

**Health Data & Informatics (HDI)**

**Data Standardization Toolset**

### VERSION 1.1

**Technical Manual and**

**Package Security Guide**

***October 10, 2005***

Veterans Health Administration Office of Information

Health Data & Informatics

# Revision History

Table 1, below, summarizes this document’s revision history.

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Revision** | **Description** | **Author(s)** |
| May 2005 | 1.0 | Initial VHA version of HDI. | Data Standardization |
| October 10,2005 | 1.1 | Added the appropriate VHA directive number in place of “pending directive #” in sections 1.1 and 12.1. | Data Standardization |

***Table 1: Technical Manual and Package Security Guide Revision History***

# Contents

[Revision History ii](#_TOC_250014)

[Contents ii](#_TOC_250013)

Tables iii

1. [Introduction iv](#_TOC_250012)
2. [Implementation and Maintenance 6](#_TOC_250011)
3. [Files 6](#_TOC_250010)
4. [Global Translation and Journaling 17](#_TOC_250009)
5. [Routines 17](#_TOC_250008)
6. [Exported Options 18](#_TOC_250007)
7. [Exported RPCs 18](#_TOC_250006)
8. [Other Software Elements 18](#_TOC_250005)
9. [Callable Routines, Entry Points and APIs 19](#_TOC_250004)
10. [External Relations 23](#_TOC_250003)
11. [Internal Relations 23](#_TOC_250002)
12. [Software Product Security 24](#_TOC_250001)
13. [Glossary 26](#_TOC_250000)

Tables

Table 1: Technical Manual and Package Security Guide Revision History ii

Table 2: Data Standardization FileMan Files 7

Table 3: Other Software Elements: Bulletins 18

Table 4: Software Installation Requirements 23

Table 5: Menus and Options 25

Table 6: Security Keys and File Security 25

# Introduction

This technical manual describes the Health Data & Informatics (HDI) 1.0 package. This document is intended to assist Information Resources Management (IRM) and Enterprise VistA Support (EVS) staff.

This document provides a general overview of the standardization process, which includes development efforts from three other teams: XU\*8.0\*299, XT\*7.3\*93, and GMRV\*5.0\*8. Additional documentation for the other development efforts is separately available.

## Data Standardization

The Health Data Informatics (HDI) package provides a basic method for seeding VHA Unique Identifiers (VUIDs) for reference data in existing VistA applications. A VUID is a meaningless number, which is automatically assigned to concepts, properties, and relationships in a terminology to facilitate their access and manipulation by computers.

The HDI package will be used by each VistA site to seed VUIDs in their existing global files that contain reference data, such as drug names, names of known allergens, and so forth. These files have been grouped into domains, and each domain will be standardized separately. As each domain’s files are originally standardized, the HDI package is used to assign a VUID to each term or concept in the file. Subsequent standardization updates and maintenance on these files will be handled separately by the New Term Rapid Turnaround (NTRT) program.

Installation of this package anticipates the installation of domain-specific application patches, applied to any application(s) that make use of the standardized reference data files.

Requirements documentation for each affected domain is separately available from Data Standardization. These application patches (e.g. GMRV\*5.0\*8) will, in general terms: change the data dictionary and global files to prevent modification of data; and modify existing data dictionary files to add additional fields, including the VUID field and fields for determining the current status of a term. The application patches will also modify user interfaces (both graphical and roll-and-scroll) to screen out all reference data whose status is ‘not active.’ Once these changes are in place, the application patch makes a procedure call to the HDI package, instructing it to seed the VUIDs and statuses for each reference term.

Once the Application Patch has been installed for the Data Domain, the Application post- initialization routine calls an API in the HDI package which creates an XML file for each of the files being standardized. The XML file includes the Term/Concept (.01 Field) from each of the files. Each XML file is then forwarded to the central server, FORUM. On the FORUM server, the XML file is compared with the standardized data from Enterprise Terminology Services (ETS). The data received from the facility is modified as follows: (1) FORUM sets a VUID value for every matching entry; (2) any unmatched local entries are assigned a VUID from a block of available numbers, and identified as inactive terms; and (3) any duplicate entries are identified as inactive terms. This information is then passed back to the facility as an XML file, which is used by the HDI package on the Facility Server to update the VistA files.

Once the Facility’s VistA files have been updated, a MailMan mail message is automatically sent to the Enterprise Reference Terminology (ERT) team. The ERT team will manually initiate a

Master File Server (MFS) push through the Vitria Interface Engine (VIE), which will complete the file update with data for additional fields not modified by the HDI package. This ERT update relies on VUIDs as a key for inserting the standardized data. At this point, the facility is considered standardized for that particular VistA file.

Once the Facility’s VistA file is standardized, the Application patch may optionally invoke a post-processing routine through MFS—for example if there is a need to perform any necessary cleanup tasks on the standardized file. When the post-processing routine completes its processing, or if there was no post-processing routine, the Health Data Repository (HDR) Implementation managers are notified automatically via another MailMan message. This message notifies HDR that the site is ready to have VistA Data Extraction Framework (VDEF) triggers turned on, which enables communication between the Facility’s VistA Server and the HDR/IMS database.

Implementation of this package is required by VHA Directive 2005-044.

## Reference Materials

Readers who wish to learn more should consult the following:

* VUID Planning Requirements Document from Enterprise Reference Terminology (ERT):

REDACTED

* Data Standardization Project Website: [REDACTED](http://vaww.infoshare.va.gov/Data_Standardization/default.aspx)
* The NTRT Program website. This website allows users to submit new terms to be included in the national standard. The website also features a user guide that provides instructions for submitting a new term: <http://vista.med.va.gov/ntrt/>
* The VistA documentation library has more detailed information about all aspects of VistA. Readers may be especially interested in documentation about the MFS, Kernel and Kernel Toolkit patches, which are involved in the Data Standardization process: <http://www.va.gov/vdl/>
* More specific documentation is available about the Data Standardization APIs in the Kernel Toolkit patch. Look for links to this documentation under the heading “Data Standardization” at the following website: <http://vista.med.va.gov/kernel/apis/index.shtml>

Documentation is made available online, on paper and in Adobe Acrobat Portable Document Format (PDF). A PDF 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" also available at the Adobe Web address above.

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# Implementation and Maintenance

The following items constitute the recommended system maintenance for the HDI package.

## Post Installation

After installation, the routine HDI1000A will be automatically run to post system configuration information in the HDIS SYSTEM and HDIS PARAMETER files.

## Site Parameters

The configuration information contained in the HDIS SYSTEM and HDIS PARAMETER files is used to correctly send and receive data from a centralized server. Information contained in these files should not be edited.

## Archiving and Purging

There are no archiving or purging capabilities in the HDI 1.0 package.

# Files

This section describes the data elements and VistA field locations needed for VUID seeding for data standardization.

## Data Elements

The following files belong to this package. The following sections describe each file in more detail.

|  |  |  |
| --- | --- | --- |
| **Number** | **Name** | **Description** |
| 7115.1 | HDIS DOMAIN | This file contains the Domains, which are a subset of medicine, a natural grouping of clinical acts (e.g., demographics, vital signs, laboratory, pharmacy), and the VistA File/Fields associated with the Domain.Data is distributed with this file. |

|  |  |  |
| --- | --- | --- |
| **Number** | **Name** | **Description** |
| 7115.3 | HDIS XML TEMPLATE | This file contains the name of the XML template, to identify which XML schema the template relates to.Data is distributed with this file. |
| 7115.5 | HDIS STATUS | This file contains the different status codes used by Data Standardization processes.Data is distributed with this file. |
| 7115.6 | HDIS FILE/FIELD | This file contains the VistA File and Field numbers.Data is distributed with this file. |
| 7118.11 | HDIS TERM/CONCEPT VUID ASSOCIATION | This file contains the association of a Term/Concept and its VUID and Activation Status as defined by ERT.No data is distributed with this file. |
| 7118.21 | HDIS SYSTEM | This file contains the system-related information for a facility. It points to the institution file (file 4).No data is distributed with this file. |
| 7118.22 | HDIS FACILTY TERM/CONCEPT ASSOCIATION | This file contains the term or concept assigned to a VistA File or Field Internal Entry Number (IEN) at a Facility by the Data Standardization VUID Implementation Process.No data is distributed with this file. |
| 7118.25 | HDIS VUID IMPLEMENTATION STATUS | This file contains the Status of the VUID Implementation Process for a VistA File/Field at a Facility.No data is distributed with this file. |
| 7118.29 | HDIS PARAMETER | This file contains different parameters used by Data Standardization processes.No data is distributed with this file. |

***Table 2: Data Standardization FileMan Files***

* + 1. HDIS DOMAIN File

**File Name/Number:** HDIS Domain file (#7115.1)

**Global:** ^HDIS(7115.1,

**System Location:** Client (Facility) and Server (Central)

This file contains the Domains, which are a subset of medicine, a natural grouping of clinical acts (e.g., demographics, vital signs, laboratory, and pharmacy) and the VistA File/Fields

associated with the Domain.

The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Domain**A subset of medicine, a natural grouping of clinical acts (e.g., demographics,vital signs, laboratory, pharmacy). | 7115.1,.01 | DOMAIN | 0;1 | Free Text | 3-30Required |
| **File/Field** | 7115.1,10 | FILE/FIELD | FILE | N/A | MultipleSub-file #7115.11 |
| **File/Field**The File/Field associated with the record. | 7115.11,.01 | FILE/FIELD | 0;1 | Pointer | HDIS File/Field file (#7115.6)Required |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | Domain (#.01) |
| Regular | “B” | File/Field (7115.11,#.01) |

### HDIS XML Template

**File Name/Number:** HDIS XML Template file (#7115.3)

**Global:** ^HDIS(7115.3,

**System Location:** Client (Facility) and Server (Central)

This file contains XML schema templates which are used to create XML documents. It identifies the entities, their sequence in the document, and whether they are required or optional.

The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Name** | 7115.3,.01 | NAME | 0;1 | Free Text | 3-30 |
| Name of the XML | Required |
| Template. Identifies which |  |
| XML schema the template |  |
| relates to. |  |
| **XML Version** | 7115.3,1 | XML VERSION | 0;2 | Number | 1-99 |
| Identifies what version of | 4 decimal digits |
| XML this XML message | Required |
| will use. |  |
| **Encoding** | 7115.3,2 | ENCODING | 0;3 | Free Text | 1-20 |
| Defines the encoding which | Required |
| will be used when creating |  |
| the XML message. |  |
| Normally this is set to UTF• |  |
| 8. |  |
| **Primary Element** | 7115.3,3 | PRIMARY | 0;4 | Free Text | 3-30 |
| Identifies the primary | ELEMENT | Required |
| element in the XML |  |  |
| schema. |  |  |

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Element Number** | 7115.3,4 | ELEMENT | SEQ;0 | N/A | Multiple |
| Each element (line) in the | NUMBER | Sub-file #7115.34 |
| XML message is assigned |  |  |
| an element number. The |  |  |
| elements are processed by |  |  |
| this number, so this data |  |  |
| determines the sequence of |  |  |
| data for the XML message. |  |  |
| **Element Number** | 7115.34,.01 | ELEMENT | 0;1 | Number | 1-9999 |
| This field contains a |  | NUMBER |  |  | 3 Decimal digits |
| numerical number which is |  |  |  |  | Required |
| used to determine the |  |  |  |  |  |
| sequence of data for the |  |  |  |  |  |
| output XML document. |  |  |  |  |  |
| **Element Name** | 7115.34,.02 | ELEMENT | 0;2 | Free Text | 2-30 |
| The name of the element |  | NAME |  |  | Required |
| which will be included in |  |  |  |  |  |
| the XML document when |  |  |  |  |  |
| created. |  |  |  |  |  |
| **Element Required** | 7115.34,.03 | ELEMENT | 0;3 | Set | 1= Required |
| This field is used to define | REQUIRED | Required |
| whether this element is |  |  |
| required for the output |  |  |
| XML document. If set to |  |  |
| “Required,” the element is |  |  |
| included whether or not |  |  |
| data exists for that element. |  |  |
| If set to “Not Required,” the |  |  |
| element will not be included |  |  |
| in the XML document if |  |  |
| there is no data related to |  |  |
| the element. |  |  |
| **Level** | 7115.34,.05 | LEVEL | 0;5 | Number | 0-20 |
| This field defines what level | Required |
| the element is. This field is |  |
| used when determining |  |
| indentation of element |  |
| names for ease of reading. |  |
| **Has Children** | 7115.34,.06 | HAS | 0;6 | Set | 1=Has Children |
| If this field is set to “Has | CHILDREN |
| Children,” then the program |  |
| logic knows there is no data |  |
| related to this element, and |  |
| that only the element name |  |
| needs to be formatted. If |  |
| this field is set to “No,” the |  |
| program knows data is |  |
| expected for this element. |  |
| **Is Multiple** | 7115.34,.07 | IS MULTIPLE | 0;7 | Set | 1= Multiple |
| This field indicates whether |
| the element can have |
| multiple entries, or is a |
| single value. For example, |
| a Social Security Number |
| element would not be a |
| multiple, whereas |
| description would have |
| multiple lines. |

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Indentation**Used to define the number of spaces for each element indentation. The level indicator is multiplied by the indentation field. Thisfield can be set to zero, so that no indentation occurs. | 7115.3,5 | INDENTATION | 0;5 | Number | 0-10Required |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | NAME |
| Regular | “B” | ELEMENT NUMBER |

### HDIS STATUS file

**File Name/Number:** HDIS Status (#7115.5)

**Global:** ^HDIS(7115.5,

**System Location:** Client (Facility) and Server (Central)

This file contains the different status codes used by Data Standardization processes. The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Locatio n** | **Data Type** | **Definition** |
| **Status**Status name/text. | 7115.5,.01 | STATUS | 0;1 | Free Text | 1 to 80 characters longRequired |
| **Status Code** | 7115.5,.02 | STATUS CODE | 0;2 | Free Text | 1 to 4 characters long |
| Code representing the | Required |
| status. | Un-editable |
|  | Identifier |
| **Status Type** | 7115.5,.03 | STATUS TYPE | 0;3 | Set of | 1 = CLIENT |
| Denotes where/how the | Codes | 2 = SERVER |
| status is used. |  | Required |
|  |  | Un-editable |
|  |  | Identifier |
| **Status Description** | 7115.5,1 | STATUS | 1 | Word |  |
| Description of the status | DESCRIPTION | Processing |
| and/or its use. |  |  |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | Status (#.01) |
| Regular | “C” | Status Code (#.02) |
| Compound | “AC” | Status Type (#.03), Status Code (#.02) |

### HDIS FILE/FIELD File

**File Name/Number:** HDIS FILE/FIELD file (#7115.6)

**Global:** ^HDIS(7115.6,

**System Location:** Client (Facility) and Server (Central) This file contains the File/Fields in VistA.

The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **File/Field Name** | 7115.6,.01 | FILE/FIELD | 0;1 | Free Text | 1-100 Characters |
| The File/Field Name | NAME | Required |
| associated with a VistA |  | Un-editable |
| File/Field combination. |  |  |
| **File Number** | 7115.6,.02 | FILE NUMBER | 0;2 | Free Text | 1-30 Characters |
| The File Number assigned | Required |
| to the file in VistA. | Un-editable |
| **Field Number** | 7115.6,.04 | FIELD | 0;4 | Free Text | 1-30 Characters |
| The Field Number assigned | NUMBER |  |
| to the field in VistA. |  | Required |
|  |  | Un-editable |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | File/Field Name (#.01) |
| Compound | “AFIL” | File Number(#.02), Field Number (#.04) |

### HDIS TERM/CONCEPT VUID ASSOCIATION File

**File Name/Number:** HDIS Term/Concept VUID Association file (#7118.11)

**Global:** ^HDISV(7118.11,

**System Location:** Server (Central)

This file contains the association of a Term/Concept and its VUID and Activation Status as defined by Enterprise Reference Terminology (ERT).

The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data****Type** | **Definition** |
| **Term/Concept** | 7118.11,.01 | TERM/CONCEPT | 0;1 | Free Text | 1-245 |
| A Term is any string. A | Required |
| Concept is an abstract |  |
| expression of a meaning. A |  |
| concept may have multiple |  |
| expressions. For instance, |  |
| the concept of blood |  |
| pressure can be expressed |  |
| as hypertension or high |  |
| blood pressure. |  |

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Date/Time Created** | 7118.11,1.01 | DATE/TIME | 1;1 | Date/Time |  |
| The date and time the | CREATED |
| record is created by HDIS |  |
| during VUID |  |
| Implementation. |  |
| It will not be set if the |  |
| VUID is assigned by ERT. |  |
| **National Standard Flag** | 7118.11,1.02 | NATIONAL | 1;2 | Set of | 1=YES |
| The Term/Concept is part of | STANDARD | Codes | 0=NO |
| the national standard. | FLAG |  | Required |
|  |  |  | Un-editable |
| **File/Field** | 7118.11,10 | FILE/FIELD | FILE | N/A | MultipleSub-file #7118.13 |
| **File/Field** | 7118.13,.01 | FILE/FIELD | 0;1 | Pointer | HDIS File/Field |
| The File/Field associated | file (#7115.6) |
| with the record. | Required |
| **VUID** | 7118.11,99.99 | VUID | VUID;1 | Free Text | 1-20 Characters |
| VHA Unique ID (VUID).A unique meaningless integer assigned to reference terms VHA-wide. | RequiredUn-editableInput Transform: |
|  | S X=+X |
|  | K:$L(X)>20!($L(X)<1)! |
|  | '(X?1.20N) X |
| **Effective Date/Time** | 7118.12,99.991 | EFFECTIVE | TERMSTATUS | N/A | Multiple |
| Describes the pair Status | DATE/TIME | Sub-file #7118.12 |
| and Effective Date/Time for |  |  |
| each reference term. |  |  |
| **Effective Date/Time** | .01 | EFFECTIVE | 0;1 | Date/Time | Required |
| This is the date/time when | DATE/TIME | May | Un-editable |
| the Status of the reference |  | Include |  |
| term was established. |  | Time and |  |
|  |  | Seconds |  |
| **Status** | .02 | STATUS | 0;2 | Set of | 1=ACTIVE |
| The Status of a reference | Codes | 0=INACTIVE |
| term is either “active” or |  | Required |
| “inactive.” If “active,” then |  | Un-editable |
| the term will be accessible |  |  |
| by end-users to document a |  |  |
| particular patient event. If |  |  |
| “inactive,” then the term |  |  |
| will only be accessible by |  |  |
| the application to display |  |  |
| legacy data. |  |  |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | Term/Concept (#.01) |
| Regular | “B” | Effective Date/Time (Sub-file #7118.12,#.01) |
| Regular | “B” | File/Field (Sub-file #7118.13,#.01) |
| Regular | “AVUID” | VUID (#99.99) |

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular (whole | “AC” | File/Field (Sub-file #7118.13,#.01) |
| file) |

### HDIS SYSTEM File

**File Name/Number:** HDIS System file (#7118.21)

**Global:** ^HDISF(7118.21,

**System Location:** Server (Central)

This file contains the system-related information for a facility.

The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Facility** | 7118.21,.01 | FACILITY | 0;1 | Pointer | Institution file (#4) |
| The VA Medical Center | Required |
| associated with the system. |  |
| **Domain/IP Address** | 7118.21,.02 | DOMAIN/IP | 0;2 | Free Text | 1-70 Characters |
| The Domain/IP Address | ADDRESS | Required |
| associated with the system. |  | Identifier |
| **Type** | 7118.21,.03 | TYPE | 0;3 | Set of | 0=TEST |
| The Type of system. | Codes | 1=PRODUCTIONRequired |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | Facility (#.01) |
| Compound | “ATYP” | Type (#.03), Facility (#.01) |

### HDIS FACILITY TERM/CONCEPT ASSOCIATION File

**File Name/Number:** HDIS Facility Term/Concept Association file (#7118.22)

**Global:** ^HDISF(7118.22,

**System Location:** Server (Central)

This file contains the Term or Concept assigned to a VistA File or Field IEN at a Facility (VAMC) by the Data Standardization VUID Implementation Process.

The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **System** | 7118.22,.01 | SYSTEM | 0;1 | Pointer | HDIS System file |
| The system that sent the | (#7118.21) |
| record. | Required |
| **File/Field** | 7118.22,.02 | FILE/FIELD | 0;2 | Pointer | HDIS File/Field file |
| The File/Field associated | (#7115.6) |
| with the record. | Required |
|  | Un-editable |

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Internal Reference** | 7118.22,.03 | INTERNAL | 0;3 | Free Text | 1-50 Characters |
| The Internal Reference at | REFERENCE | Required |
| the VAMC that sent the |  | Un-editable |
| record. Could be an IEN or |  |  |
| the internal value for a set |  |  |
| of codes. |  |  |
| **Term/Concept** | 7118.22,.04 | TERM/CONCEPT | 0;4 | Pointer | HDIS Term/Concept |
| A term is any string. A | VUID Association file |
| concept is an abstract | (#7118.11) |
| expression of a meaning. A | Required |
| concept may have multiple | Un-editable |
| expressions. For instance, |  |
| the concept of blood |  |
| pressure can be expressed |  |
| as hypertension or high |  |
| blood pressure. |  |
| **Date/Time Associated** | 7118.22,.05 | DATE/TIME | 0;5 | Date/Time | Required |
| The date and time the | ASSOCIATED | Un-editable |
| record is assigned to the |  |  |
| Term/Concept. |  |  |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | System (#.01) |
| Compound | “AC” | System (#.01), File/Field (#.02) |
| Compound | “AS” | System (#.01), File/Field (#.02), Term/Concept (#.04) |

### HDIS VUID IMPLEMENTATION STATUS File

**File Name/Number:** HDIS VUID Implementation Status file (#7118.25)

**Global:** ^HDISF(7118.25,

**System Location:** Client (Facility) and Server (Central)

This file contains the Status of the VUID Implementation Process for a VistA File/Field at a Facility.

The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **System**The Facility being processed. | 7118.25,.01 | SYSTEM | 0;1 | Pointer | HDIS System file (#7118.21)Required |
| **File/Field**The File/Field associated with the record. | 7118.25,.02 | FILE/FIELD | 0;2 | Free Text | HDIS File/Field file (#7115.6)Required Un-editable |
| **Status**This indicates the status of the VUID implementation process for the Facility,domain and file/field. | 7118.25,.03 | STATUS | 0;3 | Pointer | HDIS Status file (#7115.5) RequiredUn-editable |

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Status Date/Time** | 7118.25,.04 | STATUS | 0;4 | Date/Time | Required |
| The date/time that this | DATE/TIME | Un-editable |
| status was entered. |  |  |

**Cross-references:**

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | System (#.01) |
| Compound | “AFAC” | System (#.01), File/Field (#.02), Status Date/Time (#.04), Status (#.03) |

### HDIS PARAMETER File

**File Name/Number:** HDIS Parameter (#7118.29)

**Global:** ^HDISF(7118.29,

**System Location:** Client (Facility) and Server (Central)

This file contains different parameters used by Data Standardization processes. The following table contains the data elements being added to VistA for this file:

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **System** | 7118.29,.01 | SYSTEM | 0;1 | Pointer | HDIS System file |
| The Facility that the | (#7118.21) |
| parameter values refer to. | Required |
| **System Type** | 7118.29,.02 | SYSTEM TYPE | 0;2 | Set of | 1 = Client |
| Denotes type of system. | Codes | 2 = Server |
| **Disable VUID Activity** | 7118.29,11 | DISABLE | 1;1 | Set of | 0 = No |
| Flag denoting if all VUID | VUID | Codes | 1 = Yes |
| related activity should be | ACTIVITY |  |  |
| disabled. |  |  |  |
| **VUID Server Location** | 7118.29,12 | VUID SERVER | 1;2 | Free Text | 1 to 100 characters long. |
| Where the VUID Server is | LOCATION |
| located. |  |
| **VUID Server Connection** | 7118.29,13 | VUID SERVER | 1;3 | Set of | 1 = MailMan |
| **Type** | CONNECTION | Codes |
| Type of connection used to | TYPE |  |
| communicate with VUID |  |  |
| Server. |  |  |
| **VUID Server Option** | 7118.29,21 | VUID SERVER | 2;1 | Free Text | 1 to 30 characters long. |
| Name of the MailMan | OPTION |
| server type option that |  |
| message should be |  |
| forwarded to. |  |
| **Disable Status Updates** | 7118.29,31 | DISABLE | 3;1 | Set of | 0 = No |
| Flag denoting if sending of | STATUS | Codes | 1 = Yes |
| status update messages to | UPDATES |  |  |
| the Status Server should be |  |  |  |
| disabled. |  |  |  |
| **Status Server Location** | 7118.29,32 | STATUS | 3;2 | Free Text | 1 to 100 characters long |
| Where the Status Server is | SERVER |
| located. | LOCATION |

|  |  |
| --- | --- |
| **Element** | **VISTA Field Location** |
| **Description** | **File/Field** | **Name** | **Location** | **Data Type** | **Definition** |
| **Status Server Connection** | 7118.29,33 | STATUS | 3;3 | Set of | 1 = MailMan |
| **Type** | SERVER | Codes |
| Type of connection used to | CONNECTION |  |
| communicate with the | TYPE |  |
| Status Server. |  |  |
| **Status Server Option** | 7118.29,41 | STATUS | 4;1 | Free Text | 1 to 30 characters long. |
| Name of the MailMan | SERVER |
| server type option that | OPTION |
| message should be |  |
| forwarded to. |  |
| **Last Non-Standard VUID** | 7118.29,51 | LAST NON- | 5;1 | Free Text | 1 to 18 characters long. |
| Last non-standard VUID | STANDARD |
| assigned by the centralized | VUID |
| VUID Server. |  |
| **Ending Non-Standard** | 7118.29,52 | ENDING NON- | 5;2 | Free Text | 1 to 18 characters long. |
| **VUID** | STANDARD |
| Last non-standard VUID | VUID |
| that can be assigned by |  |
| centralized VUID Server. |  |

**Cross-references:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 7115.1 | HDIS DOMAIN | YES | YES | YES | OVER | NO | NO |
| 7115.3 | HDIS XML TEMPLATE | YES | YES | YES | OVER | NO | NO |
| 7115.5 | HDIS STATUS | YES | YES | YES | OVER | NO | NO |
| 7115.6 | HDIS FILE/FIELD | YES | YES | YES | OVER | NO | NO |

|  |  |  |
| --- | --- | --- |
| **Type** | **Name** | **Fields(s)** |
| Regular | “B” | System (#.01) |

## Package Default Definition

The following screen capture shows the HDI package’s default definition.

PACKAGE: HEALTH DATA & INFORMATICS 1.0

Feb 23, 2005 5:09 pm

PAGE 1

TYPE: SINGLE PACKAGE TRACK NATIONALLY: YES

NATIONAL PACKAGE: HEALTH DATA & INFORMATICS DESCRIPTION:

The Health Data & Informatics package.

ENVIRONMENT CHECK :

PRE-INIT ROUTINE :

POST-INIT ROUTINE : POST^HDI1000A PRE-TRANSPORT RTN :

DELETE ENV ROUTINE: No DELETE PRE-INIT ROUTINE: No DELETE POST-INIT ROUTINE: No

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| FILE # | NAME | UP DATE DD | SEND SEC. CODE | DATA COMES W/FILE | SITE DATA | USERRSLV OVERPTS RIDE |
|  |
|  |
|  |
| 7118.11 HDIS TERM/CONCEPT VUID ASSOCIATIONYESYES NO7118.21 HDIS SYSTEM YES YES NO |
| 7118.227118.25 | HDIS FACILITY TERM/CONCEPT ASSOCIATIONYES YES HDIS VUID IMPLEMENTATION STATUSYES YES | NO NO |

7118.29 HDIS PARAMETER YES YES NO

# Global Translation and Journaling

The following file should be journaled: HDIS VUID Implementation Status #7118.25. No other file requires journaling.

There are no translation requirements.

# Routines

The following routines are included in this Package:

|  |  |  |
| --- | --- | --- |
| HDI1000A | HDISVCFX | HDISVF09\* |
| HDI1000B | HDISVCMR | HDISVF10 |
| HDI1000C | HDISVCUT | HDISVM00 |
| HDI1000D | HDISVF01\* | HDISVM01 |
| HDI1000E | HDISVF02\* | HDISVM02 |
| HDI1000F | HDISVF03\* | HDISVS00 |
| HDI1000G | HDISVF04\* | HDISVS01 |
| HDISVAP | HDISVF05\* | HDISVS02 |
| HDISVC00 | HDISVF06\* | HDISVS03 |
| HDISVC01 | HDISVF07\* | HDISVSFX |
| HDISVC02 | HDISVF08\* | HDISVU01 |
|  |  | HDISXML |
| \* APIs. |  |  |

See “Callable Routines, Entry Points and APIs” for a detailed description of APIs. For information about other routines, run XUPRROU (List Routines). This command prints a list of the HDIS routines. This option is found on the XUPR-ROUTINE-TOOLS menu on the XUPROG (Programmer Options) menu, which is a sub-menu of the EVE option (Systems Manager menu).

Select Systems Manager Menu Option: **programmer**

Options

Select Programmer Options Option: **routine tools**

Select Routine Tools Option: **list routines**

Routine Print

Want to start each routine on a new page: No// **[ENTER]**

Routine(s) ? > **HDI\***

The first line of each routine contains a brief description of the general function of the routine. Use the Kernel option XU FIRST LINE PRINT (First Line Routine Print) to print a list of just the first line of each HDI subset routine.

Select Systems Manager Menu Option: **programmer** Options Select Programmer Options Option: **routine tools**

Select Routine Tools Option: **First Line Routine Print**

PRINTS FIRST LINES

Routine(s) ? > **HDI\***

# Exported Options

The following options are delivered with this package:

|  |  |  |
| --- | --- | --- |
| **Option Name** | **Menu Text** | **Parent Option** |
| HDIS-FACILITY-DATA-SERVER | HDIS FACILITY DATA SERVER | None |
| HDIS-STATUS-UPDATE-SERVER | HDIS STATUS UPDATE SERVER | None |

# Exported RPCs

There are none.

# Other Software Elements

There are no print, sort, input or list templates in HDI 1.0. HDI 1.0 includes four bulletins.

|  |  |
| --- | --- |
| **Bulletin Name** | **Description** |
| HDIS Errors | Notification of an error occurring during HDIS VUID processing. |
| HDIS Notify ERT | Notifies the ERT mailgroup that a site needs file update for specific domain. |
| HDIS Notify HDR | Notifies HDR personnel that a file at a specific site is ready for activation of the HDR Triggers. |
| HDIS XML Msg Process Error | Bulletin is generated when a problem occurs during processing of a received XML encoded message. |

***Table 3: Other Software Elements: Bulletins***

HDI 1.0 includes three mail groups: HDIS Errors, HDIS ERT Notification and HDIS HDR Notification. These groups are described in more detail in the section, “Mail Groups and Alerts.”

# Callable Routines, Entry Points and APIs

The following supported reference calls allow other packages to access HDI Package calls.

## VUID Seeding Initiation

Name: EN^HDISVCMR

Integration Agreement Number: 4639 Description: Initiates the VUID seeding process.

Calling Syntax EN^HDISVCMR([HDISDOM],[HDISFILE])

Return Value None.

|  |  |
| --- | --- |
| **Input** | **Output** |
| HDISDOM - IEN for the HDIS Domain file.HDISFILE – Specific file number to be seeded (optional). If this value is null, all domain files will be seeded. | None. |

## Display NTRT Message Text

Name: NTRTMSG^HDISVAP

Integration Agreement Number: 4638

Description: Displays a message that tells the user how to enter a new term using the New Term Rapid Turnaround process (NTRT) being provided by ETS. The message text can optionally be returned in an array.

Calling Syntax NTRTMSG^HDISVAP(HDISARYF,) Return Value: NTRT message text.

|  |  |
| --- | --- |
| **Input** | **Output** |
| HDISARYF - Return Text in an Array Flag (Optional). Defaults to 0.1=Yes 0=No | If set to yes, an array containing the NTRT message is returned, otherwise, the message is displayed on the screen. The output variable is assumed to be null when the API is invoked. |

## Get the HDIS Domain File IEN

Name: $$GETIEN^HDISVF09

Integration Agreement Number: 4651

Description: Get an IEN from the HDIS Domain file.

Calling Syntax $$GETIEN^HDISVF09([HDISDOM],[HDISDIEN])

Return Value 1= Successful and 0=Failure.

|  |  |
| --- | --- |
| **Input** | **Output** |
| HDISDOM – Domain | HDISDIEN – IEN from HDISDomain file (#7115.1) |

## Set VUID Implementation Status to Complete

Name: MFSUP^HDISVF09

Integration Agreement Number: 4651

Description: Updates MFS toggle with the information that the ERT update has been completed and the patched files (those files that have VUID fields) should be used. This API should be invoked in the Post-Processing Logic field in the Master File Parameter file (#4.001) for the file being standardized. The API updates the status of the file to “VUID Implementation Completed” and sends out the HDR activation bulletin to the HDIS HDR Notification MailMan group.

Calling Syntax MFSUP^HDISF09([HDISFILE],[HDISERR],[HDISFN])

|  |  |  |
| --- | --- | --- |
| Return Value | None. |  |
| **Input** | **Output** |
| HDISFILE – File number of the file updated with | None. |
| VUIDs. |  |
| HDISERR – Error indicator from MFS (1 or 0). |
| HDISFN – Field number (optional). |

## Get VUID Implementation Status

Name: $$GETSTAT^HDISVF01

Integration Agreement Number: 4640

Description: Returns implementation status for requested file/field.

Calling Syntax $$GETSTAT^HDISVF01(File,Field,[Date],[Fac],[Domain],[Type]) Return Value 1= Successful and 0=Failure

**Input Output**

File - File number StatusCode ^ StatusPointer ^

Field - Field number (defaults to .01) StatusDate

Date – The FileMan date/time to return status for StatusCode - Code representing (optional; defaults to NOW). If time is not status – refer to listing of included with the date, the last status for the given entries in HDIS STATUS file day is returned. (#7115.5) for range of values.

Fac - Facility number (optional – defaults to StatusPointer - Pointer to HDIS current facility). STATUS file (#7115.5).

Domain – Domain/IP Address (optional – defaults StatusDate - FileMan date/time. to current). Notes:

Type – Type of system (optional, defaults to  Values for “not started” current). 0= Test 1=Production status and no date are

returned on bad input or if no entry is found

* If more than one entry for the same date/time is found, the highest entry number is returned.

## Set VUID Implementation Status

Name: SETSTAT^HDISVF01

Integration Agreement Number: 4640

Description: Sets the status for VUID implementation for a facility. If an entry for the given file/field and date/time already exists, a new entry will still be added.

Calling Syntax SETSTAT^HDISVF01(File,Field,Code,[Date],[STType],[Fac],[Domain],[SysType])

Set Value Sets implementation status.

|  |  |
| --- | --- |
| **Input** | **Output** |
| File - File number.Field - Field number (Optional; defaults to .01).Code - Code representing the status (optional). Refer to listing of entries in HDIS STATUS file (#7115.5) for range of values. Defaults to 0 (Not Started)Date - FileMan date/time for status (optional). Defaults to NOW. If time is not included with the date, 1 second past midnight will be used as the time.STType - Type of status code (optional). Statuses are: 1 = Client (default) or 2 = ServerFac - Facility number (optional). Defaults to facility number of current systemDomain - Domain/IP address of facility (optional). Defaults to MailMan domain of current system.SysType - Type of system (optional). Types are: 0= Test or 1 = Production. Defaults to type of system of current system. | None |

## Screening Inactive Terms

Name: $$SCREEN^HDISVF01

Integration Agreement Number: 4640

Description: Returns whether or not the given file/field should be screened during selection. Calling Syntax $$SCREEN^HDISVF01(File,Field,[Date])

Return Value 0= Do not screen selection, 1 = screen selection.

|  |  |
| --- | --- |
| **Input** | **Output** |
| File - File number. Field - Field number.Date - FileMan date/time to check against (Optional; defaults to NOW). If time is not included with the date, the last status for the given day is returned. | 0 = Don’t screen selection (also returned on bad input).1 = Screen selection. |

# External Relations

## Software Requirements

|  |  |  |
| --- | --- | --- |
| **Software** | **Version** | **Patch Information** |
| Kernel | 8.0 | XU\*8.0\*299 |
| Kernel Toolkit | 7.3 | XT\*7.3\*93Note: The required Kernel Toolkit patch is included in the installation distribution. |
| MailMan | 8.0 | Fully patched. |
| VA FileMan | 22.0 | Fully patched. |

***Table 4: Software Installation Requirements***

## DBA Approvals and Integration Agreements

The HDI package provides several APIs, which have been approved and documented in Integration Agreements (IAs). The full information is available from the DBA menu on FORUM. This information is maintained by the Database Administrator (DBA).

To obtain the current list of IAs, follow the steps shown in this example:

Select Integration Agreements Menu Option: **8 <Enter>**

Custodial Package Menu

1. ACTIVE by Custodial Package
2. Print ALL by Custodial Package
3. Supported References Print All

Select Custodial Package Menu Option: **1 <Enter>** ACTIVE by Custodial Package Select PACKAGE NAME: **HDI**

Device: HOME// **<Enter>** UCX DEVICE Right Margin: 80//**<Enter>**

# Internal Relations

This guide assumes that post-installation routines have completed VUID seeding without incident. When that is the case, there are neither internal relations nor input/output dependencies.

# Software Product Security

Security for data standardization is handled through file access.

## VHA Directives and Official Policies

Implementation of this package is required by VHA Directive 2005-044.

## Legal Requirements

No legal requirements are introduced by this package.

The Data Standardization toolset does not manipulate patient data directly, nor does it output any individually identifiable information about patients.

## Mail Groups and Alerts

Three mail groups are created as part of the installation: HDIS Errors, HDIS ERT Notification and HDIS HDR Notification. All three mail groups contain a list of remote members. The list of remote members should not be modified, as messages being delivered to these mail groups are being sent to nationally-defined mail groups.

HDIS Errors is used for automated error reporting, for errors related to VUID seeding in VistA files. Local facility users may be added to this group, but local users are not required.

HDIS ERT Notification is used to automatically notify the Enterprise Reference Terminology (ERT) team that VUIDs have been stored, and that ERT can now push standardized terms to the facility. Local facility users should not be added to this group.

HDIS HDR NOTIFICATION is used to notify the Health Data Repository (HDR) team when the entire VUID implementation process occurs. The HDR team will enable the VDEF triggers so that data can be transmitted to the HDR. Local facility users should not be added to this group.

Each of these local mail groups has the corresponding FORUM mail group as a remote member. The FORUM mail groups include Microsoft™ Exchange mailing lists as remote members. User subscription to the national mail group should be managed through membership on the Exchange lists.

## Remote Systems

The HDI package communicates with a centralized server on FORUM. The server controls VUIDs and Status settings. There are two kinds of communications:

1. About a term, including the term name, VistA file number, entry number, VUID and a local/national indicator.
2. About the local site’s implementation status, including the VistA file number, status code and the date and time of the status change.

The communication occurs during VUID implementation. There is no confirmation of receipt, and no verification of communicated data conducted. The messages are not encrypted.

## Menus and Options

The following menu options are added with this package to process mail messages. Menu assignments do not need to be made.

|  |  |
| --- | --- |
| **Option Name** | **Menu Text** |
| HDIS-FACILITY-DATA-SERVER | HDIS FACILITY DATA SERVER |
| HDIS-STATUS-UPDATE-SERVER | HDIS STATUS UPDATE SERVER |

***Table 5: Menus and Options***

## Security Keys and File Security

There are no security keys.

The table below indicates the security that the Data Standardization package establishes for its files.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Number** | **Name** | **DD** | **RD** | **WR** | **DEL** | **LAYGO** | **AUDIT** |
| 7115.1 | HDIS DOMAIN | @ | @ | @ | @ | @ | @ |
| 7115.3 | HDIS XML TEMPLATE | @ | @ | @ | @ | @ | @ |
| 7115.5 | HDIS STATUS | @ | @ | @ | @ | @ | @ |
| 7115.6 | HDIS FILE/FIELD | @ | @ | @ | @ | @ | @ |
| 7118.11 | HDIS TERM/CONCEPT VUID ASSOCIATION | @ | @ | @ | @ | @ | @ |
| 7118.21 | HDIS SYSTEM | @ | @ | @ | @ | @ | @ |
| 7118.22 | HDIS FACILTY TERM/CONCEPT ASSOCIATION | @ | @ | @ | @ | @ | @ |
| 7118.25 | HDIS VUID IMPLEMENTATION STATUS | @ | @ | @ | @ | @ | @ |
| 7118.29 | HDIS PARAMETER | @ | @ | @ | @ | @ | @ |

***Table 6: Security Keys and File Security***

Implementation of the Data Standardization toolset does anticipate a software patch that will further restrict user rights to access and edit certain reference files. Changes to Security Keys and File Security settings may be required as part of that software patch. Refer to the software patch documentation for more information.

# Glossary

|  |  |
| --- | --- |
| **API** | Application Programming Interface. This is the definition (calling conventions) by which one |
|  | application can get services from another application. |
| **CHDR** | Clinical Data Repository/Health Data Repository (Interoperability Project) |
| **Deploying** | The process of pushing terminology and content from the development to the production |
|  | environment. |
| **Domain** | A subset of medicine, a natural grouping of clinical acts (e.g., demographics, vital signs, |
|  | laboratory, pharmacy) |
| **DS** | Data Standardization |
| **DTS** | Distributed Terminology Server |
| **ETS (also VETS)** | Enterprise Terminology Services |
| **HDI** | Health Data and Informatics |
| **HDR** | Health Data Repository |
| **HDR IMS** | Health Data Repository – Interim Messaging Solution |
| **Interface** | As opposed to reference terminology, this is a format of the terminology that aims at facilitating |
| **Terminology** | its access and use by end-users. |
| **LOINC** | Logical Observation Identifier Names and Codes. LOINC is a terminology generally accepted as |
|  | the exchange standard for laboratory results. It was introduced in 1994 by the Regenstrief |
|  | Institute (Clem McDonald & Stan Huff). |
| **Mapping** | Mappings are sets of relationships of varying complexity established between two vocabularies |
|  | in order to allow automated translation or connection between them. More specific concepts can |
|  | generally be mapped accurately to more general concepts. Mappings cannot be used to add |
|  | specificity to information that was captured at a more generic level. |
| **NDF** | National Drug File |
| **NDF-RT** | National Drug File – Reference Terminology |
| **NPAD** | National Person Administrative Database |
| **Point of Contact** | The person who is the first point of contact for questions and comments on a data standard. |
|  | He/she will serve as the liaison between the designated Domain Action Team (DAT) and users |
|  | on all issues pertaining to the data standard. |

**Recommended** The recommended field name to be used in a database to facilitate data transfer between

**Field Name** different systems and databases.

**Reference** A set of concepts and relationships that provides a common reference point for comparison and

**Terminology** aggregation of data about the entire health care process.

**RPC** Remote Procedure Call.

**SNOMED-CT** Maintained and distributed by the College of American Pathologists, the Systematized Nomenclature of Medicine - Clinical Terminology was first introduced in 1965. Free license thru NLM.

**Standard Source**

The source for electronic copies of the data values or data sets described by the standard.

**Standardization** The process of defining, creating, deploying, and maintaining a common terminology resource (i.e., content and services) to all current and future VHA applications.

**TDE** Terminology Development Environment

**Template** An HL7 template is a data structure, based on the HL7 Reference Information Model that expresses the data content needed in a specific clinical or administrative context. Templates are drawn from the RIM and make use of HL7 vocabulary domains. Templates have been described as constraints on HL7 artifacts. A template is a structured aggregation of one or more archetypes, with optional order, used to represent clinical data.

**Terminology** Set of terms, definitions, relationships of a specialized subject area. The terms which are characterized by special reference within a discipline are called the 'terms' of the discipline, and collectively, they form the terminology, those which function in general reference over a variety of languages are simply 'words', and their totality 'the vocabulary' [Sager]. See also vocabulary.

**Terminology** An application and a machine whose function is to provide access to terminology content thru a

**Server** published set of standardized services.

**Translation** Once two terminologies have been mapped to each other, then a translation between the two is possible (e.g., given this code from terminology A what is the corresponding code in terminology B.

**UMLS** Unified Medical Language System. A project initiated by the National Library of Medicine to collect and map several terminologies to each others in order to facilitate access to biomedical resources. Thus, a clinician could the same set of words to search both articles indexed with MeSH and patients whose data was encoded with SNOMED.

**Validation Date** The date the data standard was last reviewed by the Domain Action Team to ensure the continued utility and accuracy of the standard.

**Vocabulary** A list of words or phrases with their meanings. See also terminology

**VUID** VHA Unique Identifier - these are meaningless numbers that are automatically assigned to concepts, properties, and relationships in a terminology to facilitate their access and manipulation by computers.

**XML** Extension Markup Language. An extensively used format for information exchange.