirement Traceability Matrix (RTM).](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/PMAS%20Documentation/Milestone%201/Requirements%20Traceability%20Matrix%20(RTM)/20150715_Consolidated%20JLV-Community%20Non-VA%20Provider_RTM%20for%20Presentation%20Demo.xlsx)

**6.1. Hardware Detailed Design**

Table 20 depicts the EO Cloud Hardware requirements to implement this system and are aligned with established SDE EO HW requirements

**Table 20: Hardware Requirement Details**

|  |  |
| --- | --- |
| **Component** | **Optimal Specifications** |
| JLV Community Pilot | |
| JLV-COMMUNITY Application Web Server | Each server: 2 core, 16GB RAM, 160GB Disk  storage  1 VM server configured with Load Balancer:  - OS: RHEL 6.5 (Tikanga)  - WebLogic 10.3.5.0  - Hosted on AITC |
| JLV-COMMUNITY Data Service Server | 2 VM servers: Each Server: 2 core, 16GB RAM,  160GB Disk storage  - OS: RHEL 6.5 (Tikanga)  - 1 VM VistA DataService server: Weblogic  10.3.5.0  - 1 VM jMeadows DataService server: Weblogic  10.3.5.0 |
| JLV COMMUNITY SQL Database Server | Each server: 2 core, 16GB RAM, 160GB Disk  storage  - OS: Windows 2012 R2  1 – VM JLV-COMMUNITY SQL Database server: MS SQL Server 2012 R2 |
| JLV-GTDB – Pre-Production | |
| JLV-GTDB Oracle Service Bus | Each server: 2 core, 16GB RAM, 160GB Disk  storage  2 VM Oracle Service Bus  - OS: RHEL 6.5 (Tikanga)  - Hosted on AITC |
| JLV-GTDB Application Web Server | Each server: 2 core, 16GB RAM, 160GB Disk  storage  2 VM server configured with Load Balancer:  - OS: RHEL 6.5 (Tikanga)  - WebLogic 10.3.5.0  - Hosted on AITC |

|  |  |
| --- | --- |
| **Component** | **Optimal Specifications** |
| JLV-GTDB Data Service Server | 4 VM servers: Each Server: 2 core, 16GB RAM,  160GB Disk storage  - OS: RHEL 6.5 (Tikanga)  - 2 VM VistA DataService server: Weblogic  10.3.5.0  - 2 VM jMeadows DataService server: Weblogic  10.3.5.0 |
| JLV-GTDB SQL Database Server | Each server: 2 core, 16GB RAM, 160GB Disk  storage  - OS: Windows 2012 R2  2 – VM JLV-GTDB SQL Database server: MS SQL Server 2012 R2 |
| JLV-GTDB – Production | |
| JLV-GTDB Oracle Service Bus | Each server: 2 core, 16GB RAM, 160GB Disk  storage  2 VM Oracle Service Bus  - OS: RHEL 6.5 (Tikanga)  - Hosted on AITC |
| JLV-GTDB Application Web Server | Each server: 2 core, 16GB RAM, 160GB Disk  storage  4 VM server configured with Load Balancer:  - OS: RHEL 6.5 (Tikanga)  - WebLogic 10.3.5.0  - Hosted on AITC |
| JLV-GTDB Data Service Server | 8 VM servers: Each Server: 2 core, 16GB RAM,  160GB Disk storage  - OS: RHEL 6.5 (Tikanga)  - 4 VM VistA DataService server: Weblogic  10.3.5.0  - 4 VM jMeadows DataService server: Weblogic  10.3.5.0 |
| JLV-GTDB SQL Database Server | Each server: 2 core, 16GB RAM, 160GB Disk storage  - OS: Windows 2012 R2  2 – VM JLV-GTDB SQL Database server: MS SQL Server 2012 R2 |

**6.2. Software Detailed Design**

Detailed Design for the software, in addition to Grails MVC requires input from Software

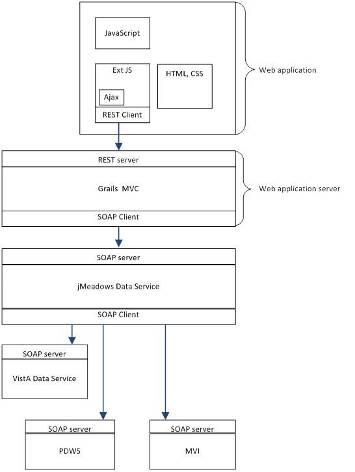
Engineering group assigned once the contract is awarded in early September 2015.

**6.2.1. Conceptual Design**

**6.2.1.1. Product Perspective**

This product is not a component of a larger system. There has been no determination to incorporate the final JLV-GTDB into any larger system and may not be discussed until the project has completed its development and published for public use. Public use refers to restricting access to authorization Users providing services for Veterans Health.

**6.2.1.1.1. User Interfaces**



**Figure 23: User Interface Diagram**

The JLV-COMMUNITY/GTDB accessibility is through a firewall to the JLV- COMMUNITY/GTDB’s GUI framework (*Figure 23*) and is built on a simple architecture consisting of portals, tokens, widgets, and sessions. These elements, including the definition and/or purpose of each and how they are used in the GUI, are summarized in the following table.

**Table 21: Accessibility Architecture**

|  |  |
| --- | --- |
| **Element** | **Implementation** |
| Portal  A gateway for a web site or web application that  is, or proposes to be, a major starting site for users when they get connected to the web or that users tend to visit as an anchor. The specific details of the portals from this gateway are provided in Section 3.2.2.1 and its subsections. | The JLV-COMMUNITY/GTDB interface returns  two portals inherited from the VA JLV  application: a provider portal and a patient portal. Each portal does the following:  • Pertains to a particular subject or topic  • Includes a library of widgets  • Provides a column-based widget layout and layout customization  Provides a tabular layout design and the ability to have any number of widget layouts |

|  |  |
| --- | --- |
| **Element** | **Implementation** |
| Token  An object that represents something else, such as another object (either physical or virtual), or an abstract concept | The GUI uses two types of tokens: a patient token  and a record token. A patient token:  • Consists of the following:  - patient ID  - patient site code  - timestamp  • Is tied to an active session that is initiated by the provider when the provider logs in to the system  • Is generated in Grails and encrypted. Data encryption is provided by the Advanced Encryption Standard  A record token Is used to retrieve specific details. |
| Widget  An element of a GUI that displays information or provides a specific way for a user to interact with the operating system and the application. Widgets include icons, pull-down menus, buttons,  selection boxes, progress indicators, on-off checkmarks, scroll bars, windows, window edges  (that allow the resizing of a window), toggle  buttons, forms, and many other devices for displaying information and for inviting, accepting, and responding to user actions. | Each widget does the following:  • Is a mini-application running on top of a larger application  • Is a generic container to which provider data or clinical data can be ported  • Contains data coming from one source; in this case, all of the data is coming from the REST layer  • Requires a patient token to retrieve data |
| Session  A session is initiated when an authorized user logs into the JLV-COMMUNITY application. | During an active session, a user has access to the  following JLV-COMMUNITY capabilities:  • View and edit user profiles  • Change onscreen user interface themes  • Search for patient records  By default, a session will terminate after a period of inactivity. |

**6.2.1.1.2. Hardware Interfaces**

The Hardware interfaces are shown in Figure 3 and will be described in Interface Technical

Specifications, Section 6.5.2.4.1.

**6.2.1.1.3. Software Interfaces**

• User System Authentication - The following sequence (shown in Figure 24) describes the user authentication process performed by JLV-COMMUNITY/GTDB.

1. User accesses the JLV-COMMUNITY/GTDB Login page via the published URL. (The Login Page is shown in Figure 14*).*

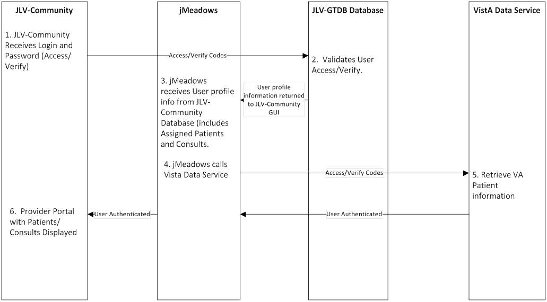
2. JLV-COMMUNITY/GTDB retrieves the Non-VA Provider Login Name (access)/password (verify) codes. These are contained in the User Account file in JLV-Community/GTDB user table.

3. If the user is in the User Table: “User Table” refers to the JLV-GTDB database that contains the authorized Users granted access to the system.

a. jMeadows calls the VistA Data Service.

b. VistA Data Service makes an RPC call to retrieve patient information.

4. The Provider Portal is displayed, loaded with assigned Patients and Consults: The Provider Portal page contains assigned patients.



**Figure 24: JLV-COMMUNITY/GTDB User Authentication Diagram**

• VA Data Retrieval Sequence - Based on the clinical widget being displayed, the following steps occur for VA data after a patient is selected (see Figure 25).

1. If there are VA locations for a patient, jMeadows issues a request to the VistA Data

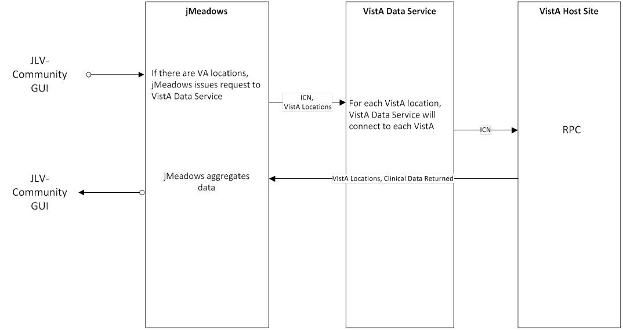
Service with the VA ICN and VistA locations.

2. For each VistA location, the VistA Data Service will connect to each VistA, and return the clinical data to jMeadows.

3. jMeadows aggregates data.

• Note that the performance requirements for both the jMeadows and VistA Data Service are found in the JLV 2.3 jMeadows ICD and JLV 2.2 Vista Data Service ICD.

**Figure 25: JLV-COMMUNITY/GTDB VA Data Retrieval**

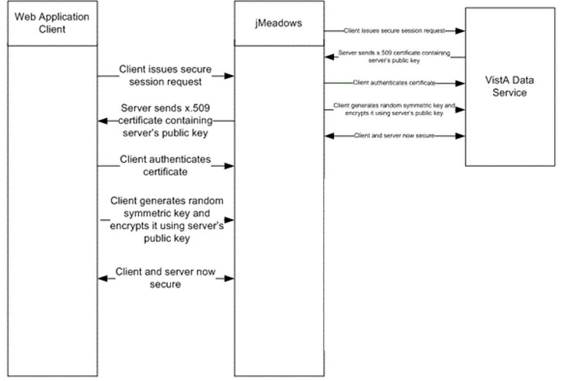


**6.2.1.1.4. Communications Interfaces**

All communication to the VistA Data Service and the Relay Service from jMeadows, which is the main aggregate service, is through HTTPS SSL/TLS basic authentication. Before any connection to the service is made, it is required that the exchange of valid server certificates and valid service/user name and password is provided for each service.

For example, when jMeadows requests VA data from the VistA Data Service, the jMeadows server must first present the server certificate to the VistA Data Service server along with the server/user name and password. If the provided server certificate and server/user name are valid, the request for data is executed and the data is returned to jMeadows. This process occurs for each data request: jMeadows to the VistA Data Service and jMeadows to the Relay Service as shown in figure below. **Note:** The communications interfaces used for the JLV Community Pilot and GTDB increment releases will follow the same security requirements for communication inherited from the parent import from the Customer-managed JLV Enterprise application.

**Figure 26: Communication Interface Diagram**



**6.2.1.1.5. Memory Constraints**

There are no memory constraints.

**6.2.1.1.6. Special Operations**

This subsection should specify the special operations required by the user such as backup, recovery, and archiving operations.

There are no external devices or COTS systems anticipated on this project.

**6.2.1.2. Product Features**

**6.2.1.3. User Characteristics**

The VA Referral Administrator should be trained to operate the JLV Administration Module tools.

**6.2.1.4. Dependencies and Constraints**

• Interfaces and other operations - Design may be applied against an EO cloud environment of re-engineered components derived from the VA Customer-managed Joint Legacy Viewer (JLV) enterprise, utilizing identical code language, interfaces, data exchange processes, and general user interfaces (GUI). In recent discussions, the

JLV-GTDB application, post the JLV-Community Pilot decommissioning, may be virtual machines in a traditional, non-EO Cloud environment, less any public facing interface requirements.

• Usability - JLV-COMMUNITY/GTDB is compliant with Section 508 accessibility guidelines. Upon JLV-COMMUNITY entry, the JLV-COMMUNITY/GTDB GUI allows the user to select as default or switch to a Section 508-compliant user interface before logging in or during an active user session.

Within JLV-COMMUNITY/GTDB Login pages, the Section 508-compliant interface option is accessed through the Edit Profile link provided beneath the user credential fields. Within the subsequent page, selecting the **Accessible** User Interface Theme option opens the accessible interface upon successful login. This selection also makes Accessible the default interface option in the user’s profile.

Once logged into the JLV-COMMUNITY/GTDB application, the Section 508-compliant interface option is accessed through the **cog wheel** icon in the top-right corner of the portal pages. In the **User Configuration** dialog box, selecting the **Accessible** User Interface Theme option changes the interface display to Accessible. This selection also makes the interface option the default option in the user’s profile.

The Accessible interface features Section 508-compliant, on-screen elements, including:

• Keyboard focus

• Panels and tab panels

• Tables

• Dialogs

• Context menus

• Widgets and widget tools

**Note:** JLV-COMMUNITY/GTDB WebHelp output is configured to be Section 508- compliant in Internet Explorer browsers.

The Accessible interface also provides an Accessible help system, linked through a button on the portal pages, which describes options and elements of the Accessible interface.

Section 508 accessibility guidelines will apply to current and all future User Interfaces developed for the JLV Community/GTDB application.

• Audit Functions - The audit log information is stored within the JLV-GTDB Database server in the AITC data center. The audit log information is currently only retrievable by the JLV-COMMUNITY/GTDB developers on an as-needed basis. The audit log is being used to capture weekly usage statistics for the JLV-COMMUNITY/GTDB management team. This is being done manually by the JLV-GTDB development team. The audit logs are maintained for the life of the application and are never purged.

The following table presents the JLV-GTDB Database column items and data types displayed in a

JLV-COMMUNITY/GTDB audit log.

**Table 22: Audit Column Items and Data Types**

|  |  |
| --- | --- |
| **Column Item** | **Data Type** |
| ID or auditID | The unique ID of each entry |
| entryDate | The date at which the audit was entered |
| startDate | Works with “endDate” to set the date range for the data request |
| endDate | Works with “startDate” to set the date range for the data request |
| systemID | The user’s login site identifier.  On the VA side, systemID specifies the VistA host system to which the userID is associated. |
| userNPI | The user’s NPI (National Provider Identifier) |
| userID | The user’s identifier.  On the VA side, userID is the VistA IEN of the VistA host system that is associated with the user’s Access/Verify codes. |
| userName | The name of the user |
| patID | The patient’s EDIPI (Electronic Data Interchange Personal Identifier) |
| category | The query action (e.g., login, , clinical domain data) |
| queryType | The application name (JLV or unit\_test) |

• Performance Specifications – The specifications were currently evaluated in the JLV WAN Capacity Evaluation SEDR, completed in June 2015. The JLV- Community/GTDB project is not expected to need to support these specifications but will have the capacity to support measures. Refer to this hyperlink to review the [SEDR14-](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/Development/FINDINGS%20REPORT%20SEDR14-1099%20Final.docx)

[1099 for JLV.](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/Development/FINDINGS%20REPORT%20SEDR14-1099%20Final.docx)

• The system shall support a total estimated user base of 130,000 users.

• The system shall support more than 30,000 concurrent users.

• The number of transactions supported are an average of greater than 10 transactions per user per hour.

• The system is expected to scale up to 10,000 new users annually.

• As new transaction requirements are defined and developed the system must be capable of increasing transactions supported to more than 20 new types of transactions per hour.

o Peak hours are expected to be 0700 to 2300 local time; non-peak hours 2300 to 0700 local time.

o Expected peak transaction load times are 0700 to 2300 local time; non-peak times are expected to be 2300 to 0700 local time.

• The system is expected to meet the following storage requirements, for a temporary period of time until transformation is affected in Increment 3 release to index to the patient’s electronic health record, where longterm storage occurs:

o Clinical note might be about 2-3 pages, storage 2 kilobytes per note (estimate

624MB to 6GB per year).

Radiology images – 8–10MB/image (Radiology images can vary greatly and can be larger than 30MB/image), estimated annual storage of images cannot be determined at this time.

• The solution/infrastructure must be available 24 hours a day, 7 days a week, consistent with VistA uptime at 99.9%, exclusive of scheduled maintenance. This is a standard availability performance metric consistant with the JLV system replication and documented in both the jMeadows and Vista Data Services ICDs.

• Scheduled down time for routine maintenance must not exceed 3 hours per week and unscheduled down-time must not exceed 3 hours per month. Scheduled down time shall be limited to off peak hours, as determined by the affected organizations..

• The system shall recover from an outage within 1-2 hours per outage and comply with the following:

o Level 1 outage <1 failures per/month o Level 2 outage <2 failures per/month o Level 3 outage < 3 failures per month

• Provider requests for Patient data transactions will process within 0.5 seconds.

• Mouse or key-based UI controls shall provide instantaneous responsivenss in less than 90 milli-seconds.

**6.2.2. Specific Requirements**

**6.2.2.1. Database Repository**

N/A – The contents for this section, to include the Database block diagram will be developed once the system developers are on board with the contract award. The contract is expected to be awarded in early September 2015.

**6.2.2.2. System Features include**

• VA Referral Administrator JLV Administrator Module (JAM)

The JAM provides the VA Referral Adminstrators an access, authentication, and control feature to create Non-VA Provider user profiles, commonly referred to as the User Table through a provisioning process to perform the following:

o Add Non-VA Providers

o Assign Patients to Non-VA Providers

o Assign Consults to Non-VA Providers

o Designate Non-VA Provider access longevity

• Provider Portal

Non-VA Providers users will connect from a external web-based browser, through a specific URL and pass through a firewall to ensure secure login and authentication. Additionally, load balancers will be utilized to regulate user traffic to JLV-COMMUNITY. The Non-VA Provider users access a patient’s clinical data via a browser from within the site’s intranet. After logging in, the Community Provider will view the Provider Portal, which provides

information specific to a clinician. The information is displayed in a consolidated collection of widgets for the corresponding clinical data types. The configuration and layout of widgets is unique for each user of the system. The Non-VA provider will have capabilities limited to assigned patients and consultations. A new widget will be added to the portal taskbar for “JAM.” When open, this widget will show the “JLV Administrative Module” in the title bar, with a single link, “Patient List“ for the pilot implementation.

o Abnormal Lab Results

o Admissions

o Appointments

o Consults Requested

o JLV Administrative Module (JAM)

o Orders Pending o Orders Resulted o References

o Unsigned Notes

• Patient Portal

The Patient Portal displays patient-centric information. From this portal, a user will have many of the same on-screen elements and capabilities of the Provider Portal, including patient selection, system status, and the ability to add or remove widgets.

o Admissions

o Allergies

o Appointments

o Clinical Reminders

o Community Health Summaries

o Consults

o Discharge/

o Essentris Notes

o Encounters

o Immunizations

o Lab Orders/ Panel Results

o Lab Results

o Inpatient Medications

o Outpatient Medications4

o Orders

o Problem List

o Procedures

o Progress Notes

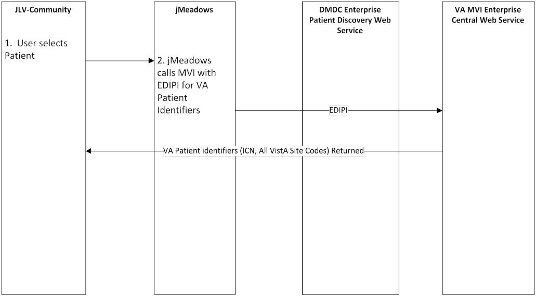
o Questionnaires and Deployment Assessments (AHLTA Only)

o Radiology Exams

o Social, Family, and Other Past Histories

o Vitals

• Patient Selection



**Figure 27: Patient Selection Diagram**

**6.2.2.3. Design Element Tables**

Other than the addition of the data elements being developed for the JAM, the data element dictionary( DED) and the element table diagrams are identical to the data tables in the Customer- managed Joint Legacy Viewer enterprise application. Refer to this [hyperlink](https://vaww.vaco.portal.domain/sites/OHIA/HI/JLVprojectTeam/JLV%20Development/v2.3%20JLV%20Documentation/JLV_2.3_Normalized_Data_Design_Document.pdf) for a complete data set from JLV 2.3 Normalized data design document.

**6.2.2.3.1. Routines (Entry Points)**

This application does not have a direct entry point in VistA. JLV Community/GTDB will utilize the VistA Data Service to provide the data required for the Users accessing the JLV Community/GTDB application.

**6.2.2.3.2. Templates**

Templates will be developed at a later point as development of the system is going through the stages of Agile development, starting with Increment 2. Table 23 will identify the templates when determined, if applicable. Table 24 will provide applicable information if a template is developed.

**Table 23: Templates (Instructions)**

|  |  |
| --- | --- |
| **Templates** | **Instructions** |
| **Template Name** |  |
| **Enhancement Category** |  |
| **RSD Traceability** |  |
| **Template Type** |  |
| **Related Options** |  |
| **Related Routines** |  |
| **Data Dictionary (DD) References** |  |
| **Global References** |  |

**Table 24: Templates**

|  |  |
| --- | --- |
| **Templates** | **Description** |
| **Template Name** |  |
| **Enhancement Category** | New Modify Delete No Change |
| **RSD** |  |
| **Template Type** | Sort Input Print Other |
| **Related Options** |  |

|  |  |  |
| --- | --- | --- |
| **Related Routines** | **Routines “Called By”** | **Routines “Called”** |
|  |  |  |

|  |  |
| --- | --- |
| **Routines** | **Description** |
| **Data Dictionary (DD) References** |  |
| **Global References** |  |

**6.2.2.3.3. Bulletins**

Currently no bulletins will be affected by the functionality being designed for JLV Community/GTDB. Table 25 will depict the format of applicable bulletins if later determined. Table 26 will complete the Bulletins when applicable.

**Table 25: Bulletins (Instructions)**

|  |  |
| --- | --- |
| **Bulletins** | **Instructions** |
| **Bulletin Name** |  |

|  |  |
| --- | --- |
| **Enhancement Category** |  |
| **RTM** |  |
| **Related Options** |  |
| **Related Routines** |  |
| **Mail Subject** |  |
| **Mail Group** |  |
| **Parameters** |  |
| **Data Dictionary (DD) References** |  |

**Table 26: Bulletins**

|  |  |
| --- | --- |
| **Bulletins** | **Description** |
| **Bulletin Name** |  |
| **Enhancement Category** | New Modify Delete No Change |
| **RTM** |  |

|  |  |  |
| --- | --- | --- |
| **Related Routines** | **Routines “Called By”** | **Routines “Called”** |
|  |  |  |

|  |  |
| --- | --- |
| **Routines** | **Description** |
| **Mail Subject** |  |
| **Mail Group** |  |
| **Parameters** |  |
| **Data Dictionary (DD) References** |  |

**6.2.2.3.4. Data Entries Affected by the Design**

Until the DED from the Customer-managed JLV Enterprise application is analyzed and the specific data elements are identified for modification, this section cannot be completed. Initial Metadata Work Group identified data is shown in Table 27 and upon development of the JLV Community/GTDB DED the specific entries will provide when completed. Current data table definitions and field names can be found in the [JLV 2.3 Normalized Data Design Document.pdf.](https://vaww.vaco.portal.domain/sites/OHIA/HI/JLVprojectTeam/JLV%20Development/v2.3%20JLV%20Documentation/JLV_2.3_Normalized_Data_Design_Document.pdf)

**Table 27: Data Entries Affected by the Design**

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Current Value** | **New Value** |
| Justification |  |  |

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Current Value** | **New Value** |
| Authorization |  |  |
| Chief complaint |  |  |
| Doc type |  |  |
| Doc Title |  |  |
| Original Author - person providing the care |  |  |
| Patient id (2 of 3) |  |  |
| ORIGIN: FEE |  |  |
| DOCUMENT IMAGE DATE: Date specimen was taken |  |  |
| DOCUMENT IMAGE TYPE: |  |  |
| SPECIALTY: |  |  |
| PROCEDURE/EVENT: |  |  |
| IMAGE DESCRIPTION: |  |  |
| patient name |  |  |
| patient ssn |  |  |
| consult type |  |  |
| consult # |  |  |
| authorization # |  |  |
| station # |  |  |
| eHMP properties for image, annotation, image procedure report, order, radiology order |  |  |
| 7078 properties |  |  |
| 7079 properties |  |  |
| Patient Control Number |  |  |
| Medical Record Number |  |  |
| Patient Last Name |  |  |
| Patient First Name |  |  |
| Patient Identifier (ID) |  |  |
| Provider NPI |  |  |

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Current Value** | **New Value** |
| Date of Service (Date range with  Start Date and End Date) |  |  |
| Payer Claim Control Number |  |  |
| Attachment Number |  |  |
| VA Unique Attachment ID |  |  |
| Attachment ID |  |  |
| Medical Record Number |  |  |
| Trace Number |  |  |

**6.2.2.3.5. Unique Record(s)**

There are not unique record ID(s) that will be affected by the changes implemented by the design as far as known at this time. JLV Community/GTDB will utilize record IDs imported from the Customer-managed JLV Enterprise system and maintain continuity ofuser and patient IDs utilized in existing tables.

**6.2.2.3.6. File or Global Size Changes**

The memory requirements, file storage estimates, operating system, and reprocated storage requirements have been identified in the EO Intake (10657) and should be adequate for the JLV Community/GTDB application project initial implementation. The majority of files are dynamic and generally influenced by the storage of Images or Optical character recognition standards. If identified they will be indicated in Table 28.

**Table 28: File or Global Size Changes**

|  |  |  |
| --- | --- | --- |
| **File/Global Name(s)** | **Estimated Increase** | **Estimated Decrease** |
|  |  |  |

**6.2.2.3.7. Mail Groups**

This system does not have mail groups.

**6.2.2.3.8. Security Keys**

This will be determined as the methodology for getting data in from Non-VA Providers are developed. At this time no security keys, imported from the customer-managed JLV enterprise application, are subject to change. The discussion to provide security certificate exchanges between Users in JLV-GTDB and secure messaging systems has been intiated and expected to conclude in the next 30-60 days. Table 29 will depict Security Keys requiring modification, changes, deletion, or addition (new). Table 30 will provide information on Security Keys identified.

**Table 29: Security Keys (Instructions)**

|  |  |
| --- | --- |
| **Security Keys** | **Instructions** |
| **Security Key Name** |  |
| **Enhancement Category** |  |
| **Related Options** |  |
| **Related Routines** |  |
| **Data Passing** |  |
| **Security Key**  **Description** |  |
| **Subordinate Keys** |  |
| **Mutually Exclusive**  **Keys** |  |
| **Granting Condition**  **Logic** |  |
| **Current Logic** |  |
| **Modified Logic**  **(Changes are in bold)** |  |
| **Hierarchical**  **Precedence** |  |

**Table 30: Security Keys**

|  |  |
| --- | --- |
| **Security Keys** | **Activities** |
| **Security Key Name** |  |
| **Enhancement**  **Category** | New Modify Delete No Change |
| **Related Options** |  |

|  |  |  |
| --- | --- | --- |
| **Related Routines** | **Routines “Called By”** | **Routines “Called”** |
|  |  |  |

|  |  |
| --- | --- |
| **Security Keys** | **Activities** |
| **Data Passing** | Input Output Both Global Reference Local Reference |
| **Security Key**  **Description** |  |
| **Subordinate Keys** |  |

|  |  |
| --- | --- |
| **Security Keys** | **Activities** |
| **Mutually Exclusive**  **Keys** |  |
| **Granting Condition**  **Logic** |  |

**Current Logic**

**Modified Logic (Changes are in bold)**

|  |  |
| --- | --- |
| **Security Keys** | **Activities** |
| **Hierarchical**  **Precedence** |  |

**6.2.2.3.9. Options**

At this time no new options will be available to the Users for the JLV Community Pilot. However,some of the options imported from the customer-managed JLV enterprise will be reviewed against the business requirements and may be eliminated. They will be captured after the fact.

**Table 31: Options (Instructions)**

|  |  |
| --- | --- |
| **Options** | **Instructions** |
| **Option Name**  **(MENU TEXT field)** |  |
| **Enhancement Category** |  |
| **Associated Menu Options that will invoke this reference** |  |
| **Data Passing** |  |
| **Menu Text Description** |  |
| **Option Type** |  |
| **Option Definition** |  |
| **Current Entry Action**  **Logic** |  |
| **Modified Entry Action Logic (Changes are in bold)** |  |

|  |  |
| --- | --- |
| **Options** | **Instructions** |
| **Current Exit Action**  **Logic** |  |
| **Modified Exit Action**  **Logic**  **(Changes are in bold)** |  |

**Table 32: Options**

|  |  |
| --- | --- |
| **Options** | **Activities** |
| **Option Name** |  |
| **Enhancement**  **Category** | New Modify Delete No Change |
| **Associated Menu Options that will invoke this reference** |  |
| **Data Passing** | Input Output Both Global Reference Local Reference |
| **Menu Text**  **Description** |  |
| **Option Type** | Edit Print Menu Inquire  Action Run Routine Other |
| **Associated Routine** |  |
| **Option Definition** |  |

**Current Entry Action Logic**

**Modified Entry Action Logic (Changes are in bold)**

**Current Exit Action Logic**

**Modified Exit Action Logic (Changes are in bold)**

**6.2.2.3.10. Protocols**

At this time there are no Protocols subject to change. If later determined they will be indicated in Table 33 and described in Table 34.

**Table 33: Protocols (Instructions)**

|  |  |
| --- | --- |
| **Protocols** | **Instructions** |
| **Protocol Name** |  |
| **Enhancement Category** |  |
| **Associated Protocols** |  |
| **Data Passing** |  |
| **Item Text Description** |  |
| **Protocol Type** |  |
| **Associated Routine** |  |
| **Current Entry Action**  **Logic** |  |
| **Modified Entry Action**  **Logic**  **(Changes are in bold)** |  |
| **Current Exit Action**  **Logic** |  |
| **Modified Exit Action**  **Logic**  **(Changes are in bold)** |  |

**Table 34: Protocols**

|  |  |
| --- | --- |
| **Protocols** | **Activities** |
| **Protocol Name** |  |
| **Enhancement**  **Category** | New Modify Delete No Change |
| **Associated**  **Protocols** |  |
| **Data Passing** | Input Output Both Global Reference Local Reference |
| **Item Text**  **Description** |  |
| **Protocol Type** | Action Menu Protocol Protocol Menu Limited Protocol  Extended Action Dialog Other |
| **Associated Routine** |  |

**Current Entry Action Logic**

**Modified Entry Action Logic (Changes are in bold)**

**Current Exit Action Logic**

**Modified Exit Action Logic (Changes are in bold)**

**6.2.2.3.11. Remote Procedure Call (RPC)**

Only general details are available at this time. The tables will be completed when specific

details are available. The RPCs utilized in JLV-Community/GTDB are the same as those used in the Customer-managed JLV enterprise system. Refer to Vista Data Service ICD and jMeadows [ICD](https://vaww.vaco.portal.domain/sites/OHIA/HI/JLVprojectTeam/JLV%20Development/Configuration%20Management/JLV%202.2/Product%20Docs/JLV_2.2_jMeadows_ICD.pdf) for JLV enterprise. No changes to the current RPCs are expected.

**Table 35: RPCs (Instructions)**

|  |  |
| --- | --- |
| **RPCs** | **Instructions** |
| **Name** |  |
| **TAG^RTN** |  |
| **Input Parameters** |  |
| **Results Array** |  |
| **Description** |  |

**Table 36: RPCs**

|  |  |
| --- | --- |
| **RPCs** | **Activities** |
| **Name** |  |
| **TAG^RTN** |  |
| **Input Parameters** |  |
| **Results Array** | Single Value Array Word Processing  Global Array Global Instance |
| **Description** |  |

**6.2.2.3.12. Constants Defined in Interface**

The developer awarded the development contact will review the Interfaces form the Customer- managed JLV enterprise code imported, and provide details to update these tables for Increment

2 development.

**Table 37: Constants Defined in Interface**

|  |  |
| --- | --- |
| **Name** | **Description** |
|  |  |

**6.2.2.3.13. Variables Defined in Interface**

The developer awarded the development contact will review the Interfaces form the Customer- managed JLV enterprise code imported, and provide details to update these tables prior to Increment 2.

**Table 38: Variables Defined in Interface**

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Description** |
|  |  |  |

**6.2.2.3.14. Types Defined in Interface**

N/A. None provided at this time.

**Table 39: Types Defined in Interface**

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Description** |
|  |  |  |

**6.2.2.3.15. GUI**

General User Interfaces under design, not resident to the current system availability from the Customer-managed JLV enterprise import, that are being modified for this project are shown in Table 40.

**Table 40: GUI**

|  |  |
| --- | --- |
| **Unit Name** | **Description** |
| JLV Administration Module  (JAM) GUI | The JLV Adminstrative Module (JAM) that allows VA Referral Administrators the ability to assign Non-VA Providers with secure accounts to access JLV-COMMUNITY/GTDB User interfaces, patients, and patient consults for a determined period of time. |
| Non-VA Provider Login GUI | The Non-VA Provider Login GUI is the method in which Non-VA Providers authenticate and access patient records that have been assigned through the JAM. |
| Provider Portal UI | Modifed from parent Provider Portal UI to exclude the ability to search patients, see data outside the user class, and limited user configuration customization. |
| Patient Portal UI | Modified from parent Patient Portal UI to eliminate widget availability related to data not accessible by the Non-VA Provider. |

**6.2.2.3.16. GUI Classes – Wil be determined by developer awarded the contract.**

**Table 41: GUI Classes (Instructions)**

|  |  |
| --- | --- |
| **GUI Classes** | **Instructions** |
| **Class Name** |  |
| **Derived From Class** |  |
| **Purpose** |  |

**Table 42: GUI Classes**

|  |  |
| --- | --- |
| **GUI Classes** | **Instructions** |
| **Class Name** |  |
| **Derived From Class** |  |
| **Purpose** |  |

**6.2.2.3.17. Current Form**

Not available.

**6.2.2.3.18. Modified Form**

Not available.

**6.2.2.3.19. Components on Form**

**Table 43: Components on Form**

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Description** |
|  |  |  |

**6.2.2.3.20. Events**

**Table 44: Events**

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Description** |
|  |  |  |

**6.2.2.3.21. Methods**

**Table 45: Methods**

|  |  |  |
| --- | --- | --- |
| **Method Name** | **Procedure/Function** | **Description** |
|  |  |  |

**6.2.2.3.22. Special References**

There are no special references known at this time.

|  |  |  |
| --- | --- | --- |
| **Special Reference Name** | **Type** | **Description** |
|  |  |  |

**6.2.2.3.23. Class Events**

**Table 46: Class Events**

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Description** |
|  |  |  |

**6.2.2.3.24. Class Methods**

**Table 47: Class Methods**

|  |  |  |
| --- | --- | --- |
| **Name** | **Procedure/Function** | **Description** |
|  |  |  |

**6.2.2.3.25. Class Properties**

**Table 48: Class Properties**

|  |  |  |  |
| --- | --- | --- | --- |
| **Class Properties Name** | **Type** | **Visibility** | **Description** |
|  |  |  |  |

**6.2.2.3.26. Uses Clause**

Any Uses Clauses discovered will be documented in this section and should be determined by the end of August 2015.

**6.2.2.3.27. Forms**

Forms will be identified once a determination is made as to which are required to be submitted by Non-VA Providers sending data to the JLV-GTDB system. A decision has not yet been provided to require Non-VA Providers, not utilizing an EHR, to utilize VA Healthcare forms. Use of form, if required, will not occur until Increment 3.

**Table 49: Forms (Instructions)**

|  |  |
| --- | --- |
| **Forms** | **Instructions** |
| **Form Name** |  |
| **Enhancement Category** |  |
| **Form Functionality** |  |
| **Current Form Layout** |  |
| **Modified Form Layout**  **(Changes are in bold)** |  |

**Table 50: Forms**

|  |  |
| --- | --- |
| **Forms** | **Description** |
| **Form Name** |  |
| **Enhancement Category** | New Modify Delete No Change |
| **Form Functionality** |  |

**Current Form Layout**

**Modified Form Layout (Changes are in bold)**

**6.2.2.3.28. Functions**

**Table 51: Functions (Instructions)**

|  |  |
| --- | --- |
| **Functions** | **Instructions** |
| **Function Name** |  |
| **Short Description** |  |
| **Enhancement Category** |  |
| **Related Options** |  |
| **Related Routines** |  |
| **Data Dictionary (DD) References** |  |
| **Related Protocols** |  |
| **Related Integration Control**  **Registrations (ICRs)** |  |
| **Data Passing** |  |
| **Input Attribute Name and**  **Definition** |  |
| **Output Attribute Name and**  **Definition** |  |
| **Current Logic** |  |
| **Modified Logic (Changes are in bold)** |  |

**Table 52: Functions**

|  |  |
| --- | --- |
| **Function Name** | **Activities** |
| **Short**  **Description** |  |
| **Enhancement**  **Category** | New Modify Delete No Change |
| **Related**  **Options** |  |

|  |  |  |
| --- | --- | --- |
| **Related Routines** | **Routines “Called By”** | **Routines “Called”** |
|  |  |  |

|  |  |
| --- | --- |
| **Function Name** | **Activities** |
| **Data Dictionary**  **(DD) References** |  |
| **Related**  **Protocols** |  |
| **Related Integration Control Registrations (ICRs)** |  |
| **Data Passing** | Input Output Both Global Reference Local Reference |
| **Input Attribute Name and Definition** | Name: Definition: |
| **Output Attribute Name and Definition** | Name: Definition: |

**Current Logic**

**Modified Logic (Changes are in bold)**

**6.2.2.3.29. Dialog**

No changes to dialog messages are needed.

**Table 53: Dialog (Instructions)**

|  |  |
| --- | --- |
| **Dialog** | **Instructions** |
| **Dialog Message**  **(Description)** |  |
| **Enhancement Category** |  |
| **Dialog Message**  **(Description) Condition** |  |

|  |  |
| --- | --- |
| **Dialog** | **Instructions** |
| **Current Dialog Message**  **(Description)** |  |
| **Modified Dialog Message**  **(Description) (Changes are in bold)** |  |

**Table 54: Dialog**

|  |  |
| --- | --- |
| **Dialog** | **Instructions** |
| **Dialog Message**  **(Description)** |  |
| **Enhancement Category** | Modify Delete No Change  New |
| **Dialog Message**  **(Description) Condition** |  |
| **Current Dialog Message**  **(Description)** |  |
| **Modified Dialog Message**  **(Description) (Changes are in bold)** |  |

**6.2.2.3.30. Help Frame**

It has not yet determined if the help system will be different than parent JLV help functionality, which will be migrated from the original JLV application. The Help functionality and design for the Customer-managed JLV enterprise application is currently depicted in RoboHelp11. Current access to help is shown here.



**Table 55: Help Frame (Instructions)**

|  |  |
| --- | --- |
| **Help Frame** | **Instructions** |
| **Help Frame Text** |  |
| **Enhancement Category** |  |
| **Help Frame Text Calling**  **Mechanism** |  |
| **Current Help Frame Text** |  |
| **Modified Help Frame Text**  **(Changes are in bold)** |  |

**Table 56: Help Frame**

|  |  |
| --- | --- |
| **Help Frame** | **Description** |
| **Help Frame Text** |  |
| **Enhancement Category** | New Modify Delete No Change |
| **Help Frame Text Calling**  **Mechanism** |  |

**Current Help Frame Text**

**Modified Help Frame Text (Changes are in bold)**

**6.2.2.3.31. HL7 Application Parameter**

**Table 57: HL7 Application Parameter (Instructions)**

|  |  |
| --- | --- |
| **HL7 Application Parameter** | **Instructions** |
| **HL7 Application Parameter**  **Name** |  |
| **Enhancement Category** |  |
| **Application Status** |  |
| **Facility Name** |  |
| **Country Code** |  |
| **HL7 Field Separator** |  |
| **HL7 Encoding Characters** |  |
| **Mail Group** |  |

**Table 58: HL7 Application Parameter**

|  |  |
| --- | --- |
| **HL7 Application**  **Parameter Name** | **Description** |
| **Enhancement Category** | New Modify Delete No Change |
| **Application Status** | Active Inactive Active Inactive |

|  |  |  |
| --- | --- | --- |
| **Enhancement Category** | **Current** | **Modified** |
| **Facility Name** |  |  |
| **Country Code** |  |  |
| **HL7 Field Separator** |  |  |
| **HL7 Encoding Characters** |  |  |

|  |  |  |
| --- | --- | --- |
| **Enhancement Category** | **Current** | **Modified** |
| **Mail Group** |  |  |

**6.2.2.3.32. HL7 Logical Link**

**Table 59: HL7 Logical Link (Instructions)**

|  |  |
| --- | --- |
| **HL7 Logical Link** | **Instructions** |
| **HL7 Logical Link**  **Parameter (LLP) Name** |  |
| **Enhancement Category** |  |
| **Node** |  |
| **Institution** |  |
| **Domain** |  |
| **Autostart** |  |
| **Queue Size** |  |
| **LLP Type** |  |

**Table 60: HL7 Logical Link**

|  |  |  |
| --- | --- | --- |
| **HL7 Logical Link** | **Description** | |
| **HL7 Logical Link**  **Parameter Name** |  | |
| **Enhancement Category** | **New Modify Delete No Change** | |
| **Enhancement Category** | **Current** | **Modified** |
| **Node** |  |  |
| **Institution** |  |  |
| **Domain** |  |  |
| **Autostart** |  |  |
| **Queue Size** |  |  |
| **LLP Type** |  |  |

**6.2.2.3.33. COTS Interface**

This product will not interface with any COTS products, only Government Off the Shelf (GOTS)

products. GOTS products include those identified in Section 6.5.2.3, Dependencies.

**6.3. Network Detailed Design**

• These will be inherited from the Customer-managed JLV enterprise software (currently Release 2.3) copied into JLV-COMMUNITY Pilot and GTDB. However, if newer releases are in production prior to the delivery of the JLV Community Pilot, that release software will be utilized.

**6.4. Security and Privacy**

**6.4.1. Security**

The following security design principles are applied to the JLV-COMMUNITY system to ensure a system that follows security protocol standards for secured systems:

• **Session security:** By the use of secured unique session tokens generated using a 128-bit hash from a secure random number generator for each authenticated user, the system ensures prevention of communication session hijacking. Once the user logs out of the system, the session is immediately destroyed and the session hash can no longer be used. Also, if in some instance the SessionID were to be obtained, the user cannot paste it as part of a URL string to gain access.

• **Data Encryption:** Using SSL with TLS 1.0 ensures that all server communication is encrypted, which limits the ability to perform MITM attacks.

• **Schema Validation:** Web Services used in JLV-COMMUNITY/GTDB employ Schema Validation. This helps prevent Denial of Service (DoS) attacks by preventing the invocation of XML bombs.

**6.4.2. Privacy**

JLV-COMMUNITY/GTDB will contain Personal Identifying Information (PII) and Personal Health Information (PHI) and as such a Privacy Impact Assessment (PIA) is being requested followed by a System Security Plan (SSP). The PIA and SSP should be completed prior to the start of Increment 2 in February 2016.

The system also addresses the classification of sensitive information:

• **Mark sensitive (PII/PHI) information in display and output:** JLV- COMMUNITY/GTDB marks sensitive information, including Personal Identification Information (PII) and Protected Health Information (PHI) in all cases of display and output. As a NIPRNET- connected system, no classified information is displayed nor accessed by JLV-COMMUNITY/GTDB. Sensitive information is specifically marked as follows:

• **Login/Splash Screen:** A security banner (inclusive of VA security notification requirements) is displayed on the application login/splash screen.

• **Application Display Screens:** All displayed application screens include a prominent

FOUO string in the page header.

• **Print:** All application print output includes a prominent FOUO string in the print header.

• **Copy/Paste:** All application data copied to the OS clipboard contains a prominent FOUO

string in the clipboard data header.

**6.5. Service Oriented Architecture / ESS Detailed Design** The developer contracted to perform the primary work statements will provide the details of consumed services within 30 days of contract award.

**6.5.1. Service Description for <Consumed Service Name>**

Consumed services have not been identified at this time. Expected documentation will result from the Company contracted to perform the development of JLV-GTDB.

**6.5.2. Service Design for <Provided Service Name>**

Service design for any provider will be illustrated by the contractor awarded the development tasks.

**6.5.2.1. Introduction**

**6.5.2.1.1. Purpose and Scope of Service**

**6.5.2.1.2. Links to Other Documents**

• Charter – found in JLV-GRTD SharePoint Site, Folder Charter

• Requirements Traceability Matrix - found in JLV-GTDB SharePoint Site, Folder PMAS Documents

• Requrements Specification Document [RSD link](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/PMAS%20Documentation/Milestone%201/Requirements%20Specification%20Document%20(RSD)/JLV-Community_Requirements_Specification_Document(RSD)_v2_7-28-2015.pdf)

• Business Requirements Document [BRD link](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/PMAS%20Documentation/Milestone%201/Business%20Requirements%20Document%20(BRD)/20150303_VE%20Get%20the%20Data%20Back%20Non%20VA%20Provider%20Clinical%20Consults_BRD.docx)

• JLV-COMMUNITY SharePoint Site

**6.5.2.2. Service Details**

**6.5.2.2.1. Service Identification**

Services will identified during the review of the business and functional requirements as part of the contacted company’s work tasks, which has yet to be awarded.

|  |  |
| --- | --- |
| **Service Attribute** | **Value** |
| Name and Alias (if any) |  |
| Overview |  |
| Version |  |
| Latest Status |  |
| Service Type |  |
| Architecture Layer |  |
| Business Domain |  |
| Service Domain |  |
| Business Organization and Owner |  |
| Technical Organization and Owner |  |
| Development Organization and  Owner |  |
| Support Organization and Owner |  |
| Target Consumer Organization(s)  and Owner(s) |  |

**6.5.2.2.2. Service Versions**

|  |  |  |
| --- | --- | --- |
| **Version Numbers** | **Current Status of**  **Version** | **A Brief Description of the change implemented in that version** |
|  |  |  |
|  |  |  |
|  |  |  |

**6.5.2.2.3. Summary of Design and Platform Details**

**6.5.2.2.3.1. SOA Pattern(s) Implemented**

No SOA patterns will be implemented, at least in the first increment of this project.

**6.5.2.2.3.2. COTS Platform vendor names and versions for hosting platform**

There is no COTS platform being used.

**6.5.2.3. Dependencies**

Upstream Dependencies are shown in the following chart. The delivery of Increment 1 will utilize upstream dependencies on the following projects:

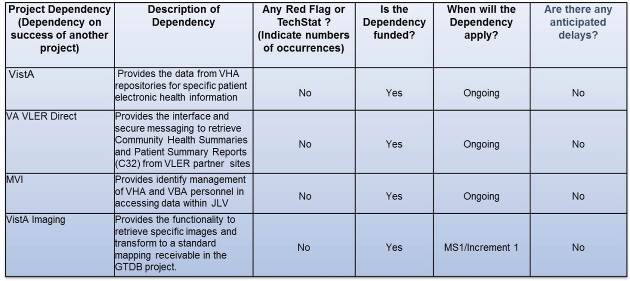
• VistA

• MVI

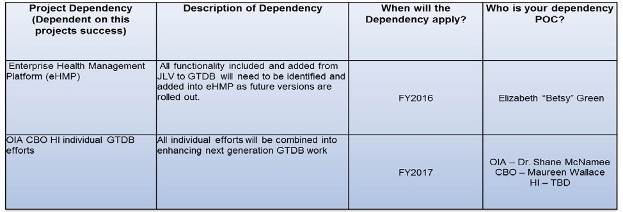
• The delivery of all subsequent Increments, includes those in Increment 1 and the addition of the following for Increments 2 and 3.

• VA VLER

• Potentially VistA Imaging



The Downstream Dependencies are listed below. The JLV-Community Pilot will not affect these downstream dependencies, however, JLV-GTDB Increment 2 and 3 project success will impact OIA CBO HI Individual GTDB efforts and requires consideration in development of eHMP future feature sets.



**6.5.2.4. Service Design Details**

No additional details are known at this time. The Service Description Document will be completed through coordination with the developer contracted to complete the tasks as soon as feasible after contract award.

**6.5.2.4.1. Interface Technical Specs**

This project is not farenough along for this interaction until the developer contract is awarded Base interface technical specifications can be found in the JLV project [Release 2.3 System](https://vaww.vaco.portal.domain/sites/OHIA/HI/JLVprojectTeam/JLV%20Development/Technical%20Documentation/JLV_2%202_System_Architecture_Document.pdf) Architecture Document.pdf.

**6.5.2.4.1.1. Service Invocation Type**

The Transport Security mechanism protects the application during transport using Secure Sockets Layer (SSL) for authentication and confidentiality. Transport-layer security is provided by the transport mechanisms used to transmit information over the wire between clients and providers, thus transport-layer security relies on secure HTTP transport (HTTPS) using SSL. Transport security is a point-to-point security mechanism that can be used for authentication, message integrity, and confidentiality. When running over an SSL-protected session, the server and client can authenticate one another and negotiate an encryption algorithm and cryptographic keys before the application protocol transmits or receives its first byte of data. Security is “live” from the time it leaves the consumer until it arrives at the provider or vice versa. The problem is that it is not protected once it gets to its destination. For protection of data after it reaches its destination, one of the security mechanisms that uses SSL and that also secures data at the message level will be utilized.

Digital certificates are necessary when running HTTPS using SSL. The HTTPS service of most web servers will not run unless a digital certificate has been installed. Digital certificates have been created for the web services server, and the default certificates are sufficient for running this mechanism, and are required when using atomic transactions. However, the message security mechanisms require a newer version of certificates than is available with the web services server. The Message Authentication over SSL mechanism attaches a cryptographically secured identity or authentication token with the message and uses SSL for confidentiality protection.

Two-way SSL authentication is a security requirement for JLV-GTDB and VA VLER. When JLV- GTDB attempts to establish a connection with the VA VLER server, the VA VLER server will

transmit its certificate to the JLV-GTDB server. If the JLV-GTDB server recognizes the certificate as a trusted certificate, it will then proceed to transmit its certificate to the VA VLER server. Only when the VA VLER server recognizes the JLV-GTDB server’s certificate as authentic and trusted will a connection be established. The certificate root that is approved and recognized for use with two-way SSL authentication is “ECA Root CA” for the VA.

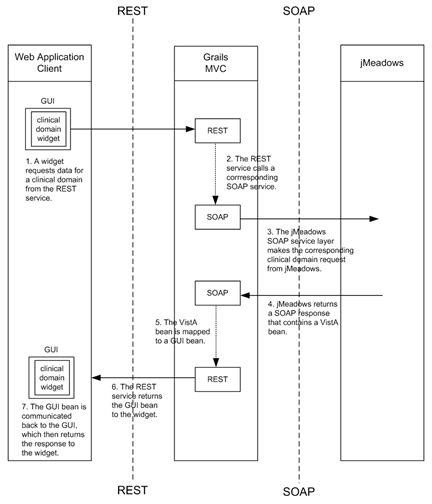
In the VA environment, the certificate will be for fully qualified domain names (FQDNs), as in the following examples:

1. janusap-aitc.va.gov (where “ap” is for the web application)

2. janusds-aitc.va.gov (where “ds” is for the data service)

3. janusdb-mesa.health.mil (where “db” is for the databases)

Figure 26 shows the sequence diagram of the Request/Response Relationship



**Figure 26. JLV-COMMUNITY Pilot/GTDB Project Conceptual Data Mode**

**6.5.2.4.1.2. Service Interface Type**

Need development team input for the details of the Web Service, RESTful service and SOAP protocols which should be provided prior to development lifecycle by the developer awarded the contract.

**6.5.2.4.1.3. Service Name**

Need development team input. Service identification from the development team, not shown in the Conceptual Data Mode, will be provided shortly after the developer contract award, expected completion in early October 2015..

**6.5.2.4.1.4. Interface**

Interfaces imported from the Customer-managed JLV enterprise will be incorporated and details from the development team input will be provided shortly after the developer contract award.

**6.5.2.4.1.5. End Points**

Not known. Calls made into the Service will be provided shortly after the developer contract award. Initial work is currently ongoing.

**6.5.2.4.1.6. Operations or Methods**

Details have not been determined. Awaiting approval of the Project Management Plan and

Operational Concept Plan.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Operation Name** | **Inputs** | **Outputs** | **Transactional Qualities if relevant (Updating?, Atomic?, Can participate in transaction?)** | **Pre and Post Conditions** | **Exception (s)** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**6.5.2.4.1.7. Message Schemas**

These will be dependent on the implementation style and protocol binding of the interface as determined by the contractor developing the JLV-GTDB system.

**6.5.2.4.2. Information Model**

To be provided by the contractor developing the JLV-Community/GTDB system during

Increments 1 and 2.

**6.5.2.4.2.1. Class Diagram and Description of Entities Involved**

To be provided by the contractor developing the JLV-Community/GTDB system during

Increments 1 and 2.

**6.5.2.4.2.2. Mappings from ELDM to Standards Based Schemas**

To be provided by the contractor developing the JLV-Community/GTDB system during

Increments 1 and 2.

**6.5.2.4.3. Behavior Model (AKA Use Case Realization)**

To be provided by the contractor developing the JLV-Community/GTDB system during

Increments 1 and 2.

**6.5.2.4.3.1. Use Cases (Use Case Model)**

Use case development is still underway. Use Cases and User Stories for Increment 1 (JLV- Community Pilot and first feature set of the GTDB should be complete by early September 2015 and the SDD will be updated at that time. Details of the Increments and Feature Sets are referred to in the RTM, Requirements Summary Tab.

**6.5.2.4.3.2. Interaction Diagrams**

Until the contractor developing the JLV-GTDB system contract is awarded (anticipated award is early September 2015) and with provision that the contractor will have access to the

Replacement Scheduling Application Development Program (RSA), the interaction diagrams can be created at that time.

**6.5.2.5. Gap Analysis**

Gap analysis will be performed once a contract has been awarded approximately early October

2015.

**6.5.2.5.1. Variances from Enterprise Target Architecture**

There will be no variances from the Enterprise Target Architecture.

**6.5.2.5.2. Variances from SLDs**

There will be no variances from the Enterprise Target Architecture.

**6.5.2.5.3. Variances from Standards and Policies**

This project will be in line with all Standards and Policies

**6.5.2.5.4. Justification for Exceptions and Mitigation**

N/A

**7. External System Interface Design**

**7.1. Interface Detailed Design**

The JLV-GTDB Intake workgroup is currently identifying potential get-the-data-back flows which will identify the external system interfaces required and may include, but not be limited to the following:

• eHealth Exchange

• eHealth Direct

• Data Access Services (DAS) or VistA Imaging

**8. Human-Machine Interface**

An Access Control Interface will exist between JLV-COMMUNITY Pilot/GTDB and the web- browser of the Non-VA Provider. This results in the intiation of the JLV-GTDB Audit Log. Figure 25 details the User Authentication Access Control Flow according to the sequence described.

1. User accesses the web-browser and launches the JLV-COMMUNITY Pilot/GTDB URL.

2. The user must accept the JLV-COMMUNITY Pilot/GTDB Notification Warning –

a. If the User does not accept, they will be exited from the browser.

3. If the User accepts, JLV-COMMUNITY Pilot/GTDB UI will prompt user for Login Name.

4. JLV-COMMUNITY Pilot/GTDB UI will prompt user for Password.

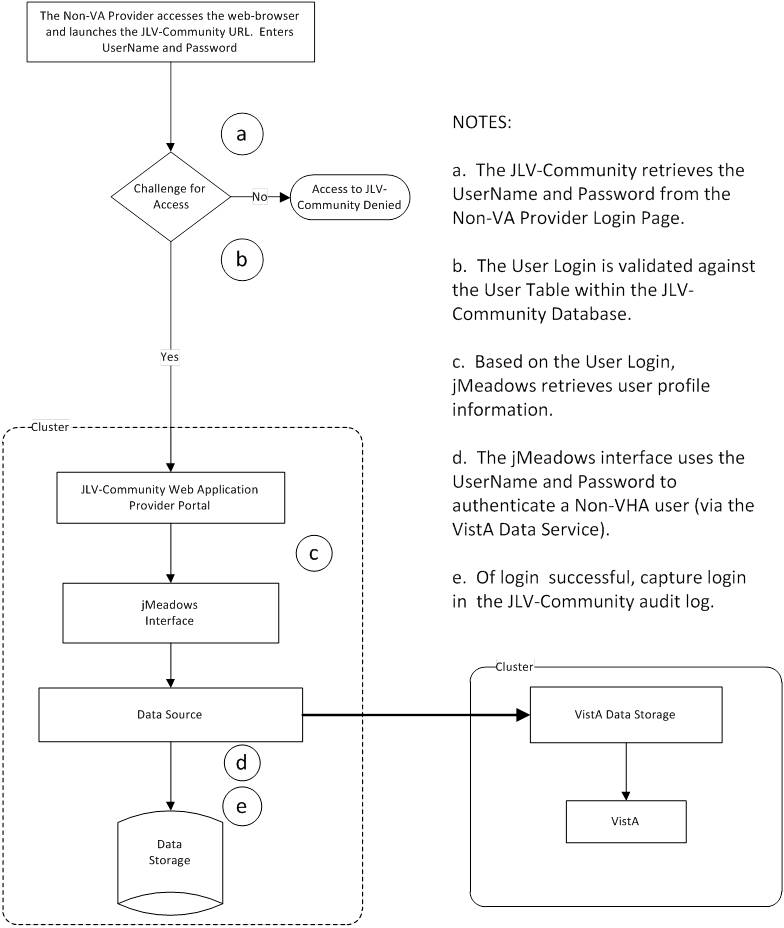
5. The follow validation steps will be taken.

a. JLV-COMMUNITY Pilot/GTDB validates a user’s Login Name and Password to the User table in the JLV-GTDB Database.

b. If the Login Name and Password is validated the User table, the user is directed to the JLV-COMMUNITY Pilot/GTDB Provider Portal in JLV-COMMUNITY Pilot/GTDB.

c. If the Login Name and Password is NOT validated in the User table, the user is directed to the “Not Authorized” page.

**Figure 27: User Authentication Access Control Diagram**



**8.1. Interface Design Rules**

Refer to JLV\_2.3\_jMeadows\_ICD, JLV\_2.3\_VistA\_data\_Service\_ICD on the JLV SharePoint

Site at https://vaww.vaco.portal.va.gov/sites/OHIA/HI/JLVprojectTeam/SitePages/Home.aspx

**8.2. Inputs**

Users will be positioned at the firstmost required prompt which will be developed in Rapid Application Design (RAD) sessions starting shortly after the contractor Kick-off meeting. Athe JLV-Community/GTDB User will input information via web-based GUIs identified in Section

3.2.3.1.

**8.3. Outputs**

Actual Screen outputs will be portrayed by the contractor awarded the development of the JLV- Community/GTDB and should begin in early October.

**8.4. Navigation Hierarchy**

The Navigational Hierarchy will be depicted prior to the start of Increment 2, upon validation that the JLV-GTDB functional navigation is acceptable.

**8.4.1. Screen [x.1]**

**8.4.2. Screen [x.2]**

**8.4.3. Screen [x.3]**

**9. 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.

Signed: Date:

Signed: Date:

**A. Additional Information**

**A.1. Identification of Technology and Standards**

Identification number(s), title(s), abbreviation(s), version number(s), and release number(s) of all standards (e.g., American National Standards Institute [ANSI], International Organization for Standardization [ISO], Institute of Electrical and Electronics Engineers [IEEE], etc.) will be provided by the contracted developer upon contract award.

Main reference of standards are incorporated from the VA Systems Requirements Engineering

Handbook, dtd. April 7, 2013, version 1.1.

**A.2. Constraining Policies, Directives and Procedures**

There are no constraints or requirements placed on this document by policies, directives, or procedures.

**A.3. Requirements Traceability Matrix**

This is the link to the [20150715 Consolidated JLV-Community Non-VA Provider RTM](http://vaww.srv.server.domain/pm/iehr/vista_evolution/GetDataBack/PMAS%20Documentation/Milestone%201/Requirements%20Traceability%20Matrix%20(RTM)/20150715_Consolidated%20JLV-Community%20Non-VA%20Provider_RTM%20for%20Presentation%20Demo.xlsx)

**A.4. Packaging and Installation**

There are no special considerations anticipated.

**A.5. Design Metrics**

N/A

**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 |

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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>