Camp Lejeune-Veterans (CL-V)

Increment 4

VistA

Radiology V. 5.0

Patch RA\*5.0\*120

System Design Document



May 2016

Version .06

Department of Veterans Affairs

Revision History

| Date | Version | Description | Author |
| --- | --- | --- | --- |
| 05/10/2016 | .06 | Updated RABWORD2 routine component for Test Version 3. |  |
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# Introduction

Public Law 112-154 was enacted to furnish Department of Veterans Affairs (VA) medical services and hospital care to Veterans stationed at Camp Lejeune between August 1, 1953 and December 31, 1987. Veterans serving at this location for at least 30 days may suffer from medical conditions and/or illnesses arising from their exposure to water contaminated by hazardous chemicals.

Software enhancements to the Veterans Health Information Systems and Technology Architecture (VistA) and the centralized Health Eligibility Center (HEC) Enrollment System Core (ESC) are required for maintaining the Camp Lejeune-Veterans (CL-V) Support information in the Veteran records. This implies that enhancements to the Health Level 7 (HL7) messaging between ESC and VistA are also required as part of the software development effort.

The purpose of this System Design Document (SDD) is to outline the design specifications for the CL-V project for the Radiology application. The change to Radiology will be done via patch RA\*5.0\*120. Wherever the Radiology patch is referenced in this SDD, it is for Radiology patch RA\*5.0\*120.

## Scope

For detailed information, refer to the Camp Lejeune PL 112-154 System Changes to Support Provisions Affecting Veterans BRD (Business Requirements Document) v10 located on CL-V Technical Services Project Repository (TSPR).

The Radiology/Nuclear Medicine VistA package automates the entire range of diagnostic functions performed in imaging departments, including order entry of requests. The Radiology package will be enhanced to display the Camp Lejeune eligibility of a Veteran when requesting an imaging exam.

## User Profiles

**NAME** is the main point of contact for the Radiology software. The Automated Data Processing Application Coordinators (ADPACs) manually perform the tasks associated with the Radiology software package and are already familiar with how to establish and track environmental indicators, of which CL-V is one.

# Background

This section provides an overview of the system, business processes, and business benefits.

## Overview of the System

In order to fulfill the legislative requirements, implementation of Camp Lejeune system changes from the front-end applications for point of entry, through the back office processing of Camp Lejeune related care, are required.

The CL-V project implements system changes through front-end applications as well as back office [e.g., Integrated Billing (IB), Office of Policy and Planning (OPP) reporting, and Managerial Cost Accounting (MCA), etc.].

The first phase of the CL-V project addressed the front-end applications involved in Veterans Health Administration (VHA) Eligibility and Enrollment of Camp Lejeune–eligible Veterans; this was accomplished during Increment 3 of the CL-V project. The second phase of the initiative, Increment 4, addresses the downstream clinical, administrative, and back office processing of services related to the Camp Lejeune–eligible Veterans’ healthcare. PTF is one of the applications that handles the back office processing of services affected by Increment 4.

The Radiology application displays the patient's SC/Service Connected and environmental indicators at the time of exam order entry when the menu option Request an Exam is selected. This will now include the current value of the Camp Lejeune eligibility.

A detailed description of the change required with the Radiology patch can be found in Table 9, item 2.6.8.1 in the CL-V Increment 4 VistA RSD (Requirements Specification Document) on [CL-V TSPR](http://tspr.vista.med.va.gov/warboard/anotebk.asp?proj=1662).

## Overview of the Business Process

The Radiology/Nuclear Medicine VistA package automates the entire range of diagnostic functions performed in imaging departments, including order entry of requests. The Radiology package will be enhanced to display the Camp Lejeune eligibility of a Veteran when requesting an imaging exam.

See details of the requirements and updated user interfaces in Section 2.6.8 of the CL-V Increment 4 VistA RSD, found on [CL-V TSPR](http://tspr.vista.med.va.gov/warboard/anotebk.asp?proj=1662).

The CL-V Increment 4 RTM (Requirements Traceability Matrix), found on [CL-V TSPR](http://tspr.vista.med.va.gov/warboard/anotebk.asp?proj=1662), contains a tab for Radiology with a listing of all RA requirements linked to the Business Needs found on [CL-V TSPR](http://tspr.vista.med.va.gov/warboard/anotebk.asp?proj=1662).

## Overview of the Significant Requirements

The RSD for the CL-V Increment 4 applications is the CL-V Increment 4 VistA RSD, found on the [CL-V TSPR site](http://tspr.vista.med.va.gov/warboard/anotebk.asp?proj=1662).

Table 1 provides an overview of the significant requirements for the Radiology patch.

Table : Overview of Significant Requirements for Radiology Patch

| ID | Requirement |
| --- | --- |
| 2.6.8.1 | The Radiology application shall display the patient’s SC/Service Connected and environmental indicators, to include the current value of the Camp Lejeune eligibility, at the time of exam order entry when the menu option “Request an Exam” is selected. |

**Functional and Workload Requirements**

It is expected that functional workload will be the equivalent of current workload and existing performance system requirements:

* There is no anticipated increased user base or increased transaction volume being introduced with this project.
* No new user interfaces are being added or removed with this project. Modification of existing user interfaces to accommodate the new CL-V data fields should have no impact on user response times or system performance.
* Existing interfaces and communication methods are being used to send additional CL-V data fields to the external system at the Austin Information Technology Center. The new data fields should not impact VA network or VistA MailMan servers in any way.

**Security and Privacy Requirements**

There are no special security or privacy requirements that are unique to this project.

**System Criticality and High Availability Requirements**

This is an enhancement to an existing VistA legacy system (Radiology). There will not be any changes to the required level of availability and disaster recovery currently in place for the existing legacy system.

**Single Sign-on Requirement**

This is an enhancement to an existing VistA legacy system (Radiology), and pre-existing standard sign-on applies.

**Requirement for Use of Enterprise Portals**

This is an enhancement to an existing VistA legacy system (Radiology). Modifications will be made to the existing roll and scroll user interface, and there will not be any new user interfaces introduced that require use of Enterprise Portals.

**Special Device Requirements**

No special devices are required for this enhancement.

**Technical Requirements**

There are no applicable technical requirements for this project.

# Conceptual Design

## Conceptual Application Design

This section provides an overview of the conceptual application design.

### Application Context

The context diagram in Figure 1 shows the application context of the components related to this specific release.

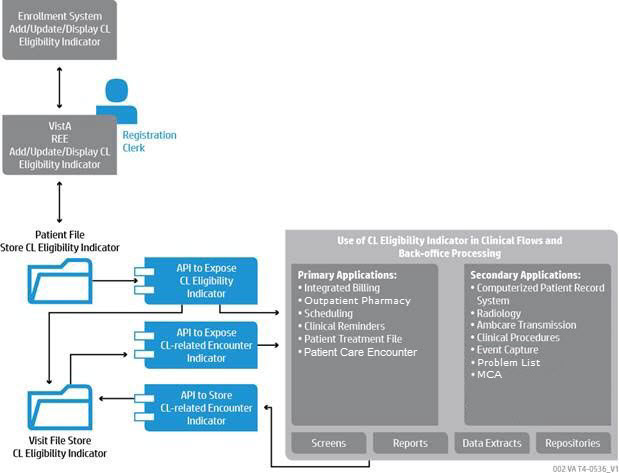


Figure 1. Camp Lejeune Context Diagram – VistA

Table : (Grouping): Application Context Description

Object

| ID | Name | Description | Interface Name | Interface System |
| --- | --- | --- | --- | --- |
| N/A | N/A | N/A | N/A | N/A |

Interfaces External to OI&T

| ID | Name | Related Object | Input Messages | Output Messages | External Party |
| --- | --- | --- | --- | --- | --- |
| N/A | N/A | N/A | N/A | N/A | N/A |

Interfaces Internal to OI&T

| ID | Name | Related Object | Input Messages | Output Messages | External Party |
| --- | --- | --- | --- | --- | --- |
| N/A | N/A | N/A | N/A | N/A | N/A |

Externally Shared Data Stores

| ID | Name | Data Stored | | | | Owner | Access |
| --- | --- | --- | --- | --- | --- | --- | --- |
| N/A | N/A | | N/A | N/A | N/A | | N/A |

### High-Level Application Design

The CL-V Increment 4 modifications to the Radiology application have no impact to the existing high-level design of VistA.

Table (Grouping): Objects in the High Level Application Design

Objects / Components to be Built or Modified

| ID | Name | Description | Service or Legacy Code | External Interface Name | External Interface ID | Internal Interface Name | Internal Interface ID | SDP Sections 1&2 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Internal Data Stores

| ID | Name | Data Stored | Steward | Access |
| --- | --- | --- | --- | --- |
| N/A | N/A | N/A | N/A | N/A |

### Application Locations

The VistA Radiology application resides within the existing VistA systems and infrastructure servers. No change in this area is introduced.

Table : Application Locations

| Application Component | Description | Location at Which Component is Run | Type |
| --- | --- | --- | --- |
| N/A | N/A | N/A | N/A |

The VistA Radiology application users are shown below:

Table : Application Users

| Application Component | Location | User |
| --- | --- | --- |
| VistA Radiology | VistA sites | Dr. Robert Sherrier or designee and ADPACs |

## Conceptual Data Design

This section is not applicable to this SDD.

### Project Conceptual Data Model

N/A

### Database Information

N/A

Table : Database Inventory

| Database Name | Description | Type | Steward |
| --- | --- | --- | --- |
| N/A | N/A | N/A | N/A |

### User Interface Data Mapping

There are no new user interfaces being created for this project. This project is making enhancements to existing user interfaces (menu option) within the Radiology application.

#### Application Screen Interface

Refer to section 2.6.8.1 of the CL-V Increment 4 VistA RSD, found on the [CL-V TSPR site](http://tspr.vista.med.va.gov/warboard/anotebk.asp?proj=1662).

##### GUI Screens

N/A

Table : Screen Description

| Graphical User Interface (GUI) Field | Table (Database Table that field connects to) | Field (Field in Table that the GUI field connects to) | Comments |
| --- | --- | --- | --- |
| N/A | N/A | N/A | N/A |

#### Application Report Interface

There is no Application Report Interface applicable to the Radiology application.

##### Report Names

There are no reports to mention, so there are no figures and tables in this section.

#### Unmapped Data Element

N/A

## Conceptual Infrastructure Design

There is no change in infrastructure for this release.

### System Criticality and High Availability

N/A

### Special Technology

N/A

Table : Special Technology Requirements

| Special Technology | Description | Notional Location | TRM Status |
| --- | --- | --- | --- |
| N/A | N/A | N/A | N/A |

### Technology Locations

The Radiology patch will be installed in each VA VistA instance by VA OI&T staff.

There are no specific components apart from VistA that the Radiology patch includes or adds. It is all legacy mainframe-based.

Table (Grouping): Technology Location Details

| Technology Component  Production 1 | Location | Usage |
| --- | --- | --- |
| Workstations | N/A | N/A |
| Special Hardware | N/A | N/A |
| Interface Processors | N/A | N/A |
| Legacy Mainframe | N/A | N/A |
| Legacy Application Server | N/A | N/A |
| Legacy Databases | N/A | N/A |
| Other | N/A | N/A |

| Technology Component  Production 2 | Location | Usage |
| --- | --- | --- |
| N/A | N/A | N/A |

| Technology Component  Certification | Location | Usage |
| --- | --- | --- |
| N/A | N/A | N/A |

| Technology Component  Education | Location | Usage |
| --- | --- | --- |
| N/A | N/A | N/A |

| Technology Component  Test | Location | Usage |
| --- | --- | --- |
| N/A | N/A | N/A |

| Technology Component  Development | Location | Usage |
| --- | --- | --- |
| N/A | N/A | N/A |

### Conceptual Infrastructure Diagram

No changes are being made to the infrastructure of the existing legacy VistA system.

#### Location of Environments and External Interfaces

The system will use existing locations and existing VistA technology.

#### Conceptual Production String Diagram

N/A

# System Architecture

There is no change in the System Architecture for this release.

## Hardware Architecture

There is no change in the Hardware Architecture for this release.

## Software Architecture

There is no change in the Software Architecture for this release.

## Network Architecture

There is no change in the Network Architecture for this release.

## Service Oriented Architecture / ESS

There is no change in the Service Oriented Architecture for this release.

## Enterprise Architecture

There is no change in the Enterprise Architecture for this release.

# Data Design

This section describes the data design (where applicable).

## DBMS Files

N/A

## Non-DBMS Files

N/A

## Data View

N/A

# Detailed Design

The Radiology patch has very little architectural impact on the overall VistA system, as it only displays an additional environmental factor for Camp Lejeune (CL-V) within one VistA menu option, *Request an Exam*.

## Hardware Detailed Design

There is no change in Hardware for this release.

## Software Detailed Design

There is no change to the Software Detailed Design for this release.

### Conceptual Design

There is no change to the Conceptual Design for this release as all updates will adhere to the existing VistA design concepts, conventions, and guidelines.

#### Product Perspective

Existing Radiology software supports the display of other environmental indicators such as Agent Orange and Shipboard Hazard and Defense (SHAD). The enhancements made with this patch allow the Radiology application to display the Camp Lejeune (CL-V) indicator.

##### User Interfaces

This project will modify the existing Radiology roll and scroll user interface and users will continue to enter/edit data using the roll and scroll user interface. For details of the screen change, refer to Figure 87 of the CL-V Increment 4 VistA RSD, found on CL-V TSPR.

##### Hardware Interfaces

N/A

##### Software Interfaces

Table 10 lists the Integration Control Registration (ICR) applicable to this Radiology patch.

Table : Applicable ICR

| **ICR** | **Custodian** | **Usage** | **Description** | **New/Modified** |
| --- | --- | --- | --- | --- |
| 10061 | Registration | Supported | VADPT is a utility routine designed to provide a central point where a programmer can obtain information concerning a patient's record. Supported entry points are provided which will return demographics, inpatient status, eligibility information, etc. | Modified |

##### Communications Interfaces

There are no communications interfaces applicable to this Radiology patch.

##### Memory Constraints

The effect of the CL-V data on the dynamic memory and disk storage is insignificant compared to the existing overall dynamic memory and disk storage for the Radiology application. There are no memory constraints given the nature of the addition. It uses existing features such as Agent Orange, SHAD, etc.

##### Special Operations

The project does not introduce or impact any special operations required by the user such as backup, recovery, and archiving operations.

#### Product Features

The Radiology patch does not add any new features. The application will be enhanced to display the Camp Lejeune eligibility of a Veteran when requesting an imaging exam. This will be added to existing functionality on the screen found under Requirement ID 2.6.8.1 in the CL-V Increment 4 VistA RSD, which is found on CL-V TSPR.

#### User Characteristics

The Radiology / Nuclear Medicine package menu is designed to assist with the functions related to processing patients for imaging examinations. The users are the ADPACs who enter information into the system. They will need to know if the patient needing an imaging exam has Camp Lejeune eligibility, and the screen interface will allow them to view that piece of information.

#### Dependencies and Constraints

CL-V Increment 3 VistA Registration Eligibility and Enrollment (REE), in host file DG\*5.3\*P909.KID, will be in place so that Camp Lejeune eligibility can be shown in the Registration Application and help drive the related business processes.

Prior to the installation of the Increment 4 Radiology patch, the Clinical Procedures Patch, MD\*1.0\*40, must already be installed. Refer to sections 2 and 3 of the CL-V Increment 4 VistA Installation, Back-out, and Rollback Guide*,* found on CL-V TSPR*,* for detailed system requirements, pre-installation, and installation instructions.

### Specific Requirements

For specific requirements, see Section 2.6.8 in the CL-V Increment 4 VistA RSD, found on   
CL-V TSPR.

For an historical perspective, see the CL-V VistA Registration, Eligibility, and Enrollment (REE) Increment 3 System Design Document.

#### Database Repository

Database Repositories are related to relational databases which are not related to VistA. VistA relies on the Caché hierarchical database design.

#### System Features

The System Features are described in Section 2.6.8 of the Requirements Specification Document, CL-V Increment 4 VistA RSD, found on CL-V TSPR.

#### Design Element Tables

This section provides design element tables specifying the modifications to the Radiology software components.

##### Routines (Entry Points)

The second line of each routine listed in this section will be modified to include the patch number “120” in the patch list.

**Example:**

RABWORD2 ;HOIFO/KAR - Radiology Billing Awareness ;12/20/04  3:55pm  
;;5.0;Radiology/Nuclear Medicine;\*\*41,70,**120**\*\*;Mar 16, 1998;Build 4

Table : RABWORD2 Routine

| Routines | | Activities | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Routine Name | | RABWORD2 | | | | | | | | | |
| **Enhancement Category** | | New | | Modify | Delete | | | No Change | | |
| **RTM** | | 2.6.10.1 | | | | | | | | |
| **Related Options** | | REQUEST AN EXAM | | | | | | | | |
| Related Routines | | Routines “Called By” | | | | | Routines “Called” | | | |
|  | | RAORD1.INT | | | | | HOME^%ZIS  Y^DIQ  EN^DIQ1  ^DIR  $$CIDC^IBBAPI  DEM^VADPT  ELIG^VADPT  SVC^VADPT  $$FMTE^XLFDT | | | |
| **Data Dictionary (DD) References** | | ^DD(75.1  ^RADPT(  ^RAO(75.1  ^TMP("RACOPY"  ^XUSEC("PROVIDER" | | | | | | | | |
| **Related Protocols** | | N/A | | | | | | | | |
| **Related Integration Control Registrations (ICRs)** | | IA 10061 holds complete information on SVC^VADPT. | | | | | | | | |
| **Data Passing** | | Input | Output Reference | | | Both | | | Global Reference | Local |
| **Input Attribute Name and Definition** | | VASV(15) holds a 1 if Camp Lejeune is indicated, 0 otherwise. | | | | | | | | |
| **Output Attribute Name and Definition** | | RACLV is namespaced variable holding Camp Lejeune output as YES or NO. | | | | | | | | |
| Current Logic | | | | | | | | | | |

RABWORD2 ;HOIFO/KAR - Radiology Billing Awareness ;12/20/04 3:55pm  
 ;;5.0;Radiology/Nuclear Medicine;\*\*41,70\*\*;Mar 16, 1998;Build 7  
 ;  
 ; Rtn invokes IA #1300-A, #2083, #4419  
 Q  
ORDER ; List Exam Orders to select to copy ICD-9 SC/EC Indicator values from  
 D HDR S (RAXIT,RACOPY)=0  
 N RALP,RA751,DIROUT,DIRUT,DTOUT,DUOUT S (RALP,RAXIT)=0  
 F  S RALP=$O(^RAO(75.1,"B",RADFN,RALP)) Q:RALP'>0!(RAXIT) D  
 .S RA751(0)=$G(^RAO(75.1,RALP,0)),RA751(2)=$P(RA751(0),U,2)  
 .Q:RA751(2)=""  
 .S RA751(16)=$P(RA751(0),U,16),RA751(20)=$P(RA751(0),U,20)  
 .S RA751(5)=+$P(RA751(0),U,5) Q:RA751(5)=1  
 .S Y=RA751(2),C=$P($G(^DD(75.1,2,0)),U,2) D Y^DIQ S RA751(2)=Y  
 .S Y=RA751(20),C=$P($G(^DD(75.1,20,0)),U,2) D Y^DIQ S RA751(20)=Y  
 .S RACOPY=RACOPY+1,RACOPY(RACOPY)=RALP  
 .W !,RACOPY,?10,$E(RA751(2),1,28),?39  
 .W $S(RA751(16)]"":$$FMTE^XLFDT(RA751(16),"2D"),1:"")  
 .W ?52,$E(RA751(20),1,12) ; prints 'SUBMIT REQUEST TO' data  
 .I $E(IOST,1,2)="C-",($Y>(IOSL-4)) D  
 ..K DIR S DIR(0)="E" D ^DIR K DIR S:'+Y RAXIT=1  
 ..I 'RAXIT W @IOF D HDR  
 Q  
HDR ; Header  
 D HOME^%ZIS W:$D(RAOPT("ORDEREXAM"))#2 @IOF  
 W !!,"#",?10,"Last Procedures/New Orders",?39,"Order Date",?52,"Imaging Loc."  
 W !,"------",?10,"----------------------------",?39,"------------",?52,"------------"  
 Q  
PREV ;Prompt for Copying a previous Order's DX/SC/EC values.  
 Q:'$D(^XUSEC("PROVIDER",DUZ)) ;user provider key check  
 Q:'$$CIDC^IBBAPI(RADFN) ;patient insurance & CIDC switch check  
 N RAPREV S RAPREV=0 K DIR  
 I $P($G(VAEL(3)),"^") D  
 .S DIR("B")="NO",DIR("A")="Copy a previous order's ICD codes and SC/EI values",DIR(0)="YO"  
 .S DIR("?")="Answer 'Y' if you plan to copy ICD-9 Diagnosis codes and Service Connected/Environmental Indicator values to this order." D ^DIR  
 I '$P($G(VAEL(3)),"^") D  
 .S DIR("B")="NO",DIR("A")="Copy a previous order's ICD codes",DIR(0)="YO"  
 .S DIR("?")="Answer 'Y' if you plan to copy ICD-9 Diagnosis codes to this order." D ^DIR  
 I Y D   
 .N RACOPY D ORDER  
 .K DIR S DIR("A")="Select Order # to copy",DIR(0)="NO" D ^DIR  
 .I '$D(RACOPY(+Y)) W !,"\*Invalid selection" S RAPREV=1 Q  
 .I +Y>0 D  
 ..I '$D(^RAO(75.1,RACOPY(+Y),"BA")) W !,"\*No Previous ICD codes entered for this order" Q  
 ..S ^TMP("RACOPY",$J,"BA")=^RAO(75.1,RACOPY(+Y),"BA")  
 ..N RABASEC S RABASEC=0 F  S RABASEC=$O(^RAO(75.1,RACOPY(+Y),"BAS",RABASEC)) Q:RABASEC<1 D  
 ...S ^TMP("RACOPY",$J,"BA",$P(^RAO(75.1,RACOPY(+Y),"BAS",RABASEC,0),U,1))=^RAO(75.1,RACOPY(+Y),"BAS",RABASEC,0)  
 G:RAPREV PREV  
 Q  
ELIG ;List the Service Connected ratios for the patient  
 N RAY,RAELIG,RASC,RAPERC,RAAO,RAIR,RAEC,RASHAD  
 D DEM^VADPT,ELIG^VADPT,SVC^VADPT  
 S RAELIG=$P(VAEL(1),"^",2),RASC=$P(VAEL(3),"^"),RASC=$S(RASC:"YES",RASC=0:"NO",1:""),RAPERC=$P(VAEL(3),"^",2)  
 S RAAO=$S(VASV(2):"YES",1:"NO"),RAIR=$S(VASV(3):"YES",1:"NO"),RASHAD=$S($G(VASV(11)):"YES",1:"NO")  
 S DIC=2,DA=RADFN,DR=".322013",DIQ="RAY",DIQ(0)="I" D EN^DIQ1 K DA,DIC,DIQ,DR  
 S RAEC=RAY(2,RADFN,.322013,"I"),RAEC=$S(RAEC="Y":"YES",1:"NO")  
 W @IOF,!,VADM(1)\_" ("\_VA("PID")\_") ",$P(VAEL(6),"^",2),!!," \* \* \* Eligibility Information and Service Connected Conditions \* \* \*"  
 W !!,?5,"Primary Eligibility: "\_RAELIG,!,?5,"A/O Exp.: "\_RAAO,?22,"ION Rad.: "\_RAIR,?40,"SWAC: "\_RAEC,?57,"SHAD: "\_RASHAD,!  
 Q  
ADDEXAM ;Add DX/SC/EI data to new order when adding order to Last Visit  
 Q:'$D(^XUSEC("PROVIDER",DUZ)) ;user provider key check  
 Q:'$$CIDC^IBBAPI(RADFN) ;patient insurance & CIDC switch check  
 N RAOIEN,RACOPY,RABASEC  
 S RAOIEN=$P(^RADPT(RADFN,"DT",RAVLEDTI,"P",RAVLECNI,0),U,11)  
 Q:'$D(^RAO(75.1,RAOIEN,"BA"))  
 S ^TMP("RACOPY",$J,"BA")=^RAO(75.1,RAOIEN,"BA")  
 S RABASEC=0 F  S RABASEC=$O(^RAO(75.1,RAOIEN,"BAS",RABASEC)) Q:RABASEC<1 D  
 .S ^TMP("RACOPY",$J,"BA",$P(^RAO(75.1,RAOIEN,"BAS",RABASEC,0),U,1))=^RAO(75.1,RAOIEN,"BAS",RABASEC,0)

Q

| Modified Logic (Changes are in bold) |
| --- |
| RABWORD2 ;HOIFO/KAR - Radiology Billing Awareness ;12/20/04 3:55pm  ;;5.0;Radiology/Nuclear Medicine;\*\*41,70,120\*\*;Mar 16, 1998;Build 17  ;  ; Rtn invokes IA #1300-A, #2083, #4419  Q ORDER ; List Exam Orders to select to copy ICD-9 SC/EC Indicator values from  D HDR S (RAXIT,RACOPY)=0  N RALP,RA751,DIROUT,DIRUT,DTOUT,DUOUT S (RALP,RAXIT)=0  F  S RALP=$O(^RAO(75.1,"B",RADFN,RALP)) Q:RALP'>0!(RAXIT) D  .S RA751(0)=$G(^RAO(75.1,RALP,0)),RA751(2)=$P(RA751(0),U,2)  .Q:RA751(2)=""  .S RA751(16)=$P(RA751(0),U,16),RA751(20)=$P(RA751(0),U,20)  .S RA751(5)=+$P(RA751(0),U,5) Q:RA751(5)=1  .S Y=RA751(2),C=$P($G(^DD(75.1,2,0)),U,2) D Y^DIQ S RA751(2)=Y  .S Y=RA751(20),C=$P($G(^DD(75.1,20,0)),U,2) D Y^DIQ S RA751(20)=Y  .S RACOPY=RACOPY+1,RACOPY(RACOPY)=RALP  .W !,RACOPY,?10,$E(RA751(2),1,28),?39  .W $S(RA751(16)]"":$$FMTE^XLFDT(RA751(16),"2D"),1:"")  .W ?52,$E(RA751(20),1,12) ; prints 'SUBMIT REQUEST TO' data  .I $E(IOST,1,2)="C-",($Y>(IOSL-4)) D  ..K DIR S DIR(0)="E" D ^DIR K DIR S:'+Y RAXIT=1  ..I 'RAXIT W @IOF D HDR  Q HDR ; Header  D HOME^%ZIS W:$D(RAOPT("ORDEREXAM"))#2 @IOF  W !!,"#",?10,"Last Procedures/New Orders",?39,"Order Date",?52,"Imaging Loc."  W !,"------",?10,"----------------------------",?39,"------------",?52,"------------"  Q PREV ;Prompt for Copying a previous Order's DX/SC/EC values.  Q:'$D(^XUSEC("PROVIDER",DUZ)) ;user provider key check  Q:'$$CIDC^IBBAPI(RADFN) ;patient insurance & CIDC switch check  N RAPREV S RAPREV=0 K DIR  I $P($G(VAEL(3)),"^") D  .S DIR("B")="NO",DIR("A")="Copy a previous order's ICD codes and SC/EI values",DIR(0)="YO"  .S DIR("?")="Answer 'Y' if you plan to copy ICD-9 Diagnosis codes and Service Connected/Environmental Indicator values to this order." D ^DIR  I '$P($G(VAEL(3)),"^") D  .S DIR("B")="NO",DIR("A")="Copy a previous order's ICD codes",DIR(0)="YO"  .S DIR("?")="Answer 'Y' if you plan to copy ICD-9 Diagnosis codes to this order." D ^DIR  I Y D   .N RACOPY D ORDER  .K DIR S DIR("A")="Select Order # to copy",DIR(0)="NO" D ^DIR  .I '$D(RACOPY(+Y)) W !,"\*Invalid selection" S RAPREV=1 Q  .I +Y>0 D  ..I '$D(^RAO(75.1,RACOPY(+Y),"BA")) W !,"\*No Previous ICD codes entered for this order" Q  ..S ^TMP("RACOPY",$J,"BA")=^RAO(75.1,RACOPY(+Y),"BA")  ..N RABASEC S RABASEC=0 F  S RABASEC=$O(^RAO(75.1,RACOPY(+Y),"BAS",RABASEC)) Q:RABASEC<1 D  ...S ^TMP("RACOPY",$J,"BA",$P(^RAO(75.1,RACOPY(+Y),"BAS",RABASEC,0),U,1))=^RAO(75.1,RACOPY(+Y),"BAS",RABASEC,0)  G:RAPREV PREV  Q ELIG ;List the Service Connected ratios for the patient  **; rbd RA\*5.0\*120 RSD SPEC# 2.6.8.1 Init Camp Lejeune RACLV variable.**  N RAY,RAELIG,RASC,RAPERC,RAAO,RAIR,RAEC,RASHAD**,RACLV**  D DEM^VADPT,ELIG^VADPT,SVC^VADPT  S RAELIG=$P(VAEL(1),"^",2),RASC=$P(VAEL(3),"^"),RASC=$S(RASC:"YES",RASC=0:"NO",1:""),RAPERC=$P(VAEL(3),"^",2) **; rbd RA\*5.0\*120 RSD SPEC# 2.6.8.1 Retrieve VASV(15) into RACLV.**  S RAAO=$S(VASV(2):"YES",1:"NO"),RAIR=$S(VASV(3):"YES",1:"NO"),RASHAD=$S($G(VASV(11)):"YES",1:"NO")**,RACLV=$S($G(VASV(15)):"YES",1:"NO")**  S DIC=2,DA=RADFN,DR=".322013",DIQ="RAY",DIQ(0)="I" D EN^DIQ1 K DA,DIC,DIQ,DR  S RAEC=RAY(2,RADFN,.322013,"I"),RAEC=$S(RAEC="Y":"YES",1:"NO")  W @IOF,!,VADM(1)\_" ("\_VA("PID")\_") ",$P(VAEL(6),"^",2),!!," \* \* \* Eligibility Information and Service Connected Conditions \* \* \*" **; rbd RA\*5.0\*120 RSD SPEC# 2.6.8.1 Display Camp Lejeune info.**  W !!,?5,"Primary Eligibility: "\_RAELIG,!,?5,"A/O Exp.: "\_RAAO,?**19**,"ION Rad.: "\_RAIR,?**34**,"SWAC: "\_RAEC,?**45**,"SHAD: "\_RASHAD,**?56,"CL-V Exp.: ",RACLV,!**  Q ADDEXAM ;Add DX/SC/EI data to new order when adding order to Last Visit  Q:'$D(^XUSEC("PROVIDER",DUZ)) ;user provider key check  Q:'$$CIDC^IBBAPI(RADFN) ;patient insurance & CIDC switch check  N RAOIEN,RACOPY,RABASEC  S RAOIEN=$P(^RADPT(RADFN,"DT",RAVLEDTI,"P",RAVLECNI,0),U,11)  Q:'$D(^RAO(75.1,RAOIEN,"BA"))  S ^TMP("RACOPY",$J,"BA")=^RAO(75.1,RAOIEN,"BA")  S RABASEC=0 F  S RABASEC=$O(^RAO(75.1,RAOIEN,"BAS",RABASEC)) Q:RABASEC<1 D  .S ^TMP("RACOPY",$J,"BA",$P(^RAO(75.1,RAOIEN,"BAS",RABASEC,0),U,1))=^RAO(75.1,RAOIEN,"BAS",RABASEC,0)  Q |

##### Templates

N/A

Table (Grouping): Templates

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

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
| **N/A** | N/A | N/A |

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

##### Bulletins

N/A

Table (Grouping): Bulletins

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

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
| N/A | N/A | N/A |

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

##### Data Entries Affected by the Design

N/A

Table : Data Entries Affected by the Design

| Field Name | Current Value | New Value |
| --- | --- | --- |
| N/A | N/A | N/A |

##### Unique Record(s)

N/A

Table : Unique Record ID

| Field Name | Current Value | New Value |
| --- | --- | --- |
| N/A | N/A | N/A |

##### File or Global Size Changes

The Radiology patch introduces no table changes because it pulls information from the Registration package.

Table : File or Global Size Changes

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

##### Mail Groups

No mail groups are affected.

Table (Grouping): Mail Groups

| Mail Groups | Activities | | | |
| --- | --- | --- | --- | --- |
| **Mail Group Name** | N/A | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
| **N/A** | N/A | N/A |

| Mail Groups | Instructions | |
| --- | --- | --- |
| **Data Dictionary (DD) References** | N/A | |
| **Related Protocols** | N/A | |
| **Mail Group Description** | N/A | |
| **Self-Enrollment Allowed** | Yes | No |
| **Type** | Public | Private |

##### Security Keys

N/A

Table (Grouping): Security Keys

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

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
| **N/A** | N/A | N/A |

| Security Keys | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Passing** | Input | Output | Both | Global Reference | Local Reference |
| **Security Key Description** | N/A | | | | |
| **Subordinate Keys** | N/A | | | | |
| **Mutually Exclusive Keys** | N/A | | | | |
| **Granting Condition Logic** | N/A | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| N/A |

| Security Keys | Activities |
| --- | --- |
| **Hierarchical Precedence** | N/A |

##### Options

N/A

Table : (Grouping): Options

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

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| N/A |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

##### Protocols

N/A

Table (Grouping): Protocols

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

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| N/A |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

##### Remote Procedure Call (RPC)

N/A

Table : RPCs

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

##### Constants Defined in Interface

N/A

Table : Constants Defined in Interface

| Name | Description |
| --- | --- |
| N/A | N/A |

##### Variables Defined in Interface

Table : Variables Defined in Interface

| Name | Type | Description |
| --- | --- | --- |
| N/A | N/A | NA/ |

##### Types Defined in Interface

Table : Types Defined in Interface

| Name | Type | Description |
| --- | --- | --- |
| N/A | N/A | N/A |

##### GUI

N/A

Table : GUI

| Unit Name | Description |
| --- | --- |
| **N/A** | N/A |

##### GUI Classes

Table : GUI Classes

| GUI Classes | Instructions |
| --- | --- |
| **Class Name** | N/A |
| **Derived From Class** | N/A |
| **Purpose** | N/A |

##### Current Form

N/A

##### Modified Form

N/A

##### Components on Form

N/A

Table : Components on Form

| Name | Type | Description |
| --- | --- | --- |
| N/A | N/A | N/A |

##### Events

N/A

Table : Events

| Name | Type | Description |
| --- | --- | --- |
| N/A | N/A | NA/ |

##### Methods

N/A

Table : Methods

| Method Name | Procedure/Function | Description |
| --- | --- | --- |
| N/A | N/A | N/A |

##### Special References

N/A

Table : Special References

| Special Reference Name | Type | Description |
| --- | --- | --- |
| N/A | N/A | N/A |

##### Class Events

N/A

Table : Class Events

| Name | Type | Description |
| --- | --- | --- |
| N/A | N/A | N/A |

##### Class Methods

Table : Class Methods

| Name | Procedure/Function | Description |
| --- | --- | --- |
| N/A | N/A | N/A |

##### Class Properties

Table : Class Properties

| Class Properties Name | Type | Visibility | Description |
| --- | --- | --- | --- |
| N/A | N/A | N/A | N/A |

##### Uses Clause

N/A

##### Forms

N/A

Table (Grouping): Forms

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

| Current Form Layout |
| --- |
| N/A |

| Modified Form Layout (Changes are in bold) |
| --- |
| N/A |

##### Functions

N/A

Table (Grouping): Functions

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

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
| **N/A** | N/A | N/A |

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

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| N/A |

##### Dialog

N/A

Table : Dialog

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

##### Help Frame

N/A

Table (Grouping): Help Frame

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

| Current Help Frame Text |
| --- |
| N/A |

| Modified Help Frame Text (Changes are in bold) |
| --- |
| N/A |

##### HL7 Application Parameter

N/A

Table : (Grouping): HL7 Application Parameter

| HL7 Application Parameter Name | Description |
| --- | --- |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Enhancement Category** | New | Modify | Delete | No Change |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Application Status** | Active | Inactive | Active | Inactive |

| Enhancement Category | Current | Modified |
| --- | --- | --- |
| **Facility Name** | N/A | N/A |
| **Country Code** | N/A | N/A |
| **HL7 Field Separator** | N/A | N/A |
| **HL7 Encoding Characters** | N/A | N/A |
| **Mail Group** | N/A | N/A |

##### HL7 Logical Link

N/A

Table : (Grouping): HL7 Logical Link

| HL7 Logical Link | Description |
| --- | --- |
| **HL7 Logical Link Parameter Name** | N/A |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Enhancement Category | New | Modify | Delete | No Change |

| Enhancement Category | Current | Modified |
| --- | --- | --- |
| **Node** | N/A | N/A |
| **Institution** | N/A | N/A |
| **Domain** | N/A | N/A |
| **Autostart** | N/A | N/A |
| **Queue Size** | N/A | N/A |
| **LLP Type** | N/A | N/A |

##### COTS Interface

N/A

Table : COTS Interface

| COTS Interface | Description |
| --- | --- |
| **Communication Method** | N/A |
| **Application Interface** | N/A |

## Network Detailed Design

No change from previous releases.

## Security and Privacy

No special considerations apply for security and privacy for the CL-V Increment 4 enhancements.

### Security

N/A

### Privacy

N/A

## Service Oriented Architecture / ESS Detailed Design

The current Radiology package is a VistA legacy application and not based on a Service Oriented Architecture. No enterprise shared services are consumed or provided as part of this project.

### Service Description for <Consumed Service Name>

Not applicable to VistA.

### Service Design for <Provided Service Name>

Not applicable to VistA.

#### Introduction

##### Purpose and Scope of Service

Not applicable to VistA.

##### Links to Other Documents

Not applicable to VistA.

#### Service Details

##### Service Identification

Not applicable to VistA.

Table : Service Identification

| Service Attribute | Value |
| --- | --- |
| N/A | N/A |
| Overview | N/A |
| Version | N/A |
| Latest Status | N/A |
| Service Type | N/A |
| Architecture Layer | N/A |
| Business Domain | N/A |
| Service Domain | N/A |
| Business Organization and Owner | N/A |
| Technical Organization and Owner | N/A |
| Development Organization and Owner | N/A |
| Support Organization and Owner | N/A |
| Target Consumer Organization(s) and Owner(s) | N/A |

##### Service Versions

Not applicable to VistA.

Table : Service Versions

|  |  |  |
| --- | --- | --- |
| Version Numbers | Current Status of Version | A Brief Description of the Change Implemented in that Version |
| N/A | N/A | N/A |

##### Summary of Design and Platform Details

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

Not applicable to VistA.

###### COTS Platform Vendor Names and Versions for Hosting Platform

Not applicable to VistA.

#### Dependencies

Not applicable to VistA.

#### Service Design Details

Not applicable to VistA.

##### Interface Technical Specs

Not applicable to VistA.

###### Service Invocation Type

Not applicable to VistA.

###### Service Interface Type

Not applicable to VistA.

###### Service Name

Not applicable to VistA.

###### Interface

Not applicable to VistA.

###### End Points

Not applicable to VistA.

###### Operations or Methods

Not applicable to VistA.

Table : Operations

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

###### Message Schemas

Not applicable to VistA.

##### Information Model

Not applicable to VistA.

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

Not applicable to VistA.

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

Not applicable to VistA.

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

Not applicable to VistA.

###### Use Cases (Use Case Model)

Not applicable to VistA.

###### Interaction Diagrams

Not applicable to VistA.

#### Gap Analysis

Not applicable to VistA.

Table : Gap Analysis

| Design Elements🡪  Policies / SLD elements etc.↓ | Design  Element A | Design  Element B | Design  Element C | Comment for Non-Conformance |
| --- | --- | --- | --- | --- |
| N/A | N/A | N/A | N/A | N/A |

##### Variances from Enterprise Target Architecture

Not applicable to VistA.

##### Variances from SLDs

Not applicable to VistA.

##### Variances from Standards and Policies

Not applicable to VistA.

##### Justification for Exceptions and Mitigation

Not applicable to VistA.

# External System Interface Design

N/A

## Interface Architecture

No change from previous releases.

## Interface Detailed Design

No change from previous releases.

# Human-Machine Interface

There are no changes to the human-machine interface for the CL-V enhancements.

## Interface Design Rules

N/A

## Inputs

N/A

## Outputs

N/A

## Navigation Hierarchy

N/A

### Screen [x.1]

N/A

### Screen [x.2]

N/A

### Screen [x.3]

N/A

# Attachment A – Approval Signatures

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

The Business Sponsor and Project Manager are required to sign.

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

Signed: Date:

< Business Sponsor >

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

Signed: Date:

, CL-V Project Manager

1. Additional Information

Additional information is provided in the sub-sections that follow.

* 1. Identification of Technology and Standards

The only standard that applies to the patch described in this SDD are the American National Standards Institute [ANSI] standards.

This application conforms to the current VistA Standards and Conventions Committee (SACC) and has passed through all of the VA vetting processes before its national release.

In addition, it utilizes the latest versions of key VistA infrastructure applications (FileMan, Kernel, MailMan, etc.)

* 1. Constraining Policies, Directives and Procedures

Directive: Public Law 112-154: On August 6, 2012, President Obama signed into law the “Honoring America’s Veterans and Caring for Camp Lejeune Families Act of 2012” (P. L. 112-154). This law provides healthcare for Veterans who served on active duty at Camp Lejeune and reimbursement for healthcare to family members who resided at Camp Lejeune for not fewer than 30 days between August 1, 1953 and December 31, 1987. The law authorizes care for 15 medical conditions, even if there is insufficient medical evidence to conclude that such illnesses or conditions are attributable to the Veterans’ military service or family members’ residence at Camp Lejeune.

The Camp Lejeune-Veterans (CL-V) project improves organizational efficiency in providing services to affected Veterans by ensuring they are appropriately identified as Camp Lejeune eligible, assigning them to Priority Group 6, and waiving co-payments for their conditions related to Camp Lejeune. This helps to address the mandated House Resolution (H.R.) 1627 [now Public Law (P.L.) 112-154, Honoring America’s Veterans], which requires the Department of Veterans Affairs (VA) to provide hospital care and medical services to Veterans who meet the specified conditions.

The changes to the Radiology application, the subject of this SDD, is one of the backend processing systems for Camp Lejeune related care that allows implementation of Camp Lejeune system changes.

* 1. Requirements Traceability Matrix

The CL-V Increment 4 RTM is found on CL-V TSPR. The requirements traceability for the Radiology patch is found on the Radiology tab of the RTM.

* 1. Packaging and Installation

Not applicable to VistA.

* 1. Design Metrics

Not applicable to VistA.