



**Radiology/Nuclear Medicine
Release Notes**

**Patch RA*5.0*47
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Department of Veterans Affairs
Health Systems Design & Development
Provider Systems

Release Notes for Patch RA*5*47

Patch RA*5*47 is an enhancement patch to standardize the VistA RIS messaging interface to the current IHE specifications by updating the messages broadcast by Vista Radiology in accordance with HL7 version 2.4 standards.

Overview

Patch RA*5*47 adds a Study Instance User Identification (SIUID) to specific v2.4 HL7 event messages when an order is registered, an exam cancelled, an exam reaches the Examined status, or when a report is sent.

- The SIUID is a unique key that associates images to a particular study, which is required in messages sent to the Picture Archiving and Communications System (PACS). HL7 is the accepted protocol for transferring this information.
- The SIUID allows VistA Radiology to send event transactions to a commercial PACS directly, bypassing the VistA Digital Imaging and Communications in Medicine (DICOM) Text Gateway.
- The VA wants to accommodate commercial PACS and supply them with HL7 order messages and discontinue the use of the DICOM for the Radiology/Nuclear Medicine application.

Configuration instructions to set up the PACS for this are included with the VistA Imaging patch MAG*3.0*49, which must be installed *after* this patch.

General Installation Notes

- Associated patches RA*5*90, RA*5*99, and RA*5*104 must be installed before you install patch RA*5*47.
- MailMan and Kernel patches must be current on the target system to avoid problems loading and installing patch RA*5*47.
- The install time for patch RA*5*47 is less than ten minutes.
- Because patch RA*5*47 impacts VistA HL7 messaging, it is best installed when system activity is minimal.
- The VistA Radiology and Voice Recognition interfaces must be shutdown.
 - a. On the VistA-side, the shutdown of VistA Radiology means that all radiology logical links must be shutdown.
 - b. Notify the Radiology department that the VistA Radiology application will be shutdown.
 - c. This shutdown will impact the HL7 messaging between VistA Radiology, Voice Recognition, PACS, and VistA Imaging.

Specific Installation Notes

- Patch RA*5.0*47 and Patch MAG*3.0*49 are closely related. Patch RA*5.0*47 must be installed first and Patch MAG*3.0*49 must be installed right after Patch RA*5.0*47. Each patch creates APIs used by the other and therefore must be installed in that order.
- After both RA*5.0*47 and MAG*3.0*49 are installed and properly set up, you do not need the VistA DICOM Text Gateway to create the unique key for the commercial PACS.

Patch RA*5*47 New Features

Patch RA*5*47 creates the new Site Specific Accession Number (SSAN) by pre-pending the Facility ID to the day-case number. A new division parameter and a set-up option are created to control the use of the SSAN.

Only when the division parameter, *Use Site Accession Number?*, is set to YES, does the Radiology package generate and store the SSAN during Registration, and add the display of the SSAN to options, reports and look-ups, which previously displayed the case number or day-case number.

- The parameter is set by division and is distributed with a NULL value; all divisions must be set when the switch is flipped (either ALL ON or ALL OFF).
- After the parameter is set to YES, the SSAN is displayed in RA options, reports, and lookups, where the case number or day-case number was previously displayed.
- For historical cases created before the parameter is set, there is no associated SSAN; therefore, the case number or day-case number continues to display for the life of those cases.

A new option, **Site Accession Number Set-up**, was added to the IRM Menu.

- This option functions as a *switch* to turn on the use of the SSAN.
- This option provides the sites with the ability to NOT begin using the SSAN until all devices are able to handle the longer accession number; sites must not begin using the SSAN until all devices are able to handle the longer accession number.

Examples

Example of an existing display with the division parameter set to NO or NULL.

Select Exam Entry/Edit Menu Option: Case No. Exam Edit

Enter Case Number: 3039

Choice	Case No.	Procedure	Name	Pt ID
1	032009-3039	ANGIO CAROTID CEREBRAL UN	RADPATIENT, ONE	0000

(RAD Detailed) CPT:75665

Example of the new display with the division parameter set to YES.

Select Exam Entry/Edit Menu Option: Case No. Exam Edit

Enter Case Number: 141-032009-3039

←User may still select by case # (3039)

Choice	Case No.	Procedure	Name	Pt ID
1	141-032009-3039	ANGIO CAROTID CEREBRAL UN	RADPATIENT, ONE	0000

(RAD Detailed) CPT:75665

Options affected by the new SSAN

Abnormal Exam Report	[RA ABNORMAL]
Access Uncorrected Reports	[RA UNCORRECTED REPORTS]
Add Exams to Last Visit	[RA ADDEXAM]
Add/Remove Report From Batch	[RA BTCHREMOVE]
Cancel an Exam	[RA CANCEL]
Case No. Exam Edit	[RA EDITCN]
Clinic Distribution List	[RA RPTDISTLISTCLINIC]
Daily Log Report	[RA LOG]
Delete a Report	[RA DELETERPT]
Delinquent Status Report	[RA DELINQUENT]
Diagnostic Code and Interpreter Edit by Case No.	[RA DIAGCN]
Display Patient Demographics	[RA PROFDEMOS]
Display a Rad/Nuc Med Report	[RA RPTDISP]
Draft Report (Reprint)	[RA REPRINT]
Duplicate Dosage Ticket	[RA DOSAGE TICKET]
Duplicate Flash Card	[RA FLASH]
Edit Exam by Patient	[RA EDITPT]

Exam Deletion	[RA DELETEXAM]
Exam Profile (selected sort)	[RA PROFSORT]
Exam Status Display	[RA STATLOOK]
Incomplete Exam Report	[RA INCOMPLETE]
Indicate No Purging of an Exam/report	[RA NOPURGE]
Jacket Labels	[RA LABELS]
List Reports in a Batch	[RA BTCHLIST]
On-line Verifying of Reports	[RA RPTONLINEVERIFY]
Outside Report Entry/Edit	[RA OUTSIDE RPTENTRY]
Override a Single Exam's Status to 'complete'	[RA OVERRIDE]
Print Division Parameter List	[RA SYSDIVLIST]
Print Rad/Nuc Med Requests by Date	[RA ORDERPRINTS]
Print Selected Requests by Patient	[RA ORDERPRINTPAT]
Print a Batch of Reports	[RA BTCHPRINT]
Profile of Rad/Nuc Med Exams	[RA PROFQUICK]
Radiopharmaceutical Administration Report	[RA NM RADIOPHARM ADMIN]
Radiopharmaceutical Usage Report	[RA NM RADIOPHARM USAGE]
Register Patient for Exams	[RA REG]
Report Entry/Edit	[RA RPTENTRY]
Report's Print Status	[RA RPTDISTPRINTSTATUS]
Request an Exam	[RA ORDEREXAM]
Restore a Deleted Report	[RA RESTORE REPORT]
Select Report to Print by Patient	[RA RPTPAT]
Status Tracking of Exams	[RA STATRACK]
Summary/Detail report (for Outpt Proc Wait Times)	[RA TIMELINESS REPORT]
Summary/Detail report (for Verification Timeliness)	[RA PERFORMIN RPTS]
Unprinted Reports List	[RA RPTDISTLISTUNPRINTED]
Unverified Reports	[RA DAIUVR]
Unverify a Report for Amendment	[RA UNVERIFY]
Update Exam Status	[RA UPDATEXAM]
Verify Batch	[RA BTCHVERIFY]
Verify Report Only	[RA RPTVERIFY]
View Exam by Case No.	[RA VIEWCN]
Ward Distribution List	[RA RPTDISTLISTWARD]

Patch RA*5*47 Modified Features

1. Routines are modified to call Imaging APIs to get:
 - a. **Patient ID** information for the **PID** segment
 - b. **Patient Visit** information for the **PV1** segment
 - c. **Ordering Provider Call Back Phone Number(s)** for the **ORC** segment
 - d. A unique **Study Instance User Identification (SIUID)** key that creates a new **ZDS** segment used in the ORM and ORU HL7 v2.4 message typesThe calls to the Imaging APIs are covered by ICRs 5021, 5022, and 5023.
2. New version 2.4 event driver protocols are exported with this patch.
3. An input template is modified to file the site accession number data in the new Site Accession Number (#31) field and the SIUID in the Study Instance UID (#81) field, both in the EXAMINATIONS (#70.03) multiple.
4. A routine is added to update the new Site Accession Number and Study Instance UID fields and to provide VistA Imaging with new APIs through a private integration agreement.
5. The Exam Date (#.01) field of the REGISTERED EXAMS (#70.02) sub-file is modified to make the data in the field uneditable.
6. Because of the addition of the Site Accession Number field to the EXAMINATIONS multiple, the input template must be re-compiled. A routine re-compiles the input template.

After Installation of Patch RA*5*47

Note: Do not proceed with these steps until ready to begin using the new HL7 v2.4 messaging.

Once you are ready to switch over to the new HL7 v2.4 messaging, you must perform the following steps.

- These steps must be done in coordination with the voice recognition software in use at the site.
- These steps should be done when the Radiology options or voice recognition software is not in use.

Setting Up the Voice Recognition Event Driver Protocols

In order to use the new Integrating the Healthcare Enterprise (IHE) compliant HL7 v2.4 messaging provided by this patch, you must add the corresponding voice recognition subscriber protocols as SUBSCRIBERS to the new v2.4 event driver protocols exported in this patch.

Note: For setting up the VistA Imaging MAGD SEND ORM and MAGD SEND ORU subscriber protocols, refer to MAG*3.0*49 patch documentation.

- The voice recognition subscriber protocols are likely the subscriber protocols that the site currently uses for the existing v2.3 (or previous) protocols.

- Prior to adding the voice recognition subscriber protocols to the new v2.4 event driver protocols, the corresponding voice recognition subscriber protocols must be removed from the existing v2.3 event driver protocols, to prevent sending duplicate messages.

Note: If the listed protocols were renamed locally at your site, use the appropriately named protocols.

In the examples, RA TALKLINK ORM/ORU is used to illustrate the process, but the steps are the same for RA PSCRIBE ORM/ORU, RA RADWHERE ORM/ORU, and/or RA SEND ORM/ORU; so, substitute the correct name.

Step 1 - Remove voice recognition and PACS subscribers from existing ORM event driver protocols

For the RA CANCEL 2.3, RA EXAMINED 2.3 and RA REG 2.3 protocols (or the appropriate protocols if the site is using a version previous to v2.3), remove the voice recognition **ORM** subscriber protocol.

Note: The PACS subscriber may need to be removed from the RA REG, RA EXAMINED and RA CANCEL protocols.

- For TalkStation, the subscriber protocol is RA TALKLINK ORM **←Note ORM**
- For PowerScribe, the subscriber protocol is RA PSCRIBE ORM **←Note ORM**
- For RadWhere, the subscriber protocol is RA RADWHERE ORM **←Note ORM**
- For PACS, the subscriber protocol is RA SEND ORM **←Note ORM**

Example for Step 1

Note: You must perform step 1 for the RA REG 2.3, RA CANCEL 2.3, and RA EXAM 2.3 protocols, but only RA REG 2.3 is shown in this example.

```
Select OPTION NAME: HL7 MAIN MENU  HL MAIN MENU  HL7 Main Menu
```

```

Event monitoring menu ...
Systems Link Monitor
Filer and Link Management Options ...
Message Management Options ...
Interface Developer Options ...
Site Parameter Edit
HLO  HL7 (Optimized) MAIN MENU ...
```

```
Select HL7 Main Menu Option:  Interface Developer Options
```

```

EA  Application Edit
EP  Protocol Edit
EL  Link Edit
VI  Validate Interfaces
Reports ...
```


Select Interface Developer Options Option: Protocol Edit

Select PROTOCOL NAME: RA REG 2.3

←Select v2.3 event driver protocol

HL7 INTERFACE SETUP

PAGE 1 OF 2

NAME: RA REG 2.3

DESCRIPTION (wp):

←[This protocol is triggered whenever a Radiology]

ENTRY ACTION:

EXIT ACTION:

TYPE: event driver

←Press <return> at this field to go to next screen

COMMAND:

HL7 EVENT DRIVER
RA REG 2.3

Press <PF1>H for help

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SENDING APPLICATION: RA-VOICE-SERVER

TRANSACTION MESSAGE TYPE: ORM

EVENT TYPE: 001

MESSAGE STRUCTURE:

PROCESSING ID:

VERSION ID: 2.3

ACCEPT ACK CODE:

APPLICATION ACK TYPE:

RESPONSE PROCESSING RTN: *****

SUBSCRIBERS

RA TALKLINK ORM

←Remove VR ORM subscriber

RA SEND ORM

←Remove PACS ORM subscriber, if applicable

Step 2 - Remove voice recognition and PACS subscribers from existing ORU event driver protocol

Note: The PACS subscriber may need to be removed from the RA RPT protocol.

For the RA RPT 2.3 protocol (or the appropriate protocol if the site is using a version previous to v2.3), remove the voice recognition **ORU** subscriber protocol.

- For TalkStation, the subscriber protocol is RA TALKLINK ORU ←Note ORU
- For PowerScribe, the subscriber protocol is RA PSCRIBE ORU ←Note ORU
- For RadWhere, the subscriber protocol is RA RADWHERE ORU ←Note ORU
- For PACS, the subscriber protocol is RA SEND ORU ←Note ORU

Example for Step 2

Select OPTION NAME: HL7 MAIN MENU HL MAIN MENU HL7 Main Menu

Event monitoring menu ...
Systems Link Monitor
Filer and Link Management Options ...
Message Management Options ...
Interface Developer Options ...
Site Parameter Edit
HLO HL7 (Optimized) MAIN MENU ...

Select HL7 Main Menu Option: Interface Developer Options

EA Application Edit
EP Protocol Edit
EL Link Edit
VI Validate Interfaces
Reports ...

Select Interface Developer Options Option: Protocol Edit

Select PROTOCOL NAME: RA RPT 2.3

←Select v2.3 event driver protocol

HL7 INTERFACE SETUP

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NAME: RA RPT 2.3

DESCRIPTION (wp):

←[This protocol is triggered whenever a Radiology]

ENTRY ACTION:

EXIT ACTION:

TYPE: event driver

←Press <return> at this field to go to next screen

COMMAND:

Press <PF1>H for help

HL7 EVENT DRIVER
RA RPT 2.3

PAGE 2 OF 2

SENDING APPLICATION: RA-VOICE-SERVER

TRANSACTION MESSAGE TYPE: ORU

EVENT TYPE: R01

MESSAGE STRUCTURE:

PROCESSING ID:

VERSION ID: 2.3

ACCEPT ACK CODE:

APPLICATION ACK TYPE:

RESPONSE PROCESSING RTN: *****

SUBSCRIBERS

RA TALKLINK ORU

←Remove appropriate VR ORU subscriber

Step 3 - Add voice recognition and PACS subscribers to new ORM event driver protocols

For the RA CANCEL 2.4, RA EXAMINED 2.4, and RA REG 2.4 protocols, add the voice recognition and PACS **ORM** subscriber protocol.

- For TalkStation, it is usually RA TALKLINK ORM ←Note ORM
- For PowerScribe, it is usually RA PSCRIBE ORM ←Note ORM
- For RadWhere, it is usually RA RADWHERE ORM ←Note ORM
- For PACS, it is usually RA SEND ORM ←Note ORM

Example for Step 3

Note: You must perform step 3 for the RA REG 2.4, RA CANCEL 2.4 and RA EXAMINED 2.4 protocols, but only RA REG 2.4 is shown in this example.

Select OPTION NAME: HL7 MAIN MENU HL MAIN MENU HL7 Main Menu

```

Event monitoring menu ...
Systems Link Monitor
Filer and Link Management Options ...
Message Management Options ...
Interface Developer Options ...
Site Parameter Edit
HLO    HL7 (Optimized) MAIN MENU ...
    
```

Select HL7 Main Menu Option: Interface Developer Options

```

EA    Application Edit
EP    Protocol Edit
EL    Link Edit
VI    Validate Interfaces
Reports ...
    
```

Select Interface Developer Options Option: Protocol Edit

Select PROTOCOL NAME: RA REG 2.4

←Select v2.4 event driver protocol

HL7 INTERFACE SETUP

PAGE 1 OF 2

NAME: RA REG 2.4

DESCRIPTION (wp) :

←[This protocol is triggered whenever a Radiology]

ENTRY ACTION:

EXIT ACTION:

TYPE: event driver

←Press <return> at this field to go to next screen

```

COMMAND:                                     Press <PF1>H for help
        HL7 EVENT DRIVER                       PAGE 2 OF 2
        RA REG 2.4

```

```

SENDING APPLICATION: RA-VOICE-SERVER
TRANSACTION MESSAGE TYPE: ORM                EVENT TYPE: 001
MESSAGE STRUCTURE:
PROCESSING ID:                               VERSION ID: 2.4
ACCEPT ACK CODE:                             APPLICATION ACK TYPE:

```

```

RESPONSE PROCESSING RTN: *****
                        SUBSCRIBERS

```

```

RA TALKLINK ORM
RA SEND ORM

```

←Add appropriate VR ORM subscriber
←Add PACS ORM subscriber, if applicable

Step 4 - Add voice recognition subscribers to new ORU event driver protocol

For the RA RPT 2.4 protocol, add the voice recognition and PACS ORU subscriber protocol.

- For TalkStation, the subscriber protocol is RA TALKLINK ORU **←Note ORU**
- For PowerScribe, the subscriber protocol RA PSCRIBE ORU **←Note ORU**
- For RadWhere, the subscriber protocol RA RADWHERE ORU **←Note ORU**
- For PACS, the subscriber protocol RA SEND ORU **←Note ORU**

Example for Step 4

```

Select OPTION NAME: HL7 MAIN MENU  HL MAIN MENU  HL7 Main Menu

```

```

        Event monitoring menu ...
        Systems Link Monitor
        Filer and Link Management Options ...
        Message Management Options ...
        Interface Developer Options ...
        Site Parameter Edit
HLO    HL7 (Optimized) MAIN MENU ...

```

```

Select HL7 Main Menu Option:  Interface Developer Options

```

```

EA    Application Edit
EP    Protocol Edit
EL    Link Edit
VI    Validate Interfaces
        Reports ...

```

```

Select Interface Developer Options Option:  Protocol Edit

```

Select PROTOCOL NAME: RA RPT 2.4

←Select v2.4 event driver protocol

HL7 INTERFACE SETUP

PAGE 1 OF 2

NAME: RA RPT 2.4

DESCRIPTION (wp):

←[This protocol is triggered whenever a Radiology]

ENTRY ACTION:

EXIT ACTION:

TYPE: event driver

←Press <return> at this field to go to next screen

COMMAND:

Press <PF1>H for help

HL7 EVENT DRIVER
RA RPT 2.4

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SENDING APPLICATION: RA-VOICE-SERVER

TRANSACTION MESSAGE TYPE: ORU

EVENT TYPE: R01

MESSAGE STRUCTURE:

PROCESSING ID:

VERSION ID: 2.4

ACCEPT ACK CODE:

APPLICATION ACK TYPE:

RESPONSE PROCESSING RTN: *****

SUBSCRIBERS

RA TALKLINK ORU

←Add appropriate VR ORU subscriber

RA SEND ORU

←Add PACS ORU subscriber, if applicable

Step 5 - Change the Version ID field of existing message receipt protocol to 2.4

For the existing message receipt protocol, change the **Version ID** field to 2.4.

- For TalkStation, it is usually RA TALKLINK TCP SERVER REPORT
- For PowerScribe, it is usually RA PSCRIBE TCP SERVER REPORT
- For RadWhere, it is usually RA RADWHERE TCP SERVER REPORT

Example for Step 5

Select OPTION NAME: HL7 MAIN MENU HL MAIN MENU HL7 Main Menu

```

Event monitoring menu ...
Systems Link Monitor
Filer and Link Management Options ...
Message Management Options ...
Interface Developer Options ...

```

Site Parameter Edit
HLO HL7 (Optimized) MAIN MENU ...

Select HL7 Main Menu Option: Interface Developer Options

EA Application Edit
EP Protocol Edit
EL Link Edit
VI Validate Interfaces
Reports ...

Select Interface Developer Options Option: EP Protocol Edit

Select PROTOCOL NAME: RA TALKLINK TCP SERVER RPT **←Select existing message receipt event driver protocol (TALKLINK is used in this example)**

HL7 INTERFACE SETUP

PAGE 1 OF 2

NAME: RA TALKLINK TCP SERVER RPT

DESCRIPTION (wp): **←[Driver protocol for sending report to VISTA Rad]**

ENTRY ACTION:

EXIT ACTION:

TYPE: event driver

←Press <return> at this field to go to next screen

HL7 EVENT DRIVER

PAGE 2 OF 2

RA TALKLINK TCP SERVER RPT

SENDING APPLICATION: RA-TALKLINK-TCP

TRANSACTION MESSAGE TYPE: ORU

EVENT TYPE: R01

MESSAGE STRUCTURE:

PROCESSING ID:

VERSION ID: 2.3

←Change this field to 2.4

ACCEPT ACK CODE:

APPLICATION ACK TYPE:

RESPONSE PROCESSING RTN:

SUBSCRIBERS

RA TALKLINK TCP REPORT

Step 6 - Turn on the use of the long site accession number

The option, Site Accession Number Set-up, functions as the *switch* to turn on the use of the Site Specific Accession Number (SSAN).

- Until this field is set to **YES**, the system will **not** generate and store the SSAN during the registration of a new case.
- Only when all devices are able to handle the SSAN, should this field be set to **YES**, at which point, the system will generate and store the SSAN during Registration.

Example for Step 6

```
Select OPTION NAME: RA SITEMANAGER          IRM Menu

      Device Specifications for Imaging Locations
      Distribution Queue Purge
      Failsoft Parameters
      Imaging Type Activity Log
      Purge Data Function
      Rebuild Distribution Queues
      Report File x-ref Clean-up Utility
      Site Accession Number Set-up
      Credit completed exams for an Imaging Location
      Resource Device Specifications for Division
      Schedule Perf. Indic. Summary for 15th of month
      Template Compilation
Select IRM Menu Option: Site Accession Number Set-up
```

Warning: Turning on the Site Specific Accession Number should only be done in conjunction with using the RA v2.4 messaging protocols.

NOTE: Changing the Site Specific Accession Number parameter at a multidivisional site will change the parameter for ALL divisions.

```
Current value of Site Specific Accession Number parameter: NO
Use Site Specific Accession Number? YES
```

Software and Documentation Retrieval

Software

Patch RA*5*47 software and documentation are available on the Office of Information Field Offices (OIFOs) [ANONYMOUS. SOFTWARE] directories at the following Internet addresses:

Preferred or Specific Server	Internet Address
First available ftp server	REDACTED < Preferred
REDACTED	REDACTED
REDACTED	REDACTED
REDACTED	REDACTED

This patch is available via FTP (File Transfer Protocol) in a KIDS (Kernel Installation and Distribution System) distribution file.

File Name	Description	Download Format
RA_5_P47.KID	KIDS Build	ASCII

Documentation

Manuals are also available in MS Word (.docx) format and the Portable Document Format (.pdf) on the **VA Software Documentation Library**

<http://www4.va.gov/vdl/>

Document File Description	File Names	FTP Mode
Radiology/Nuclear Medicine User Manual	RA5_0UM.doc RA5_0UM.pdf	Binary
Radiology/Nuclear Medicine Technical Manual	RA5_0TM.doc RA5_0TM.pdf	Binary
Radiology/Nuclear Medicine 5.0 HL7 Interface Specification Version 3.0	RA5_0HL7spec.doc RA5_0HL7spec.pdf	Binary
Radiology/Nuclear Medicine 5.0 HL7 Setup/Implementation Manual Version 3.0	RA5_0HL7setup.doc RA5_0HL7setup.pdf	Binary
Radiology/Nuclear Medicine Release Notes	RA5_0RN_P47.doc RA5_0RN_P47.pdf	Binary