Imaging System

Import API Programmer Guide

July 2010

MAG*3.0*108

Department of Veterans Affairs
Office of Enterprise Development
Health Provider Systems

Import API Programmer Guide
VA Imaging, MAG*3.0*108
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VistA Imaging Office of Enterprise Development

Department of Veterans Affairs

Internet: http://www.va.gov/imaging
VA intranet: http://vaww.va.gov/imaging

Revision History

Date	Rev	Notes
07/08/10	1	Initial draft.

Contents

Preface

VHA Directive

VHA Directive 2001-045 required that VA medical centers implement a document imaging system by September 30, 2004. This directive stated that medical facilities must scan certain clinical documents to make them part of a patient's electronic medical record. The directive specifically mentioned advance directives and consent forms.

To comply with this directive and support the goal to make a patient's complete medical record available online, the following types of documents should be maintained:

- Consent forms and other documents with "wet" signatures of patients, practitioners, or other personnel
- Advance Directives
- Results/reports from medical procedures that are not acquired directly from the instrument or entered in the VistA system
- Means Tests
- Outside medical reports

Acronyms

Acronym	Definition
CPRS	Computerized Patient Record System
KIDS	Kernel Installation and Distribution System
PICS	Patient Image Capture System
UNC	Universal Naming Convention, a naming convention used primarily to specify and map network drives in Microsoft Windows.
VistA	Veterans Health Information Systems and Technology Architecture

Terms of Use

The following restrictions apply:

Vendor Agreement: The Import API cannot be used without a written agreement between the VistA Imaging group and the party wishing to use the Import API. All imported images must meet image quality and documentation requirements of VistA Imaging.

Integration Agreement: The Import API, as a part of the VistA Imaging software, is regulated as a medical device. The Import API cannot be used without a written agreement between the VistA Imaging HSD&D group and the party wishing to use the Import API.

To secure an agreement for the use of the Import API, the following criteria must be met:

1. Any products built or interfaced using the VistA Imaging Import API must be tested with VistA Imaging. Testing will be performed by the VistA Imaging team with assistance from field sites and the calling package. This testing must demonstrate that there are no adverse interactions affecting the safety, efficacy or performance of the VistA Imaging software or the devices interfaced to VistA Imaging.
2. Any changes to packages/product(s) using the VistA Imaging Import API must be reported to the VistA Imaging Project Office for review and testing before release. Retesting of VistA Imaging with the product(s) is required with any change.
3. Documentation that imported reports/objects meet VHA, regulatory, and quality requirements must be on file with the Vista Imaging Project Office prior to any clinical use. Sample imported reports/objects shall be provided initially to the VistA Imaging Project Office by the package using the API. Sites installing the VistA Imaging API must comply with all VistA Imaging requirements and are responsible for filing all required documentation with the VistA Imaging Project Office, including image quality and data forms and sample reports/objects from any interfaced device.
4. Additional requirements may apply to non-VA software using the Import API.

Caution: Federal law restricts this device to use by or on the order of either a licensed practitioner or persons lawfully engaged in the manufacture or distribution of the product.

The FDA classifies VistA Imaging, and the Import API (as a component of VistA Imaging) as a medical device. Unauthorized modifications to VistA Imaging, including the Import API, will adulterate the medical device. The use of an adulterated medical device violates US federal law (21CFR820).

Conventions

This manual uses the following conventions:

- Change bars in margins indicate content added or updated since the last revision.
- Controls, options, and button names are shown in Bold.
- A vertical bar is used to separate menu choices. For example: “Click File | Open” means: “Click the File menu, and then click the Open option.”
- Keyboard key names are shown in bold and in brackets.
- Sample output is shown in monospace.
- When this document is used online, hyperlinks are indicated by blue text.
- Useful or supplementary information is shown in a Tip.
- Important or required information is shown in a Note.
- Critical information is indicated by: 

Getting Help

If you encounter any problems implementing the Import API Interface, contact National Help Desk at 1-888-596-4357 and log a Remedy ticket

Introduction

The Import API (Application Programming Interface) provides a mechanism for non-VistA Imaging applications to automatically import image files, retrieve image index terms, and patient photo data. Image files can originate from a medical device (instrument) or a network or local drive. For example, the PICS application captures Photo IDs and wants to send a copy of the photos to VistA Imaging for import. Or, iMed Consent captures consent forms and advance directives and wants to send a copy to VistA Imaging for import into the patient's medical record.

The API then enables these applications to import images into the VistA database and connect them to the patient record. Once image files are imported, they are available for display from the VistA Imaging Clinical Display application and CPRS. Some of the applications that use the Import API are:

- Clinical Procedures package
- PICIS MICU Flowsheet (Sto Interface) (VA application that creates flowsheets). San Francisco developed a Class 3 interface that allows flowsheets to be automatically imported into VistA Imaging.
- Commercial application, DSS DocManager
- Commercial application, iMed Consent
- Veterans ID Card Patient Image Capture System (PICS)

Purpose

The purpose of this guide is to provide procedures for authorized non-VistA Imaging software developers to interface to the VistA Imaging database. This guide explains three ways to implement the Import API:

- M API using MUMPS code within VistA
- Custom application using the Import API ActiveX control in a Windows programming environment such as Delphi or Visual Basic
- Remote Procedure Calls (RPCs) using the VA Kernel RPC Broker

Description of the Implementations

The following descriptions are provided to help in deciding which implementation best suits your environment. An important distinction to consider when choosing an implementation is that the M API and Remote Procedure Calls queue uploads for processing later by the Queue Processor. The ActiveX control uploads requests directly.

ActiveX Control

- Used by a high-level programming language where a VA Kernel RPC Broker is not available
- Contains the VA Kernel RPC Broker logic to make a connection to VistA
- Useful for applications that do not have a VistA side presence, i.e., do not run M routines on the VistA server and have no other connections to the VistA server
- Uploads request directly

M API

- Useful for low-level programming when the Import API M calls are incorporated into other M routines on the VistA server
- Useful for applications that have a VistA side presence, i.e., run M routines on the VistA server
- Queues requests

Remote Procedure Calls (RPCs)

- Uploads requests to the Import queue for processing when the Queue Processor is run.
- RPC calls run from the Client application using the VA Kernel RPC Broker methods
- Useful for applications that already make use of the VA Kernel RPC Broker

Newest Features

- Capability to check VistA Imaging and verify if a patient has a photo ID on file in VistA Imaging.
    - The API will return a (0) if a photo does not exist.
    - The API will return a Procedure Date/Time Timestamp of the most recent photo.
- Capability to retrieve a current list of indexing terms.
- Capability to send index terms in the Import API when importing images.
- Capability to create a new TIU Note and link images to the notes. TIU notes can be unsigned or electronically filed through the Import API.

Requirements

- Signed vendor agreement (as stated in the *Terms of Use*)
- Signed integration agreement (as stated in the *Terms of Use*)
- Patch MAG*3.0*108 KIDS file
- Windows development environment

How Data Is Used by the Import API

When the Import API is used, the calling program is responsible for providing an input array to the Import API, and must be able to accept the queue status array and results array returned by the Import API.

Stage 1: Input Array Sent to Import API

The following table summarizes the data that must be sent to the Import API.

Guidelines

- Required fields are indicated with an asterisk (*).
- In addition to required fields, the input array must contain values for:

  IXTYPE and/or any other index fields (IXSPEC, IXPROC, IXORIGIN)
  If IXTYPE is sent, the procedure fields (PXDT, PXIEN, PXPKG) can also be sent.

  Or

  DOCCTG (document category) and DOCDT (document date).

  Or

  PXDT (procedure date), PXIEN (procedure IEN), and PXPCG (procedure package)

  Important: Import API implementers are urged to discontinue use of the DOCCTG and DOCDT as soon as possible and use the index fields IXTYPE, IXSPEC, IXPROC, and IXORIGIN instead. When support of DOCCTG and DOCDT is discontinued, IXTYPE will be a required field with or without an associated procedure. This differs from the current design of either a Document Category or a Procedure but not both.

- If an associated procedure (TIU Note) is sent in the input array, all three procedure fields are required: PXIEN, PXPKG, and PXDT.

Note: Underlined data IDs in the table are described in greater detail in ***Appendix A: Input Array Descriptions***.

Data ID	Description
ACQD*	Acquisition Device: 'Computer Name' of Device (Domain Name for non-Windows
ACQL	Hospital Location: Pointer to VistA HOSPITAL LOCATION file (#44)
ACQS*	Acquisition Site: Pointer to VistA INSTITUTION file (#4)
CDUZ	DUZ of person capturing the image
DFLG	Delete Flag: '1' if images should be deleted after successful processing (The default is '0', No Deletion)
DOCCTG	Document Category: Pointer to VistA MAG DESCRIPTIVE CATEGORIES file (#2005.81) **Note**: To be discontinued in a future patch
DOCDT	Document Date: (FileMan External or Internal Date) **Note**: To be discontinued in a future patch
IXTYPE	Image or Document TYPE. Pointer to IMAGE INDEX FOR TYPES file (#2005.83) or the full name of the Index Type **Note:** If IXTYPE is sent in the Input Array, DOCCTG cannot be sent.
IXSPEC	Image or Document SPECIALTY/SUBSPECIALTY Pointer to IMAGE INDEX FOR SPECIALTY/SUBSPECIALTY file (#2005.84) or the full name of the Index Specialty
IXPROC	Image or Document PROCEDURE/EVENT Pointer to IMAGE INDEX FOR PROCEDURE/EVENT file (#2005.85) or the full name of the Index Proc/Event
IXORIGIN	Image or Document ORIGIN, set of codes Possible values are : VA, NON-VA, DOD, FEE If a value for this is not sent, it will default to VA.
GDESC	Short Description for the Image or Image Group (60 chars)
IDFN*	VistA Patient DFN
IMAGE	Full path of image in UNC notation ^ Optional Image Description (array)
ITYPE	Image Type The type of image must be supplied if file extension supports different kinds of images.
PASSWORD	Encrypted Password
PXDT	Procedure Date/Time (FileMan External or Internal Date Time)
PXIEN	Procedure IEN
PXPKG	Procedure Package
PXNEW	Procedure New
PXTIUTTL	TIU Title IEN or text

Data ID	Description
PXSGNTYP	Signature Type
PXTIUTCNT	TIU Note text counter
PXTIUTXTnnnnn	TIU Note text
STSCB*	Status Handler: "Tag^Routine" of initiating package Imaging will call this to return the resulting status of the Import process.
TRKID*	Tracking ID = PackageID_;_unique identifier Example: "DOC;453"
USERNAME	Username

Stage 2: Queue Results Array Returned by Import API

The following table summarizes the queue results array that is sent by the Import API to the calling program after receipt of the input array. A Queue Results Array is returned whenever the Import API is called using the M API or RPC method. This is not applicable when the Import API is called using the ActiveX method.

Array Node- Data Type	Description
QUEUERESULTS (0) Status^Message	If status is '0', then an error occurred. If status is an integer greater than '0', then the process succeeded and an entry has been made in the IMPORT QUEUE file (#2006.034). The integer returned is the Queue Number that was assigned, and the appended message is "Data has been Queued."
QUEUERESULTS (1...n) Error Messages	If Status = 0, then nodes (1...n) will contain all error messages that occurred during validation.

Example of a Successful Queue (no other nodes are defined)

```
QUEUERESULTS (0) = "111^Data has been Queued."
```

Example of an Unsuccessful Queue

```
QUEUERESULTS (0) = "0^Required parameter is null"

QUEUERESULTS (1) = "Tracking ID is Required. !"

QUEUERESULTS (2) = "Status Handler is Required. !"

QUEUERESULTS (3) = "Acquisition Site is Required. !"
```

Stage 3: Result Array Returned to Status Handler

After image files are imported and new entries are added to the IMAGE file (#2005), the Import API calls the status handler to return the results in an array. The status handler routine is supplied by the calling application.

The VistA Imaging Import API calls this status handler routine to report the status of the image import.

Note: The behavior of the interface is 'All or None' related to image import. If any image fails to be copied, then any image entries created during processing the queue entry will be deleted. Review the status handler to determine if the job had errors to determine if the image(s) imported or failed to import.

Important: The status handler must be an 'M' routine that has an array as its only parameter. Processing must begin at a tagged entry point in the M routine.

The results provided will include:

- Status Code and optionally an Error Message
- TrackingID
- Queue Number
- List of warnings (if warnings occur during processing)

Example of the RESULTSARRAY

```
RESULTSARRAY (0)= "0^Unable to access image"

RESULTSARRAY (1)=Doc;494

RESULTSARRAY (2)=3

RESULTSARRAY (3..N)="Image file not deleted"
```

Results Array: returned to the Status Handler routine of the application

Array Node- Data Type	**Description**
RESULTSARRAY (0) Status^Message	If status is '0^message', then an entry was not made in the IMAGE file (#2005), and the message describes the problem that occurred. If status is '1^message', then an Entry has been made in the IMAGE file (#2005), and the image files have been successfully copied to the Server. If status is '2^message', then an Entry has been made in the IMAGE file (#2005), image files have been successfully copied to the Server and there are warnings or messages in nodes 3…n.
RESULTSARRAY (1) Tracking Number	This is a unique identifier created by the package calling the interface. For example: Doc;494. The identifier may contain alphanumerics or symbols.
RESULTSARRAY (2) Queue Number	This is a number provided by VistA Imaging that can be used for internal tracking of the process by support staff.
RESULTSARRAY (3..N)Warnings	Warnings will be present if: A group of Images was to be imported, and only some of the Images could be copied Delete Flag (provided in the input array) is true, and Imaging could not delete the original image file, after copying it to the Imaging Network Server.

Using M API

When the Import API is accessed as an M routine, it is called directly by another VistA package..

Process

When the Import API is used with M routines, importing images is a two-stage process:

1. The calling program initiates the import process by sending an input array to the Import API. The Import API uses the input array to create an entry in the IMPORT QUEUE file (#2006.034) and returns a status array to the calling program.

2. After the entries in the IMPORT QUEUE file (#2006.034) are processed (by the Background Processor residing on the network), the Import API reports back to the calling program in a result array.

'M' Routine Call

The Import API M routine " IMPORT^MAGGSIUI " is invoked by the calling application. This routine call makes an entry in the IMPORT QUEUE file (#2006.034).

Example of a Call

```
D IMPORT^MAGGSIUI(.MAGRY, .IMAGES, .MAGIX)
```

MAGRY = the result array, described in *Stage 2: Queue Results Array Returned by Import API*.
IMAGES = array of images to be imported.
MAGIX = array of data, described in *Stage 1: Input Array Sent to Import API*.

Note: The Queue Number (Returned in the result array) can be used to call the Queue Status API from an 'M' program.

Queue Status API

```
> S X=$$STATUS^MAGQBUT3(Queue Number)
```

```
> S X=$$STATUS^MAGQBUT3(Tracking ID)
```

Possible return values

```
"0^Error message"
```

```
"1^Success"
```

```
"2^Pending"
```

* Image Array (.IMAGES)

An array of file names and paths in UNC format and an optional description

Note: An 'Image Array' is required.

Example

```
IMAGES(1)="\\image server\image share\filename.ext^image description"

IMAGES(2)="\\image server\image share\filename2.ext"

IMAGES(3)="\\image server\image share\filename3.ext^image description"

IMAGES(4)="\\image server\image share\filename4.ext"
```

Each entry is the full path of the Image using UNC notation, and optionally a short description of the Image as the second '^' delimited piece.

If the entry doesn't contain a short description as the 2nd '^' delimited piece, the API will generate a default image short description from the procedure and procedure date. All images in the array will be saved as a group of images. If the array contains only one image, it will be saved as a single image.

* Input Array (.MAGIX)

An array of predefined 'nodes' and data

The possible 'nodes' in the Input Array correspond to the entries in the table in the Input Array section.

Example

```
MAGIX("ACQD")=" MYCOMPUTER"

MAGIX("ACQL")=99

MAGIX("ACQS")=688

MAGIX("DOCCTG")=19

MAGIX("DOCDT")="05/05/1999"

MAGIX("IDFN")=1033

MAGIX("STSCB")="TESTCB^MAGGSIUI"

MAGIX("TRKID")="GK;101"
```

Using the ActiveX Control

The Import API distribution consists of:

- KIDs file
- ActiveX control distributed as an OCX file called MagImportX

Process

VistA Imaging developed the MagImportX control for use in Windows application development. MagImportX does not run as a standalone application.

When the Import API ActiveX control is used, the stages in the process are:

1. The program sets the control's required properties and calls public methods of the control to initiate action. This includes providing valid VistA credentials to log in.
2. After an action is completed, a status is returned indicating success or failure to the calling program along with the expected result.
3. If an error occurs, a message is returned explaining the problem.

Steps

To use the MagImportX control:

1. Install and register the MagImportX.OCX into your Windows operating system
2. Use a software development environment (e.g., Delphi, Visual Basic, C++, C#) to create an application.
3. Set properties in the MagImportX control.

   

   When you log in, be careful to avoid a silent login since some login credentials require access and verify codes, and a division code. If the login is not silent, the division prompt will become visible. Otherwise, the login process will fail and subsequent operations will fail.
4. Call public methods to retrieve data or to move data to VistA
5. Check the result array and the returned status for success or failure

   The ActiveX control has a property for each of the data types noted in the table in the Input Array Summary section. Properties and methods are summarized below.

MagImportX Properties

When the ActiveX control is dropped onto a form (Delphi, VB, etc.), the following public properties are available.

ActiveX Property	ActiveX Type	M Field Mapping	Notes
AcqLocation	BSTR	ACQL	
AcqDev	BSTR	ACQD	
AcqSite	BSTR	ACQS	
DeleteFlag	Variant_Bool	n/a	If true, deletes local drive images file(s) after saving to server
DFN	BSTR	IDFN	
DocCategory	BSTR	DOCCTG	To be discontinued in a future patch
DocDate	BSTR	DOCDT	To be discontinued in a future patch
ExcpHandler	BSTR	STSCB	
GroupDesc	BSTR	GDESC	
Images	Variant	IMAGE	
ImgType	BSTR	ITYPE	
IndexOrigin	BSTR	IXORIGIN	
IndexProc	BSTR	IXPROC	
IndexSpec	BSTR	IXSPEC	
IndexType	BSTR	IXTYPE	
Password	BSTR	PASSWORD	
ProcDT	BSTR	PXDT	
ProcIEN	BSTR	PXIEN	
ProcNew	BSTR	PXNEW	
ProcPKG	BSTR	PXPKG	
TIUSignType	BSTR	PXSGNTYP	
TIUTitle	BSTR	PXTIUTTL	
TrkID	BSTR	TRKID	
Username	BSTR	USERNAME	
Visible	Variant_Bool		

ActiveX Methods

- AboutBox
- ClearProperties
- ImportQueue
- GetOriginList
- GetProcList
- GetSpecList
- GetTypeList
- GetPatientHasPhoto
- SaveDirect
- ShowProperties
- SetTIUText
- VistaInit

Index Terms Note

The Specialty and Proc/Event fields must be programmed to apply a filter to the other. The filter (see the parameter list of the method calls below) adjusts the contents of the other index to return valid Specialty and Proc/Event combinations. This eliminates the possibility of selecting inappropriate index term pairs. When a user selects a Procedure, the list of Specialties should be refreshed with the selected Procedure. If the user selects a Specialty the list of Procedures should be refreshed.

If the user sends a Procedure/Event and a Specialty/SubSpecialty that are not valid for each other, the return message will be similar to the example below:

```
0^Invalid Association between Spec/SubSpec and Proc/Event
Type-Class : IMAGE – CLIN
Speciality/SubSpecialty:  PLASTIC SURGERY <SURGERY>
Procedure/Event : BONE SURVEY
```

MagImportX Method Calls

VistAInit(var status: WordBool; var xmsg: WideString; const vserver, port: WideString)

VistAInit connects to VistA. User is prompted to select a site to log into if the user has not already successfully logged into VistA prior to calling VistAInit.

ImageAdd(const imagefile: WideString)

ImageAdd adds another image to the list of images to be imported. Usually the Images Property will be used to capture a list of images to an Image Group. If needed, this call can be used to create and/or add to the list of images.

AboutBox

The AboutBox provides version information about the Imaging Import API ActiveX Control.

SaveDirect(var status: WordBool; var xmsglist: OleVariant); safecall;

SaveDirect is called after all properties have been set with data. A Result array (xmsglist) will be returned indicating the status (success/failure) of the process.

GetOriginList(status: EXCEPINFO): OleVariant;

GetOriginList returns a list of Vista Imaging origin values. A variant array of strings is returned.
Status = OUT parameter containing RPC return status information

The first line of the array contains the column description names.

```
Image Origin^Abbr
```

An example of the Origin terms is as follows:

```
VA
NON-VA
DOD
FEE
```

GetTypeList(const ClassChoice: WideString; status: EXCEPINFO): OleVariant;

GetTypeList returns a list of Vista Imaging types. A variant array of strings is returned.
ClassChoice = IN parameter. Values can be: “ADMIN,ADMIN/CLIN”, “CLIN,CLIN/ADMIN”
Status = OUT parameter containing RPC return status information

The first line of the array contains the column description names as follows:

```
Types^Abbr|Code
```

An example of Type terms is as follows (note that there are no abbreviations for Types):

```
CONSENT^|66
CONSULT^|80
```

GetProcList(const ClassChoice, SpecChoice: WideString; status: EXCEPINFO): OleVariant;

GetProcList returns a list of Vista Imaging procedure values. A variant array of strings is returned.
ClassChoice = IN parameter. Values can be: "", "ADMIN,ADMIN/CLIN", "CLIN,CLIN/ADMIN"
SpecChoice = IN parameter. Values can be blank or insert a specialty from the specialty list
Status = OUT parameter containing RPC return status information

The first line of the array contains the column description names as follows:

```
Procedure Event^Abbr|Code
```

An example of Procedure/Event terms is as follows:

```
A-SCAN^ASCAN|179
ACUPUNCTURE^ACU|21
```

GetSpecList(const ClassChoice, ProcChoice: WideString; status: EXCEPINFO): OleVariant;

GetSpecList returns a list of Vista Imaging specialty values. A variant array of strings is returned.
ClassChoice = IN parameter. Values can be: "", "ADMIN,ADMIN/CLIN", "CLIN,CLIN/ADMIN"
ProcChoice = IN parameter. Blank or insert a procedure from the procedure list
Status = OUT parameter containing RPC return status information

The first line of the array contains the column description names as follows:

```
SpecialtySubSpecialty^Abbr|Code
```

An example of Specialty terms is as follows:

```
ALLERGY & IMMUNOLOGY^ALL&IMM|41
ANESTHESIOLOGY^ANESTH|40
```

GetPatientHasPhoto(const DFN: WideString; out status: EXCEPINFO): OleVariant;

GetPatientHasPhoto returns a "0" if the Patient identified by the DFN parameter does not have a patient photo in Vista Imaging. Otherwise it will return the date/time of the most recent photo on file.
DFN = IN parameter. Patient DFN.
Status = OUT parameter containing RPC return status information

Using Remote Procedure Calls (RPCs)

For Windows applications, an alternative to calling IMPORT^MAGGSIUI is to call the RPC "MAG4 REMOTE IMPORT".

The RPC accepts an array as the only input parameter. It performs the same function as IMPORT^MAGGSIUI by making an entry in the IMPORT QUEUE file (#2006.034). The RPC Call accepts one parameter, which is a list (Input Array). (See example of Delphi code below for MAG4 REMOTE IMPORT.)

The input array used in the RPC call is composed of two pieces of data – a code identifying the kind of data to follow and the data itself. The codes used to identify the type of data correspond to the entries in the table in the Input Array section.

A node in the input array would look like: MAGDATA(n)=CODE^DATA

Example of an Input Array

```
MAGDATA(1)="IMAGE^\\ImageServer\ImageShare \MAX1.JPG^Image description"
MAGDATA(2)="IMAGE^\\ImageServer\ImageShare \MAX2.JPG"
MAGDATA(3)="IMAGE^\\ImageServer\ImageShare \MAX3.JPG^Image description"
MAGDATA(4)="ACQD^COMPUTER CALLING RPC"
MAGDATA(5)="ACQL^99"
MAGDATA(6)="ACQS^688"
MAGDATA(7)="DOCCTG^19"
MAGDATA(8)="DOCDT^05/05/1999"
MAGDATA(9)="IDFN^1033"
MAGDATA(10)="STSCB^TESTCB^MAGGSIUI"
MAGDATA(11)="TRKID^GK;101"
```

Note: Each 'IMAGE' entry is the full path of the Image using UNC notation, and optionally a short description of the Image as the third '^' delimited piece.

If the array entry does not contain a short description as the 3rd '^' delimited piece, the API will generate a default image short description from the procedure and procedure date. All images in the array will be saved as a group of images. If the array contains only one image, it will be saved as a single image.

Sample Delphi Code that Calls the Import API

```
procedure TfTestRPCtoIAPI.btnSendDataClick(Sender: TObject);
var
   i : integer;
   t : TStrings;
begin
   t := TStringlist.Create;
   try
```

```
      with RPCBroker1 do
      begin
         RemoteProcedure := 'MAG4 REMOTE IMPORT';
         Param[0].ptype := list;
         Param[0].value := '.x';
         for i := 0 to memo1.Lines.Count-1 do
         begin
            Param[0].Mult[IntToStr(i)] := Memo1.lines[i];
         end;
         try
            LstCall(t);
         except
            on E:Exception do
                t.Insert(0,'VistA Error');
         end;
      end;
      listbox1.Items.Assign(t);
   finally
      t.Free;
   end;
end;
```

The format of the input data from Memo1.lines :=

```
ACQD^COMPUTER CALLING RPC
ACQL^99
ACQS^688
DOCCTG^19
DOCDT^04/04/1966
IDFN^1033
IMAGE^\\ImageServer\ImageShare\MAX1.JPG^image description"
IMAGE^\\ImageServer\ImageShare\MAX2.JPG"
IMAGE^\\ImageServer\ImageShare\MAX3.JPG^image description"
STSCB^TESTCB^MAGGSIUI
TRKID^GK;101
```

Appendix A: Input Array Descriptions

The following list provides more details for the data IDs in the table explained in section *Stage 1: Input Array Sent to Import API* .

ACQD - Acquisition Device [required]

Description Required. Acquisition Device name must be unique for each instrument at a site. Used by the Imaging Package for statistical, tracking, and debugging purposes.

Notes For Windows systems, ACQD should be the "computer name" of the capturing device. For non-Windows systems, "ACQD" should be the domain name of the system.

Example "COMPUTER CALLING RPC"

DFLG - Delete Flag

Description Optional. This parameter must be sent if the calling application wants to delete the original image file(s) after being processed and copied to the Imaging Network. Possible values: "1" means delete the original image(s) after processing.

Notes If this parameter is not sent, the original image(s) will not be deleted.

Example "1"

DOCCTG - Document Category (Type)

Description Optional. This parameter is an IEN in the MAG DESCRIPTIVE CATEGORIES file (#2005.81), and is used to identify the type of images being imported. A list of available DOCCTG values is listed in *Appendix C: DOCCTG Values*.

Note: To be discontinued in a future patch

Notes When DOCCTG is used, DOCDT must be used as well. If DOCCTG is not used, values must be defined for PXDT, PXIEN, and PXPKG.

Example "4"

IXTYPE - Image or Document TYPE

Description Optional. This is a pointer to IMAGE INDEX FOR TYPES file (#2005.83) or the full name of the Index Type.

Notes A full list of Index for Types can be retrieved by using RPC call "MAG4 INDEX GET TYPE".

Example "66" or "CONSENT"

IXSPEC - Image or Document SPECIALTY/SUBSPECIALTY

Description Optional. Pointer to IMAGE INDEX FOR SPECIALTY/SUPSPECIALTY file (#2005.84) or the full name of the Index Specialty

Notes A full list of Index for Specialty can be retrieved by using RPC call "MAG4 INDEX GET SPECIALTY".

Example "2" or "CARDIOLOGY"

IXPROC - Image or Document PROCEDURE/EVENT

Description Optional. Pointer to IMAGE INDEX FOR PROCEDURE/EVENT file (#2005.85) or the full name of the Index Proc/Event

Notes A full list of Index for Proc/Event can be retrieved by using RPC call "MAG4 INDEX GET EVENT"

Example "16" or "ANESTHESIA"

IXORIGIN - Image or Document ORIGIN

Description Optional. Set of Codes. Possible values are: VA, NON-VA, DOD, FEE. If a value for this is not sent, it will default to VA.

Notes A full list of Index for ORIGIN can be retrieved by using RPC call "MAG4 INDEX GET ORIGIN".

Example "V" or "VA"

GDESC - Group Description

Description Optional. A Short Description (60 character maximum) for the group of images. Imaging generates a default description if this parameter is null. The default description consists of the Procedure Name and Procedure Date.

Notes If only one image is being imported, this field will be used as the short description for that image. If a third '^' piece is included with the IMAGE file (#2005) name, (see IMAGE in the input array summary table), that third piece will override this entry.

Example "Informed Consent 01/01/2001"

ITYPE - Image Type

Description Optional. Use ITYPE to specify an Image Type other than the default type assumed by VistA Imaging. The value for ITYPE is an IEN in the OBJECT TYPE file (#2005.02) or its external value. Possible values are:

IEN	Image Type	Extension
1	STILL IMAGE	JPG
15	DOCUMENT	TIF
18	PATIENT PHOTO	JPG
21	MOTION VIDEO	AVI
100	DICOM IMAGE	DCM
103	TEXT	ASC
104	ADOBE	PDF
105	RICH TEXT	RTF
106	AUDIO	WAV

Notes Typically, VistA Imaging will use the file extension of an image to determine the Image Type:

Extension	VistA Default Type
tga	STILL IMAGE (color)
tif	DOCUMENT
jpg	STILL IMAGE (color)
bmp	STILL IMAGE (color)
dcm	DICOM
pdf	PDF
rtf	RTF
txt	TEXT
avi	MOTION VIDEO
wav	AUDIO

Example "18"

PXIEN - Procedure IEN

Description Optional. The IEN of the procedure in the VistA Package File.

Notes In the current version, we are only associating Clinical images with the TIU package, so PXIEN is the IEN of the TIU Document file (#8925).

When PXIEN is used, PXDT and PXPKG must be used as well. If PXIEN is not used, values must be defined for DOCCTG and DOCDT. (DOCCTG to be discontinued in a future patch)

Example PXPKG="8925", PXIEN="834"
(The IEN of TIU Document equals 834.)

PXPKG - Procedure PKG [required]

Description Required. The File number of the VistA Package to associated with the Image. Possible values of PXPKG are "8925" or "null".

Notes For the current version of the Import API, images can be associated only with TIU package or as an Image Category (MAG DESCRIPTIVE CATEGORIES file (#2005.81)).

When PXPKG is used, PXDT and PXIEN must be used as well. If PXPKG is not used, values must be defined for DOCCTG and DOCDT. (DOCCTG to be discontinued in a future patch)

Example "8925" (TIU Document)

PXNEW - Procedure New

Description Optional. Procedure New is a flag that determines if a new Procedure Report will be created, or if an existing one will be used.

Notes Only new entries for TIU DOCUMENT file (#8925) can be created.

Example "0", "1", or nothing

PXTIUTTL - TIU Title IEN or Text

Description Optional. External or internal value of TIU Title in TIU DOCUMENT DEFINITION file (#8925.1), the TIU Title of a new TIU note

Notes Required when a new TIU note will be created. In this case, PXPKG should be set to "8925" or "TIU" and PXNEW should be set to "1".

Example "118" or "POST ANESTHETIC"

PXSGNTYP - Signature Type

Description Optional. Signature Type of a new TIU Note – unsigned or electronically filed.

Notes Required when a new TIU Note is created. The parameter will be used to indicate the status of the new TIU Note – unsigned ("0") or electronically filed ("1").

Example "0", "1", or nothing

PXTIUTCNT - TIU Text Lines Counter

Description Optional. Text Lines counter of a new TIU Note.

Notes Required when a new TIU Note is created.

Example If TIU Note text has two lines, then the value of the field is "2".

PXTIUTXTnnnnn – TIU Note Text

Description Optional. Text Line in newly created TIU Note

Notes Required when the value of PXTIUTCNT is positive

Example If TIU note text is:
{line 1 text}
{line 2 text}

Then, PXTIUTXTnnnnn and PXTIUCNT have to be set as follows:
PXTIUTXT00001=*{line 1 text}*
PXTIUTXT00002=*{line 2 text}*
PXTIUCNT=2

STSCB - Status Handler [required]

Description Required. The Status Handler must be "Tag^Routine" of an M routine that exists in VistA. This is always called to inform the calling package of the Status of the Import process. A Status^Message, TrackingID, and Queue Number are returned and possibly a list of warnings.

Example of how the Import API calls the Status Handler:

D @(STSCB_"(.STATARR)")

STATARR(0)= "0^message" or "1^message"

STATARR(1)=TRKID

STATARR(2)=QNUM

STATARR(3..N)=warnings

Notes Warnings will be present if a Group of Images was to be imported, and only some of the Images could be copied, or Delete Flag is true, and Imaging could not delete the original image file, after copying it to the Imaging Network Server.

If Status is '1^message' indicating success, then an Entry has been made in the IMAGE file (#2005), and all images have been successfully copied to the Server.

If any images fail to be copied, all IMAGE file (#2005) entries will be deleted.

Example For Clinical Procedures: "STATUS^CPRTN"

TRKID - Tracking ID [required]

Description Required. This is a unique identifier passed by the calling package. It will be saved with the IMAGE file (#2005) entry. If an error occurs during processing, causing the import to fail, this number is returned along with a status and message to the Status Handler Routine.

Format: Package ID_';'_unique identifier (package ID _semicolon_ unique ID)

Notes If the calling application is a VistA Package, the Package ID will be the VistA namespace or File Number; otherwise it will be an identifying name assigned to each vendor. The unique identifier can be a number or free text. It is the responsibility of the calling application to ensure that the unique identifier is indeed unique within the application.

Example Clinical Procedures

"703.1;183" or "CP;183"

Document Imaging Interface

"DOC;494"

Username and Password

Description Separate parameters are passed for username and encrypted password, each consisting of a string value.

Notes In some cases, the Server\Share (image paths passed in the 'Image Array') where the images are temporarily stored will be secured. A Username and Password will be needed for access. In this case, if the privileged Imaging User (IU) or Imaging Admin (IA) accounts will not have access, then you must send a valid Username and Password in this parameter.

Note: VA Kernel RPC Broker encryption must be used for the password.

Example None

Appendix B: RPCs

VistA Imaging Image Index Terms

The values of the four VistA Imaging image index terms can be retrieved by calling the following RPCs:

MAG4 INDEX GET TYPE

MAG4 INDEX GET EVENT

MAG4 INDEX GET SPECIALTY

MAG4 INDEX GET ORIGIN

Photo ID Exists for a Patient DFN

Check if a photo ID exists for a patient in VistA Imaging by calling:

MAGN PATIENT HAS PHOTO

Appendix C: DOCCTG Values

The following is a list of values that can be used for DOCCTG. These values are based on the entries in the MAG DESCRIPTIVE CATEGORIES file (#2005.81).

NUMBER	CLASS	NAME
18	CLIN	ABG
15	OLD	ADMIN
48	ADMIN	ALLIED VETERAN
1	CLIN	ANATOMIC DIAGRAM
25	CLIN	ANGIO
49	ADMIN	APPT OF VSO AS CLAIMANT'S REP
43	CLIN	ARTH
28	CLIN	AUD
20	CLIN	BMA
39	CLIN	BSW
4	CLIN	CONSULT FORM
50	ADMIN	CORRESPONDENCE
42	CLIN	CLINICAL PICTURE
51	ADMIN	DD214 ENLISTED RECORD & RPT OF SEP
52	ADMIN	DEATH CERTIFICATE
53	ADMIN	DENIAL LETTER
24	CLIN	DENTAL
35	CLIN	DERM
65	ADMIN	DESIGNATION OF HEALTHCARE SURROGATE
54	ADMIN	DISCHARGE AGAINST MEDICAL ADVICE
17	CLIN	DRM
27	CLIN	ECG
41	CLIN	EEG
55	ADMIN	ELIGIBILITY (10-7131)
10	CLIN	ENCOUNTER FORM
19	CLIN	ENDOC
36	CLIN	ENT

NUMBER	CLASS	NAME
31	CLIN	ERC
56	ADMIN	FINANCIAL WORKSHEET
30	CLIN	GEN
59	ADMIN	HEALTH INSURANCE CARDS
38	CLIN	HEMATOLOGY
37	CLIN	IMM
6	ADMIN	INSURANCE FORM
57	ADMIN	INVENTORY OF FUNDS AND EFFECTS
29	CLIN	LHC
66		LOCAL SITE ENTRY
46	ADMIN	MEANS TEST (10-10EZ)
47	ADMIN	MEANS TEST (10-10F)
58	ADMIN	MEDICAL CERTIFICATE
45	ADMIN	MISCELLANEOUS
21	CLIN	NEU
26	CLIN	OPH
32	CLIN	ORTH
12	CLIN	OTHER-MEDICAL
13	OLD	OTHER-NON-MEDICAL
60	ADMIN	PLENARY GUARDIANSHIP
23	CLIN	POD
61	ADMIN	POWER OF ATTORNEY
62	ADMIN	REPORT OF CONTACT
63	ADMIN	REQUEST FOR INFORMATION
33	CLIN	RHEUM
40 .	CLIN	SPEECH TH
34	CLIN	ULTSND
44	CLIN	UNASSIGNED
64	ADMIN	VALUABLES / BELONGINGS CHECKLIST
16	CLIN	VAS
22	CLIN	WOUND ASSESSMENT

Appendix D: List of Current Specialty Index Terms

```
ALLERGY & IMMUNOLOGY^ALL&IMM|41
ANESTHESIOLOGY^ANESTH|40
AUDIOLOGY^AUDIO|58
BLIND REHAB^BLINDRHB|84
BLOOD BANK^BB|31
CARDIAC SURGERY^CARD|74
CARDIOLOGY^CARDIO|2
CHEMISTRY^CHEM|33
CHIROPRACTIC^CHIROPRC|79
COLON & RECTAL SURGERY^C&RSURG|20
CRITICAL CARE, MED^MICU|10
CRITICAL CARE, SURGERY^SICU|22
DENTISTRY^DENT|53
DERMATOLOGY^DERM|19
DIETETICS^DIET|69
EMERGENCY MEDICINE^ER|39
ENDOCRINOLOGY, DIABETES, METAB^ENDOCR|12
ENDODONTICS^ENDODONT|80
EYE CARE^EYE|57
GASTROENTEROLOGY^GI|3
GERIATRICS^GERIAT|11
HEMATOLOGY, LAB^HEM LAB|30
HEMATOLOGY, MEDICAL^HEM MED|4
IMMUNOLOGY^IMMUNO|34
INFECTIOUS DISEASE^ID|5
INTERNAL MEDICINE^INT MED|1
LABORATORY^LAB|49
MEDICINE^MED|47
MENTAL HEALTH^MH|55
MICROBIOLOGY^MICRO|32
NEPHROLOGY^NEPHRO|7
NEUROLOGIC SURGERY^NEUROSURG|18
NEUROLOGY^NEURO|27
NEURORADIOLOGY^NEURORAD|51
NUCLEAR MEDICINE^NUC MED|28
NURSING^NURS|52
OBSTETRICS & GYNECOLOGY^OBGYN|43
ONCOLOGY^ONC|6
OPHTHALMOLOGY^OPHTH|17
OPTOMETRY^OPTOM|56
ORAL MF SURGERY^ORALSURG|73
ORTHODONTICS^ORTHODON|88
ORTHOPEDICS^ORTHO|16
OTOLARYNGOLOGY^OTO|83
OTORHINOLARYNGOLOGY (ENT)^OTOLAR|24
PAIN MANAGEMENT^PAIN MGT|81
PATHOLOGY^PATH|50
PEDIATRICS^PEDS|87
PERIODONTICS^PERIODON|89
PHARMACY^PHARM|60
PLASTIC SURGERY^PLSURG|44
PODIATRY^POD|23
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```
POLYTRAUMA^POLYTRMA|85
PRENATAL^PRENATL|86
PREVENTIVE MEDICINE^PREV MED|45
PRIMARY CARE^PC|42
PROCTOLOGY^PROC|72
PROSTHETICS^PROS|70
PROSTHODONTICS^PROSDONT|90
PSYCHIATRY^PSYCH|26
PSYCHOLOGY^PSYCHOL|76
PULMONARY^PULM|8
RADIATION THERAPY^RAD THER|71
RADIOLOGY^RAD|29
REHABILITATIVE^REHAB|25
RESEARCH^RES|66
RHEUMATOLOGY^RHEUM|9
SOCIAL WORK^SW|68
SPEECH PATHOLOGY^SPCHPATH|82
SPINAL CORD INJURY^SCI|67
SURGERY^SURGERY|48
THORACIC SURGERY^THORSURG|14
TRANSPLANTATION^TRANSP|75
UROLOGY^GU|15
VASCULAR^VAS|21
WOMEN'S HEALTH CLINIC^WH|78
```

Appendix E: List of Current Procedure/Event Index Terms

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A-SCAN^ASCAN|179
ACUPUNCTURE^ACU|21
ADVANCE DIRECTIVE DISCUSSION^ADIRDISC|168
ALLERGY TESTING^ALTST|173
ANESTHESIA^ANEST|16
ANGIOGRAPHY^ANGIO|109
ANGIOSCOPY^ANGSC|145
ANKLE BRACHIAL INDICES^ABI|177
ARMED FORCES INST PATH RPT^AFIP|84
ARTERIAL BLOOD GAS^ABG|110
ARTERIOGRAM^ARTGR|80
ARTHROGRAM^ARTHG|164
ARTHROSCOPY^ARTHR|7
ASPIRATION/DRAINAGE/BIOPSY^ASP|29
AUDIOGRAM^AUDGM|157
AUTOPSY^AUT|103
BARIUM ENEMA^BAE|166
BARIUM SWALLOW^BARSW|152
BIOPSY^BX |10
BLOOD COMPONENT FORM^BLFRM|83
BLOOD TRANSFUSION^BB |28
BONE DENSITY STUDY^BDS|163
BONE MARROW ASPIRATE/BIOPSY^BM|194
BONE SURVEY^BONSV|55
BRONCHOSCOPY^BRONC|17
C&P EXAM^C&P|124
CAPSULE ENDOSCOPY^CENDO|199
CARDIAC CATHETERIZATION^CATH|1
CARDIOVERSION^DCC|174
CATHETER INSERTION^CATHI|74
CENTRAL AUDIOLOGY PROCESSING^CAUDPROC|200
CEPHALOMETRIC^CEPHL|61
CHEMOTHERAPY^CHEMO|100
COLONOSCOPY^COL|12
COLPOSCOPY^COLP|146
COMPUTED RADIOGRAPHY^CR|111
COMPUTED TOMOGRAPHY^CT|105
CONSCIOUS SEDATION^SED|32
CONTRAST INJECTION^CONTR|18
CORONARY ARTERY BYPASS^CAB|175
CRITICAL TIME INTERVENTION^CTI|161
CYSTOSCOPY^CYSTO|8
CYTOLOGY^CYTO|102
DAILY CRITICAL CARE^DCARE|75
DENSITOMETRY^DENS|150
DENTAL IMAGE PA^DENPA|19
DIABETIC RETINOPATHY SURVEILLANCE^DIEYE|88
DIALYSIS CATHETER INSERTION^DIALC|31
DIALYSIS^DIALY|129
DIGITAL RADIOGRAPHY^DX|114
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DISCHARGE SUMMARY^DCSUM|93
ECHOCARDIOGRAM^ECHO|2
EEG^EEG|120
EGD^EGD|13
EKG^EKG|3
ELECTROMYOGRAM^EMG|125
ELECTRON MICROSCOPY^EM|104
ELECTRONYSTAGMOGRAM^ENG|195
ELECTROPHYSIOLOGY STUDY^EPS|98
ENDODONTICS^ENDODONT|169
ENDOSCOPY^ENDO|6
EPID STEROID INJECTION^STERD|22
ERCP^ERCP|79
EXTENDED CARE^ECARE|33
EXTRAORAL^EXORAD|53
EYE EXAM^EYEEX|122
EYE PHOTOGRAPHY^EYEPH|132
EYE THRESHOLD TEST^EYETH|89
FLUORESCEIN ANGIOGRAPHY^FLANG|64
FREQUENCY DOUBLING TECHNIQUE^FDT|184
HEALTH QUESTIONS/QUESTIONNAIRE^QUEST|70
HEPARIN DRIP^HEP|76
HISTORY & PHYSICAL^H&P|94
HIV COUNSELING^|167
HIV TESTING^HIV|34
HOLTER/CARDIAC EVENT MONITOR^HOLTR|4
HOME VISIT^HBPC|67
HORIZONTAL BITEWINGS^BITEWNGH|203
IMMUNIZATION^IMMUN|133
IMPLANT^IMPLNT|171
INFLUENZA FLU VACCINE^FLUVC|35
INJECTION^INJ|136
INPATIENT STAY^|197
INTER-FACILITY TRANSFER^IFT|36
INTRA-ORAL RADIOGRAPH^IORAD|54
INTRAORAL^INTOR|68
IV^IV|186
LAPAROSCOPY^LAP|15
LARYNGOSCOPY^LAR|126
LASER TREATMENT^LASRTX|190
LUMBAR PUNCTURE^LP|99
LUNG REDUCTION^LUNGR|128
MAGNETIC RESONANCE SCAN^MR|106
MAMMOGRAPHY^MAMMO|130
MANOMETRY/PH STUDY^MANOM|65
MENTAL HEALTH LEGAL STATUS^|198
MICROSCOPY^MICRO|9
MISCELLANEOUS^MISC|46
MOHS PROCEDURE^MOHS|178
MR ANGIOGRAPHY^MA|143
MR SPECTROSCOPY^MS|148
NASOPHARYNGOSCOPY^NASOP|24
NEURO CHECKS^NEURO|77
NUCLEAR MEDICINE SCAN^NMSCN|81
OCCLUSAL^OCCLUSAL|52
OCCUPATIONAL THERAPY^OT|142
ONE-TO-ONE OBSERVATION REQUIREMENT^1TO1|49
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OP EMER/REF & TREATMENT^OPERT|71
OPT OBSERVATION MAR^OPTOB|90
ORAL EXTRACTION^ORALEXTR|172
ORAL MAXILLOFACIAL SURGERY^MXFSURG|69
OTOSCOPY^OTOSCPY|192
PACEMAKER PLACEMENT/MONITORING^PACEM|151
PACU^PACU|78
PAIN MANAGEMENT^PAINM|138
PALLIATIVE CARE^PALLI|37
PANENDOSCOPY^PNEND|154
PANORAMIC^PANOR|60
PAP SMEAR^PAP|189
PARACENTESIS^PARAC|23
PATIENT CONTRACT/CHRONIC NARCOTIC USE^PTNAR|39
PATIENT EDUCATION^PATED|135
PATIENT'S TREATMENT PLAN^PTTXP|48
PERIODONTIC EXAM^PERIO|72
PERIPHERAL BLOOD SMEAR^PBS|139
PHOTOGRAPHY^PHOTO|38
PHYSICAL THERAPY^PT|140
PLETHYSMOGRAPHY^PLETH|92
PNEUMONECTOMY^PNMECTMY|176
PORT PLACEMENT^PORT|40
POSITRON EMISSION TOMOGRAPHY^PT|144
PULMONARY FUNCTION TEST^PFT|5
RADIATION THERAPY^XRT|170
RADIO FLUOROSCOPY^FLUOR|160
RADIOTHERAPY IMAGE^RTIMG|147
REFERENCE LAB^RFLAB|85
REFERRAL^REFER|66
REQUEST FOR VOLUNTARY ADMISSION^VOLAD|47
RESEARCH PROCEDURE (ACTIVE)^RESCP|180
RESEARCH PROCEDURE^RESCH|42
RESERVIST PHYSICAL SF 88/93^RESPE|50
RESPIRATORY THERAPY^RT|141
RETINAL TOMOGRAPHY^RT|193
SCREENING AND SURVEILLANCE^SCRNSURV|191
SECLUSION/RESTRAINT^SECLU|87
SERUM PROTEIN ELECTROPHORESIS^SPEP|86
SIALOGRAPHY^SIALO|56
SIGMOIDOSCOPY^SIG|25
SLEEP STUDY^SLP|153
SPECT^ST|149
SPIROMETRY^SPIRO|91
STERILIZATION^STERI|82
STRESS TEST^STRES|20
STROBOSCOPIC VOICE EVALUATION^VSTROB|185
STROBOSCOPY^STROB|162
SURGERY^SURG|11
SURGICAL PATHOLOGY^SP|121
SWALLOW STUDY^SWALSTDY|187
TELEPHONE CONTACT^TEL|137
THALLIUM STRESS TEST^THALL|26
THORACENTESIS^THORA|127
TMJ^TMJ|58
TOMOGRAPHIC^TOMOG|59
TOPOGRAPHY^TOPO|183
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TRANSFUSION^TXF|155
TRICARE/DOD RESERVIST PHYSICAL SF 88/93^DODPE|101
TRIG PT INJ^TRIGM|27
TYMPANOGRAM^TYMP|156
ULTRASOUND^US|108
UPPER ENDOSCOPY^ENDOU|30
URODYNAMICS^URODYNA|202
UROFLOWOMETRY^UROFLOW|201
USE OF RESTRAINT^RESTR|41
VALVE REPLACEMENT/REPAIR^VR|188
VASCULAR INTERVENTION^VASC|43
VASCULAR ULTRASOUND^VASUS|117
VENOGRAM^VENGR|44
VENTILATION^VENT|51
VERTICAL BITEWINGS^BITEWNGV|57
VESTIBULAR/BALANCE TESTING^VESTBAL|196
VIDEO URODYNAMICS^UROVIDEO|165
VISIBLE LIGHT^VISLT|62
VISIT^VISIT|14
VISUAL FIELD^VISFD|131
VITAL SIGNS^VITAL|123
WAIVER FOR PATIENT OF CHILD BEARING AGE^WAIVR|45
WANDERER PHOTO^WAN|158
WOUND ASSESSMENT^WOUND|119
XRAY ANGIOGRAPHY^XA|116
XRAY^XRAY|107
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Appendix E: List of Current Type Index Terms

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CONSENT^|66
CONSULT^|80
DIAGRAM^|76
FLOWSHEET^|72
IMAGE^|75
MEDICAL RECORD^OMR OTH|69
MEDICATION RECORD^|71
MISCELLANEOUS DOCUMENT^|45
ORDER^|100
PROCEDURE RECORD/REPORT^|74
PROGRESS NOTE^PNOTE|85
VIDEO^|90
VISIT RECORD^|73
```

Appendix F: List of Current Origin Index Terms

VA
NON-VA
DOD
FEE