Community Care System Enhancements (CCSE)

Electronic Data Interchange (EDI)

Purchased Care (PC) Enhancements

System Design Document

for

Attachments Retrieval System (ARS)



Department of Veterans Affairs

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# Introduction

The mission of the Department of Veterans Affairs (VA), Office of Information and Technology (OI&T), Community Care System Enhancements (CCSE) is to provide Information Technology (IT) products and services to the Veterans Health Administration (VHA) which in turn provides benefits and services to Veterans of the United States. In meeting these goals, OI&T strives to provide high quality, effective, and efficient IT services to those responsible for providing care to the Veterans at the point of-care as well as throughout all the points of the Veterans’ health care in an effective, timely and compassionate manner. VA depends on Information Management/Information Technology (IM/IT) systems to meet mission goals.

The Chief Business Office (CBO) Purchased Care (PC) assesses the impact of healthcare regulatory requirements on VHA Electronic Data Interchange (EDI) revenue operations and designs the use cases to illustrate the reengineered business process flows associated with technology changes. The office continuously monitors and participates in meetings of industry EDI standards-setting organizations. As the business process owner and subject matter expert (SME) for industry health care EDI mandates, PC defines business needs that necessitate revenue system software development. The office designs the maintenance and iterative updates to the EDI enterprise tool used to pay healthcare providers for service connected care provided to Veterans. PC develops partnerships with other Federal agencies and trading partners to support EDI processing and verify compliance; they test software, train users on the use of revised software, and provide help desk support for end users. The EDI transactions processes are utilized to pay nearly $6B in projected claims annually. The development work done under the scope of PC is inextricably linked to providing Veterans the medical care they have earned and deserve.

ARS will create a mechanism for requesting supporting documentation for claims and services via EDI transactions. In addition, this enhancement will develop the necessary systems for receiving, storing and retrieving Healthcare Claim and services attachments, whether submitted in response to a Request for Information (RFI) or unsolicited.

## Purpose of the SDD

This System Design Document (SDD) translates the requirements listed in the corresponding Requirements Specification Document (RSD) into technical design specifications. It identifies the system architecture, and describes hardware, software, communication, and interface.

The intended audience of this document includes the Product Development (PD), Software Quality Assurance (SQA), the CBO, and staff at the OI&T at the Health Administration Center (HAC).

This SDD for the Attachements Retrieval System details the necessary functionality for receiving electronic attachments for healthcare services review requests (authorization requests), as well as requesting electronic attachments for claims and authorizations.

This document is organized as follows:

* Section 1: Presents introduction, scope, definition and acronyms, and references.
* Section 2: Presents a conceptual design and analysis of the External Interfaces.
* Section 3: Documents the specific technical and design requirements for each software element relevant to ARS.
* Section 4: Presents details regarding the system architecture.
* Section 5: Presents details regarding data design, including Database Management System (DBMS) and data view.
* Section 6: Discusses the system’s detailed hardware and software design as applicable.
* Section 7: Presents details of the external interface design to the system.
* Section 8: Presents details of the interface between the user and the PC system.
* Section 9: Presents details of system security mechanisms and privacy design considerations at the application level.

## Identification

The systems impacted by this project are EDI Gateway, Automated Authorization Tool (AAT), Fee Payment Processing System (FPPS), EDI Web Viewer (EWV), and Attachment Retrieval System (ARS).

Listed below are VA reference and guidance documentation and standards applicable to or tailored for the CCSE EDI PC Project. CCSE EDI PC will use this guidance to fulfill the performance requirements of this contract.

* 44 U.S.C. § 3541, “Federal Information Security Management Act (FISMA) of 2002”
* Federal Information Processing Standards (FIPS) Publication 140-2, “Security Requirements For Cryptographic Modules”
* Software Engineering Institute (SEI), Software Acquisition-Capability Maturity Modeling (SA-CMM) Level 3 procedures and processes
* VA Directive 6102, “Internet/Intranet Services,” July 15, 2008
* 36 C.F.R. Part 1194 “Electronic and IT Accessibility Standards,” July 1, 2003
* Office of Management and Budget (OMB) Circular A-130, “Management of Federal Information Resources,” November 28, 2000
* 32 C.F.R. Part 199, “Civilian Health and Medical Program of the Uniformed Services (CHAMPUS)”
* An Introductory Resource Guide for Implementing the Health Insurance Portability and Accountability Act (HIPAA) Security Rule, March 2005
* Sections 504 and 508 of the Rehabilitation Act (29 U.S.C. § 794d), as amended by the Workforce Investment Act of 1998 (P.L. 105-220), August 7, 1998
* Homeland Security Presidential Directive (12) (HSPD-12)
* VA Directive 6500, “Information Security Program,” August 4, 2006
* VA Handbook 6500, “Information Security Program,” September 18, 2007
* VA Handbook, 6500.5, Incorporating Security and Privacy in System Development Lifecycle.
* VA Handbook 6500.6, “Contract Security,” March 12, 2010
* Project Management Accountability System (PMAS) portal (reference Performance Work Statement (PWS) References - Technical Library at <https://URL/>)
* Office of Enterprise Development (OED) ProPath Process Methodology (reference PWS References -Technical Library and ProPath Library links at <https://URL/>). Note: In the event of a conflict, OED ProPath takes precedence over other processes or methodologies.
* Technical Reference Model (TRM) (reference at <http://www.va.gov/TRM>)
* National Institute Standards and Technology (NIST) Special Publications SP 800-60 and 800-53
* IT Asset Management (ITAM) and Enterprise Management Foundation (EMF) BR-0006, version 002.1-14052008, dated 10/30/2007
* HIPAA of 1996; Pub.L 104-191.
* Patient Protection and Affordable Care Act (PPACA), Pub. L. 111-148, 124 Stat. 119, H.R. 3590, enacted March 23, 2010
* 5 CFR 1315, Final Rule, Prompt Payment (<http://fms.treas.gov/prompt/regulations.html>) (formerly OMB Circular A-125),
* The aim of this project is to ensure that the CCSE EDI PC systems are compliant with the CORE Rules as published by Council for Affordable Quality Healthcare (CAQH), and found here <http://www.caqh.org/CORE_operat_rules.php>

## Scope

This document addresses the software design that will satisfy the technical requirements the ARS RSD which were derived from the ARS Business Requirements Document (BRD.

Table 1 lists the scope inclusions for ARS.

Table 1 – Business Themes, Epics, and User Storys

| Identifier | Description |
| --- | --- |
| Theme 001 | View healthcare attachments (Aligns to Goal 2) |
| Epic 001 | As Claims Processing team, I want to be able to view 275 healthcare claim attachments so I can process a claim. |
| Epic 002 | As Claims Processing team, I want to be able to view 275 healthcare services attachments so I can process an authorization. |
| Epic 003 | As Claims Processing team, I want to be able to view submitted Request for Information (RFI) so I can confirm that the request has been sent. |
| User Story 001 | As a Claims Processor Clerk, I want the system to record that an RFI was submitted for a Veterans Family Services (VFS) claim so I can view the healthcare claim attachment request that was sent. |
| User Story 002 | As a Claims Processor Clerk, I want the system to record that an RFI was submitted for a Non-VA Care claim so I can view the healthcare claim attachment request that was sent. |
| User Story 004 | As a Claims Processor Clerk, I want the system to record that an RFI was submitted for a Non-VA Care claim so I can view the healthcare service request that was sent. |
| Theme 002 | Send healthcare claim attachment request (Aligns to Goal 1) |
| Epic 004 | As Claims Processing team, I want to be able to request 277 RFI so I can receive an attachment with additional information (275). |
| User Story 005 | As a Claims Processor Clerk, I want to input pre-defined identification information so that I can request additional claim information. |
| User Story 006 | As a Claims Processor Clerk, I want to be able to select from a standardized list of items so that I can request additional information. |
| User Story 007 | As a Claims Processor Administrator, I want to be able to edit the standardized list of items so that I can update the items that are needed to request additional information. |
| User Story 008 | As a Claims Processor Clerk, I want the system to require data points to be populated for a RFI so that I can submit an accurate RFI. |
| User Story 009 | As a Claims Processor Clerk, I want the system to display a message when required data points are not populated so that I can input the required data to submit an accurate RFI. |
| User Story 010 | As a Claims Processor Clerk, I want the system to create a compliant 277 RFI so that I can request additional documentation. |
| Theme 003 | Print RFI (Aligns to Goal 2) |
| Epic 005 | As Claims Processing team, I want to be able to print a standardized letter that is equivalent to an electronic RFI so I can provide a hard copy of the healthcare claim request to the provider. |
| Epic 006 | As Claims Processing team, I want to be able to print a standardized letter that is equivalent to an electronic RFI so I can provide a hard copy of the healthcare service request to the provider. |
| Theme 004 | Send healthcare service request (Aligns to Goal 1) |
| Epic 007 | As Claims Processing team, I want to be able to send 278 RFI so I can receive healthcare additional information to support a healthcare service review response 275. |
| User Story 011 | As a Claims Processor Clerk, I want to input pre-defined identification information so that I can request additional information for the healthcare services review. |
| User Story 012 | As a Claims Processor Clerk, I want to be able to select from a standardized list of items so that I can request additional information for the healthcare services review. |
| User Story 013 | As a Claims Processor Clerk, I want to be able to edit the standardized list of items so that I can update the items that are needed to request additional information for the healthcare services review. |
| User Story 014 | As a Claims Processor Clerk, I want the system to require data points to be populated for a request for additional claim information so that I can submit an accurate RFI for the healthcare services review. |
| User Story 015 | As a Claims Processor Clerk, I want the system to display a message when required data points are not populated so that I can input the required data to submit an accurate Request for additional information (RFAI) for the healthcare services review. |
| User Story 016 | As a Claims Processor Clerk, I want the system to create a compliant 277 RFI so that I can request additional information for the healthcare services review. |

The business need listed below was excluded from the scope of this development, as supporting healthcare services (authorization) requests for Veteran Family Services (VFS) had been deemed out of scope.

Table 2 – Scope Exclusions

| Identifier | Description |
| --- | --- |
| User Story 003 | As a Claims Processor Clerk, I want the system to record that an RFI was submitted for a VFS claim so I can view the healthcare service request that was sent. |

## Constraining Policies, Directives and Procedures

This SDD is constrained by the following policies, directives, artifacts, and procedures.

Policies and Directives

* The Accredited Standards Committee X12 (ASC X12) N 005010X210 Additional Information to Support a Health Care Claim or Encounter (275)
* ASC X12N/005010X211 Additional Information to Support a Health Care Services Review (275)
* ASC X12N/005010X213 Health Care Claim RFAI (277)
* ASC X12N/005010X217 Health Care Services Review – Request for Review and Response (278)

VA-generated Artifacts

* PC X12 Attachments Compliance Phase 3 BRD, version 1.0, May 2015  
  (<http://URL/pm/hape/ipt_5010/EDI_Portfolio/Program%20Level%20Documentation/PC/FY%202015/BRD/08-023%20PC%20X12%20Attach%20Compl%20BRD%20v1.0.pdf>)

VA Standard Procedures

* VA Section 508 policies and procedures 6221 Accessible Electronic and IT, Directive/Handbook, published by the VA’s Section 508 PD Product Assessment Competency Division (reference at <http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=435&FType=2>)
* 508 compliance testing certifications for each enhancement that requires any change to the Graphical User Interface (GUI) (<http://www.section508.va.gov/Standards_Checklist.asp>)

## User Characteristics

This development will affect claims adjudicators and their supervisors for Non-VA Care and VFS, as well as review nurses, clerks, and supervisors who manage authorizations for Non-VA Care. For claims processing, an adjudicator can request clinical documentation to support the claim in either EWV or FPPS. Likewise, users of AAT will be able to request documentation for authorizations or authorization requests. In addition, medical records personnel could use ARS to download copies of attachments into Veterans’ medical records in their VistA Imaging system.

All affected systems currently exist and their support structure will remain unchanged.

### User Objectives

ARS will allow users to view solicited and unsolicited attachments for claims, authorizations, and authorization requests. It will also allow them to solicit attachments for claims, authorizations, and authorization requests.

## Definitions, Acronyms, and Abbreviations

### Acronyms

The table below lists acronyms and abbreviations applicable to ARS.

Table 4 – Acronyms and Abbreviations

| Term | Definition |
| --- | --- |
| AAT | Automated Authorization Tool |
| AERB | Architecture and Engineering Review Board |
| ANSI | American National Standards Institute |
| ARS | Attachment Retrieval System |
| ASC X12 | The Accredited Standards Committee X12 |
| BRD | Business Requirements Document |
| CAQH | Council for Affordable Quality Healthcare |
| CBO | Chief Business Office |
| CBOPC | Chief Business Office Purchased Care |
| CCD | Continuity of Care Document |
| CDW | Corporate Data Warehouse |
| CHAMPUS | Civilian Health and Medical Program of the Uniformed Services |
| CM | Configuration Management |
| CMP | Configuration Management Plan |
| CORE® | Committee on Operating Rules for Information Exchange |
| COTS | Commercial Off-the-Shelf |
| CPRS | Computerized Patient Record System |
| CVS | Conformance Validation Statement |
| DBMS | Database Management System |
| DD | Data Dictionary |
| DIR | Diagnostic Imaging Report |
| EDI | Electronic Data Interchange |
| EFT | Electronic Funds Transfer |
| EMF | Enterprise Management Foundation |
| ERA | Electronic Remittance Advice |
| ERD | Entity Relationship Diagram |
| ESS | Electronic Safety and Security |
| EWV | EDI Web Viewer |
| FIPS | Federal Information Processing Standards |
| FISMA | Federal Information Security Management Act |
| FPPS | Fee Payment Processing System |
| FSAM | Federal Segment Architecture Methodology |
| GUI | Graphical User Interface |
| HAC | Health Administration Center |
| HAPE | Health Administration Product Enhancements |
| HCCH | Health Care Clearing House |
| HIPAA | Health Insurance Portability and Accountability Act |
| HSPD-12 | Homeland Security Presidential Directive (12) |
| ICN | Internal Control Number |
| IM | Information Management |
| IPT | Integrated Project Team |
| IT | Information Technology |
| ITAM | IT Asset Management |
| LOINC | Logical Observation Identifiers Names and Codes |
| NIST | National Institute Standards and Technology |
| NPI | National Provider Identifier |
| OED | Office of Enterprise Development |
| OI&T | Office of Information and Technology |
| OMB | Office of Management and Budget |
| PC | Purchased Care |
| PCN | Patient Control Number |
| PD | Product Development |
| PHI | Protected Health Information |
| PII | Personally Identifiable Information |
| PjM | Project Manager |
| PM | Program Manager |
| PMAS | Project Management Accountability System |
| PMP | Project Management Plan |
| POC | Point of Contact |
| PPACA | Patient Protection and Affordable Care Act |
| PWS | Performance Work Statement |
| QASP | Quality Assurance Surveillance Plan |
| RFAI | Request for Additional Information |
| RFI | Request for Information |
| RPC | Remote Procedure Call |
| RSD | Requirements Specification Document |
| RTM | Requirements Traceability Matrix |
| SA-CMM | Software Acquisition-Capability Maturity Modeling |
| SDD | System Design Document |
| SDE | Service Delivery and Engineering |
| SEI | Software Engineering Institute |
| SFTP | Secure File Transfer Protocol |
| SME | Subject Matter Expert |
| SOA | Service Oriented Architecture |
| SQA | Software Quality Assurance |
| T4 | Transformation Twenty-One Total Technology |
| TIN | Tax Identification Number |
| TO | Task Order |
| TRM | Technical Reference Model |
| UAK | Unique Authorization Key |
| VA | Department of Veterans Affairs |
| VAMC | VA Medical Center |
| VFS | Veterans Family Services |
| VHA | Veterans Health Administration |
| VistA | Veterans Health Information Systems and Technology Architecture |
| VPN | Virtual Private Network |

### Definitions

The table below lists terms and definitions applicable to ARS.

Table 5 – Definitions

| Term | Definition |
| --- | --- |
| 275 Additional Information to Support a Health Care Claim or Encounter | A transaction for delivering an attachment for a claim |
| 275 Additional Information to Support a Health Care Services Review | A transaction for delivering an attachment for an authorization or authorization request |
| 277 Health Care Claim RFAI | A transaction for requesting an attachment for a claim |
| 278 Health Care Services Review – Request for Review | A transaction for requesting an attachment for an authorization or authorization request |
| ASC X12 | The ASC X12 – is an American National Standards Institute (ANSI)-accredited standards development organization and the entity responsible for the HIPAA transaction standards for electronic health care, eligibility, claims processing, claims status, authorizations and remittance transactions named by the HIPAA of 1996. The VA is currently operating to version 5010 standards. |
| CORE | CORE, is an multi-stakeholder initiative created, organized and facilitated by CAQH that is working to make it easier for physicians and hospitals to access eligibility, benefits and claim information for their patients at the point of care |
| HIPAA v. 5010 | HIPAA version 5010 is the newest set of standards related to the electronic transmission of specific health care transactions such as Health Care Claims, Eligibility Inquiry/Response, and Health Care Claim Remittance Advice. |
| Payer | An insurance company, fiscal intermediary, government agency, other agency, or individual responsible for the payment of health care claims |

## References

* PC X12 Attachments Compliance Phase 3 BRD, version 1.0, May 2015  
  (<http://URL/pm/hape/ipt_5010/EDI_Portfolio/Program%20Level%20Documentation/PC/FY%202015/BRD/08-023%20PC%20X12%20Attach%20Compl%20BRD%20v1.0.pdf>)
* PC X12 Attachments Compliance RSD, version 1.1, July 2015

(<http://URL/pm/hape/ipt_5010/EDI_Portfolio/Program%20Level%20Documentation/Forms/AllItems.aspx?RootFolder=%2Fpm%2Fhape%2Fipt%5F5010%2FEDI%5FPortfolio%2FProgram%20Level%20Documentation%2FPC%2FFY%202015%2FVendor%20Deliverables%20%28VA%2D118%2D11%2DD%2D1009%29%2F0002AC%20%2D%20Purchased%20Care%20Authorizations%20Compliance%20Phase%203%20Requirements%20Specification%20Document>)

* PC X12 Attachments Compliance Entity Relationship Diagram (ERD), version 0.01, July 2015  
  (<http://URL/pm/hape/ipt_5010/EDI_Portfolio/Program%20Level%20Documentation/Forms/AllItems.aspx?RootFolder=%2Fpm%2Fhape%2Fipt%5F5010%2FEDI%5FPortfolio%2FProgram%20Level%20Documentation%2FPC%2FFY%202015%2FVendor%20Deliverables%20%28VA%2D118%2D11%2DD%2D1009%29%2F0005AC%20%2D%20Purchased%20Care%20X%2D12%20Attachments%20Compliance%20Phase%203%20Requirements%20Specification%20Document>)
* CORE Level III EFT standards.
* 44 U.S.C. § 3541, “FISMA of 2002”
* FIPS Publication 140-2, “Security Requirements For Cryptographic Modules”
* SEI, SA-CMM Level 3 procedures and processes
* VA Directive 6102, “Internet/Intranet Services,” July 15, 2008
* 36 C.F.R. Part 1194 “Electronic and IT Accessibility Standards,” July 1, 2003
* OMB Circular A-130, “Management of Federal Information Resources,” November 28, 2000
* 32 C.F.R. Part 199, “CHAMPUS”
* An Introductory Resource Guide for Implementing the HIPAA Security Rule, March 2005
* Sections 504 and 508 of the Rehabilitation Act (29 U.S.C. § 794d), as amended by the Workforce Investment Act of 1998 (P.L. 105-220), August 7, 1998
* HSPD-12
* VA Directive 6500, “Information Security Program,” August 4, 2006
* VA Handbook 6500, “Information Security Program,” September 18, 2007
* VA Handbook, 6500.5, Incorporating Security and Privacy in System Development Lifecycle.
* VA Handbook 6500.6, “Contract Security,” March 12, 2010
* PMAS portal (reference PWS References - Technical Library at <https://URL/>)
* OED ProPath Process Methodology (reference PWS References -Technical Library and ProPath Library links at <https://URL/>). Note: In the event of a conflict, OED ProPath takes precedence over other processes or methodologies.
* TRM (reference at <http://www.va.gov/TRM>)
* NIST Special Publications SP 800-60 and 800-53
* ITAM and EMF BR-0006, version 002.1-14052008, dated 10/30/2007
* HIPAA of 1996; Pub.L 104-191.
* PPACA, Pub. L. 111-148, 124 Stat. 119, H.R. 3590, enacted March 23, 2010
* 5 CFR 1315, Final Rule, Prompt Payment (<http://fms.treas.gov/prompt/regulations.html>) (formerly OMB Circular A-125),
* The aim of this project is to ensure that the HAPE EDI PC systems are compliant with the CORE Rules as published by the CAQH, and found here: <http://www.caqh.org/CORE_operat_rules.php>.
* ASC X12N 005010X210 Additional Information to Support a Health Care Claim or Encounter (275)
* ASC X12N/005010X211 Additional Information to Support a Health Care Services Review (275)
* ASC X12N/005010X213 Health Care Claim RFAI (277)
* ASC X12N/005010X217 Health Care Services Review – Request for Review and Response (278)
* ProPath Version 23, PRP-2.3, Create SDD
* PMAS Readiness Checklist
* VA Section 508 policies and procedures 6221 Accessible Electronic and IT, Directive/Handbook, published by the VA’s Section 508 PD Product Assessment Competency Division (reference at <http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=435&FType=2>)
* 508 compliance testing certifications for each enhancement that requires any change to the GUI (<http://www.section508.va.gov/Standards_Checklist.asp>)

# Background

## Overview of the System

A number of systems used by the VA will be modified by this project so that solicited and unsolicited electronic attachments can be integrated into the claims adjudication and outside care authorization processes.

* EDI Gateway is the system that receives batch transactions from the Health Care Clearing House (HCCH), parses them, and distributes them to other systems. Attachments for authorizations, requests for attachments for authorizations, and requests for attachments for claims, represent new transaction types that the EDI Gateway did not previously process. The attachments will need to be funneled into the ARS, and the requests will pass from ARS to the EDI Gateway so they can be transmitted to the HCCH.
* ARS is a central repository for electronic attachments. It will allow searching and viewing of attachments in its own system and allow those attachments to be identified and linked to and from inside EWV, FPPS, and AAT.
* FPPS is a web-based system that interfaces with other VA systems to process and adjudicate Veteran claims. Links will be added allowing claims adjudicators to create and view requests for supporting documentation for a claim.
* EWV is a web-based system that allows VFS claims adjudicators to view electronically received claims to assist in claims adjudication. Links will be added allowing claims adjudicators to create and view requests for supporting documentation for a claim.
* AAT is a central repository for electronic authorizations and authorization requests. It will receive necessary attachment-related information from ARS.

## Overview of the Business Process

### Claim Attachment Request Business Process



Figure 1 – Claim Attachment Request Business Process Diagram

Table 6 – Claim Attachment Request Business Process Identifiers

| **Step #** | **Process Step** | **Automated/**  **Manual** | **Current or**  **Future Process** | **Owner of Process** |
| --- | --- | --- | --- | --- |
| 1 | Claim adjudicator needs to request additional information from the provider in the form of medical documentation to support the adjudication of a health care claim | Manual | Current | Claim adjudicator |
| 2 | The request will be initiated by a user viewing claim data in EWV or FPPS, or directly from a blank request in ARS. | Automated | Future | EWV, FPPS, ARS |
| 3 | The ARS Graphical User Interface (GUI) will pull in claim data to create the request (in cases where a request was initiated from EWV or FPPS). | Automated | Future | ARS |
| 4 | Upon submission, the ARS will generate the 277 RFAI EDI transaction. | Automated | Future | ARS |
| 5 | The 277 RFAI data will be sent to the Attachment Repository to allow viewing and storing of the request. | Automated | Future | Attachment Repository |
| 6 | The 277 RFAI transaction will be stored in the EDI Gateway until it is batched with other transactions of the same type. | Automated | Future | EDI Gateway |
| 7 | During a nightly process, the 277 RFAI will be transmitted to the HCCH. | Automated | Future | EDI Gateway |
| 8 | The 277 RFAI will be sent electronically to the provider to request additional information about the claim or service line. | Automated | Future | HCCH |

### Authorization Attachment Request Business Process



Figure 2 – Authorization Attachment Request Business Process Diagram

Table 7 – Authorization Attachment Request Business Process Identifiers

| **Step #** | **Process Step** | **Automated/**  **Manual** | **Current or**  **Future Process** | **Owner of Process** |
| --- | --- | --- | --- | --- |
| 1 | Review Nurse needs to respond to the healthcare service review inquiry requesting additional information to support an authorization for a service. | Manual | Current | Review Nurse |
| 2 | The request will be initiated by a user viewing authorization data in the AAT. | Automated | Future | AAT |
| 3 | The AAT GUI will pull in authorization request data to create the transaction. | Automated | Future | AAT |
| 4 | Upon submission, the AAT will generate the 278 RFAI EDI transaction. | Automated | Future | AAT |
| 5 | A copy of the 278 RFAI will be saved in the 278 Repository | Automated | Future | AAT |
| 6 | The 278 RFAI data will be sent to the ARS to allow cross-referencing any 275 responses. | Automated | Future | AAT |
| 7 | The 278 RFAI will be transmitted to the HCCH in real time. | Automated | Future | AAT |
| 8 | The 278 RFAI will be sent electronically to the provider. | Automated | Future | HCCH |

## Business Benefits

This development is necessary to avoid the potential for substantial penalties and fees assessed for non-compliance with EDI requirements set forth in PPACA. Non-compliance with the regulatory timeline will result in the inability for VHA to exchange data with providers according to the standards for data exchange, thereby resulting in a loss of revenue. Furthermore, the inability to exchange data according to the standards will result in a loss of business efficiency and ultimately a considerable failure to serve the Veteran population.

## Assumptions and Constraints

### Design Assumptions

This design assumes that the currently contracted HCCH will support both the 277 RFAI and 278 transactions and that they will be handled as batches similar to the 277 transactions currently used for claim status.

### Design Constraints

ARS has the following constraints:

* The solution will need to meet VA Enterprise Standards for development language, security, 508 compliance, web framework, application framework, and integration with other VA systems.
* Development of the applications are constrained by the availability of programming resources and VHA resources for advice and testing.
* Timely acquisition of all new or allocated hardware resources approved by the Government for project development.

### Design Trade-offs

ARS database tables will be created in the FPPS\_OWNER database within an existing instance of Oracle instead of SQL Server. This will reduce the SQL Server database license count and remove the need to use Talend, an extract, transform and load (ETL) utility to move ARS data from SQL Server to Oracle. Modifications to existing PL/SQL will move data from ARS tables to PROGRAM TRACKING tables in Oracle, improving overall performance.

## Overview of the Significant Requirements

### Overview of Significant Functional Requirements

* The ARS will accept, store, process, and allow viewing and downloading of solicited and unsolicited attachments for authorization requests.
* The ARS will accept, store, process, and allow viewing and downloading of solicited and unsolicited attachments for authorization requests in the same way it currently does for claim attachments.
* The ARS will allow the solicitation of attachments for claims.
* The ARS will allow the solicitation of attachments for authorization requests.
* The ARS will allow a physical letter to be printed that can be sent to request the same information as the attachment request.

### Overview of Functional Workload / Performance Requirements

All attachments, as well as attachment requests for claims will be sent, received, and transferred between systems in batch mode with no stringent requirements in regards to response time. Attachment requests for authorizations will be sent in real-time, and a confirmation from the HCCH is expected within 20 seconds. The requested attachment will later be returned via batch. It is estimated that there will be approximately 5,000 attachments received per day once providers have transitioned from the paper process the new EDI process.

### Overview of Operational Requirements

ARS S/W will be deployed in the HAC. ARS metadata and attachments will remain in the HAC.

The nature and size and retention period of (1) attachment metadata stored in Oracle, (2) attachement images and (3) retention of original X12 275 documents require development of one or more administrative dashboards for capacity status and planning.

### Overview of the Technical Requirements

ARS will use the infrastructure and graphical user interface (GUI) technologies developed for FPPS 2.0. The infrastructure uses REST-based service oriented architecture. Business logic and data access will be encapsulated as services and deployed to WebLogic. The GUI will adhere to a Single-Page Application (SPA) architecture whereby a single HTML page will be loaded into the browser and client-side Javascript will be used to render changes to the display, alleviating the need to load multiple static pages or dynamically creating pages in the back-end (WebLogic).

### Overview of the Security or Privacy Requirements

#### Auditing

Audit trailswill be kept for viewing and downloading attachments. In addition, an audit trail will be kept when users generate RFAI letters for claims, authorizations, and authorization requests. Finally, only users with appropriate security keys will be able to edit the list of Logical Observation Identifiers Names and Codes (LOINC) codes used when requesting attachments.

#### Identity Access Management (IAM)

Before a user can access ARS they must be authenticated as being a known user. Phase 1 delivery of ARS will use existing HAC mechanisms to authenticate. In phase 2 ARS will integrate with IAM SSOi for user authentication.

#### Single Sign On (SSO)

SSO allows a user to logon once and access applications without going thru the log on process again. The user’s permissions, derived from their user roles, will determine which applications are allowed. Phase 1 will use existing HAC SSO. Phase 2 will use SSO provided by IAM SSOi.

#### User Roles and Permissions

ARS will use Attribute Based Access Control (ABAC), a form of Role Based Access Control (RBAC), to limit access to screens and information displayed. The benefit of ABAC over RBAC is the reduction of the prolifteration of roles for cases where a user needs one or more permissions outside of their current role(s).

*Table 8 – Security Requirements*

| Theme/Epic/Narrative | Requirement Number | Description |
| --- | --- | --- |
| User Story 007 | FS-UN007-003 | The LOINC Code Modifier list for claims shall be able to be edited by a user with super user/admin rights in the ARS. |
| User Story 013 | FS-UN013-003 | The LOINC Code Modifier list for authorizations shall be able to be edited by a user with super user/admin rights. |
| Epic 005 | FS-EP005-005 | An audit trail shall be created with a link to the previously printed claim RFAI letter, date the letter was printed, and user name/ID. |
| Epic 006 | FS-EP006-005 | An audit trail shall be created with a link to the previously printed authorization RFAI letter, date the letter was printed, and user name/ID. |

### Overview of System Criticality and High Availability Requirements

No new systems are introduced by this project, and the existing availability and disaster recovery plans will be sufficient for the affected systems. As stated in the BRD, the systems involved are to be available no less than 86% of the calendar week, and should recover from any outage with a mean time of 30 minutes. Additional details should be available from the HAC CIO.

### Storage

Based on the size, frequency and retention period requirements for raw and processed 275 EDI documents, has determined that storage capacity needs be increased in the following areas:

1. Storage of extracted attachment metadata in Oracle
2. Storage of extracted attachment images to local or network attached storage (NAS)
3. Storage of raw 275 EDI documents

Storage capacity analysis for ARS attachments can be found in Appendix A. Storage capacity analysis for attachment metadata in Oracle can be found in Appendix B.

# Conceptual Design

## Conceptual Application Design

The following figures illustrate the conceptual application design of the changes and additions described in this SDD.



Figure 3 – Claim Attachment Request Conceptual Application Design



Figure 4 – Authorization Attachment Request Conceptual Application Design

### Application Context

Users will continue using the applications that they’re already using to do their job, but new functions will be added. Where users currently view claims, they’ll be able to request documentation to support those claims. The PC Authorizations project, concurrent with this one, will add the ability to process authorization requests and authorizations, and users will be able to use that system to view attachments and request documentation to support those authorization requests and authorizations. When creating such a request, users will be able to generate letters to send to providers in addition to the EDI transaction that will be generated.

## Conceptual Data Design

### Database Information

Table 9 – Databases

| Database Name | Description | Type | Steward |
| --- | --- | --- | --- |
| ARS | Attachment Retrieval System | Create/Modify | HAC |
| FPPS | Fee Payment Prcoessing System | Create/Modify | HAC |
| EWV | EDI Web Viewer | Create/Modify | HAC |
| EDI Gateway | Electronic Data Interchage Gateway | Back-end packages | HAC |
| E\_REPOS | Claims database used by EWV | Create/Modify | HAC |

## Conceptual Infrastructure Design

### System Criticality and High Availability

This project modifies existing systems and will not change their system criticality or availability requirements. As stated in the BRD, the systems involved are to be available no less than 86% of the calendar week, and should recover from any outage with a mean time of 30 minutes.

# System Architecture

ARS is hosted at the HAC. The other affected systems hosted at the HAC include EDI Gateway, FPPS, and EWV.

## Software Architecture

The EDI Gateway is a collection of Java routines and database jobs that move and transform data between the HCCH and the various HAC systems.

FPPS and EWV are web-based systems hosted at the HAC for managing Non-VA and VFS claims, respectively.

ARS is a web-based system hosted at the HAC for managing electronic attachments for claims and authorizations, including storing, viewing, and requesting attachments.

## Service Oriented Architecture / Electronic Safety and Security (ESS)

ARS will use the FPPS 2.0 service oriented architecture consisting of Node.js for the front-end UI server and WebLogic application server to host business and data access logic.

# Data Design

## DBMS Files

The ARS database will contain records of the 277 and 278 transactions that it sends to request attachments.

Table 10 – 277\_RFAI

| Column | Type | Notes |
| --- | --- | --- |
| RFAI\_ID | Numeric | Automatically assigned to each request |
| EREPOS\_ID | Numeric | ID of matching claim from E\_REPOS (or blank if linked to FPPS) |
| FPPS\_ID | Numeric | ID of matching claim from FPPS (or blank if linked to E\_REPOS) |
| SERVICE\_LINE | Numeric | ID of the service line on the original claims (or blank if the RFAI is for the entire claim and not a particular service line) |
| REQUEST\_SENT | Date/Time | When the request was sent |
| REQUEST\_TEXT | Text | The entirety of the outgoing request |
| RECIPIENT\_ID | Numeric | ID of the provider the request is being sent to |
| STATUS\_CODE | Text | Claims Status Type Code |
| LOINC\_CODE | Text | LOINC code describing desired document type |
| LOINC\_MOD | Text | LOINC code modifier |
| STATUS | Text | “O”=Open, “C”=Closed |
| ATCHMNT\_ID | Numeric | ID of attachment received in response to this request |

Table 11 – 278\_RFAI

| Column | Type | Notes |
| --- | --- | --- |
| RFAI\_ID | Numeric | Automatically assigned to each request |
| REQUEST\_SENT | Date/Time | When the request was sent |
| REQUEST\_TEXT | Text | The entirety of the outgoing request |
| RECIPIENT\_ID | Numeric | ID of the provider the request is being sent to |
| STATUS\_CODE | Text | Claims Status Type Code |
| LOINC\_CODE | Text | LOINC code describing desired document type |
| LOINC\_MOD | Text | LOINC code modifier |
| STATUS | Text | “O”=Open, “C”=Closed |
| ATCHMNT\_ID | Numeric | ID of attachment received in response to this request |

## Data View

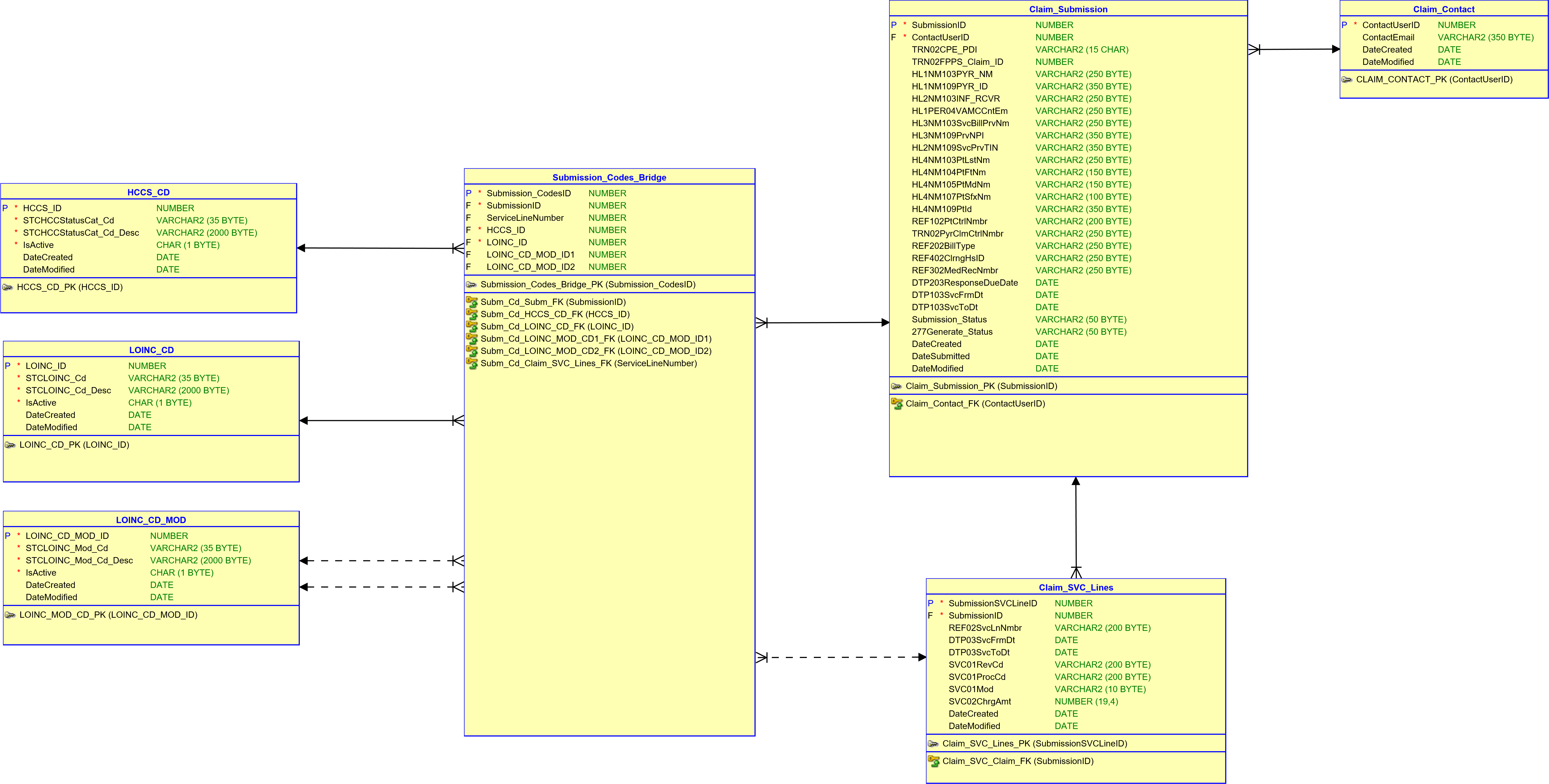
The following entity relationship diagram describes the tables and table relationships for ARS.

Figure ARS Entity Relationship Diagram (ERD)

## ARS Data Description Language (DDL)

The following ARS DDL will be used to create the ARS tables defined in Figure 5.

CREATE TABLE claim\_contact (

contactuserid NUMBER NOT NULL,

contactemail VARCHAR2(350 BYTE),

datecreated DATE,

datemodified DATE

);

ALTER TABLE claim\_contact ADD CONSTRAINT claim\_contact\_pk PRIMARY KEY ( contactuserid );

CREATE TABLE claim\_submission (

submissionid NUMBER NOT NULL,

contactuserid NUMBER NOT NULL,

trn02cpe\_pdi VARCHAR2(15 CHAR),

trn02fpps\_claim\_id NUMBER,

hl1nm103pyr\_nm VARCHAR2(250 BYTE),

hl1nm109pyr\_id VARCHAR2(350 BYTE),

hl2nm103inf\_rcvr VARCHAR2(250 BYTE),

hl1per04vamccntem VARCHAR2(250 BYTE),

hl3nm103svcbillprvnm VARCHAR2(250 BYTE),

hl3nm109prvnpi VARCHAR2(350 BYTE),

hl2nm109svcprvtin VARCHAR2(350 BYTE),

hl4nm103ptlstnm VARCHAR2(250 BYTE),

hl4nm104ptftnm VARCHAR2(150 BYTE),

hl4nm105ptmdnm VARCHAR2(150 BYTE),

hl4nm107ptsfxnm VARCHAR2(100 BYTE),

hl4nm109ptid VARCHAR2(350 BYTE),

ref102ptctrlnmbr VARCHAR2(200 BYTE),

trn02pyrclmctrlnmbr VARCHAR2(250 BYTE),

ref202billtype VARCHAR2(250 BYTE),

ref402clrnghsid VARCHAR2(250 BYTE),

ref302medrecnmbr VARCHAR2(250 BYTE),

dtp203responseduedate DATE,

dtp103svcfrmdt DATE,

dtp103svctodt DATE,

submission\_status VARCHAR2(50 BYTE),

"277Generate\_Status" VARCHAR2(50 BYTE),

datecreated DATE,

datesubmitted DATE,

datemodified DATE

);

ALTER TABLE claim\_submission ADD CONSTRAINT claim\_submission\_pk PRIMARY KEY ( submissionid );

CREATE TABLE claim\_svc\_lines (

submissionsvclineid NUMBER NOT NULL,

submissionid NUMBER NOT NULL,

ref02svclnnmbr VARCHAR2(200 BYTE),

dtp03svcfrmdt DATE,

dtp03svctodt DATE,

svc01revcd VARCHAR2(200 BYTE),

svc01proccd VARCHAR2(200 BYTE),

svc01mod VARCHAR2(10 BYTE),

svc02chrgamt NUMBER(19,4),

datecreated DATE,

datemodified DATE

);

ALTER TABLE claim\_svc\_lines ADD CONSTRAINT claim\_svc\_lines\_pk PRIMARY KEY ( submissionsvclineid );

CREATE TABLE hccs\_cd (

hccs\_id NUMBER NOT NULL,

stchccstatuscat\_cd VARCHAR2(35 BYTE) NOT NULL,

stchccstatuscat\_cd\_desc VARCHAR2(2000 BYTE) NOT NULL,

isactive CHAR(1 BYTE) DEFAULT '1' NOT NULL,

datecreated DATE,

datemodified DATE

);

ALTER TABLE hccs\_cd ADD CONSTRAINT hccs\_cd\_pk PRIMARY KEY ( hccs\_id );

CREATE TABLE loinc\_cd (

loinc\_id NUMBER NOT NULL,

stcloinc\_cd VARCHAR2(35 BYTE) NOT NULL,

stcloinc\_cd\_desc VARCHAR2(2000 BYTE) NOT NULL,

isactive CHAR(1 BYTE) DEFAULT '1' NOT NULL,

datecreated DATE,

datemodified DATE

);

ALTER TABLE loinc\_cd ADD CONSTRAINT loinc\_cd\_pk PRIMARY KEY ( loinc\_id );

CREATE TABLE loinc\_cd\_mod (

loinc\_cd\_mod\_id NUMBER NOT NULL,

stcloinc\_mod\_cd VARCHAR2(35 BYTE) NOT NULL,

stcloinc\_mod\_cd\_desc VARCHAR2(2000 BYTE) NOT NULL,

isactive CHAR(1 BYTE) DEFAULT '1' NOT NULL,

datecreated DATE,

datemodified DATE

);

ALTER TABLE loinc\_cd\_mod ADD CONSTRAINT loinc\_mod\_cd\_pk PRIMARY KEY ( loinc\_cd\_mod\_id );

CREATE TABLE submission\_codes\_bridge (

submission\_codesid NUMBER NOT NULL,

submissionid NUMBER NOT NULL,

servicelinenumber NUMBER,

hccs\_id NUMBER NOT NULL,

loinc\_id NUMBER NOT NULL,

loinc\_cd\_mod\_id1 NUMBER,

loinc\_cd\_mod\_id2 NUMBER

);

ALTER TABLE submission\_codes\_bridge ADD CONSTRAINT submission\_codes\_bridge\_pk PRIMARY KEY ( submission\_codesid );

ALTER TABLE claim\_submission

ADD CONSTRAINT claim\_contact\_fk FOREIGN KEY ( contactuserid )

REFERENCES claim\_contact ( contactuserid );

ALTER TABLE claim\_svc\_lines

ADD CONSTRAINT claim\_svc\_claim\_fk FOREIGN KEY ( submissionid )

REFERENCES claim\_submission ( submissionid );

ALTER TABLE submission\_codes\_bridge

ADD CONSTRAINT subm\_cd\_claim\_svc\_lines\_fk FOREIGN KEY ( servicelinenumber )

REFERENCES claim\_svc\_lines ( submissionsvclineid );

ALTER TABLE submission\_codes\_bridge

ADD CONSTRAINT subm\_cd\_hccs\_cd\_fk FOREIGN KEY ( hccs\_id )

REFERENCES hccs\_cd ( hccs\_id );

ALTER TABLE submission\_codes\_bridge

ADD CONSTRAINT subm\_cd\_loinc\_cd\_fk FOREIGN KEY ( loinc\_id )

REFERENCES loinc\_cd ( loinc\_id );

ALTER TABLE submission\_codes\_bridge

ADD CONSTRAINT subm\_cd\_loinc\_mod\_cd1\_fk FOREIGN KEY ( loinc\_cd\_mod\_id1 )

REFERENCES loinc\_cd\_mod ( loinc\_cd\_mod\_id );

ALTER TABLE submission\_codes\_bridge

ADD CONSTRAINT subm\_cd\_loinc\_mod\_cd2\_fk FOREIGN KEY ( loinc\_cd\_mod\_id2 )

REFERENCES loinc\_cd\_mod ( loinc\_cd\_mod\_id );

ALTER TABLE submission\_codes\_bridge

ADD CONSTRAINT subm\_cd\_subm\_fk FOREIGN KEY ( submissionid )

REFERENCES claim\_submission ( submissionid );

CREATE SEQUENCE claim\_subm\_submissionid\_seq START WITH 1 NOCACHE ORDER;

CREATE OR REPLACE TRIGGER claim\_submission\_submissionid BEFORE

INSERT ON claim\_submission

FOR EACH ROW

WHEN ( new.submissionid IS NULL )

BEGIN

:new.submissionid := claim\_submission\_submissionid.nextval;

END;

/

CREATE SEQUENCE claim\_svc\_lines\_subm\_svcl\_seq START WITH 1 NOCACHE ORDER;

CREATE OR REPLACE TRIGGER claim\_svc\_lines\_submissionsvcl BEFORE

INSERT ON claim\_svc\_lines

FOR EACH ROW

WHEN ( new.submissionsvclineid IS NULL )

BEGIN

:new.submissionsvclineid := claim\_svc\_lines\_submissionsvcl.nextval;

END;

/

# Detailed Design

Section [6.1.2](#_System_Features) details the changes that will be made to the claims adjudication and Non-VA Care authorization process. These changes are reflected in the diagrams below.



Figure 6 – Claim Attachment Request Design

## Software Detailed Design

### Conceptual Design

#### Product Perspective

The changes described in this document will allow the VA to electronically request supporting documentation for claims and to accept solicited electronic claims attachments and use them during claims adjudication. Additionally, the changes will allow the VA to electronically request supporting documentation for authorizations and authorization requests and to access solicited and unsolicited attachments to authorizations and authorization requests. Finally, when these attachments are being solicited electronically, the user will have the ability to generate and print a paper letter that can be sent to the provider.

##### User Interfaces

The user interfaces of the various existing systems will be mostly unaffected. Existing screens in AAT, EWV, and FPPS will have links to request attachments added to them, and existing screens in AAT will have links to view attachments added.

The ARS will be updated to allow users to search for attachments to authorization requests via their attachment IDs, or using additional information such as patient demographics. Additionally, attachments for Non-VA Care authorizations may be sent to the VistA Imaging system at the user’s local VAMC.

##### Communications Interfaces

All involved systems will use the existing VA network.

Attachments will be transferred via Secure File Transfer Protocol (SFTP) from the HCCH to the EDI Gateway at the HAC in the same fashion that claims currently work. Requests for attachments will be transferred to the HCCH via SFTP in a manner similar to how claims status updates currently work. Attachment data will be imported from the EDI Gateway into the ARS, and attachment metadata will be transmitted to AAT as necessary.

#### Product Features

* The ARS will accept, store, and process solicited attachments for claims just like it currently does for unsolicited claim attachments.
* The ARS will accept, store, process, and allow viewing and downloading of solicited and unsolicited attachments for authorizations in the same way it currently does for claim attachments.
* The ARS will allow the solicitation of attachments for claims, authorization requests, and authorizations.
* The ARS will store requests for attachments and allow users to search for and view them.
* The ARS will allow a physical letter to be printed that can be sent to request the same information as the attachment request.

#### User Characteristics

This development will affect claims adjudicators and their supervisors for Non-VA Care and VFS, as well as review nurses, clerks, and supervisors who manage authorizations for Non-VA Care. For claims processing, an adjudicator can request clinical documentation to support the claim in ARS, EWV, or FPPS. Likewise, users of AAT will be able to request documentation for authorization requests. In addition, medical records personnel could use ARS to download copies of attachments into Veterans’ medical records in their VistA Imaging system.

### Specific Requirements

#### Database Repository

ARS tables will be created in the FPPS DB for storage of ARS attachement metadata. ARS attachements will be save to local or network attached storage to be determine by the HAC

#### System Features

##### View Solicited Claim Attachments

Few changes will be needed in order to view solicited claim attachments. After the deployment from the FY14 Claims Attachments project, the system will already distribute metadata on claims attachments to all relevant systems allowing either direct viewing via ARS or providing attachment IDs to search on in ARS.

Table 12 – Design Elements for Solicited Attachments

| Requirement  Number | Design Element | Description |
| --- | --- | --- |
| FS-EP001-001  FS-EP001-002  FS-EP001-004  FS-EP001-005  FS-EP001-006  FS-EP001-007  FS-EP001-008  FS-EP001-009  FS-EP001-010  FS-EP001-011  FS-EP001-012  FS-EP001-013  FS-EP001-014  FS-EP001-015  FS-EP001-016  FS-EP001-017  FS-EP001-018  FS-EP001-019 | SD-EP001-001 | Solicited claims attachments will behave in every way, including searching, viewing, visibility and hyperlinking in downstream systems, and downloading to VistA Imaging where appropriate, as unsolicited claims as developed in the FY14 Claims Attachments Compliance project.  The ARS will update the data used by downstream systems (FPPS and E\_REPOS) so that they can link to received attachments (or provide attachment IDs for searching), which, to the downstream systems, will function identically to unsolicited attachments. Also, the ARS will update the data that FPPS and EWV use to display the status of an attachment request. |
| FS-EP001-003 | SD-EP001-003 | The user will be allowed to enter any combination of the following fields from the ASC X12 275 EDI Transaction as the search criteria to view electronic attachments.   * Patient Control Number (REF\*EJ segment at the 1000D loop) * Medical Record Identification Number (REF\*EA segment at the 1000D loop) * Patient Last Name (NM103 of the NM1 segment at the 1000D loop) * Patient First Name (NM104 of the NM1 segment at the 1000D loop) * Patient Identifier (ID) (NM109 of the NM1 segment at the 1000D loop) * Provider NPI (NM109 of the NM1 segment at the 1000C loop) * Date of Service – single date or a date range (If not present in the DTP\*472 segment of the 2100A loop, then DTP\*472 of the 1000D loop will be used. Format Qualifier can be D8 or RD8) * Payer Claim Control Number (TRN segment at the 2000A loop) * Attachment Control Number (TRN segment at the 2000A loop) * VA Unique Attachment ID (Created when the electronic attachment is stored in the Attachment Repository) |

##### View Authorization Attachments

ARS will add support for solicited and unsolicited attachments for authorization requests. A link allowing viewing of the attachment will be available in the AAT GUI for authorization requests.

Table 13 – Design Elements for Unsolicited Authorization Attachments

| Requirement  Number | Design Element | Description |
| --- | --- | --- |
| FS-EP002-001 | SD-EP002-001 | For solicited authorization responses, users will be able to view 275 healthcare service attachments by searching using the ARS. Links will also be added to the AAT GUI allowing viewing of attachments. |
| FS-EP002-002 | SD- EP002-002 | Authorization attachments will only be viewable for Non-VA Care. |
| FS-EP002-003 | SD- EP002-003 | Attachment ID will be created in the ARS database. |
| FS-EP002-004 | SD- EP002-004 | Attachment ID will be stored in the AAT database. |
| FS-EP002-005 | SD- EP002-005 | A solicited attachment for an authorization response will be linked to the original authorization request in the AAT database. ARS will send this information to AAT using a web service. |
| FS-EP002-006 | SD- EP002-006 | A solicited attachment for an authorization request will be able to be viewed in the ARS via a hyperlink in the AAT GUI. |
| FS-EP002-007 | SD- EP002-007 | A solicited attachment for an authorization response will be linked to the 10-7078 or 10-7079 in the AAT database. ARS will send this information to AAT using a web service. |
| FS-EP002-008 | SD- EP002-008 | The VistA Imaging users will be allowed to view and download attachments using the ARS for healthcare service attachments. |
| FS-EP002-009 | SD- EP002-009 | The ARS search screen will list the stored healthcare service attachments for healthcare service requests. |
| FS-EP002-010 | SD- EP002-010 | The user will be allowed to enter any combination of the following fields from the ASC X12 275 EDI Transaction as the search criteria to view electronic attachments.   * 278 Request Date * Patient Control Number (REF\*EJ segment at the 1000D loop) * Medical Record Identification Number (REF\*EA segment at the 1000D loop) * Patient Last Name (NM103 of the NM1 segment at the 1000D loop) * Patient First Name (NM104 of the NM1 segment at the 1000D loop) * Patient Identifier (ID) (NM109 of the NM1 segment at the 1000D loop) * Provider NPI (NM109 of the NM1 segment at the 1000C loop) * Date of Service – single date or a date range (If not present in the DTP\*472 segment of the 2100A loop, then DTP\*472 of the 1000D loop will be used. Format Qualifier can be D8 or RD8) * Payer Claim Control Number (TRN segment at the 2000A loop) * Attachment Control Number (TRN segment at the 2000A loop) * VA Unique Authorization ID (Created when the electronic attachment is stored in the Attachment Repository) |
| FS-EP002-011 | SD- EP002-011 | The search result will display the list of attachment IDs with links to the electronic attachments based on the search criteria. |
| FS-EP002-012 | SD- EP002-012 | User will be allowed to select and view the attachments by clicking on the attachment ID link. |
| FS-EP002-013 | SD- EP002-013 | When the hyperlink is clicked, a new ARS window will open to display the attachments. |
| FS-EP002-014 | SD- EP002-014 | Healthcare service request attachments for Non-VA Care will be able to be viewed in ARS via a hyperlink in the AAT GUI. |

##### Create and Send Requests for Claim Attachments

This project will add the ability to FPPS and EWV to request attachments for a claim. Links in the claim detail view of both tools will allow the user to open a new activity where they specify the information in the RFAI in order to send it to the provider. The status of an attachment request can also be checked from the same location. Attachment requests will be held and transmitted in a daily batch from the EDI Gateway to the HCCH. The ARS itself will have an added activity to fill out a blank RFAI, which FBCS users can fill out using data from FBCS.

Table 14 – Design Elements for Requesting Claim Attachments

| Requirement  Number | Design Element | Description |
| --- | --- | --- |
| FS-UN001-001 | SD-UN001-001 | 277 RFAIs will be able to be viewed in ARS. |
| FS-UN001-002 | SD-UN001-002 | For a VFS claim, a claim will be “flagged” in EWV when a 277 RFAI has been sent. |
| FS-UN001-003 | SD-UN001-003 | A VFS 277 RFAI that has not been fulfilled with an associated 275 attachment response will be recorded as having an Open/Pending status in ARS. |
| FS-UN001-004 | SD-UN001-004 | A VFS 277 RFAI will be flagged as closed when an associated 275 response is received by the ARS. |
| FS-UN001-005 | SD-UN001-005 | A user will have the ability to flag the 277 RFAI as closed in ARS or EWV, if the response is received in a means other than electronically (i.e. paper). |
| FS-UN001-006 | SD-UN001-006 | The ARS search screen will list the stored healthcare claim requests. |
| FS-UN001-007 | SD-UN001-007 | The user will be allowed to enter any combination of the following fields from the ASC X12 277 EDI Transaction as the search criteria to view healthcare claim requests.   * Service Provider/Billing Provider Name – 2100C loop * Service Provider/NPI – 2100C loop * Service Provider/Billing Provider Name – 2100C loop * Service Provider/Tax Identification Number(TIN) – 2100C loop * Patient Last Name – 2100D loop * Patient First Name – 2100D loop * Patient Identifier – 2100D loop * Payer Claim Control Number – TRN02 in the 2200D loop * Patient Control Number (PCN) – REF\*EJ at the 2200D loop * Claim Number (CP&E or FPPS) – REF\*D9 at the 2200D loop * Line Item Control Number – REF\*FJ at the 2220D loop * Medical Record Number – REF \*EA at the 2200D loop * Internal Control Number (ICN) – TRN02 at the 2200D loop * Date of Service – single date or a date range (DTP\*472 segment of the 2200D loop at the claim level, or DTP\*472 of the 2220D loop at the service line level will be used. Format Qualifier can be D8 or RD8) – DTP segment at the 2200D loop |
| FS-UN002-001 | SD-UN002-001 | For a Non-VA Care claim, a 277 RFAI will be able to be viewed in FPPS. |
| FS-UN002-002 | SD-UN002-002 | A new tab “Requests” will be added to the Claims Search, Awaiting Process, and In Process screens in FPPS to display all 277 RFAI requests that are made from FPPS. |
| FS-UN002-003 | SD-UN002-003 | A Non-VA Care 277 RFAI that has not been fulfilled with an associated 275 attachment response will be recorded as having an Open/Pending status in ARS. |
| FS-UN002-004 | SD-UN002-004 | A Non-VA Care 277 RFAI will be flagged as closed when an associated 275 response is received by the ARS. |
| FS-UN002-005 | SD-UN002-005 | A 277 RFAI will have the ability to flag the request as closed in FPPS, if the response is received in a means other than electronically (i.e. paper). |
| FS-UN002-006 | SD-UN002-006 | For a Non-VA Care claim, a 277 RFAI will be able to be viewed in ARS. |
| FS-EP004-001 | SD-EP004-001 | A new button will be added to the Detail View/Billing Misc. screen in EWV to enable a user to create a RFAI for a VFS claim. (Figure 1) |
| FS-EP004-002 | SD-EP004-002 | The ‘request’ button will direct a user to ARS to fulfill all criteria to create and generate the 277 RFAI. |
| FS-EP004-003 | SD-EP004-003 | A new button will be added to the Detail View/Service Line(s) screen in EWV to enable a user to create a RFAI at each line of service for VFS. |
| FS-EP004-004 | SD-EP004-004 | The ‘request’ button will direct a user to ARS to fulfill all criteria to create and generate the 277 RFAI. |
| FS-EP004-005 | SD-EP004-005 | A new button will be added to the Claims Menu/ Detail Claim section of the Claims Search, Awaiting Process, and In Process screens in FPPS to enable a user to create a RFAI (pertaining to a claim or service line for Non-VA Care). (Figure 2) |
| FS-EP004-006 | SD-EP004-006 | The ‘request’ button will direct a user to ARS to fulfill all criteria to create and generate the 277 RFAI. |
| FS-EP004-007  FS-EP004-008 | SD-EP004-007 | A new button, designed with FBCS users in mind, will be added to the ARS to enable the user to create a 277 RFAI. The “request” button will present the user with a blank request form. The user will be able to fill out all applicable fields to create and generate the 277 RFAI. |
| FS-UN005-001 | SD-UN005-001 | The new RFAI screen in ARS will input data into the following pre-populated fields:   * Payer Name: Veteran’s Affairs * Payer ID: 12115 (for Blank Form, or matching the source claim when opened from FPPS [always 12115] or EWV [84146 or 80214]) * Information Receiver: HCCH, ETIN * Response Due Date – the date 30 days in the future from the date of the request * Contact Information – this will be the group email of the local VAMC |
| FS-UN005-002 | SD-UN005-002 | The new Request for Additional Information screen in ARS will pre-populate data from the associated claim lines (or with the information provided) into the following fields:   * Service Provider/Billing Provider Name – 2010AA loop from the 837 Provider Name - 2100C loop of the 277RFAI * Service Provider/NPI – 2010AA loop from the 837 Provider NPI - 2100C loop of the 277RFAI * Service Provider/TIN – 2010AA loop from the 837 Provider TIN - 2100C loop of the 277RFAI, if NPI not available * Patient Last Name –2010BA loop from the 837 Patient Last Name - 2100D loop of the 277RFAI * Patient First Name –2010BA loop from the 837 Patient First Name- 2100D loop of the 277RFAI * Patient Identifier 2010BA (SSN with a MI qualifier) Patient Identifier Name - 2100D loop of the 277RFAI * Payer Claim Control Number – CHAMPVA claim ID or FPPS claim index number Payer Claim Control Number - TRN02 at the 2200D loop of the 277RFAI * PCN - CLM01 at the 2300 loop Patient Control Number - REF\*EJ at the 2200D loop of the 277RFAI * Bill Type (for 837I claims) – CLM05 at the 2300 loop Bill Type - REF\*BLT at the 2200D loop of the 277RFAI * Clearinghouse ID – REF\*D9 at the 2300 loop Clearinghouse ID – REF\*D9 at the 2200D loop of the 277RFAI * Medical Record Number – REF \*EA at the 2300 loop Medical Record Number - REF\*EA at the 2200D loop of the 277RFAI * Date(s) of Service – single date or a date range (DTP\*472 segment of the 2400 loop at the Service line level of the 837P. Format Qualifier can be D8 or RD8) (DTP\*434 segment of the 2300 loop at the Claim level of the 837I. Format Qualifier can be D8 or RD8); Date(s) of Service - DTP03 at the 2200D loop of the 277RFAI (will be required in the instance when a claim level only request is made) |
| FS-UN005-003 | SD-UN005-003 | The new RFAI screen in ARS will pre-populate data from the associated claim/service lines (or with the information provided) into the following fields when the request is generated at the service line level:   * Service Provider/Billing Provider Name – 2010AA loop from the 837 Provider Name - 2100C loop of the 277RFAI * Service Provider/NPI – 2010AA loop from the 837 Provider NPI - 2100C loop of the 277RFAI * Service Provider/TIN – 2010AA loop from the 837 Provider TIN - 2100C loop of the 277RFAI, if NPI not available * Patient Last Name –2010BA loop from the 837 Patient Last Name - 2100D loop of the 277RFAI * Patient First Name –2010BA loop from the 837 Patient First Name- 2100D loop of the 277RFAI * Patient Identifier 2010BA (SSN with a MI qualifier) Patient Identifier Name - 2100D loop of the 277RFAI * Payer Claim Control Number –CHAMPVA claim ID or FPPS claim index number Payer Claim Control Number - TRN02 at the 2200D loop of the 277RFAI * PCN - CLM01 at the 2300 loop Patient Control Number - REF\*EJ at the 2200D loop of the 277RFAI * Bill Type (for 837I claims) – CLM05 at the 2300 loop Bill Type - REF\*BLT at the 2200D loop of the 277RFAI * Clearinghouse ID – REF\*D9 at the 2300 loop Clearinghouse ID – REF\*D9 at the 2200D loop of the 277RFAI * Medical Record Number – REF \*EA at the 2300 loop Medical Record Number - REF\*EA at the 2200D loop of the 277RFAI * Service Line Information/Revenue Code - SVC201 at the 2400 loop from the 837I; Service Line Information/Procedure Code - SVC01 – 2 at the 2220D loop of the 277RFAI if Procedure code not present, else SVC04 at the 2220D loop of the 277RFAI * Service Line Information/Procedure Code – SVC202 – 2 at the 2400 loop from the 837I; Service Line Information/Procedure Code – SVC01 – 2 at the 2220D loop of the 277RFAI, if present * Service Line Information/Procedure Code – SVC101 – 2 at the 2400 loop from the 837P or – SVC301 – 2 at the 2400 loop from the 837D Service Line; Information/Procedure Code – SVC01 – 2 at the 2220D loop of the 277RFAI * Service Line Information/Modifiers * (4 occurrences) – * SVC101 – 3, SVC101 – 4, SVC101 – 5, SVC101 – 6 of 2400 loop of 837P/D and SVC201 – 3, SVC201 – 4, SVC201 – 5, SVC201 – 6 of the 837I Service Line Information/Modifiers * (4 occurrences) – * SVC01 – 3, SVC01 – 4, SVC01 – 5, SVC01 – 6 at the 2220D loop of the 277RFAI * Service Line Information/Charge Amount – SVC102 at the 2400 loop from the 837P/D and SVC203 from the 837I; Service Line Information/Charge Amount – SVC02 at the 2220D loop of the 277RFAI * Date(s) of Service – single date or a date range (DTP\*472 segment of the 2220D loop at the service line level will be used. Format Qualifier can be D8 or RD8) – DTP segment at the 2220D loop. (This field can also be calculated from the first and last dates of service at the line level for 837P/D claims.); Date(s) of Service – single date or a date range (DTP\*472 segment of the 2220D loop at the service line level will be used. Format Qualifier can be D8 or RD8) – DTP\*472 segment at the 2220D loop. * Line Item Control Number – REF02 at the 2400 loop on the original claim. (If a Line Item Control Number is not submitted, this will be the line sequence number of the service line.) Line Item Control Number – REF02 at the 2400 loop on the original claim. (If a Line Item Control Number is not submitted, this will be the line sequence number of the service line.) |
| FS-UN005-004 | SD-UN005-004 | The 837 claim data used to pre-populate the fields above when creating the RFAI from EWV will be pulled from the e-Repository. |
| FS-UN005-005 | SD-UN005-005 | The 837 claim data used to pre-populate the fields above when creating the RFAI from FPPS will be pulled from FPPS\_Owner. |
| FS-UN005-006 | SD-UN005-006 | The pre-populated fields will not be editable by the ARS user for a RFAI request generated from EWV or FPPS. |
| FS-UN005-007 | SD-UN005-007 | The pre-populated fields will not be validated during the validation process upon submission of the request. |
| FS-UN005-008 | SD-UN005-008 | The fields will be able to be edited by the user for a blank RFAI request generated in the ARS. |
| FS-UN006-001 | SD-UN006-001 | The following fields will be marked as \*Required when creating the 277 RFAI in the ARS:   * Health Care Claim Status Category Code * LOINC Code * LOINC Code Modifier |
| FS-UN006-002 | SD-UN006-002 | The Health Care Claim Status Category Code field will list the Descriptions of the valid values for a user to choose from and map to the valid Health Care Claim Status Category code upon creating the 277 RFAI transaction.   |  |  | | --- | --- | | **STC01-1 value** | **Description** | | **R0** | RFAIs/General Requests-Requests that don't fall into other R-type categories. | | | **R1** | RFAIs/Entity Requests-Requests for information about specific entities (subscribers, patients, various providers). | | | **R3** | RFAIs/Claim/Line-Requests for  information that could normally be submitted on a claim. | | | **R4** | RFAIs/Documentation-Requests for additional supporting documentation. Examples: certification, x-ray, notes. | | | **R5** | RFAI/more specific detail-Additional information as a follow up to a previous request is needed. The  original information was received but is inadequate. More  specific/detailed information is requested. | | | **R6** | RFAIs – Regulatory requirements | | | **R7** | RFAIs – Confirm care is consistent with Health Plan policy coverage | | | **R8** | RFAIs – Confirm care is consistent with health plan coverage exceptions | | | **R9** | RFAIs – Determination of medical  necessity | | | **R10** | RFAIs – Support a filed grievance or  appeal | | | **R11** | RFAIs – Pre-payment review of claims | | | **R12** | RFAIs – Clarification or justification of  use for specified procedure code | | | **R13** | RFAIs – Original documents submitted  are not readable. Used only for subsequent request(s). | | | **R14** | RFAIs – Original documents received  are not what was requested. Used only for subsequent request(s). | | | **R15** | RFAIs – Workers Compensation  coverage determination. | | | **R16** | RFAIs – Eligibility determination | | | **R17** | Replacement of a Prior Request. Used to indicate that the current attachment request replaces a prior attachment request. | | |
| FS-UN006-003 | SD-UN006-003 | The Health Care Claim Status Category Code field will be required for a valid value and cannot be blank. |
| FS-UN006-004 | SD-UN006-004 | The LOINC Code field will list the Descriptions of the valid values for a user to choose from and map to the valid LOINC Code upon creating the 277 RFAI transaction.   |  |  |  | | --- | --- | --- | | **Clinical document Type** | **Position in STC,** | **Description/selection term** | |  | **LOINC codes for STC01-4** |  | |  | 19016-5 | All requests for information that are  included in this transaction are  implicit to individual services. | | Continuity of Care Document (CCD) | 34133-9 | Summarization of episode note | | Consultation Note | 11488-4 | Consult note | | Diagnostic Imaging Report (DIR) | 18748-4 | Diagnostic imaging study | | Discharge Summary | 18842-5 | Discharge summary | | History and Physical | 34117-2 | History and physical note | | Operative Note | 11504-8 | Provider-unspecified Operation note | | Procedure Note | 28570-0 | Provider-unspecified Procedure note | | Progress Note | 11506-3 | Provider-unspecified Progress note | |
| FS-UN006-005 | SD-UN006-005 | The LOINC Code field will be required for a valid value and cannot be blank. |
| FS-UN006-006 | SD-UN006-006 | LOINC Code 19016-5 will be validated to not appear on a 277 RFAI at the service line level. |
| FS-UN006-007 | SD-UN006-007 | The LOINC Code Modifier field will list the Descriptions of the valid values for a user to choose from and map to the valid LOINC Code Modifier code upon creating the 277 RFAI transaction.   |  |  | | --- | --- | | **MODIFIER LOINC codes for STC10-4 and STC11-4** | **Selection description dealing with time** | | 18789-8 | Include all data of the selected type within the date window associated with the service | | 18790-6 | Include all data of the selected type on or before the date of service | | 18791-4 | Include all data of the selected type within or aligned to a service | | 18792-2 | Include all data of the selected type on or after the date of service | | 18803-7 | Include all data of the selected type that represents observations made 30 days or fewer before the starting date of service | | 18804-5 | Include all data of the selected type that represents observations made three months or fewer before the starting date of service | | 18805-2 | Include all data of the selected type that represents observations made six months or fewer before the starting date of service | | 18806-0 | Include all data of the selected type that represents observations made nine months or fewer before the starting date of service | | 18807-8 | Include all data of the selected type that represents observations made one year or less before the starting date of service | | 53033-7 | Include all data of the selected type that represents observations made two years or less before the starting date of service | | 18793-0 | Use no fixed time limit on data—any of the selected type are relevant no matter when obtained | |  | **Selection description dealing with Item** | | 18794-8 | Send all items of the specified type within the time window | | 18795-5 | Send all items of the specified type within the time window relevant to the service | | 18796-3 | Send all abnormals within the time window | | 18797-1 | Send the first abnormals within the time window | | 18798-9 | Send the last abnormals within the time window | | 18800-3 | Send the worst abnormal result for each kind of observation in the time window | | 18799-7 | Send the first (i.e., oldest) result for each kind of observation in the time window | | 18802-9 | Send the last (most recent) within the time window | |
| FS-UN006-008 | SD-UN006-008 | The LOINC Code Modifier field will be required for a valid value and cannot be blank. |
| FS-UN007-001 | SD-UN007-001 | The Health Care Claim Status Category Code list will be able to be edited by a user with super user/admin rights in the ARS. |
| FS-UN007-002 | SD-UN007-002 | The LOINC Code list will be able to be edited by a user with super user/admin rights in the ARS. |
| FS-UN007-003 | SD-UN007-003 | The LOINC Code Modifier list will be able to be edited by a user with super user/admin rights in the ARS. |
| FS-UN008-001 | SD-UN008-001 | A new button will be added to the RFAI screen in the ARS to ‘submit’ the request. |
| FS-UN008-002 | SD-UN008-002 | Upon submission of the 277 RFAI the ‘required’ fields will be validated in the ARS. |
| FS-UN008-003 | SD-UN008-003 | Fields found with incorrect entries during the validation process will be marked for the user to correct. |
| FS-UN009-001 | SD-UN009-001 | Required fields found with blank entries during the validation process will be marked for the user to enter a valid value. |
| FS-UN010-001 | SD-UN010-001 | A solicited 277 RFAI will be linked to the associated claim using the TRN segment. |
| FS-UN010-002 | SD-UN010-002 | The ARS will create the 277 RFAI transaction. |
| FS-UN010-003 | SD-UN010-003 | The 277 RFAI transaction will be stored in the archive database awaiting transmission to the HCCH. |
| FS-UN010-004 | SD-UN010-004 | A batch of 277 RFAI transactions in the archive database will be created nightly. |
| FS-UN010-005 | SD-UN010-005 | The batch file will have no maximum file size other than that mandated by the file system of the server. |
| FS-UN010-006 | SD-UN010-006 | The batch transmission from EDI Gateway to the HCCH will occur nightly. |
| FS-UN010-007 | SD-UN010-007 | The 277 RFAI will be stored in the Attachment Repository for viewing purposes. |

##### Create and Send Requests for Authorization Request Attachments

This project will add the ability to AAT GUI to request attachments for an authorization request. The user will be able to search for an authorization request using Veteran information and provider information. While viewing an authorization request, a link will allow the user to open a new activity where they specify the information in the RFAI in order to send it to the provider. The status of an attachment request can also be checked from the same location. Attachment requests will be transmitted in real time from the AAT.

Table 15 – Design Elements for Requesting Authorization Attachments

| Requirement  Number | Design Element | Description |
| --- | --- | --- |
| FS-UN004-001 | SD-UN004-001 | For a healthcare service request, a 278 RFAI will be able to be viewed in ARS. |
| FS-UN004-002 | SD-UN004-002 | A Non-VA Care 278 RFAI that has not been fulfilled with an associated 275 attachment response will be recorded as having an Open/Pending status in ARS. |
| FS-UN004-003 | SD-UN004-003 | A 278 RFAI will be flagged as closed when a 275 response is received. |
| FS-UN004-004 | SD-UN004-004 | An AAT user will have the ability to flag the request as closed, if the response is received in a means other than electronically (i.e. paper). |
| FS-EP007-001 | SD-EP007-001 | A new button will be added to the AAT GUI to enable a user to create a RFAI for a Non-VA Care authorization request. |
| FS-EP007-002  FS-EP007-003 | SD-EP007-002 | The “request” button will direct a user to a new activity in the AAT GUI to fulfill all criteria to create and generate the 278 RFAI. |
| FS-UN011-001 | SD-UN011-001 | The new RFAI screen in AAT GUI will input data into the following pre-populated fields:   * Payer Name: Veteran’s Affairs * Payer ID: 12115 * Information Receiver: HCCH, ETIN * Contact Information – this will be the group email of the local VAMC |
| FS-UN011-002 | SD-UN011-002 | The new RFAI screen in AAT GUI will pre-populate data from the associated authorization request (or with the information provided) into the following fields:  \*Field information to be provided. |
| FS-UN011-003 | SD-UN011-003 | The 278 Healthcare Services Review Request data used to pre-populate the fields above when creating the RFAI from AAT GUI will be pulled from the AAT database. |
| FS-UN011-004 | SD-UN011-004 | The pre-populated fields will not be editable by the user. |
| FS-UN011-005 | SD-UN011-005 | The pre-populated fields will not be validated during the validation process upon submission of the request. |
| FS-UN012-001 | SD-UN012-001 | The following fields will be marked as \*Required when creating the 278 RFAI:   * Health Care Claim Status Category Code * LOINC Code * LOINC Code Modifier |
| FS-UN012-002 | SD-UN012-002 | The Health Care Claim Status Category Code field will list the Descriptions of the valid values for a user to choose from and map to the valid Health Care Claim Status Category code upon creating the 278 RFAI transaction.   |  |  | | --- | --- | | **STC01-1 value** | **Description** | | **R0** | RFAIs/General Requests-Requests that  don't fall into other R-type categories. | | | **R1** | RFAIs/Entity Requests-Requests for  information about specific entities (subscribers, patients, various  providers). | | | **R3** | RFAIs/Claim/Line-Requests for  information that could normally be submitted on a claim. | | | **R4** | RFAIs/Documentation-Requests for  additional supporting documentation. Examples: certification, x-ray,  notes. | | | **R5** | RFAI/more specific detail-Additional  information as a follow up to a previous request is needed. The  original information was received but is inadequate. More  specific/detailed information is requested. | | | **R6** | RFAIs – Regulatory requirements | | | **R7** | RFAIs – Confirm care is consistent with  Health Plan policy coverage | | | **R8** | RFAIs – Confirm care is consistent with  health plan coverage exceptions | | | **R9** | RFAIs – Determination of medical  necessity | | | **R10** | RFAIs – Support a filed grievance or  appeal | | | **R11** | RFAIs – Pre-payment review of claims | | | **R12** | RFAIs – Clarification or justification of  use for specified procedure code | | | **R13** | RFAIs – Original documents submitted  are not readable. Used only for subsequent request(s). | | | **R14** | RFAIs – Original documents received  are not what was requested. Used only for subsequent request(s). | | | **R15** | RFAIs – Workers Compensation  coverage determination. | | | **R16** | RFAIs – Eligibility determination | | | **R17** | Replacement of a Prior Request. Used to indicate that the current  attachment request replaces a prior attachment request. | | |
| FS-UN012-003 | SD-UN012-003 | The Health Care Claim Status Category Code field will be required for a valid value and cannot be blank. |
| FS-UN012-004 | SD-UN012-004 | The LOINC Code field will list the Descriptions of the valid values for a user to choose from and map to the valid LOINC Code upon creating the 278 RFAI transaction.  19016-5 All requests for information that are included in this transaction are implicit to individual services. (Used at claim level only.)   |  |  |  | | --- | --- | --- | | **Clinical document Type** | **Position in STC,** | **Description/selection term** | |  | **LOINC codes for STC01-4** |  | |  | 19016-5 | All requests for information that are included in this transaction are implicit to individual services. | | CCD | 34133-9 | Summarization of episode note | | Consultation Note | 11488-4 | Consult note | | DIR | 18748-4 | Diagnostic imaging study | | Discharge Summary | 18842-5 | Discharge summary | | History and Physical | 34117-2 | History and physical note | | Operative Note | 11504-8 | Provider-unspecified Operation note | | Procedure Note | 28570-0 | Provider-unspecified Procedure note | | Progress Note | 11506-3 | Provider-unspecified Progress note | |
| FS-UN012-005 | SD-UN012-005 | The LOINC Code field will be required for a valid value and cannot be blank. |
| FS-UN012-006 | SD-UN012-006 | LOINC Code 19016-5 will be validated to not appear on a 278 RFAI at the service line level. |
| FS-UN012-007 | SD-UN012-007 | The LOINC Code Modifier field will list the Descriptions of the valid values for a user to choose from and map to the valid LOINC Code Modifier code upon creating the 278 RFAI transaction.   |  |  | | --- | --- | | **MODIFIER LOINC codes for STC10-4 and STC11-4** | **Selection description dealing with time** | | 18789-8 | Include all data of the selected type within the date window associated with the service | | 18790-6 | Include all data of the selected type on or before the date of service | | 18791-4 | Include all data of the selected type within or aligned to a service | | 18792-2 | Include all data of the selected type on or after the date of service | | 18803-7 | Include all data of the selected type that represents observations made 30 days or fewer before the starting date of service | | 18804-5 | Include all data of the selected type that represents observations made three months or fewer before the starting date of service | | 18805-2 | Include all data of the selected type that represents observations made six months or fewer before the starting date of service | | 18806-0 | Include all data of the selected type that represents observations made nine months or fewer before the starting date of service | | 18807-8 | Include all data of the selected type that represents observations made one year or less before the starting date of service | | 53033-7 | Include all data of the selected type that represents observations made two years or less before the starting date of service | | 18793-0 | Use no fixed time limit on data—any of the selected type are relevant no matter when obtained | |  | **Selection description dealing with Item** | | 18794-8 | Send all items of the specified type within the time window | | 18795-5 | Send all items of the specified type within the time window relevant to the service | | 18796-3 | Send all abnormals within the time window | | 18797-1 | Send the first abnormals within the time window | | 18798-9 | Send the last abnormals within the time window | | 18800-3 | Send the worst abnormal result for each kind of observation in the time window | | 18799-7 | Send the first (i.e., oldest) result for each kind of observation in the time window | | 18802-9 | Send the last (most recent) within the time window | |
| FS-UN012-008 | SD-UN012-008 | The LOINC Code Modifier field will be required for a valid value and cannot be blank. |
| FS-UN013-001 | SD-UN013-001 | The Health Care Claim Status Category Code list will be able to be edited by a user with super user/admin rights. |
| FS-UN013-002 | SD-UN013-002 | The LOINC Code list will be able to be edited by a user with super user/admin rights. |
| FS-UN013-003 | SD-UN013-003 | The LOINC Code Modifier list will be able to be edited by a user with super user/admin rights. |
| FS-UN014-001 | SD-UN014-001 | A new button will be added to the RFAI screen to ‘submit’ the request. |
| FS-UN014-002 | SD-UN014-002 | Upon submission of the 278 RFAI the ‘required’ fields will be validated. |
| FS-UN014-003 | SD-UN014-003 | Fields found with incorrect entries during the validation process will be marked for the user to correct. |
| FS-UN015-001 | SD-UN015-001 | Required fields found with blank entries during the validation process will be marked for the user to enter a valid value. |
| FS-UN016-001 | SD-UN016-001 | A solicited 278 RFAI will be linked to the associated authorization using the TRN segment and master Authorization ID number. |
| FS-UN016-002 | SD-UN016-002 | The AAT will create the 278 RFAI transaction. |
| FS-UN016-003 | SD-UN016-003 | The 278 RFAI transaction will be sent to the HCCH as a real-time transaction. |
| FS-UN016-004 | SD-UN016-004 | The 278 RFAI will be stored in the Authorization Repository for viewing purposes. |

##### Create Request for Information Letters

Wherever a user can generate an RFAI in order to request information from a provider, they will have an option to additionally generate a letter that can be printed to physically send to the provider. The exact text of the letter will be determined by the Chief Business Office Purchased Care (CBOPC) team and will be added to this document once it has been completed.

Table 16 – Design Elements for Printed RFAIs

| Requirement  Number | Design Element | Description |
| --- | --- | --- |
| FS-EP005-001 | SD-EP005-001 | The user will have the ability to print the newly created 277 RFAI upon submission. |
| FS-EP005-002 | SD-EP005-002 | The user will have the ability to print the standardized letter upon displaying the RFAI from the associated link into ARS from EWV, FPPS, or AAT, or directly from ARS. The link from all of these systems will lead to a new activity in ARS that does the actual letter generation and printing. |
| FS-EP005-003 | SD-EP005-003 | When the letter is printed from the RFAI view in ARS, it will be generated with the current date. |
| FS-EP005-004 | SD-EP005-004 | The letter will be dynamically generated to display the remaining number of days a provider has to respond to the RFAI (i.e. 45-T). |
| FS-EP005-005 | SD-EP005-005 | An audit trail will be created with a link to the previously printed letter, date the letter was printed, and user name/ID. |
| FS-EP005-006 | SD-EP005-006 | The user will have the ability to reprint any of the previously created letters. |
| FS-EP006-001 | SD-EP006-001 | The user will have the ability to print the newly created 278 RFAI upon submission. |
| FS-EP006-002 | SD-EP006-002 | The user will have the ability to print the standardized letter upon displaying the RFAI from the associated link in EWV, FPPS, AAT, and/or ARS. |
| FS-EP006-003 | SD-EP006-003 | When the letter is printed from the RFAI link in EWV, FPPS, AAT, and/or ARS, it will be generated with the current date. |
| FS-EP006-004 | SD-EP006-004 | An audit trail will be created in ARS with a link to the previously printed letter, date the letter was printed, and user name/ID. |
| FS-EP006-005 | SD-EP006-005 | The user will have the ability to reprint any of the previously created letters. |

# External System Interface Design

## Interface Architecture

All involved systems will use the existing VA network.

Attachments will be transferred via SFTP from the HCCH to the EDI Gateway at the HAC in the same fashion that claims currently work. Attachment data will be imported from the EDI Gateway into the ARS, and attachment metadata will be transmitted to AAT as necessary.

## Interface Detailed Design

The EDI Gateway currently uses a system of scripts to receive files via SFTP from HCCH, then parse them and repackage them for importing into other systems. This project will also use the EDI Gateway to send files containing requests for attachments to the HCCH, as well. As of this writing, exact file format specifications for files to and from the HCCH for supporting attachments and requests are in progress. The ARS repository will import and export the files relevant to managing electronic attachments.

# Human-Machine Interface

## Interface Design Rules

ARS will follow FPPS 2.0 single page application guide lines using HTML5, CSS3, JavaScript and Angular 2. All screens will be 508 compliant.

## Inputs

**ARS**

* ASC X12 275 Additional Information to Support a Health Care Services Review transactions from EDI Gateway
* Access audit trail information when attachments are accessed

**AAT**

* Authorization attachment metadata from ARS

## Outputs

**ARS**

* ASC X12 277 Health Care Claim RFAI transactions to EDI Gateway
* ASC X12 278 Health Care Services Review – Request for Review and Response transactions to EDI Gateway
* Authorization attachment metadata to ARS

# Security and Privacy

## Security

EWV and FPPS will continue to restrict access to only authorized users via a login process. The AAT GUI will also restrict access based on login to only authorized users. Attachment requests will be audited.

The ARS will maintain a record of all views and downloads of attachments, and only users who are explicitly given access to the system will be able to access or request attachments.

## Privacy

Protected Health Information (PHI) and Personally Identifiable Information (PII) will be secured in the appropriate databases with controls to ensure that only those with a need to access the data will be able to do so.

1. Attachment Storage Capacity Analysis

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Station | Claims (Yearly) | Attachments (Yearly) | % of paper claims with attachments  (Yearly) | Range of pages (min of 12 pages)/attachment and (max of 200 pages)/attachment (Yearly) |  |  | ROM (20kb per page) Yearly | ROM (170kb per page) Yearly |
| Lower Page Count | Upper Page Count | Calculation: 20 kb \* Page Count / 1,000,000 (1 Million KB in a GB) | Calculation: 170 kb \* Page Count / 1,000,000 (1 Million KB in a GB) |
| Danville (550) | 71,254 | 34,610 | 48.50% | 415K-6.9M | 415,000 | 6,900,000 | 8.3Gb - 138 Gb | 70.55Gb - 1173 Gb |
| Hines (578) | 50,502 | 22,600 | 44.70% | 272K-4.52M (est) | 272,000 | 4,520,000 | 5.44Gb - 90.4 Gb | 46.24Gb - 768.4 Gb |
| Iron Mountain (585) | 72,813 | 11,610 | 15.90% | 140K-2.3M | 140,000 | 2,300,000 | 2.8Gb - 46 Gb | 23.8Gb - 391 Gb |
| Jesse Brown (537) | 60,348 | 21,980 | 36.40% | 264K-4.4M | 264,000 | 4,400,000 | 5.28Gb - 88 Gb | 44.88Gb - 748 Gb |
| Lovell (556) | 42,747 | 28,455 | 66.50% | 342K-5.7M | 342,000 | 5,700,000 | 6.84Gb - 114 Gb | 58.14Gb - 969 Gb |
| Madison (607) | 78,991 | 22,600 | 44.70% | 272K-4.52M (est) | 272,000 | 4,520,000 | 5.44Gb - 90.4 Gb | 46.24Gb - 768.4 Gb |
| MKE (695) | 103,399 | 15,078 | 14.50% | 181K-3.1M | 181,000 | 3,100,000 | 3.62Gb - 62 Gb | 30.77Gb - 527 Gb |
| Tomah (676) | 53,734 | 24,008 | 44.60% | 288K-4.8M | 288,000 | 4,800,000 | 5.76Gb - 96 Gb | 48.96Gb - 816 Gb |
| Totals: | 533,788 | 180,941 |  |  | 2,174,000 | 36,240,000 | 43.48Gb - 724.8 Gb Yearly | 369.58Gb - 6160.8 Gb Yearly |
| Average: | 66,724 | 22,618 | 39.48% |  | 271,750 | 4,530,000 |  |  |
|  |  |  |  |  |  |  |  |  |
| Extrapolation out to 150 Sites | Average Page Count | Average Attachment Count | Average Attachment Ratio |  | Average Lower Page Count | Average Upper Page Count | ROM (20kb per page) Yearly | ROM (170kb per page) Yearly |
|  | 66,724 | 22,618 | 39.48% |  | 271,750 | 4,530,000 |  |  |
| Multiple of 150 | 10,008,525 | 3,392,644 |  |  | 40,762,500 | 679,500,000 | 815.25Gb - 13590 Gb | 6929.625Gb - 115515 Gb |
|  |  |  |  |  |  |  | 13.5 Tb Yearly | 115.5 Tb Yearly |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **20kb/page/month AVG LOW(Gb)** | **20kb/page/month AVG HIGH (Gb)** | **170kb/page/month AVG LOW (Gb)** | **170kb/page/month AVG HIGH (Gb)** |  |
| **Monthly Breakdown** | **Monthly Space:** | 67.94 | 1,132.50 | 577.47 | 9,626.25 |  |
| **Daily Breakdown** | **Daily Bandwidth:** | 3.40 | 56.63 | 28.87 | 481.31 |  |
| **Daily 275 File Size:** |  | 4.42 | 73.61 | 37.54 | 625.71 |  |
|  |  |  |  |  |  |  |
| Month |  | Size @ 20kb/page (Gb) | Size @ 170kb/page (Gb) | P2E Median (95kb/page) | 200 Gb/week Estimation | 320 Gb/day Estimation (1.6 Tb/week) |
| 1 |  | 68 | 9,626 | 4,847 | 800 | 6,400 |
| 2 |  | 136 | 19,253 | 9,694 | 1,600 | 12,800 |
| 3 |  | 204 | 28,879 | 14,541 | 2,400 | 19,200 |
| 4 |  | 272 | 38,505 | 19,388 | 3,200 | 25,600 |
| 5 |  | 340 | 48,131 | 24,235 | 4,000 | 32,000 |
| 6 |  | 408 | 57,758 | 29,083 | 4,800 | 38,400 |
| 7 |  | 476 | 67,384 | 33,930 | 5,600 | 44,800 |
| 8 |  | 544 | 77,010 | 38,777 | 6,400 | 51,200 |
| 9 |  | 611 | 86,636 | 43,624 | 7,200 | 57,600 |
| 10 |  | 679 | 96,263 | 48,471 | 8,000 | 64,000 |
| 11 |  | 747 | 105,889 | 53,318 | 8,800 | 70,400 |
| 12 |  | 815 | 115,515 | 58,165 | 9,600 | 76,800 |
| 13 |  | 883 | 125,141 | 63,012 | 10,400 | 83,200 |
| 14 |  | 951 | 134,768 | 67,859 | 11,200 | 89,600 |
| 15 |  | 1,019 | 144,394 | 72,706 | 12,000 | 96,000 |
| 16 |  | 1,087 | 154,020 | 77,554 | 12,800 | 102,400 |
| 17 |  | 1,155 | 163,646 | 82,401 | 13,600 | 108,800 |
| 18 |  | 1,223 | 173,273 | 87,248 | 14,400 | 115,200 |
| 19 |  | 1,291 | 182,899 | 92,095 | 15,200 | 121,600 |
| 20 |  | 1,359 | 192,525 | 96,942 | 16,000 | 128,000 |
| 21 |  | 1,427 | 202,151 | 101,789 | 16,800 | 134,400 |
| 22 |  | 1,495 | 211,778 | 106,636 | 17,600 | 140,800 |
| 23 |  | 1,563 | 221,404 | 111,483 | 18,400 | 147,200 |
| 24 |  | 1,631 | 231,030 | 116,330 | 19,200 | 153,600 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Veteran Family Services Numbers** |  |  |  |
| Claim Count (Yearly) | 7,000,000 |  |  |
| Ratio of Attachments | 39.48% |  |  |
| Count of Attachments | 2,763,250 | Low (12 pages) High (200 pages) |  |
| Count of Pages (Low) | 33,159,000 |  | 3200 |
| Count of Pages (High) | 552,650,000 |  | 376.4705882 |
| Median Pages | 292,904,500 |  |  |
| Low Estimate (20 Kb) Gb | 663 | .6 Tb |  |
| High Estimate (20 Kb) Gb | 11,053 | 11 Tb |  |
| Low Estimate (170 Kb) Gb | 5,637 | 5.6 Tb |  |
| High Estimate (170 Kb) Gb | 93,951 | 93.9 Tb |  |
| **Monthly:** |  |  |  |
| Low Estimate (20 Kb) Gb | 55 | 55 Gb |  |
| High Estimate (20 Kb) Gb | 921 | .9 Tb |  |
| Low Estimate (170 Kb) Gb | 470 | .4 Tb |  |
| High Estimate (170 Kb) Gb | 7,829 | 7.8 Tb |  |
| **Daily:** |  |  |  |
| Low Estimate (20 Kb) Gb | 3 | 3 Gb |  |
| High Estimate (20 Kb) Gb | 46 | 46 Gb |  |
| Low Estimate (170 Kb) Gb | 23 | 23 Gb |  |
| High Estimate (170 Kb) Gb | 391 | 391 Gb |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Six Month Conservative Estimate:** | 46,975 | 46 Tb |  |  |  |
|  |  |  |  |  |  |
| Additional Numbers (May 2016) |  |  |  |  |  |
| **Veteran Family Services Numbers** |  |  | **Fee Numbers** |  |  |
| Claim Count (Yearly) | 12,000,000 | (1 M Monthly) | Claim Count (Yearly) | 15,000,000 | (1.25 M Monthly) |
| Ratio of Attachments | 40.00% |  | Ratio of Attachments | 40.00% |  |
| Count of Attachments | 4,800,000 | Low (12 pages) High (200 pages) | Count of Attachments | 6,000,000 | Low (12 pages) High (200 pages) |
| Count of Pages (Low) | 57,600,000 |  | Count of Pages (Low) | 72,000,000 |  |
| Count of Pages (High) | 960,000,000 |  | Count of Pages (High) | 1,200,000,000 |  |
| Median Pages | 508,800,000 |  | Median Pages | 636,000,000 |  |
| Low Estimate (20 Kb) Gb | 1,152 |  | Low Estimate (20 Kb) Gb | 1,440 |  |
| High Estimate (20 Kb) Gb | 19,200 |  | High Estimate (20 Kb) Gb | 24,000 |  |
| Low Estimate (170 Kb) Gb | 9,792 |  | Low Estimate (170 Kb) Gb | 12,240 |  |
| High Estimate (170 Kb) Gb | 163,200 |  | High Estimate (170 Kb) Gb | 204,000 |  |
| **Monthly:** |  |  | **Monthly:** |  |  |
| Low Estimate (20 Kb) Gb | 96 |  | Low Estimate (20 Kb) Gb | 120 |  |
| High Estimate (20 Kb) Gb | 1,600 |  | High Estimate (20 Kb) Gb | 2,000 |  |
| Low Estimate (170 Kb) Gb | 816 |  | Low Estimate (170 Kb) Gb | 1,020 |  |
| High Estimate (170 Kb) Gb | 13,600 |  | High Estimate (170 Kb) Gb | 17,000 |  |
| **Daily:** |  |  | **Daily:** |  |  |
| Low Estimate (20 Kb) Gb | 5 |  | Low Estimate (20 Kb) Gb | 6 |  |
| High Estimate (20 Kb) Gb | 80 |  | High Estimate (20 Kb) Gb | 100 |  |
| Low Estimate (170 Kb) Gb | 41 |  | Low Estimate (170 Kb) Gb | 51 |  |
| High Estimate (170 Kb) Gb | 680 |  | High Estimate (170 Kb) Gb | 850 |  |
|  |  |  |  |  |  |
| **Six Month Conservative Estimate:** | 81,600 | 81 Tb | **Six Month Conservative Estimate:** | 102,000 | 102 Tb |

1. Attachment Metadata Storage Capacity Analysis (for Oracle)

|  |  |  |  |
| --- | --- | --- | --- |
| **Oracle 275 Metadata Database Sizing** |  |  |  |
| Size Per 1000 Records | 100 MB |  |  |
|  |  |  |  |
| Station | Claims (Yearly) | Attachments (Yearly) | Yearly Metadata Size (Gb) |
|
| Danville (550) | 71,254 | 34,610 | 3.5 |
| Hines (578) | 50,502 | 22,600 | 2.3 |
| Iron Mountain (585) | 72,813 | 11,610 | 1.2 |
| Jesse Brown (537) | 60,348 | 21,980 | 2.2 |
| Lovell (556) | 42,747 | 28,455 | 2.8 |
| Madison (607) | 78,991 | 22,600 | 2.3 |
| MKE (695) | 103,399 | 15,078 | 1.5 |
| Tomah (676) | 53,734 | 24,008 | 2.4 |
| **Totals:** | 533,788 | 180,941 | 18.1 |
| **Average:** | 66,724 | 22,618 | 2.3 |
| **Average Multiple of 150** | 10,008,525 | 3,392,644 | 339.3 |
|  |  |  |  |
| **Veteran Family Services Numbers** |  |  |  |
| Claim Count (Yearly) | 7,000,000 |  |  |
| Ratio of Attachments | 39.48% |  |  |
| Count of Attachments | 2,763,250 |  |  |
| Yearly Metadata Size (Gb) | 276.325 | Total Yearly Size | 615.6 |
|  |  | Six Month Plan | 102.6 |