



CLINICAL TRAINEE CORE DATASET
Supplement to Patch Description

Patch XU*8.0*251

June 2003

Department of Veterans Affairs
VistA Health Systems Design & Development (HSD&D)
Infrastructure and Security Services (ISS)

Revision History

Documentation History

The following table displays the revision history for this document. Revisions to the documentation are based on continuous dialog with Infrastructure and Security Services (ISS) Technical Writers and evolving industry standards and styles.

Date	Revision	Description	Author
June 2003	1	Clinical Trainee Core Dataset documentation, Patch XU*8.0*251. Patch XU*8.0*251 has been created in support of VHA Directive 2003-032, Clinical Trainee Registration.	Susan Strack, Michael Ogi, Jose Garcia, Skip Ormsby, and Dan Soraoka, all from Oakland OIFO, Christopher T. Clarke, PHD and Terry V. Kruzan from Office of Academic Affiliations

Table 1: Documentation History

Patch History

For the current patch history related to this software, please refer to the Patch Module (i.e., Patch User Menu [A1AE USER]) on FORUM.

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Orientation

This is the supplemental documentation for the VistA Clinical Trainee Core Dataset software, exported in Patch XU*8.0*251. It is organized into three major parts:

1. Introduction
2. User Manual Information
3. HL7 Interface Specification
4. Technical Manual Information

This manual uses several methods to highlight different aspects of the material:

- Various symbols are used throughout the documentation to alert the reader to special information. The following table gives a description of each of these symbols:

Symbol	Description
	Used to inform the reader of general information including references to additional reading material
	Used to caution the reader to take special notice of critical information

Table 2: Documentation symbol descriptions

- Descriptive text is presented in a proportional font (as represented by this font).
- "Snapshots" of computer online displays (i.e., character-based screen captures/dialogs) and computer source code are shown in a *non*-proportional font and enclosed within a box. Also included are Graphical User Interface (GUI) Microsoft Windows images (i.e., dialogs or forms).
 - User's responses to online prompts will be boldface type.
 - The "<Enter>" found within these snapshots indicate that the user should press the Enter or Return key on their keyboard.
 - Author's comments are displayed in italics or as "callout" boxes.
 -  Callout boxes refer to labels or descriptions usually enclosed within a box, which point to specific areas of a displayed image.
- All uppercase is reserved for the representation of M code, variable names, or the formal name of options, field and file names, and security keys (e.g., the XUPROGMODE key).

How to Obtain Technical Information Online

Exported file, routine, and global documentation can be generated through the use of Kernel, MailMan, and VA FileMan utilities.

-  Methods of obtaining specific technical information online will be indicated where applicable under the appropriate topic.

Help at Prompts

VistA software has online help and commonly used system default prompts. In character-based mode, users are strongly encouraged to enter question marks at any response prompt. At the end of the help display, you are immediately returned to the point from which you started. This is an easy way to learn about any aspect of VistA software.

To retrieve online documentation in the form of Help in VistA character-based software:

- Enter a single question mark ("?") at a field/prompt to obtain a brief description. If a field is a pointer, entering one question mark ("?") displays the HELP PROMPT field contents and a list of choices, if the list is short. If the list is long, the user will be asked if the entire list should be displayed. A YES response will invoke the display. The display can be given a starting point by prefacing the starting point with an up-arrow ("^") as a response. For example, **^M** would start an alphabetic listing at the letter M instead of the letter A, while **^127** would start any listing at the 127th entry.
- Enter two question marks ("??") at a field/prompt for a more detailed description. Also, if a field is a pointer, entering two question marks displays the HELP PROMPT field contents and the list of choices.
- Enter three question marks ("???") at a field/prompt to invoke any additional Help text that may be stored in Help Frames.

Obtaining Data Dictionary Listings

Technical information about files and their associated fields is stored in data dictionaries. You can use the List File Attributes option on the Data Dictionary Utilities submenu in VA FileMan to print formatted data dictionaries.



For details about obtaining data dictionaries and about the formats available, please refer to the "List File Attributes" chapter in the "File Management" section of the "VA FileMan Advanced User Manual."

Assumptions About the Reader

This manual is written with the assumption that the reader is familiar with the following:

- VistA computing environment (e.g., Kernel Installation and Distribution System [KIDS])
- VA FileMan data structures and terminology
- Microsoft Windows
- M programming language

It provides an overall explanation of the styles and guidelines to be used by the ISS Technical Writers. However, no attempt is made to explain how the overall VistA programming system is integrated and maintained. Such methods and procedures are documented elsewhere. We suggest you look at the various

VA Web pages on the World Wide Web (WWW) for a general orientation to VistA. For example, go to the VHA OI Health Systems Design & Development (HSD&D) Web page at the following web address:

<http://vaww.vista.med.va.gov/>

Reference Materials

- a) "Clinical Trainee Core Dataset Supplemental Documentation" is made available online in Adobe Acrobat Portable Document Format (PDF) at the following web address:

<http://www.va.gov/vdl/Infrastructure.asp?appID=10>

- b) Patch XU*8.0*251 Installation Instructions can be found in the description for Patch XU*8.0*251, located in the National Patch Module (i.e., Patch User Menu [A1AE USER]) on FORUM.

- c) Tracking VHA Clinical Trainee Data, Technical Brief.

Readers who wish to learn more about Infrastructure and Security Services (ISS) documentation should consult the following:

- ISS Documentation Home Page at the following web address:

<http://www.va.gov/vdl/#infrastructure>

This site provides documentation links and software downloads for all ISS documentation.

- Health Systems Design & Development (HSD&D) VistA Documentation Library (VDL) Web page at the following web address:

<http://www.va.gov/vdl/>

This site provides documentation links and software downloads for all VistA documentation.

This supplemental documentation is made available online in Microsoft Word (DOC) and Adobe Acrobat Portable Document Format (PDF). The PDF documents *must* be read using the Adobe Acrobat Reader (i.e., ACROREAD.EXE), which is freely distributed by Adobe Systems Incorporated at the following web address:

<http://www.adobe.com/>



For more information on the use of the Adobe Acrobat Reader, please refer to the "Adobe Acrobat Quick Guide" at the following web address:

<http://vista.med.va.gov/iss/acrobat/index.asp>



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Chapter 1: Introduction

This supplemental documentation is intended for use in conjunction with the Veterans Health Information System and Technology Architecture (VistA) Clinical Trainee Core Dataset patch (Kernel Patch XU*8.0*251). It outlines the details of the work involved in this patch for VA facilities.

Patch XU*8.0*251 has been created in support of VHA Directive 2003-032, Clinical Trainee Registration, to assist the VHA Office of Academic Affiliations (OAA) in capturing core data for VHA clinical trainees that use the VistA. To achieve this:

- A new PROGRAM OF STUDY file (#8932.2) has been created.
- New fields and cross-reference have been added to the NEW PERSON file (#200) .
- The forms, input templates, and print templates that are used to edit the data in the NEW PERSON file have been modified to include the new fields.
- A new menu, edit option and form, and inquiry option are provided for entering and viewing clinical trainee data.

The NEW PERSON file (#200) is a file in VistA that is exported with Kernel, and that resides at each local facility. Each person/user who has access to the local VistA computer system is entered into this file. It contains specific data on all employees, users, practitioners, and providers who access the local VistA system, and in relation to Patch XU*8.0*251, the "core trainee dataset." The data elements within this file describe the users' characteristics and attributes. Many of them are specifically oriented to the health care field.

This supplement provides instructions on how to use this software to populate the VistA NEW PERSON file (#200) with information such as name, address, social security number (SSN), discipline of study and current degree level, program of study, and the last year a trainee anticipates being in a training program at the associated VA facility across all Veterans Health Administration (VHA) facilities.

This supplement also documents specifications for a new HL7 interface implemented with Patch XU*8.0*251. It is intended to identify the VistA information that will be shared as part of the Clinical Trainee Core Dataset project (Kernel Patch XU*8.0*251).

The intended audience for this documentation is Information Resource Management (IRM) and Veterans Affairs Medical Center (VAMC) personnel responsible for the implementation and maintenance of the VistA NEW PERSON file.

Background

Access to standardized core data on the VHA clinical trainees using the VistA is not collected in any systematic way that is electronically retrievable across the VHA's health care system. Basic information on residents and trainees, such as name, address, SSN, discipline of study, and length of VA training for all clinical trainees is needed for the purposes of security, liability and public health issues, recruitment and various national reports on VHA's academic mission. For clinical trainees who will need access to the patient record as part of their clinical experience, collecting trainee information via VistA is necessary.

Purpose

VistA needs to be modified to capture information on all clinical trainees so that data may be extracted and rolled up at the national level.

System Requirements

Patch XU*8.0*251 is a Kernel Installation and Distribution System (KIDS) software release. Installation Instructions can be found in the description for Patch XU*8.0*251, located on the Patch Module (i.e., Patch User Menu [A1AE USER]) on FORUM.

The Clinical Trainee Core Dataset patch (Kernel Patch XU*8.0*251) requires that both Test and Production accounts exist in a standard VistA operating environment in order to function correctly. In addition to a standard VistA operating environment, the following patches must be installed before running this patch:

VistA Package and Version	Associated Patch Designation(s)	Brief Patch Description
HL7, Version 1.6	HL*1.6*96	<p>This patch addresses the following:</p> <p>This patch is the second phase of upgrading VistA HL7 to HL7 version 2.4 and is in support of the Clinical Trainee Core Dataset, Kernel Patch XU*8.0*251.</p> <p> The CURRENT DEGREE LEVEL field (#12.1) points to the HL7 DEGREE file (#771.9) that complies with the HL7 Standard Table #360 for Degree. This HL7 file is used by Kernel Patch XU*8.0*251 and exported with Patch HL*1.6*96.</p>
Kernel, Version 8.0	XU*8.0*134	<p>Name Standardization defines a standard way for names to be entered into the NAME field (#.01) of the NEW PERSON file (#200). This will help in uniquely defining all providers in the file. Another benefit to this project will be to help uniquely identify computer users across various VA facilities.</p>
Kernel, Version 8.0	XU*8.0*214	<p>This patch was created to support the BVA (Board of Veterans Appeals) project to allow CPRS to restrict the access of users in the NEW PERSON file (#200) to those patients associated with a specific OE/RR LIST.</p>
Kernel, Version 8.0	XU*8.0*230	<p>This patch was created to allow CPRS to restrict access of users in the NEW PERSON (#200) file to specific CPRS GUI tabs. It involves adding a new multiple in the NEW PERSON file that points to a new file OR CPRS TABS (#101.13). For each entry in the multiple, an effective date and expiration can be assigned.</p>

Vista Package and Version	Associated Patch Designation(s)	Brief Patch Description
Kernel, Version 8.0	XU*8.0*247	<p>This patch addresses the following:</p> <ol style="list-style-type: none"> 1) This patch removes the message "USER has no ACCESS CODE", which appeared in the "Edit an Existing User" Screen of the XUREACT USER form when a user selected the option: REACTIVATE A USER [XUSERREACT] with a person having an access code. 2) The field DOB (Date of Birth) is added on the "Edit an Existing User" Screen of the XUEXISTING USER form. 3) This patch also deletes the "AF" cross-ref of New Person file (#200) for accounts that may have installed XU*8.0*138 entered as error.

Table 3: Kernel patches required prior to installation of Clinical Trainee Core Dataset

Chapter 2: User Manual Information

This is the User Manual section of this supplemental documentation for the Clinical Trainee Core Dataset project (Kernel Patch XU*8.0*251). This section gives instructions on how to use this software to populate the VistA NEW PERSON file (#200) with information such as name, address, social security number (SSN), discipline of study and current degree level, program of study, and the last year a trainee anticipated being in a training program at the associated VA facility.

The VISTA NEW PERSON File—Academic Affiliations Needs

The NEW PERSON file (#200) is a file in VistA that is exported with Kernel, and that resides at each local facility. Each person/user who has access to the local VistA computer system is entered into this file. It contains specific data on all employees, users, practitioners, and providers who access the local VistA system. The data elements within this file describe the users' characteristics and attributes. Many of them are specifically oriented to the health care field.

The NEW PERSON file is being adapted to meet the needs of the Office of Academic Affiliations (OAA) for reporting information on individuals who are receiving clinical training at a VA Medical Facility (VHA clinical trainees) such as medical residents, nursing students, and other trainees who may provide care to patients. Three new fields are added to the NEW PERSON file:

- CURRENT DEGREE LEVEL (#12.1)
- PROGRAM OF STUDY (#12.2)
- LAST TRAINING YEAR (#12.3)

In addition to these three new fields, the data from the following fields are tracked:

- NAME (#.01)
- STREET ADDRESS 1 (#.111)
- STREET ADDRESS 2 (#.112)
- STREET ADDRESS 3 (#.113)
- CITY ((#.114)
- STATE (#.115)
- ZIP CODE (#.116)
- DOB (#5)
- SSN (#9)
- EMAIL ADDRESS (#.151)
- SERVICE/SECTION (#29)
- TITLE (#8)
- DEGREE (#10.6)
- DATE ENTERED (#30)
- TERMINATION DATE (#9.2)

When data for any of the above fields is modified for a person that is designated a clinical trainee, a new cross-reference defined on the NEW PERSON file sets an index (a global node) that stores the IEN of the record that was modified and the date that it was modified. A separate queueable option that runs weekly loops through this index and sends via HL7 messages the clinical trainee data for each record modified to OAA.

Editing and Displaying VHA Clinical Trainee Core Data

This section provides information about the Kernel options affected or created by the VHA Clinical Trainee Core Data release (Patch XU*8.0*251). It does not attempt to provide detailed information about how to use these Kernel options. These are documented in detail in the "Sign-On/Security" section of the Kernel Systems Manual, Version 8.0. Use the following URL to access this information: <http://www.va.gov/vdl/Infrastructure.asp?appID=10>.

Kernel Input Options Affected

The Kernel options and the associated ScreenMan forms and input templates affected by Patch XU*8.0*251 are shown in Table 4. The Kernel options themselves, have not been changed. However, the ScreenMan forms and the input templates used by these options have been modified to give users the ability to edit clinical trainee data.

Kernel Option and Menu Text	ScreenMan Form	Input Template
XUSERNEW Add a New User to the System	XUNEW USER	XUNEW USER
XUSEREDIT Edit an Existing User	XUEXISTING USER	XUEXISTING USER
XUSERREACT Reactivate a User	XUREACT USER	XUREACT USER

Table 4: Affected Kernel input options with associated ScreenMan forms and input templates

How Does an Option's ScreenMan Form Differ from its Corresponding Input Template?

Functionally there is no difference between the ScreenMan forms and input templates invoked by these options. All three options attempt to invoke the associated ScreenMan form first. However, if for some reason the ScreenMan form cannot be invoked (e.g., because the terminal type cannot handle screen-oriented applications), the associated input template for scrolling mode is invoked.

Editing Clinical Trainee Data for New Person File Entries

This next example will use the screen-oriented display (i.e., the ScreenMan form) to illustrate the changes to the Kernel options. The input template functions similarly, but in scrolling mode. We will edit the fictitious John Flowers in the NEW PERSON file.

The four existing Kernel options affected by Patch XU*8.0*251 are located on the Kernel User Management menu as shown in Figure 1. In addition to the Kernel options affected, Patch XU*8.0*251 introduces a new Kernel menu option named OAA Clinical Trainee, which is described in more detail in the section "Assign Clinical Trainee Options to User(s)" on the following pages.

```
Select Systems Manager Menu Option: User Management

  Add a New User to the System [XUSERNEW]
  Edit an Existing User [XUSEREDIT]
  Reactivate a User [XUSERREACT]
  User Inquiry [XUSERINQ]
  OAA Clinical Trainee [XU-CLINICAL TRAINEE MENU]
    Edit Clinical Trainee [XU-CLINICAL TRAINEE EDIT]
    Inquiry Clinical Trainee [XU-CLINICAL TRAINEE INQUIRY]

Select User Management Option:
```

Figure 1: Kernel options on the User Management menu affected by Patch XU*8.0*251

After you select the option Edit an Existing User, Kernel prompts you to enter the person's name, as shown in Figure 2.

```
Select NEW PERSON NAME: FLOWERS, JOHN
```

Figure 2: Selecting a user in the NEW PERSON file (#200)

The option then opens up the first page of a five-page ScreenMan form, as shown in Figure 3.

```

                                Edit an Existing User
NAME: FLOWERS,JOHN                                     Page 1 of 5
-----
NAME... FLOWERS,JOHN                                INITIAL: JF
TITLE: AUDIOLOGY Student                            NICK NAME: Rose Bud
SSN: 0005555555                                     DOB: OCT 4,1955
DEGREE:                                             MAIL CODE:
DISUSER:                                           TERMINATION DATE:
Termination Reason:

                PRIMARY MENU OPTION:
Select SECONDARY MENU OPTIONS:
Want to edit ACCESS CODE (Y/N):      FILE MANAGER ACCESS CODE:
Want to edit VERIFY CODE (Y/N):

                Select DIVISION:
                SERVICE/SECTION: IRM
-----
COMMAND:                                             Press <PF1>H for help      Insert
```

Figure 3: The Edit an Existing User form, Page 1

The data on this page that is needed by the Office of Academic Affiliations for clinical trainees are TITLE and SSN. Therefore, for clinical trainees, you should make sure this data is filled in.

The rest of the data needed by the Office of Academic Affiliations is on page 5 of the form. Press <PageDown> or <PF1><DownArrow> until you reach page 5, or press <PageUp> or <PF1><UpArrow> to go directly to the page, which is shown in Figure 4.

Edit an Existing User		Page 5 of 5
NAME: FLOWERS, JOHN		
PERMANENT ADDRESS: 250 Main St.		
Street 1:		
Street 2:		
Street 3:		
City: Omaha		
State: Nebraska		
Zip Code: 99999		
E-Mail Address:		
Is this person a Clinical Trainee? NO		
Current Degree Lvl:		
Program of Study:		
Last Training Year:		
COMMAND:	Press <PF1>H for help	Insert

Figure 4: The Edit an Existing User form, Page 5

For clinical trainees, all data on this page should be entered. The three fields at the bottom of the page, Figure 4, CURRENT DEGREE LEVEL, PROGRAM OF STUDY, AND LAST TRAINING YEAR, are uneditable until you answer "YES" to the question "Is this person a Clinical Trainee?" When you answer "YES," the following two things happen:

1. The three fields (CURRENT DEGREE LEVEL, PROGRAM OF STUDY, AND LAST TRAINING YEAR) become editable.
2. The field PROGRAM OF STUDY (#12.2) becomes required. This means that you will need to edit this field in order to save your edits and exit the Edit an Existing User option. (PROGRAM OF STUDY (#12.2), is the only field among these three new fields mentioned that becomes required.)

The CURRENT DEGREE LEVEL field (#12.1), PROGRAM OF STUDY field (#12.2), and LAST TRAINING YEAR field (#12.3) are new fields that are added to the NEW PERSON file (#200) by patch XU*8.0*251.



The question "Is this person a Clinical Trainee?" only exists on the form, with no corresponding field in the NEW PERSON file. The default answer to this question is based on whether the PROGRAM OF STUDY (field # 12.2) is filled in. If the PROGRAM OF STUDY field has a value, it is assumed that the person is a clinical trainee, and the default answer is "YES." If PROGRAM OF STUDY is blank (null), it is assumed that the person is not a clinical trainee.

Assign Clinical Trainee Options to User(s)

A new menu, two new Kernel options and a corresponding ScreenMan form have been created in Patch XU*8.0*251. The Kernel User Management menu [XUSER], which is typically used by IRM, is being transported only for purposes of attaching the new Kernel menu option OAA Clinical Trainee [XU-

CLINICAL TRAINEE MENU]. Figure 5 shows a screen capture of this new Kernel menu along with the two new Kernel options (i.e., Edit Clinical Trainee [XU-CLINICAL TRAINEE EDIT] and Inquiry Clinical Trainee [XU-CLINICAL TRAINEE INQUIRY]) associated with it:

```
Select User Management Option: oaa <Enter> Clinical Trainee
    Edit Clinical Trainee [XU-CLINICAL TRAINEE EDIT]
    Inquiry Clinical Trainee [XU-CLINICAL TRAINEE INQUIRY]
Select OAA Clinical Trainee Option:
```

Figure 5: The new OAA Clinical Trainee [XU-CLINICAL TRAINEE MENU] menu

During the installation of Patch XU*8.0*251, both new Kernel options are automatically attached to the new OAA Clinical Trainee menu [XU-CLINICAL TRAINEE MENU], shown in Table 5. No input template is associated with this menu option.

Kernel Option and Menu Text	ScreenMan Form	Input Template
[XU-CLINICAL TRAINEE MENU] OAA Clinical Trainee	None	None

Table 5: New Kernel OAA Clinical Trainee menu option



The OAA Clinical Trainee menu [XU-CLINICAL TRAINEE MENU] can also be given to any user that will be entering this data. For example, it can be given as a Secondary Menu Option to the specific user(s) assigned to enter and maintain the clinical trainee data in the NEW PERSON file (#200).

Table 6 shows these new Kernel options. The Edit Clinical Trainee option allows editing of clinical trainee data. The Inquiry Clinical Trainee option allows you to produce output displaying clinical trainee data. No input templates are associated with these options. A ScreenMan Form is associated with the Edit Clinical Trainee option, only.

Kernel Option and Menu Text	ScreenMan Form	Input Template
XU-CLINICAL TRAINEE EDIT Edit Clinical Trainee	XU-CLINICAL TRAINEE	None
XU-CLINICAL TRAINEE INQUIRY Inquiry Clinical Trainee	None	None

Table 6: New Kernel Edit Clinical Trainee and Inquiry Clinical Trainee options and associated ScreenMan form

Using the Edit Clinical Trainee Option

Figure 6 illustrates how to access the Edit Clinical Trainee option from the OAA Clinical Trainee menu:

```

Select User Management Option: OAA <Enter> Clinical Trainee

      Edit Clinical Trainee
      Inquiry Clinical Trainee

Select OAA Clinical Trainee Option: EDIT <Enter> Clinical Trainee

Select NEW PERSON NAME: FLOWERS,JOHN <Enter>      JF
  
```

Figure 6: Using the Edit Clinical Trainee option

As was previously mentioned, the Edit Clinical Trainee option [XU-CLINICAL TRAINEE EDIT] is located on the OAA Clinical Trainee menu [XU-CLINICAL TRAINEE MENU]. After selecting this option, next you will want to select an entry in the NEW PERSON file, shown in Figure 6. A one-page ScreenMan form is then presented, as shown in Figure 7.

Edit Clinical Trainee Data		Page 1 of 1
NAME: FLOWERS, JOHN		
Title: AUDIOLOGY Student	SSN: 000555555	
Service/Section: IRM	Degree: Associate	
Date of Birth: OCT 4,1955		
Permanent Street 1: 250 Main St.		
Permanent Street 2:		
Permanent Street 3:		
City: Omaha		
State: Nebraska	Zip Code: 99999	
E-Mail Address:		
Is this person a Clinical Trainee? YES		
Current Degree Lvl: ASSOCIATE		
Program of Study: AUDIOLOGY		
Last Training Year: 2004		
COMMAND: Press <PF1>H for help Insert		

Figure 7: The Clinical Trainee Edit form

All the data on this form, Figure 7, should be filled in for clinical trainees. Just as in the existing forms affected by Patch XU*8.0*251, the default answer to the question "Is this person a Clinical Trainee?" is based on whether the PROGRAM OF STUDY field has a value. Figure 7 shows that the user has answered "YES" to this question. A "YES" response causes the CURRENT DEGREE LEVEL, PROGRAM OF STUDY, and LAST TRAINING YEAR fields to all become editable. In addition, the PROGRAM OF STUDY field becomes required.



The PROGRAM OF STUDY field (#12.2) is the only one among these three fields that becomes required when answering "Yes" to the prompt "Is this person a Clinical Trainee?".

Of particular note, Figure 7 shows that the following clinical trainee information has been entered for John Flowers:

- The Current Degree Lvl is "ASSOCIATE." This is the current degree level of the clinical trainee upon entry into the current training program or residency at this particular VA medical facility.
- The Current Program of Study is "AUDIOLOGY." This is a discipline that best describes the current program of study.
- The Last Training Year is "2004." This is the last year anticipated for training at this particular VAMC.

Using the Inquiry Clinical Trainee Option

Figure 8 illustrates how to access the Inquiry Clinical Trainee option from the OAA Clinical Trainee menu:

```
Select User Management Option: OAA <Enter> Clinical Trainee
      Edit Clinical Trainee
      Inquiry Clinical Trainee
CHOOSE 1-2: Inquiry Clinical Trainee
Select NEW PERSON NAME: FLOWERS,JOHN <Enter>      JF
DEVICE: <Enter> SYSTEM      Right Margin: 80// <Enter>
```

Figure 8: Using the Inquiry Clinical Trainee option

The Inquiry Clinical Trainee option [XU-CLINICAL TRAINEE INQUIRY] is located on the OAA Clinical Trainee menu [XU-CLINICAL TRAINEE MENU]. This option displays various attributes of clinical trainees. Figure 9 shows the output displayed after clinical trainee information has been entered for John Flowers.

```

Clinical Trainee Inquiry

JOHN FLOWERS (#99)                               Last Sign-on: Jun 04, 2003
Office Phone:
E-Mail Address:                                   SSN: *****5555

Title: AUDIOLOGY Student
Service/Section: IRM

Address:
250 Main St.
Omaha, NE 99999

Current Degree Lvl: ASSOCIATE
Program of Study: AUDIOLOGY
Last Training Year: 2002
    
```

Figure 9: Inquiry Clinical Trainee option

Kernel User Inquiry Option

The User Inquiry option and the associated print template affected by Patch XU*8.0*251 are shown in Table 7.

Kernel Option and Menu Text	Print Template
XUSERINQ User Inquiry	XUSERINQ

Table 7: Affected Kernel option with associated print template

The Kernel option itself has not been changed, but the print template has been modified to display the following three fields from the NEW PERSON file for clinical trainees:

- CURRENT DEGREE LEVEL (field #12.1)
- PROGRAM OF STUDY (field #12.3)
- LAST TRAINING YEAR (field #12.3)

Chapter 3: HL7 Interface Specifications

This interface specification is intended to identify the VistA information that will be shared as part of the Clinical Trainee Core Dataset project (Kernel Patch XU*8.0*251). The sharing of this information will be triggered by specific VistA events. Both the exact events and the messages used to share this data will be reviewed.

The Clinical Trainee Core Dataset application will make use of and create messages using the abstract message approach and encoding rules specified by the HL7 standard. The HL7 **VistA** application will be used for communicating data associated with various events that occur in health care environments.

The formats of these messages conform to HL7 interface standards, Version 2.4.

Assumptions

This interface documentation assumes that communication between the systems is established and maintained by **VistA**/Kernel processes. The discussion of specific technical issues related to this aspect of communication is beyond the scope of this chapter. This documentation also assumes a communication server utilizing VistA HL7 version 1.6 or a similar compatible message communicator. VistA Kernel, MailMan, VA FileMan, and HL7 packages are assumed the most recent versions and fully patched.

Sending System and Receiving System

Messaging occurs within the context of any VistA system being the originator of the message (Sending System) and a centralized database (Receiving System) located within the VHA Office of Academic Affiliations (OAA).

Data Capture and Transmission

Updates to the VHA Clinical Trainee Core Data will signal the creation of individual messages. A scheduled (weekly) task will build a batch of messages for transmission to the OAA.



For more information on a scheduled weekly task to build the batch messages for transmission to the VHA Office of Academic Affiliations, see the section titled "Background Jobs" in the "Technical Manual Information" section of this supplement.

Batch Messages

Each batch message will consist of PMU-B02 messages. Each message represents a single entry from the NEW PERSON file (#200) that was updated and is a part of the Clinical Trainee Core Dataset. Below is an example of a batch of two messages:

```

BHS^~|\&^XUOAA PMU^^XUOAA ACK^^20030520123707-
0800^^~T~PMU|B02~2.4^^99820884^

MSH^~|\&^XUOAA PMU^^^^PMU~B02^99820884-2^T^2.4^^^^USA

EVN^B02^20030519^^^^662~SAN FRANCISCO

STF^76~IEN~NEW
PERSON^111223333~USSA~SS^GARCIA~JOSE~LUIS~JR~MR~MS^^19640129^^IRM~~S
ERVICE/SECTION^^1301 CLAY STREET, Suite 1350N~P.O. Box
123~Oakland~CA~94612~USA^^^jose.garcia@med.va.gov^^DEVELOPER

PRA^^^^HEALTH INFORMATION~~~~2001

ORG^1^662~SAN FRANCISCO^IRM~~SERVICE/SECTION^^^^~HEALTH
INFORMATION~PROGRAM OF STUDY^20010411~

EDU^1^MAS

MSH^~|\&^XUOAA PMU^^^^PMU~B02^99820884-1^T^2.4^^^^USA

EVN^B02^20030519^^^^662~SAN FRANCISCO

STF^71~IEN~NEW
PERSON^415744635~USSA~SS^BEUSCHEL~GARY^^19810919^^IRM~~SERVICE/SECTI
ON^^1301 Clay St., #1350N, Development & Infrastructure~Veterans Health
Administration~Oakland~CA~94612~5217~USA^^^john.flowers@med.va.gov
^^DEVELOPER

PRA^^^^DIETETICS~~~~2010

ORG^1^662~SAN FRANCISCO^IRM~~SERVICE/SECTION^^^^~DIETETICS~PROGRAM OF
STUDY^20001101~

EDU^1^DOC

BTS^2

```

Figure 10: Sample of two batch HL7 messages

Batch Acknowledgments

Since HL7 messaging is being delivered using MailMan, Simple Mail Transport Protocol (SMTP), the OAA opted to not generate an HL7 application acknowledgement. This is because MailMan uses the guaranteed message delivery of SMTP. If the project ever changes to Minimal Lower Level Protocol (MLLP), then the OAA may be required to generate the application acknowledgement.

HL7 Message Profile for PMU-B02

The following is a description of an HL7 message profile as defined by the HL7 organization. Z (extended) elements are not used.

Interface ID	XUOAA PMU
Organization	
HL7 Version	HL7 2.4
Spec Version	HL7 2.4
Application Role	Sender
Conformance Type	Implementation
Encodings	ER7
Event Description	- Add personnel record
Message Type	PMU
Event Type	B02
Order Control Code	
Message Structure	BHS,{MSH,EVN,STF,PRA,ORG,EDU}BTS
Structure Type	PMU_B01
Accept Ack	
Application Ack	
Ack Mode	
Static Profile ID	
Dynamic Profile ID	

Table 8: HL7 Message Profile for PMU-B02

HL7 Control Segments

This section defines the HL7 control segments supported by VistA. The messages are presented separately and defined by category; segments are also described. The messages are presented in the following categories:

- Message Control
- Unsolicited Transactions from VistA

Message Definitions

From the VistA perspective, incoming or outgoing messages are handled or generated based on an event.

In this section and in the sections following, these elements are defined for each message:

- The trigger events.
- The message event code.
- A list of segments used in the message.
- A list of fields for each segment in the message.

Each message is composed of segments. Segments contain logical groupings of data. Segments may be optional or repeatable. Square brackets ([]) indicate the segment is optional, curly brackets ({}) indicate the segment is repeatable. For each message category there will be a list of HL7 standard segments.

Message Control Segments

This section describes the message control segments contained in message-types described in this document. These are generic descriptions. All of the segments described in this section are included in messages in this document. The VistA descriptions and mappings will be as specified here unless otherwise noted.

- BHS —Batch Header Segment (Required, *not* Repeatable)
- BTS —Batch Trailer Segment (Required, *not* Repeatable)
- MSH —Message Header (required, *not* repeatable)
- EVN —Event Type Segment (required, *not* repeatable)
- STF —Staff Identification (required, *not* repeatable)
- PRA —Practitioner Detail (required, repeatable)
- ORG —Practitioner Organization Unit (required, repeatable)
- EDU —Educational Detail (required, repeatable)

Segment Table Definitions

For each segment, the data elements are described in table format on the following pages. Each table includes information such as the sequence number (SEQ), data type (DT), maximum length (LEN), required or optional (R/O), repeatable (RP/#), the table number (TBL #), the element name, and the Vista description.

The Legend below is intended to serve as a key to define the column headings for the segment tables documented on the following pages.

Legend

Codes:

- R - required
- RE - required or empty
- C - conditional
- CE - conditional or empty
- O - optional
- NS - not supported
- U - unknown

Abbreviations:

- seq - sequence
- DT - datatype
- Len - length
- Opt - optionality
- Rep - repeatable
- Min - quantity min
- Max - quantity max
- Tbl - table

BHS — Batch Header Segment (Required, *not* Repeatable)

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Batch Field Separator	^	1	ST	1	R	False	1	1		2.16.2.1
Batch Encoding Characters	~\ &	2	ST	3	R	False	1	1		2.16.2.2
Batch Sending Application	XUOAA PMU	3	ST	15	O	False	0	1		2.16.2.3
Batch Sending Facility		4	ST	20	R	False	0	1		2.16.2.4
Batch Receiving Application	XUOAA ACK	5	ST	15	R	False	0	1		2.16.2.3
Batch Receiving Facility		6	ST	20	O	False	0	1		2.16.2.4
Batch Creation Date/Time		7	TS	26	O	False	0	1		2.16.2.7
Date/Time	20021016154059-0800	1	NM	0	R					
degree of precision		2	ST	0	O					
Batch Security		8	ST	40	O	False	0	1		2.16.2.8
Batch Name/ID/Type	~P~PMU B02~2.4	9	ST	20	R	False	0	1		2.16.2.9
Batch Name/ID/Type_rep		9	ST	20	O	False	0	1		2.16.2.9
Batch Comment		10	ST	80	O	False	0	1		2.16.3.2
Batch Control ID	9987012	11	ST	20	R	False	0	1		2.16.2.11
Reference Batch Control ID		12	ST	20	O	False	0	1		2.16.2.12

Table 9: HL7 Batch Header Segment (BHS)**BTS — Batch Trailer Segment (Required, *not* Repeatable)**

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Batch Message Count	2	1	ST	10	O	False	0	1		2.16.3.1
Batch Comment		2	ST	80	O	False	0	1		2.16.3.2
Batch Totals		3	NM	100	O	True	0	0		2.16.3.3

Table 10: HL7 Batch Trailer Segment (BTS)

MSH — Message Header Segment (Required, *not* Repeatable)

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Field Separator	^	1	ST	1	R	False	1	1		2.16.9.1
Encoding Characters	~\ &	2	ST	4	R	False	1	1		2.16.9.2
Sending Application		3	HD	180	R	False	0	0	0361	2.16.9.3
namespace ID	XUOAA PMU	1	IS	3	R				0363	
universal ID		2	ST	3	NS					
universal ID type		3	ID	3	NS				0301	
Sending Facility		4	HD	180	NS	False	0	0	0362	
namespace ID		1	IS	3	NS				0363	
universal ID		2	ST	3	NS					
universal ID type		3	ID	3	NS				0301	
Receiving Application		5	HD	180	NS	False	0	0	0361	
namespace ID		1	IS	3	NS				0363	
universal ID		2	ST	3	NS					
universal ID type		3	ID	3	NS				0301	
Receiving Facility		6	HD	180	NS	False	1	1	0362	2.16.9.6
namespace ID		1	IS	3	NS				0363	
universal ID		2	ST	3	NS					
universal ID type		3	ID	3	NS				0301	
Date/Time Of Message		7	TS	26	NS	False	1	1		2.16.9.7
Date/Time		1	NM	0	NS					
degree of precision		2	ST	0	NS					
Security		8	ST	40	NS	False	1	1		2.16.9.8
Message Type		9	CM_MSG	15	NS	False	1	1	0076	2.16.9.9
message type	PMU	1	ID	3	R				0076	
trigger event	B02	2	ID	3	R				0003	
message structure		3	ID	3	NS				0354	
Message Control ID	9987012-1	10	ST	20	R	False	1	1		2.16.9.10
Processing ID		11	PT	3	R	False	1	1		2.16.9.11
processing ID	P	1	ID	3	R				0103	
processing mode		2	ID	3	NS				0207	
Version ID		12	VID	60	R	False	1	1	0104	2.16.9.12
version ID	2.4	1	ID	3	R				0104	
internationalization code		2	CE	0	NS					
international version ID		3	CE	0	NS					
Sequence Number		13	NM	15	NS	False	0	0		2.16.9.13
Continuation Pointer		14	ST	180	NS	False	0	0		2.16.9.14
Accept Acknowledgment Type		15	ID	2	NS	False	1	1	0155	2.16.9.15
Application Acknowledgment		16	ID	2	NS	False	1	1	0155	2.16.9.16

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Type										
Country Code	USA	17	ID	3	RE	False	1	1	0399	2.16.9.17
Character Set		18	ID	16	NS	False	0	0	0211	2.16.9.18
Principal Language Of Message		19	CE	250	NS	False	0	0		2.16.9.19
Alternate Character Set Handling Scheme		20	ID	20	NS	False	0	0	0356	2.16.9.20
Conformance Statement ID		21	ID	10	NS	False	0	0	0449	2.16.9.21

Table 11: HL7 Message Header Segment (MSH)

EVN — Event Type Segment (Required, *not* Repeatable)

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Event Type Code	B02	1	ID	3	R	False		1	0003	3.4.1.1
Recorded Date/Time		2	TS	26	R	False		1		3.4.1.2
Date/Time	20021010132542-0700	1	NM	0	R					
degree of precision		2	ST	0	NS					
Date/Time Planned Event		3	TS	26	NS	False		0		3.4.1.3
Event Reason Code		4	IS	3	NS	False		0	0062	3.4.1.4
Operator ID		5	XCN	250	NS	False		0	0188	3.4.1.5
Event Occurred		6	TS	26	NS	False		0		3.4.1.6
Event Facility		7	HD	180	R	False		0		3.4.1.7
namespace ID	662	1	IS	3	R					
universal ID	SAN FRANCISCO	2	ST	30	R					

Table 12: HL7 Event Type Segment (EVN)

STF — Staff Identification (Required, *not* Repeatable)

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Primary Key Value - STF		1	CE	250	C	False	0	1	9999	15.4.6.1
identifier	9152	1	ST	0	R					
text	IEN	2	ST	3	R					
name of coding system	NEW PERSON	3	IS	3	R				0396	
alternate identifier		4	ST	3	NS					
alternate text		5	ST	3	NS					
name of alternate coding system		6	IS	3	NS				0396	
Staff ID Code		2	CX	60	R	False	1	1		15.4.6.2
ID	333333333	1	ST	3	R					
Check digit		2	ST	0	NS					
code identifying the check digit scheme employed		3	ID	3	NS				0061	
assigning authority		4	HD	3	R					
namespace ID	USSSA	1	IS	3	R				0363	
universal ID		2	ST	3	NS					
universal ID type		3	ID	3	NS				0301	
identifier type code (ID)	SS	5	ID	3	R				0203	
assigning facility		6	HD	3	NS					
effective date (DT)		7	DT	3	NS					
expiration date		8	DT	3	NS					
Staff Name		3	XPN	250	R	False	1	1		15.4.6.3
family name		1	FN	3	R					
surname	GARCIA	1	ST	3	R					
own surname prefix		2	ST	3	NS					
own surname		3	ST	3	NS					
surname prefix from partner/spouse		4	ST	3	NS					
surname from partner/spouse		5	ST	3	NS					
given name	JOSE	2	ST	3	R					
second and further given names or initials thereof	LUIS	3	ST	3	RE					
suffix (e.g., JR or III)	JR	4	ST	3	RE					
prefix (e.g., DR)		5	ST	3	RE					
degree (e.g., MD)		6	IS	3	RE				0360	
name type code		7	ID	3	NS				0200	
Name Representation code		8	ID	3	NS				0465	

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
name context		9	CE	0	NS					
name validity range		10	DR	3	NS					
name assembly order		11	ID	3	NS				0444	
Staff Type		4	IS	2	NS	False	0	0	0182	15.4.6.4
Administrative Sex		5	IS	1	NS	False	0	0	0001	15.4.6.5
Date/Time Of Birth	19551004	6	TS	26	R	False	0	0		15.4.6.6
Active/Inactive Flag		7	ID	1	NS	False	0	0	0183	15.4.6.7
Department		8	CE	250	NS	False	0	0	0184	15.4.6.8
Hospital Service		9	CE	250	R	False	1	1	0069	15.4.6.9
identifier	IRM	1	ST	0	R					
text		2	ST	3	R					
name of coding system	SERVICE/SECTION	3	IS	3	R				0396	
alternate identifier		4	ST	3	NS					
alternate text		5	ST	3	NS					
name of alternate coding system		6	IS	3	NS				0396	
Phone		10	XTN	250	NS	False	0	0		15.4.6.10
Office/Home Address		11	XAD	250	R	False	1	1		15.4.6.11
street address (SAD)		1	SAD	3	R					
street or mailing address	1301 Clay STREET, SUITE 1350N	1	ST	3	R					
street name		2	ST	3	RE					
dwelling number		3	ST	3	RE					
other designation	P.O. BOX 123	2	ST	3	RE					
city	OAKLAND	3	ST	3	R					
state or province	CA	4	ST	3	R					
zip or postal code	94612	5	ST	3	R					
country	USA	6	ID	3	R				0399	
address type		7	ID	3	NS				0190	
other geographic designation		8	ST	3	NS					
county/parish code		9	IS	3	NS				0289	
census tract		10	IS	3	NS				0288	
address representation code		11	ID	3	NS				0465	
address validity range		12	DR	3	NS					
Institution Activation Date		12	CM_DIN	26	R	False	1	1		15.4.6.12
date		1	TS	3	R					
Date/Time		1	NM	0	NS					
degree of precision		2	ST	0	NS					
institution name		2	CE	0	NS					
Institution		13	CM_	26	R	False	0	0		15.4.6.13

HL7 Interface Specifications

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Inactivation Date			DIN							
date		1	TS	3	R					
Date/Time	20020724132542-0700	1	NM	0	R					
degree of precision		2	ST	0	NS					
institution name		2	CE	0	NS					
identifier		1	ST	0	NS					
text		2	ST	3	NS					
name of coding system		3	IS	3	NS				0396	
alternate identifier		4	ST	3	NS					
alternate text		5	ST	3	NS					
name of alternate coding system		6	IS	3	NS				0396	
Backup Person ID		14	CE	250	NS	False	0	0		15.4.6.14
E-Mail Address	jose.garcia@med.va.gov	15	ST	40	R	False	1	1		15.4.6.15
Preferred Method of Contact		16	CE	250	NS	False	0	0	0185	15.4.6.16
Marital Status		17	CE	250	NS	False	0	0	0002	15.4.6.17
Job Title	DEVELOPER	18	ST	20	R	False	1	1		15.4.6.18
Job Code/Class		19	JCC	20	NS	False	0	0	0327	15.4.6.19
Employment Status Code		20	CE	250	NS	False	0	0	0066	15.4.6.20
Additional Insured on Auto		21	ID	1	NS	False	0	0	0136	15.4.6.21
Driver's License Number - Staff		22	DLN	25	NS	False	0	0		15.4.6.22
Copy Auto Ins		23	ID	1	NS	False	0	0	0136	15.4.6.23
Auto Ins. Expires		24	DT	8	NS	False	0	0		15.4.6.24
Date Last DMV Review		25	DT	8	NS	False	0	0		15.4.6.25
Date Next DMV Review		26	DT	8	NS	False	0	0		15.4.6.26
Race		27	CE	250	NS	False	0	0	0005	15.4.6.27
Ethnic Group		28	CE	250	NS	False	0	0	0189	15.4.6.28
Re-activation Approval Indicator		29	ID	1	NS	False	0	0	0136	15.4.6.29

Table 13: HL7 Staff Identification Segment (STF)

PRA — Practitioner Detail (Required, Repeatable)

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Primary Key Value - PRA		1	CE	250	NS	False	0	1	9999	15.4.5.1
Practitioner Group		2	CE	250	NS	False	0	0	0358	15.4.5.2
Practitioner Category		3	IS	3	NS	False	0	0	0186	15.4.5.3
Provider Billing		4	ID	1	NS	False	0	0	0187	15.4.5.4
Specialty		5	CM_SPD	100	R	False	0	0	0337	15.4.5.5
specialty name	HEALTH INFORMATION	1	ST	3	R					
governing board		2	ST	3	NS					
eligible or certified		3	ID	3	NS					
date of certification	2001	4	DT	3	NS					
Practitioner ID Numbers		6	CM_PLN	100	NS	False	0	0	0338	15.4.5.6
Privileges		7	CM_PIP	200	NS	False	0	0		15.4.5.7
Date Entered Practice		8	DT	8	NS	False	0	0		15.4.5.8
Institution		9	CE	250	NS	False	0	0		15.4.5.9
Date Left Practice		10	DT	8	NS	False	0	0		15.4.5.10
Government Reimbursement Billing Eligibility		11	CE	250	NS	False	0	0	0401	15.4.5.11
Set ID - PRA		12	SI	60	NS	False	0	1		15.4.5.12

Table 14: HL7 Practitioner Detail Segment (PRA)

ORG — Practitioner Organization Unit (Required, Repeatable)

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Set ID - ORG	1	1	SI	60	R	False	1	1		15.4.4.1
Organization Unit Code		2	CE	250	R	False	0	0	0405	15.4.4.2
identifier	662	1	ST	0	R					
text	SAN FRANCISCO	2	ST	3	R					
name of coding system		3	IS	3	NS				0396	
alternate identifier		4	ST	3	NS					
alternate text		5	ST	3	NS					
name of alternate coding system		6	IS	3	NS				0396	
Organization Unit Type Code - ORG		3	CE	250	R	False	0	0	0474	15.4.4.3
identifier	IRM	1	ST	0	R					
text		2	ST	3	NS					
name of coding system	SERVICE/SECTION	3	IS	3	R				0396	
alternate identifier		4	ST	3	NS					
alternate text		5	ST	3	NS					
name of alternate coding system		6	IS	3	NS				0396	
Primary Org Unit Indicator		4	ID	1	NS	False	0	0	0136	15.4.4.4
Practitioner Org Unit Identifier		5	CX	60	NS	False	0	0		15.4.4.5
Health Care Provider Type Code		6	CE	250	NS	False	0	0	0452	15.4.4.6
Health Care Provider Classification Code		7	CE	250	NS	False	0	0	0453	15.4.4.7
Health Care Provider Area of Specialization Code		8	CE	250	R	False	0	0	0454	15.4.4.8
identifier		1	ST	0	NS					
text	HEALTH INFORMATION	2	ST	3	R					
name of coding system	PROGRAM OF STUDY	3	IS	3	R				0396	
alternate identifier		4	ST	3	NS					
alternate text		5	ST	3	NS					
name of alternate coding system		6	IS	3	NS				0396	
Effective Date Range		9	DR	52	R	False	0	0		15.4.4.9
range start date/time		1	TS	3	R					

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Date/Time	20020624132542-0700	1	NM	0	R					
degree of precision		2	ST	0	NS					
range end date/time		2	TS	3	R					
Date/Time	20020624132542-0700	1	NM	0	R					
degree of precision		2	ST	0	NS					
Employment Status Code		10	CE	250	NS	False	0	0	0066	15.4.6.20
Board Approval Indicator		11	ID	1	NS	False	0	0	0136	15.4.4.11
Primary Care Physician Indicator		12	ID	1	NS	False	0	0	0136	15.4.4.12

Table 15: HL7 Practitioner Organization Unit Segment (ORG)

EDU — Educational Detail (Required, Repeatable)

ELEMENT NAME	EXAMPLE VALUE	SEQ	DT	LEN	OPT	REP	MIN	MAX	TBL	REF
Set ID - EDU	1	1	SI	60	R	False	1	1		15.4.2.1
Academic Degree	MAS	2	IS	10	R	False	1	1	0360	15.4.2.2
Academic Degree Program Date Range		3	DR	52	NS	False	0	0		15.4.2.3
Academic Degree Program ParticipationDate Range		4	DR	52	NS	False	0	0		15.4.2.4
Academic Degree Granted Date		5	DT	8	NS	False	0	0		15.4.2.5
School		6	XON	250	NS	False	0	0		15.4.2.6
School Type Code		7	CE	250	NS	False	0	0	0402	15.4.2.7
School Address		8	XAD	250	NS	False	0	0		15.4.2.8

Table 16: HL7 Educational Detail Segment (EDU)

Chapter 4: Technical Manual Information

This is the Technical Manual section of this supplemental documentation for the Clinical Trainee Core Dataset patch (Kernel Patch XU*8.0*251).

Implementation and Maintenance

Patch XU*8.0*251 is a Kernel Installation and Distribution System (KIDS) software release.



Installation instructions for Clinical Trainee Core Dataset can be found in the description of Patch XU*8.0*251, located on the Patch Module (i.e., Patch User Menu [A1AE USER]) on FORUM.

Package Requirements

Patch XU*8.0*251 requires a standard VistA operating environment in order to function correctly. Check your VistA environment for packages and versions installed.

The minimum VistA packages and patches that are required are listed as follows by:

1. VistA package and current version number,
2. Associated patch designation(s) that need(s) to be installed in addition to the VistA package, and
3. Brief description of the associated patch.

VistA Package and Version	Associated Patch Designation(s)	Brief Patch Description
HL7, Version 1.6	HL*1.6*96	This patch addresses the following: This patch is the second phase of upgrading VistA HL7 to HL7 version 2.4. This upgrade is limited to Chapter 15, Personnel Management, and is in support of the Clinical Trainee Core Dataset, Kernel Patch XU*8.0*251. A final phase to fully upgrade to version 2.4 will be released in the future.
Kernel, Version 8.0	XU*8.0*134	Name Standardization defines a standard way for names to be entered into the NAME field (#.01) of the NEW PERSON file (#200). This will help in uniquely defining all providers in the file. Another benefit to this project will be to help uniquely identify computer users across various VA facilities.

Vista Package and Version	Associated Patch Designation(s)	Brief Patch Description
Kernel, Version 8.0	XU*8.0*214	This patch was created to support the BVA (Board of Veterans Appeals) project to allow CPRS to restrict the access of users in the NEW PERSON file (#200) to those patients associated with a specific OE/RR LIST.
Kernel, Version 8.0	XU*8.0*230	This patch was created to allow CPRS to restrict access of users in the NEW PERSON (#200) file to specific CPRS GUI tabs. It involves adding a new multiple in the NEW PERSON file that points to a new file OR CPRS TABS (#101.13). For each entry in the multiple, an effective date and expiration can be assigned.
Kernel, Version 8.0	XU*8.0*247	<p>This patch addresses the following:</p> <ol style="list-style-type: none"> 1) This patch removes the message "USER has no ACCESS CODE", which appeared in the "Edit an Existing User" Screen of the XUREACT USER form when a user selected the option: REACTIVATE A USER [XUSERREACT] with a person having an access code. 2) The field DOB (Date of Birth) is added on the "Edit an Existing User" Screen of the XUEXISTING USER form. 3) This patch also deletes the "AF" cross-ref of New Person file #200 for accounts that may have installed XU*8.0*138 entered as error.

Kernel patches required prior to installation of Clinical Trainee Core Dataset

Background Jobs

Use TaskMan to schedule the option XUOAA SEND HL7 MESSAGE on a weekly basis. This background job initializes the generation and sending of the batch message HL7 PMU. XUOAA SEND HL7 MESSAGE builds a batch of messages for transmission to the OAA in support of the Clinical Trainee Core Dataset, Kernel Patch XU*8.0*251.



At certain times of the year your facility may process large numbers of trainees. During these times of peak trainee registration activity, you may wish to schedule the XUOAA SEND HL7 MESSAGE task to run more frequently to avoid generating large messages.



The SCHEDULING RECOMMENDED field (#209) is located in the OPTION file (#19). It must be set to "YES" in order to allow for one-time TaskMan scheduling outside the weekly scheduled background job.

Routines

The following two Kernel routines are exported with Patch XU*8.0*251:

- XUSER2—This is an existing Kernel routine, which has been modified to add a new REQ entry point that can be called from the XUEXISTING USER, XUNEW USER, XUREACT USER, and XU-CLINICAL TRAINEE forms. This entry point makes fields #12.1, 12.2, and 12.3 available or unavailable for editing, and makes those fields along with the other fields being tracked by VHA Office of Academic Affiliations required or not required, depending on whether the person is designated as a clinical trainee.

The second line of this routine looks like:

```
<tab>;;8.0;KERNEL;**267,251**;Jul 10, 1995
```

- XUOAAHL7—This new Kernel routine iterates through the entries updated in the NEW PERSON file (#200) and sends those entries as batch HL7 messages to the Office of Academic Affiliations (OAA) National Clinical Trainee Database.

The second line of this routine looks like:

```
<tab>;;8.0;KERNEL;**251**; Jul 10, 1995
```

File List

This chapter lists the two files exported with Patch XU*8.0*251.

VistA File and File Number	Global Location	Data w/ File?	Field Information
NEW PERSON File #200	^VA(200,	No	<p>This patch adds the following fields to the NEW PERSON file (#200):</p> <p>Field Name: CURRENT DEGREE LEVEL Field Number: 200,12.1 Type: POINTER TO file HL7 DEGREE (#771.9) Description: The CURRENT DEGREE LEVEL field is used to record the most recent degree or current level of training of this clinical trainee.</p> <p>Field Name: PROGRAM OF STUDY Field Number: 200,12.2 Type: POINTER TO file PROGRAM OF STUDY file (#8932.2) Description: The Program of Study field is used to record the discipline of study that best describes this trainee's current program of study at this VA Facility.</p> <p>Field Name: LAST TRAINING YEAR Field Number: 200,12.3 Type: NUMBER Description: The Last Training Year field is used to record the LAST year this trainee anticipates being in a training program at this VA Facility.</p> <p> The CURRENT DEGREE LEVEL field (#12.1) points to the HL7 DEGREE file (#771.9) that complies with the HL7 Standard Table #360 for Degree. This HL7 file is used by Kernel Patch XU*8.0*251 and exported with Patch HL*1.6*96.</p>

VistA File and File Number	Global Location	Data w/ File?	Field Information
PROGRAM OF STUDY File #8932.2	^USC(8932.2,	Yes	<p>This new file is created to hold the list of the programs of study that can be associated with a clinical trainee. This file is pointed to by the new PROGRAM OF STUDY field (#12.2) in the NEW PERSON file (#200).</p> <p>Field Name: NAME Field Number: 8932.2,.01 Type: FREE TEXT Description: This is the name of the program of study.</p> <p>The PROGRAM OF STUDY file is sent with the following data:</p> <ul style="list-style-type: none"> • AUDIOLOGY • CHAPLAINCY • DENTISTRY • DIETETICS • HEALTH INFORMATION • HEALTH SERVICES RESEARCH & DEVELOPMENT • IMAGING (RADIOLOGIC/ULTRASOUND TECH, ETC.) • LABORATORY • MEDICAL STUDENT • MEDICAL RESIDENT/FELLOW • MEDICAL POST-RESIDENCY PHYSICIAN IN VA SPECIAL FELLOWSHIP (AMBULATORY • CARE, NATIONAL QUALITY SCHOLARS, WOMEN'S HEALTH, ETC.) • MEDICAL/SURGICAL SUPPORT (RESPIRATORY TECH, BIOMED TECH, ETC.) • NURSE ANESTHETIST • NURSING • OPTOMETRY • PHARMACY • PHYSICIAN ASSISTANT • PODIATRY • PSYCHOLOGY • REHABILITATION (OT, PT, KT, ETC.) • SPEECH - LANGUAGE PATHOLOGY • SOCIAL WORK • OTHER

Table 17: File and field definitions added to the NEW PERSON file

"ATR" New-Style Cross-Reference

A record-level new-style cross-reference is added to the NEW PERSON file (#200) to set an index whenever fields for clinical trainees being tracked by the Office of Academic Affiliations are changed.

VistA File and File Number	Global Location	Data w/ File?	Description
NEW PERSON File #200	^VA(200,	No	<p>This new-style cross-reference has as cross-reference values all the fields in the NEW PERSON file that are being tracked by the Office of Academic Affiliations for rollup into a centralized database. When any of the fields are edited, the cross-reference logic will set an index entry that corresponds to the edited record. The index entries will look like this:</p> <p style="padding-left: 40px;">^VA(200,"ATR",ien) = FM internal date</p> <p style="padding-left: 40px;">"ATR" stands for "ATrainee."</p> <p>None of the field-type cross-reference values are used as subscripts in the index, since we are only interested in recording the IENs of the records that are edited and the date the index entry is set. A separate queueable option will loop through the entries in this index, and send via HL7 messages the clinical trainee data of each record to the Office of Academic Affiliations.</p>

Table 18: New-Style Cross-Reference added to the NEW PERSON file

ScreenMan Forms and Templates

Following is a list of the modified ScreenMan forms, input templates, and associated options exported with Patch XU*8.0*251.

ScreenMan Form	Input Template	Option and Menu Text	File and Number	Description
XUNEW USER	XUNEW USER	[XUSERNEW] Add a New User to the System	NEW PERSON File #200	The form and input template used by the Add a New User to the System option are modified to include the fields in the NEW PERSON (#200) file identified by OAA as clinical trainee core data elements. Most of the fields to be added already exist in the NEW PERSON file; Three new fields are added to the NEW PERSON file by this patch. If the person is assigned a Program of Study, it is assumed that the user is a Clinical Trainee. If the person entering the data responds "YES" to the prompt "Is this person a Clinical Trainee?" the PROGRAM OF STUDY (field #12.2) becomes required.
XUEXISTING USER	XUEXISTING USER	[XUSEREDIT] Edit an Existing User	NEW PERSON File #200	The same changes made to the form and input template used by the Add a New User to the System [XUSERNEW] option are made to the form XUEXISTING USER and input template XUEXISTING USER used by the Edit an Existing User [XUSEREDIT] option. See "Option: Add a New User to the System [XUSERNEW]" documented in the first entry of this table, for a description of those changes.

ScreenMan Form	Input Template	Option and Menu Text	File and Number	Description
XUREACT USER	XUREACT USER	[XUSERREACT] Reactivate a User	NEW PERSON File #200	The same changes made to the form and input template used by the Add a New User to the System [XUSERNEW] option are made to the form XUREACT USER and input template XUREACT USER used by the Reactivate a User [XUSERREACT] option. See "Option: Add a New User to the System [XUSERNEW]" documented in the first entry of this table, for a description of those changes.

Table 19: Modified ScreenMan forms and input templates exported with Patch XU*8.0*251, and associated options

Following is the new ScreenMan form and associated new option exported with Patch XU*8.0*251:

ScreenMan Form	Option and Menu Text	File and Number	Description
XU-CLINICAL TRAINEE	[XU-CLINICAL TRAINEE EDIT] Edit Clinical Trainee	NEW PERSON File #200	This new option invokes a new form that can be used to edit clinical trainee data for users in the NEW PERSON file that haven't been terminated. This new option attaches itself to the User Management [XUSER] menu, but each site can make this option available to any user that will be entering this data.

Table 20: New ScreenMan form and associated new option exported with Patch XU*8.0*251

Following is the modified print template and associated option exported with Patch XU*8.0*251:

Print Template	Option and Menu Text	File and Number	Description
XUSERINQ	[XUSERINQ] User Inquiry	NEW PERSON File #200	The print template XUSERINQ used by the User Inquiry option has been modified to display the following fields from the NEW PERSON file (#200) for clinical trainees: 12.1 CURRENT DEGREE LEVEL 12.2 PROGRAM OF STUDY 12.3 LAST TRAINING YEAR
XU-CLINICAL TRAINEE INQUIRY	[XU-CLINICAL TRAINEE INQUIRY]	NEW PERSON File #200	This print template XU-CLINICAL TRAINEE INQUIRY is used by the Inquiry Clinical Trainee option to display clinical trainee data from the NEW PERSON file (#200).

Table 21: Modified print template exported with Patch XU*8.0*251 and associated option

Options

New Kernel Options Exported With Patch XU*8.0*251

Patch XU*8.0*251 updates the following new Kernel options and a new ScreenMan form:

Option and Menu Text	ScreenMan Form	Description
[XU-CLINICAL TRAINEE MENU] OAA Clinical Trainee	None	This menu holds the Edit Clinical Trainee and Inquiry options: <ul style="list-style-type: none"> • Edit Clinical Trainee [XU-CLINICAL TRAINEE EDIT] • Inquiry Clinical Trainee [XU-CLINICAL TRAINEE INQUIRY]
[XU-CLINICAL TRAINEE EDIT] Edit Clinical Trainee	XU-CLINICAL TRAINEE	This option is used to edit the clinical trainee core dataset. Users that have been terminated can't be edited.
[XU-CLINICAL TRAINEE INQUIRY] Inquiry Clinical Trainee	None	Displays the various attributes of clinical trainees.
[XUOAA SEND HL7 MESSAGE] Send HL7 PMU message	None	Initiates the generation of batch HL7 messages to the Office of Academic Affiliations (OAA) if entries (fields) for Clinical Trainees have been updated in the NEW PERSON (#200) file. This option should be scheduled using TaskMan on a weekly basis.  The SCHEDULING RECOMMENDED field (#209) is located in the OPTION file (#19). It must be set to "YES" in order to allow for one-time TaskMan scheduling outside the weekly scheduled background job.

Table 22: New Kernel option and new ScreenMan form

Existing Kernel Options Affected by Patch XU*8.0*251

The input and print templates and the ScreenMan forms called by the Kernel options listed below have been modified, and are exported with Patch XU*8.0*251. However, the options themselves are *not* exported with the patch:

- Add a New User to the System
- Edit an Existing User
- Reactivate a User
- User Inquiry

Table 23 lists the Kernel options on the left with the modified ScreenMan forms and input templates on the right:

Kernel Option and Menu Text	ScreenMan Form	Input Template
XUSERNEW Add a New User to the System	XUNEW USER	XUNEW USER
XUSEREDIT Edit an Existing User	XUEXISTING USER	XUEXISTING USER
XUSERREACT Reactivate a User	XUREACT USER	XUREACT USER

Table 23: Kernel options with associated ScreenMan forms and input templates

Table 24 lists the Kernel option on the left with the modified print template on the right:

Option and Menu Text	Print Template
XUSERINQ User Inquiry	XUSERINQ

Table 24: Kernel option with associated print template



For information on the modifications to the input and print templates and the ScreenMan forms called by these options, see the section "ScreenMan Forms and Templates" in this supplement.

Archiving and Purging

There are no application-specific archiving or purging procedures or recommendations for the Clinical Core Trainee Dataset, Patch XU*8.0*251.

Callable Routines

There are no callable routines exported with Patch XU*8.0*251.

External Interfaces (HL7 Components)

Patch XU*8.0*251 makes use of HL7 messaging to identify and share VistA information with the Clinical Trainee Core Dataset project.



For information on message construction for HL7 messaging for the Clinical Trainee Core Dataset project, see "Chapter 3: HL7 Interface Specifications" in this supplement.

Listed below are the HL7 Application Parameters, HL Lower Level Protocol Parameters, and HL7 Protocols used for HL7 messaging.

Scheduled Option

```
NAME: XUOAA SEND HL7 MESSAGE           MENU TEXT: Send HL7 PMU message
TYPE: run routine                       CREATOR: GARCIA, JOSE
PACKAGE: KERNEL
DESCRIPTION: This option is used to send an HL7 PMU message to the
             Office of Academic Affiliations (OAA).
ROUTINE: OAA^XUOAAHL7
UPPERCASE MENU TEXT: SEND HL7 PMU MESSAGE
```

HL7 Application Parameters

```
NAME: XUOAA PMU                         ACTIVE/INACTIVE: ACTIVE
COUNTRY CODE: USA

NAME: XUOAA ACK                          ACTIVE/INACTIVE: ACTIVE
COUNTRY CODE: USA
```

HL7 Protocols

NAME: XUOAA PMU

TYPE: event driver

CREATOR: GARCIA,JOSE

DESCRIPTION: This HL7 event protocol is one of two protocols used to generate Update Personnel Record (PMU) messages. This particular protocol represents the sending system.

SENDING APPLICATION: XUOAA PMU

TRANSACTION MESSAGE TYPE: PMU

EVENT TYPE: B02

VERSION ID: 2.4

RESPONSE PROCESSING ROUTINE: Q

SUBSCRIBERS: XUOAA MFK

NAME: XUOAA MFK

TYPE: subscriber

CREATOR: GARCIA,JOSE

DESCRIPTION: This HL7 event protocol is one of two protocols used to generate Update Personnel Record (PMU) messages. This particular protocol represents the receiving system.

RECEIVING APPLICATION: XUOAA MFK

EVENT TYPE: B02

LOGICAL LINK: XUOAA

RESPONSE MESSAGE TYPE: ACK

PROCESSING ROUTINE: Q

HL7 Logical Link

The HL7 Logical Link shown below XUOAA implements an HL7 Lower Level Protocol named (MailMan) as an email exchange.

```
NODE: XUOAA                LLP TYPE: MAILMAN
  AUTOSTART: Enabled       QUEUE SIZE: 10
  MAIL GROUP: XUOAA CLIN  TRAINEE
```



Make sure AUTOSTART is set to "enabled" in the HL7 Logical Link XUOAA. Only HL7 logical links with AUTOSTART fields set to "enabled" are automatically started again after the system has been shutdown.

Mail Group: XUOAA CLIN TRAINEE

Mail Group Name	Description
XUOAA CLIN TRAINEE	This is the mail group used by the HL7 MailMan logical link for sending out the HL7 PMU messages to support the Office of Academic Affiliations' Clinical Trainee Core Data Set project. REMOTE MEMBER: AIMCDATA@LRN.VA.GOV

Table 25: Mail group for sending HL7 PMU messages to support OAA's Clinical Trainee Core Data Set project

External Relations

Package Requirements

Patch XU*8.0*251 requires a standard VistA operating environment in order to function correctly. Check your VistA environment for packages and versions installed.



For more information on the minimum VistA packages and patches that are required by this patch see the "Implementation and Maintenance" portion of the "Technical Manual Information" section of this supplement.

Internal Relations

There three new options exported with Patch XU*8.0*251. One is an HL7 option named:

- Send HL7 PMU message [XUOAA SEND HL7 MESSAGE]

The other two are Kernel options named:

- Edit Clinical Trainee [XU-CLINICAL TRAINEE EDIT]
- Inquiry Clinical Trainee [XU-CLINICAL TRAINEE INQUIRY]

The input and print templates and ScreenMan forms associated with the following Kernel options have been modified, and they are also exported with this release:

- Add a New User to the System [XUNEW USER]
- Edit an Existing User [XUSEREDIT]
- Reactivate a User [XUSERREACT]
- User Inquiry [XUSERINQ]

Namespace

The Clinical Trainee Core Dataset patch uses the XU namespace, which is a Kernel namespace.

File Numbers

Patch XU*8.0*251 file numbers and global locations are listed as follows:

File #	Global
200	^VA(200,
8932.2	^USC(8932.2,



The CURRENT DEGREE LEVEL field (#12.1) points to the HL7 DEGREE file (#771.9) that complies with the HL7 Standard Table #360 for Degree. This HL7 file is used by Kernel Patch XU*8.0*251 and exported with Patch HL*1.6*96.

Package-wide Variables

Patch XU*8.0*251 contains no package-wide variables.

Software Product Security

Mail Groups

Mail Group Name	Description
XUOAA CLIN TRAINEE	This is the mail group used by the HL7 MailMan logical link for sending out the HL7 PMU messages to support the Office of Academic Affiliations' Clinical Trainee Core Data Set project. REMOTE MEMBER: AIMCDATA@LRN.VA.GOV

Remote Systems

Patch XU*8.0*251 uses HL7 to send batch messages to the Office of Academic Affiliations (OAA) designated as a Microsoft Exchange address.

Archiving/Purging

There are no package-specific archiving procedures or recommendations for Patch XU*8.0*251.

Interfacing

There are no specialized (not VA produced) products (hardware and/or software) embedded within or required by Patch XU*8.0*251.

Electronic Signatures

There are no electronic signatures used in Patch XU*8.0*251.

Menus

There are no options of particular interest to Information Security Officers (ISOs) in Patch XU*8.0*251.

Security Keys

There are no security keys exported with Patch XU*8.0*251.

File Security

File #	File Name	DD	RD	WR	DEL	LAYGO	AUDIT
200	NEW PERSON	^	^	^		^	
8932.2	PROGRAM OF STUDY	@		^	@	^	@

Table 26: File Security



The CURRENT DEGREE LEVEL field (#12.1) points to the HL7 DEGREE file (#771.9) that complies with the HL7 Standard Table #360 for Degree. This HL7 file is used by Kernel Patch XU*8.0*251 and exported with Patch HL*1.6*96.

Glossary

ADPAC	Automated D ata P rocessing A pplication C oordinator.
ANSI	A merican N ational S tandards I nstitute
API	A pplication P rogramming I nterface
APPLICATION PACKAGE	In VistA, software and documentation that support the automation of a service, such as Laboratory or Pharmacy within VA medical centers (see Package).
APPLICATION PROGRAMMING INTERFACE (API)	Programmer calls provided for use by application programmers. APIs allow programmers to carry out standard computing activities without needing to duplicate utilities in their own packages. APIs also further DBA goals of system integration by channeling activities, such as adding new users, through a limited number of callable entry points.
ARRAY	An arrangement of elements in one or more dimensions. An M array is a set of nodes referenced by subscripts that share the same variable name.
AUTOSTART	Set to Enabled to allow this link to be autostarted or restarted whenever the "Restart/Start All Links and Filers" option is invoked.
BULLETINS	Electronic mail messages that are automatically delivered by VistA MailMan under certain conditions. For example, a bulletin can be set up to "fire" when database changes occur, such as adding a new Institution in the INSTITUTION file (#4). Bulletins are fired by bulletin-type cross-references.
CALLABLE ENTRY POINT	Authorized programmer call that may be used in any VistA application package. The DBA maintains the list of DBIC-approved entry points.
CHUI	C haracter-based U ser I nterface (i.e., roll-and-scroll)
CO	C entral O ffice
CONTROLLED SUBSCRIPTION INTEGRATION AGREEMENT	This applies where the IA describes attributes/functions that must be controlled in their use. The decision to restrict the IA is based on the maturity of the custodian package. Typically, these IAs are created by the requesting package based on their independent examination of the custodian package's features. For the IA to be approved, the custodian grants permission to other VistA packages to use the attributes/functions of the IA; permission is granted on a one-by-one basis where each is based on a solicitation by the requesting package. An example is the extension of permission to allow a package (e.g., Spinal Cord Dysfunction) to define and update a component that is supported within the Health Summary package file structures.

CROSS REFERENCE	Cross-reference—There are several types of cross-references available. Most generally, a VA FileMan cross-reference specifies that some action is performed when the field's value is entered, changed, or deleted. For several types of cross-references, the action consists of putting the value into a list; an index used when looking-up an entry or when sorting. The regular cross-reference is used for sorting and for lookup; you can limit it to sorting only.
DATA	A representation of facts, concepts, or instructions in a formalized manner for communication, interpretation, or processing by humans or by automatic means. The information you enter for the computer to store and retrieve. Characters that are stored in the computer system as the values of local or global variables. VA FileMan fields hold data values for file entries.
DATA DICTIONARY (DD)	<p>The Data Dictionary is a global containing a description of what kind of data is stored in the global corresponding to a particular file. The data is used internally by VA FileMan for interpreting and processing files.</p> <p>A Data Dictionary contains the definitions of a file's elements (fields or data attributes); relationships to other files; and structure or design. Users generally review the definitions of a file's elements or data attributes; programmers review the definitions of a file's internal structure.</p>
DBA	Database Administrator , oversees package development with respect to VistA Standards and Conventions (SAC) such as namespacing. Also, this term refers to the Database Administration function and staff.
DBIA	Database Integration Agreement , a formal understanding between two or more VistA packages, which describes how data is shared or how packages interact. The DBA maintains a list of DBIAs.
DEFAULT	Response the computer considers the most probable answer to the prompt being given. It is identified by double slash marks (//) immediately following it. This allows you the option of accepting the default answer or entering your own answer. To accept the default you simply press the Enter (or Return) key. To change the default answer, type in your response.
DELIMITER	Special character used to separate a field, record or string. VA FileMan uses the ^ character as the delimiter within strings.
DEPARTMENT OF VETERANS AFFAIRS	The Department of Veterans Affairs , formerly called the Veterans Administration .

DHCP	D ecentralized H ospital C omputer P rogram of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA) is the former name for Veterans Health Information Systems and Technology Architecture (VistA). VistA software, developed by VA, is used to support clinical and administrative functions at VA Medical Centers nationwide. It is written in M and, via the Kernel, runs on all major M implementations regardless of vendor. VistA is composed of packages that undergo a verification process to ensure conformity with namespacing and other VistA standards and conventions.
DIRECT MODE UTILITY	A programmer call that is made when working in direct programmer mode. A direct mode utility is entered at the MUMPS prompt (e.g., >D ^XUP). Calls that are documented as direct mode utilities <i>cannot</i> be used in application package code.
DoD	D epartment of D efense
ELECTRONIC SIGNATURE CODE	Secret password that some users may need to establish in order to sign documents via the computer.
ENCRYPTION	"Cryptographic transformation of data (plaintext) into a form (ciphertext) that conceals the data's original meaning to prevent it from being known or used." ¹
ENTRY	VA FileMan record. It is uniquely identified by an internal entry number (the .001 field) in a file.
EXTRINSIC FUNCTION	Extrinsic function is an expression that accepts parameters as input and returns a value as output that can be directly assigned.
FHIE	F ederal H ealth I nformation E xchange. Formerly known as GCPR, FHIE allows for the sharing and transfer of electronic data from the DoD to the VHA for better patient care of Veterans.
FIELD	In a record, a specified area used for the value of a data attribute. The data specifications of each VA FileMan field are documented in the file's data dictionary. A field is similar to blanks on forms. It is preceded by words that tell you what information goes in that particular field. The blank, marked by the cursor on your terminal screen, is where you enter the information.
FILE	Set of related records treated as a unit. VA FileMan files maintain a count of the number of entries or records.
FILE MANAGER (VA FILEMAN)	The VistA's Database Management System (DBMS). The central component of the Kernel that defines the way standard VistA files are structured and manipulated.

¹ DEA web site (http://www.deadiversion.usdoj.gov/ecomm/e_rx/con_ops/index.html): "Public Key Infrastructure Analysis Concept of Operations," Section 3.4.1 "Terms and Definitions"

Glossary

FORM	See SCREENMAN FORM.)
FORUM	The central E-mail system within VistA. It is used by developers to communicate at a national level about programming and other issues. FORUM is located at the CIO Field Office - Washington, DC (162-2).
FREE TEXT	A DATA TYPE that can contain any printable characters.
GLOBAL VARIABLE	Variable that is stored on disk (M usage).
GUI	Graphical User Interface
HEALTH LEVEL SEVEN (HL7)	National level standard for data exchange in all healthcare environments regardless of individual computer application systems.
HEALTH LEVEL SEVEN (HL7) VISTA	Messaging system developed as a VistA software package that follows the HL7 Standard for data exchange.
HEC	Health Eligibility Center
HIPAA	Health Insurance Portability and Accountability Act
HSD&D (Formerly known as SD&D)	Health Systems Design and Development
ICN	Integration Control Number (ICN) is a unique identifier assigned to patients when they are added to the Master Patient Index. ICNs link patients to their records across VA systems. The ICN follows the American Society for Testing Materials (ASTM) E1714-95 standard for a universal health identifier.
IIS	Information Infrastructure Service
INPUT TEMPLATE	A pre-defined list of fields that together comprise an editing session.
INTEGRATION AGREEMENTS (IA) (Formerly known as DATABASE INTEGRATION AGREEMENTS [DBIA])	Integration Agreements define an agreement between two or more VistA packages to allow access to one development domain by another. Any package developed for use in the VistA environment is required to adhere to this standard; as such it applies to vendor products developed within the boundaries of DBA assigned development domains (e.g., MUMPS AudioFax). An IA defines the attributes and functions that specify access. All IAs are recorded in the Integration Agreement database on FORUM. Content can be viewed using the DBA menu or the Technical Services' web page.
IRM	Information Resource Management. A service at VA medical centers responsible for computer management and system security.
ISO	Information Security Officer

ITAC	I nformation T echnology A pproval C ommittee was established as an advisory committee to the Chief Information Officer to ensure that the Information Technology (IT) program supports VHA goals and to provide guidance concerning priorities for IT initiatives.
IV&V	I ndependent V alidation and V erification team acts to ensure the functional integrity and technical correctness of software, processes and documentation.
KERNEL	Set of VistA software routines that function as an intermediary between the host operating system and the VistA application packages such as Laboratory, Pharmacy, IFCAP, etc. The Kernel provides a standard and consistent user and programmer interface between application packages and the underlying M implementation.
LAN	L ocal A rea N etwork
LDAP	L ightweight D irectory A ccess P rotocol
LINK	Non-specific term referring to ways in which files may be related (via pointer links). Files have links into other files.
MAILMAN	VistA software that provides a mechanism for handling electronic communication, whether it's user-oriented mail messages, automatic firing of bulletins, or initiation of server-handled data transmissions.
MENU	List of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).
MENU SYSTEM	The overall Menu Manager logic as it functions within the Kernel framework.
MENU TEXT	The descriptive words that appear when a list of option choices is displayed. Specifically, the Menu Text field of the OPTION file (#19). For example, User's Toolbox is the menu text of the XUSERTOOLS option. The option's synonym is TBOX.
MPI	M aster P atient I ndex is the master index of all VHA patients. Located at the Austin Automation Center (AAC), the MPI assigns and maintains unique national patient identifiers, Integration Control Numbers (ICNs), that link patients to their records across VHA systems.

NAMESPACING	Convention for naming VistA package elements. The DBA assigns unique character strings for package developers to use in naming routines, options, and other package elements so that packages may coexist. The DBA also assigns a separate range of file numbers to each package.
NVS	National VistA Support
OAA	Office of Academic Affiliations
OIFO	Office of Information Field Office
OPTION	An entry in the OPTION file. As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by Task Manager.
OPTION NAME	Name field in the OPTION file (e.g., XUMAIN for the option that has the menu text "Menu Management"). Options are namespaced according to VistA conventions monitored by the DBA.
PACKAGE	The set of programs, files, documentation, help prompts, and installation procedures required for a given software application. For example, Laboratory, Pharmacy, and PIMS are packages. A VistA software environment composed of elements specified via the PACKAGE file (#9.4). Elements include files and associated templates, namespaced routines, and namespaced file entries from the OPTION, HELP FRAME, BULLETIN, and FUNCTION files. As public domain software, packages may be requested through the Freedom of Information Act (FOIA).
POINTER	The address at which a data value is stored in computer memory. A relationship between two VA FileMan files, a pointer is a file entry that references another file (forward or backward). Pointers can be an efficient means for applications to access data by referring to the storage location at which the data exists.
PRIMARY KEY	A Data Base Management System construct, where one or more fields uniquely define a record (entry) in a file (table). The fields are required to be populated for every record on the file, and are unique, in combination, for every record on the file.
PRIVATE INTEGRATION AGREEMENT	Where only a single application is granted permission to use an attribute/function of another VistA package. These IAs are granted for special cases, transitional problems between versions, and release coordination. A Private IA is also created by the requesting package based on their examination of the custodian package's features. An example would be where one package distributes a patch from another package to ensure smooth installation.

PROMPT	The computer interacts with the user by issuing questions called prompts, to which the user issues a response.
RECORD	Set of related data treated as a unit. An entry in a VA FileMan file constitutes a record. A collection of data items that refer to a specific entity (e.g., in a name-address-phone number file, each record would contain a collection of data relating to one person).
REQUIRED FIELD	A mandatory field, one that must not be left blank. The prompt for such a field will be repeated until the user enters a valid response.
REVERSE VIDEO	The reversal of light and dark in the display of selected characters on a video screen. For example, if text is normally displayed as black letters on a white background, reverse video presents the text as white letters on a black background or vice versa.
ROUTINE	Program or a sequence of instructions called by a program that may have some general or frequent use. M (previously referred to as MUMPS) routines are groups of program lines, which are saved, loaded, and called as a single unit via a specific name.
SAC	Standards and Conventions. Through a process of verification, VistA packages are reviewed with respect to SAC guidelines as set forth by the Standards and Conventions Committee (SACC). Package documentation is similarly reviewed in terms of standards set by the Documentation Standards and Conventions Committee (DSCC).
SACC	VistA's Standards and Conventions Committee. This Committee is responsible for maintaining the SAC.
SCREEN EDITOR	VA FileMan's Screen-oriented text editor. It can be used to enter data into any WORD-PROCESSING field using full-screen editing instead of line-by-line editing.
SCREENMAN FORMS	Screen-oriented display of fields, for editing or simply for reading. VA FileMan's Screen Manager is used to create forms that are stored in the FORM file (#.403) and exported with a package. Forms are composed of blocks (stored in the BLOCK file [#.404]) and can be regular, full screen pages or smaller, "pop-up" pages.
SCREEN-ORIENTED	A computer interface in which you see many lines of data at a time and in which you can move your cursor around the display screen using screen navigation commands. Compare to Scrolling Mode.
SCROLLING MODE	The presentation of the interactive dialogue one line at a time. Compare to Screen-oriented.
SEPG	Software Engineering Process Group

SUBSCRIBER	A subscriber is an entity that receives updates to a patient's data from other sites. Treating facilities have a subscription with an infinite expiration date implied. They may not deactivate from descriptive subscriptions. A treating facility, upon registration of a patient known elsewhere, automatically becomes a subscriber. Descriptive subscribers receive changes to patient demographic information including CMOR changes and updates to the subscription and treating facilities lists.
SUBSCRIPTION	The process used to identify the sites that will receive data updates for a patient.
SUPPORTED REFERENCE INTEGRATION AGREEMENT	This applies where any VistA application may use the attributes/functions defined by the IA (these are also called " Public "). An example is an IA that describes a standard API such as DIE or VADPT. The package that creates/maintains the Supported Reference must ensure it is recorded as a Supported Reference in the IA database. There is no need for other VistA packages to request an IA to use these references; they are open to all by default.
TEMPLATE	Means of storing report formats, data entry formats, and sorted entry sequences. A template is a permanent place to store selected fields for use at a later time. Edit sequences are stored in the INPUT TEMPLATE file (#.402), print specifications are stored in the PRINT TEMPLATE file (#.4), and search or sort specifications are stored in the SORT TEMPLATE file (#.401).
THUMBPRINT	This is the foreign key (hash) used to access the public and private certificates.
TOOLKIT	Toolkit (or Kernel Toolkit) is a robust set of tools developed to aid the Veterans Health Information Systems and Technology Architecture (VistA) development community, and Information Resources Management (IRM), in writing, testing, and analysis of code. They are a set of generic tools that are used by developers, documenters, verifiers, and packages to support distinct tasks. The Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the OI Field Office – Oakland (formerly San Francisco) for internal management and have proven valuable. Toolkit also includes tools provided by other OI Field Offices based on their proven utility.
TRIGGER	A type of VA FileMan cross-reference. Often used to update values in the database given certain conditions (as specified in the trigger logic). For example, whenever an entry is made in a file, a trigger could automatically enter the current date into another field holding the creation date.
VA	The Department of Veterans Affairs, formerly called the Veterans Administration.

VA FILEMAN	Set of programs used to enter, maintain, access, and manipulate a database management system consisting of files. A package of online computer routines written in the M language, which can be used as a stand-alone database system or as a set of application utilities. In either form, such routines can be used to define, enter, edit, and retrieve information from a set of computer stored files.
VAMC	Veterans Affairs Medical Center.
VARIABLE	Character, or group of characters, that refer to a value. M (previously referred to as MUMPS) recognizes 3 types of variables: local variables, global variables, and special variables. Local variables exist in a partition of main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays. The term "global" may refer either to a global variable or a global array. A special variable is defined by systems operations (e.g., \$TEST).
VDSI	VistA Data Systems & Integration.
VHA	Veterans Health Administration.
VISN	Veterans Integrated Service Network
VISTA	Veterans Health Information Systems and Technology Architecture (VistA) (formerly the Decentralized Hospital Computer Program [DHCP]) of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA). VistA software, developed by VA, is used to support clinical and administrative functions at VA Medical Centers nationwide. It is written in M, and, via the Kernel runs on all major M implementations regardless of vendor. VistA is composed of packages, which undergo a verification process to ensure conformity with namespacing and other VistA standards and conventions.
WAN	Wide Area Network

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