Carestream

Service Manual for the Health Level 7 (HL7) Interface on the CARESTREAM Image Suite



- · Qualified service personnel must do these procedures.
- · See the Carestream Health Service Portal for possible updates before doing these procedures.
- When doing the procedures in this document, you must use safe work practices and wear the correct personal protective equipment (for example, safety eyewear) according to your company's standard operating procedures.

Purpose: Use the HL7 Interface:

• To correctly map the incoming HL7 message from the third-party EMR/EPR/PM systems to the format used by the Image Suite software. This can be done at the site, when connected to the third-party EMR/EPR/PM system. This can also be done remotely and off-line with an HL7 message .txt file from the customer or vendor and a service laptop or PC.

The software for the HL7 Interface can be installed on the remote service laptop or PC and used to update messages, save messages to an external storage device, and restore messages to the Image Suite computer when you are on site.

- To set up the IP address and port for the third-party EMR/EPR/PM systems on the Image Suite computer.
- To get the log messages.

Confidential

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This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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Section 1: Overview

HL7

Health Level 7 (HL7) is an international standard used to exchange patient and order information as well as images and reports between electronic devices and systems. Image Suite provides an HL7 interface to communicate with third party practice management (PM) systems, electronic medical records (EMR), and electronic patient records (EPR).



This allows Image Suite to receive patient and exam information electronically to automatically create an order list and conduct a scan. After scanning and acquiring the images, the EMR/EPR/PM systems receive an image arrival notification with a URL that can be used to see related images and reports. EMR/EPR/PM systems cannot modify an image or report since the study has been set to the completed status by the Image Suite computer.

Definitions

Format	Description
EMR	Electronic Medical Record, is a computerized legal medical record created in an organization that
	delivers care, such as a hospital and doctor's office.
EPR	Electronic Patient Record, is used to record all medical/health record for an individual patient.
РМ	Practice Management, is used to schedule an exam required to complete a diagnosis or treatment.
SOAP	Simple Object Access Protocol, is a protocol specification for exchanging structured information across Web services in computer networks. It relies on Extensible Markup Language (XML) for its message format, and other Application Layer protocols, like Remote Procedure Call (RPC) and Hypertext Transfer Protocol (HTTP), for message negotiation and transmission.
XML	Extensible Markup Language, is a set of rules for encoding documents in machine readable format.
XSL	Extensible Style Sheet Language, is used by Image Suite to define the conversion from HL7 messages to XML.

🖄 Important

- Image Suite is compliant with HL7 version 2.5.
- Image Suite is not backward-compatible with earlier version(s) of HL7.
- For specification and requirements for the HL7 Interface, see the Specifications for the HL7 Interface, 9J0841, on the Image Suite page of the Carestream Health Service Portal.
- The HL7 Interface is included in the Image Suite Software application.
- The HL7 Interface can also be downloaded from the Carestream Health Service Portal for data mapping prior to installing the Image Suite software.

Section 2: HL7 Message Structure

HL7 messages follow a specific structure.

The structure of each HL7 message, used in Image Suite, is listed below followed by the format for each segment.

Order Message - ORM^O01

ORM^O01 messages are received by Image Suite whenever a New/Cancel/Update order is placed by the EPR/EMR/PM systems. There is only one patient's information sent with each order message.

New/Update/Cancel Order messages use four segments:

Segment	Name	Required
MSH	Message Header	Yes
PID	Patient Identification	Yes
ORC	Common Order	Yes
OBR	Observation Request	Yes

General Acknowledgment Message - ACK

Upon internal verification of the data being successfully written into the Image Suite tables, Image Suite will transmit an ACK message.

General Acknowledgment messages use two segments:

Segment	Name	Required
MSH	Message Header	Yes
MSA	Message Acknowledgment	Yes

Observational Results Unsolicited Message - ORU^R01

An ORU^R01 message will be sent to other EMR/EPR/PM systems whenever captured images have been acquired by Image Suite.

A URL will be sent to third-party EMR/EPR/PM systems to enable those systems to launch a Web based DICOM viewer by clicking the URL.

Observational Results Unsolicited messages use four segments:

Segment	Name	Required
MSH	Message Header	Yes
PID	Patient Identification	Yes
OBR	Observation Request	Yes
OBX	Results	Yes

Section 3: HL7 Characters

	Validation	Dequired	Maximum	Commonto
		Required	Length	Comments
Message Type	CA, XO, SC	YES		
PatientID	Invalid character:	YES	64	For veterinarian, it will store the animal's chip ID.
PatientName		YES	64	PatientName field is combined by LastName, FirstName and MiddleName. The format is LastName^FirstName^MiddleName
-LastName	Invalid characters: ^\/%<>"	NO	64	
-FirstName	Invalid characters: ^\/%<>"	NO	64	
-MiddleName	Invalid characters: ^\/%<>"	NO	64	
PatientBirthDate	Format should be: yyyyMMdd	NO	8	
PatientSex	Only allow M, F, and O	NO	1	
AccessionNO	Invalid character:	YES	16	
ReferPhysician	Invalid characters: ^\/%<>"	NO	32	
ScheduleDate	Format should be: yyyyMMdd	NO	8	
BodyPartView Position		NO		Mapped from the Procedure Code or Universal Service ID by default. <u>See "Body</u> <u>Part/Position Mapping" on Page 34.</u>
Species		NO	64	Receive the species name or code from veterinarian practice system.
Breed		NO	64	Receive the breed name or code from veterinarian practice system.
Neutered	Only allow Y or N	NO	1	
StudyInstanceUID	Only allow "0"-"9" and "."	NO	64	If not provided it is auto generated By ImageSuite.
StudyDescription		NO	256	
Symptoms/Notes		NO	256	
PatientComments		NO	256	
Chip ID		NO	64	
Veterinarian		NO		

Section 4: Installing the HL7 Interface Software to a Service Laptop



- The software for the HL7 Interface is included in the Image Suite software application for Software Version V2 or V3.
- If you have installed Software Version V2 or V3 on to the Image Suite computer you cannot manually install the software for the HL7 Interface to that computer.
- You can use the HL7 Interface on a service laptop to update third-party EMR/EPR/PM XML messages that are downloaded to an external storage device.
- To have the HL7 Interface available on the service laptop you must download the software for the HL7 Interface from the Carestream Health Service Portal.
- The HL7 Interface supports the WINDOWS XP and the WINDOWS 7 operating systems.
- If the HL7 Interface is being install on a laptop with the WINDOWS XP operating system, you must install
 .Net Framework 3.5 from the MICROSOFT web site before installing the software for the
 HL7 Interface.
- [1] Does your laptop or computer have the WINDOWS XP operating system?

Yes	No
 Download the .Net Framework 3.5 from the MICROSOFT web site. 	a. Download and install the software for the HL7 Interface to your laptop or computer.
b. Install the .Net Framework 3.5 to your WINDOW XP laptop or computer.	b. Use the shortcut icon on your laptop or computer to launch the software application
c. Download and install the software for the HL7 Interface to your laptop or computer.	for the HL7 Interface. c. Advance to <u>"Using the HL7 Interface from</u>
d. Use the shortcut icon on your laptop or computer to launch the software application for the HL7 Interface.	the Service Laptop" on Page 16
e. Advance to <u>"Using the HL7 Interface from the</u> <u>Service Laptop" on Page 16</u>	

Section 5: Using the HL7 Interface from the Image Suite Computer



- You must obtain the HL7 procedure codes for the third-party EMR/EPR/PM systems, from the customer.
- You must obtain the Image Suite HL7 specifications, 9J0841 from the Carestream Health Service Portal, and provide the specifications to the customer.
- For all Image Suite computers with the HL7 interface to the third-party EMR/EPR/PM system, you must use the HL7 Interface for configuration and mapping.
- This procedure supports starting the HL7 Interface from the Image Suite Service Utility icon on the desktop.
- Do not use this procedure if the operation of the HL7 Interface is from a service laptop.
- [1] Obtain the list of procedure codes for the third-party EMR/EPR/PM systems, from the customer.
- [2] Use the list of procedure codes for the third-party EMR/EPR/PM system and do the procedure for <u>Body Part/</u> <u>Position Mapping on Page 34</u> for each code.

Carestream	Utility Center	2 🗖 🔀
System Tools System Control Network Tools Log Tools Log Filter Full Function Filter Change Log Level DICOM Tools EchoSCU/StoreScu Statistic Tools Statistic Tools	HL7 Interface	
Statistic By Date Full Function Statistic ■ Maintenance Tools ■ DB Maintenance Tools ■ Restore Database ■ Reset Password ■ Clear System Data ■ Check Data Sanity ■ CR Tools ■ Diagnostics Tool ■ TQT Tool ■ Calculate Linearity Table		
	Kill Process Save As Clear	Exit

- [3] After you have updated the procedure codes for the third-party, at the desktop of the Image Suite computer, click the **Image Suite Service Utility** icon.
- [4] Type Service1 for the Password.
- [5] At the Utility Center screen, click HL7 Interface.

Note

The main screen for the Image Suite HL7 Interface displays.

	ng Matrix Notification URL Test HL7 Interface Log Message HL7Gateway Log Message
IL7 Receiver Setting	
HL7 Listening Port:	1235
SOAP_OUT URI:	http://localhost.8166/HL7Interface.asmx Port Number: 8166
L7 Sender Setting	
3rd Party IP Address:	127.0.0.1 3rd Party Listening Port: 1237 *
3rd Party Code Page:	Unicode (UTF-8)
SOAP_IN URI:	http://localhost:8166/HL7Service.asmx Port Number: 8166
Notify URL Action:	No Action
IL7 Client Simulator - EMI IL7V2 Text:	R System
L7 Client Simulator - EMI HL7V2 Text:	R System

[6] At the Image Suite HL7 Interface screen, check that the HL7 Listening port is set to the default 1235.

[7] Click Update Setting for HL7 Interface.

D Note

The **SOAP_OUT URI** field changes to the Interface mode.

[8] Under HL7 Sender Settings, type in corresponding fields for the third-party EMR/EPR/PM system:

- 3rd Party IP Address
- 3rd Party Listening Port
- · 3rd Party Code Page if different than default

[9] In the Notify URL Action field, select Notify URL to EMR System.

Note

The Notify URL Action field instructs the system what action to take. The other options are:

- · No Action default
- Write URL to local file You can find the file name from c:\Progream Files\Image Suite\GXWeb\Site\web.config. The item key name is HL7URLSavingPath, under the appSettings section.

[10] Click Save Configuration.

- [11] Check the status is **Running** for:
 - HL7 Receiver Status
 - HL7 Sender Status
 - SOAP Listener Status



- The Image Suite computer is now set up to receive HL7 order messages from the third-party EMR/EPR/PM system.
- Do not close the HL7 Interface application.
- [12] Provide to the customer, for the third-party EMR/EPR/PM, the IP Address for the Image Suite computer and the port number.
- [13] Ask the customer to send an order message to the Image Suite computer from the third-party EMR/EPR/PM system.



- When the Image Suite computer is in HL7 Interface mode, the Image Suite HL7 Interface screen displays the **Data Mapping Matrix** when the order message is received successfully by the Image Suite computer.
- If the order message is unsuccessfully received by the Image Suite computer there is no response from the Image Suite HL7 Interface screen.
- If a message is unsuccessfully received by the Image Suite computer, an error message might display at the 9J0841.

Yes	Νο
Continue with <u>Step 15</u> .	a. Check that the customer's version of HL7 is 2.5 which is supported by Image Suite.
	b. Check that the 3rd Party Listening Port is not blocked by the customer's firewall software.
	c. Check that the 3rd Party Listening Port is correct.
	d. Ping the third-party EMR to verify connection.
	e. Check that the HL7 Listening port is set to the default 1235.
	f. Review the log messages.
	 g. Make a call to your regional service center for technical assistance.

[14] Did the Image Suite computer receive the order message with no errors?

L7 Configuration Data Mapping Matrix Notification URL Test HL7 Interface L	og Message HL7Gateway Log Message	
Message Type*	Update Rule	
PatientID*	Update Rule	
PatientName*	Update Rule	
- LastName	Update Rule	
- FirstName	Update Rule	
- Middle Name	Update Rule	
PatientBirthDate	Update Rule	
PatientSex	Update Rule	
AccessionNo*	Update Rule	
ReferPhysician	Update Rule	
ScheduledDate	Update Rule	
BodyPartViewPosition	Update Rule	
Species	Update Rule	
Breed	Update Rule	
Neutered	Update Rule	
StudyInstanceUID	Update Rule	
StudyDescription	Update Rule	
SymptomsNotes	Update Rule	
PatientComments	Update Rule	
ChipID	Update Rule	
Veterinarian	Update Rule	
Import From File	Export To File Export To ImageSuite	



- The **Data Mapping Matrix** screen displays the procedure codes and any errors in the XML message for Image Suite. The Body Part View Position is mapped from the procedure code or universal service ID by default.
- Errors are identified by an exclamation point in a red circle next to the Update Rule field.
- [15] Did the Data Mapping Matrix screen display any red exclamation point errors next to the Update Rule field?

Yes	No
Continue with Step 16.	Advance to Step 29.

- [16] At the **Data Mapping Matrix** screen, the red exclamation point icon next to the **Update Rule** field indicating that there is an error for this particular field.
- **[17]** Click the icon to see the current message.
- [18] Next to the icon, click Update Rule to view and edit the rule.

Note

The **XPath Rule** screen displays.

Standard XML Tree:	Select a Rule:	Conversion			
HSH - @FieldSeparator - @FieldSeparator - @Message - @MessageControlID - SendingApplication - SendingApplication - MessageType ProcessingID	XPath or Fixed Value: Old String: Spliter Char: Rule Value:	HL7/MSH/@DTOfMessage , 20041119083422	Fixed Text New String:	20041119083422	
	Result Preview:			Save	Close & Apply
intire Rule Tree: HL7/OBR/@ScheduledDT	- <msh fieldsepa<br=""><sendingappl <sendingappl <receivingap <processingii <versionid ve<br=""></versionid></processingii </receivingap </sendingappl </sendingappl </msh>	arator=" " DTOfMessage="200411: ication EntityIdentifier="Centricity lity EntityIdentifier="GE" /> plication EntityIdentifier="Station1 e MessageCode="ORM" TriggerEve) ProcessingID="P" /> arsionID="2.2" />	19083422" Message /" /> L" /> :nt="001" />	eControlID ="0000	29a1">



This procedure explains changing the **Rule Value** for the **Schedule/Date** field using the **Conversion** rule. There are more examples of changing the **Rule Value** in the <u>Examples for Updating the Mapping Rules Using the HL7 Interface</u> on Page 39.

[19] At the **XPath Rule** screen, next to the **Select a Rule** field select a rule type from the drop down menu.

[20] Check the Entire Rule Tree field for the path to the new message to correct the problem.

[21] Browse the Standard XML Tree to locate the new message.

D Note

The new message displays in the Standard XML field.

[22] Drag the new message to the XPath or Fixed Value field.

Standard XML Tree:	Select a Rule:	Conversion	•		
HL7 Grield Separator @Field Separator @OTOTMessage @BessageControlID SendingApplication BessageType PreceivingApplication BeMessageType ProcessingID	XPath or Fixed Value: Old String: Spliter Char: Rule Value:	HL7/MSH/@DT0fMessage 20041119083422 20041119	Fixed Text New String: T	20041119083422 20041119	
B VersionID D PID D PV1 D ORC D OBR	Result Preview:			Save	Close & Apply
Entire Rule Tree: HL7/08R/@ScheduledDT	- <msh fieldsep.<br=""><sendingappi <receivingap «MessageTyp «ProcessingII «VersionID Vo «/MSH»</receivingap </sendingappi </msh>	arator=" " DTOfMessage="2 lication EntityIdentifier="Cen lily EntityIdentifier="Ge" /> plication EntityIdentifier="SI be MessageCode="ORM" Trig D ProcessingID="P" /> ersionID="2.2" />	0041119083422" Messag ntricity" /> ation1" /> ggerEvent="001" />	jeControlID ="0000	129a1">

- [23] Copy the data from the Rule Value field and paste it to the Old String field.
- [24] Type in the correct string into the New String field.
- [25] Click Save.
- [26] Click Close & Apply.

[27]	Check that the Data	Mapping	Matrix screen	displays no	errors
------	---------------------	---------	---------------	-------------	--------

7 Configuration Data Mapping Matrix	Notification URL Test HL7 Interface Log Message HL70	ateway Log Message	
MessageType*		Update Rule	
PatientID*		Update Rule	
PatientName*		Update Rule	
- LastName		Update Rule	
- FirstName		Update Rule	
- MiddleName		Update Rule	
PatientBirthDate		Update Rule	
PatientSex		Update Rule	
AccessionNo*		Update Rule	
ReferPhysician		Update Rule	
ScheduledDate		Update Rule	
BodyPartViewPosition		Update Rule	
Species		Update Rule	
Breed		Update Rule	
Neutered		Update Rule	
StudyInstanceUID		Update Rule	
StudyDescription		Update Rule	
SymptomsNotes		Update Rule	
PatientComments		Update Rule	
ChipID		Update Rule	
Veterinarian		Update Rule	
Import From File	Import From ImageSuite Export To	File Export To ImageSuite	

- [28] At the **Data Mapping Matrix** screen, click **Export to File** to save the new XML message file to the desired folder on the Image Suite computer.
- [29] Click the HL7 Configuration tab.

HL7 Listening Port:	1235 🚦	
SOAP_OUT URI:	http://localhost:8166/HL7Interface.asmx Port Number: 8	166 🚦
7 Sender Setting		
3rd Party IP Address:	127.0.0.1 3rd Party Listening Port: 1	237 🚦
Brd Party Code Page:	Unicode (UTF-8)	•
60AP_IN URI:	http://localhost:8166/HL7Service.asmx Port Number: 8	166 🔅
Notify URL Action:	No Action	
	Caus Configuration Under Collings For UI 7 Interface	ar Image Cuite
		ormageoute
.7 Client Simulator - EMF	H System	
LYVZ TEXC		
LYVZ TEXC		
LTV2 TEXT.		
LI Y 2 1 0XL		
LI Y Z I UXL		
Lrve Text		
Lry2 18XL		
Lrve Text		
Lrve Text		

[30] At the HL7 Configuration screen, click:

- Restore Setting for Image Suite
- Start Listening

D Note

The **SOAP_OUT URI** field changes to operation mode.

Do Step 31 to check the complete operation of the third-party system with Image Suite

[31] Check that the Image Suite computer is communicating with the third-party system. Do the following:

- (a) Log on to the Image Suite application.
- (b) Click on the Modality Worklist icon.
- (c) Review the Search Order screen to find the patient information sent from the third-party system.
- (d) Follow the procedure to scan an image using the patient information.
- (e) When the scan is complete, right-click on the patient information and select **Set Complete** to complete the study.
- (f) After the study is complete, check:
 - The third-party system received a message containing a URL string.
 - · Open the WINDOWS INTERNET EXPLORER and use the URL to view the Web DICOM Viewer.
 - Check that the image is displayed.

1001	Did the	viouor	and third nort	v ovotom	rocoivo	the image	with no	orroro?
[32]		VIEWEI	and third-part	y system	IECEIVE	ine inaye	with ho	CI1013 :

Yes	No
HL7 is set up and ready to communicate. No further set up is	a. Click the HL7 Message Log tab and copy the log to an external storage device.
required.	 b. Click the HL7 Gateway Log Message tab and copy the log to an external storage device.
	c. Use the URL Notification screen to test the connectivity between the third-party EMR and Image Suite.
	d. Make a call to your regional service center to email the logs and for technical assistance.

Section 6: Using the HL7 Interface from the Service Laptop



- The HL7 Interface can be used from a service laptop to the update third-party EMR/EPR/PM system's XML message from a remote location.
- The third-party EMR/EPR/PM system's XML message can be stored on an external storage device and brought to the service laptop at the remote location.
- This procedure supports starting the HL7 Interface from the HL7 Interface icon on the desktop.

[1] At the desktop of the service laptop, click the HL7 Interface icon.

Note

The main screen for the Image Suite HL7 Interface displays.

7 Configuration Data Mappi	s_V1.0.0.0 (10.95.16.47) ng Matrix Notification URL Test HL7 Interface Log Message HL7Gateway Log Mess	age		
HL7 Receiver Setting -				
HL7 Listening Port:	1235 🚔			
SOAP_OUT URI:	http://localhost:8166/HL7Interface.asmx	Port Number:	8166 🔅	1
HL7 Sender Setting				
3rd Party IP Address:	127.0.0.1 3rd Party Lis	stening Port:	1237 🕂	ł
3rd Party Code Page:	Unicode (UTF-8)		-]
SOAP_IN URI:	http://localhost:8166/HL7Service.asmx P	Port Number:	8166 🕂	1
Notify URL Action:	No Action			
HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface	Restore Settin	ngs For ImageSuit	
HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface	Restore Settin	ngs For ImageSuit	e
HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface I	Restore Settin	ngs For ImageSuit	-
HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface	Restore Settin	For ImageSuit	-
HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface	Restore Settin	ngs For ImageSuit	•
⊢ HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface	Restore Settin	ngs For ImageSuit	
HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface	Restore Settin	ngs For ImageSuit	e
HL7 Client Simulator - EM HL7V2 Text:	Save Configuration Update Settings For HL7 Interface	Restore Settin	ngs For ImageSuit	8

🥑 Open	e HL7V2 SampleMessages	• 4j	Search HL7V2 Samplel	Messages 🔎
Organize 🔻 New folder		20 - 20		
 ★ Favorites ▲ Desktop ▲ Downloads ※ Recent Places ※ Ibbraries ③ Documents ④ Music ➡ Pictures ➡ Videos ¥ Computer ▲ Local Disk (C:) 	Name		Date modified 9/17/2012 10:07 AM	Type Text Docum
🗣 Network 🗸 🧸				,
File nan	ne:	•	Text Files (*.txt) Open 💌 🚺	▼ Cancel

[2] At the ImageSuite HL7 Interface screen, click Open file to browse the service laptop for the .txt file from the third-party EMR.

ID116140 MITCHELL^JAMES^SI1 V1IOIOPII 55"WHITE^NANCY155" RCINW/21575390000190(2157539) BR1121575390000190(21575390) 1575390000190(CRI11091	41119083422IORM*00100029a1IP 9510328IM_1178127TH PLACE**KN WHITE*NANCY1327*Eby*Donald*HK 0000190INWI***20041119093300** 00190ICRARM*ARM 1 VIEWI200812 3093300********************************	2.2. OXVILLE^IA^50138I(519)444-4444 DR_WCI^WHITE^NANCY^IEI21575 Rvs120041119083422 ***********************************	Home 777777777 39 20041119091300 1 n 55^WHITE^NANCY^IICR

- [3] Select the file and click **Open** to load the .txt file to the **HL7V2 Text** field on the **Image Suite HL7 Interface** screen.
- [4] At the ImageSuite HL7 Interface screen, click Send to send the file to the Image Suite HL7 Interface.

Note

The Data Mapping Matrix screen displays.

L7 Configuration Data Ma	apping Matrix Notification URL Test HL7Simulator Log Message HL7Gater	way Log Message
MessageType*	NW	Update Rule
PatientID*	6140	Update Rule
PatientName*	MITCHELL^S^JAMES	Update Rule
- LastName	MITCHELL	Update Rule
- FirstName	S	Update Rule
- MiddleName	JAMES	Update Rule
PatientBirthDate	19510328	Update Rule
PatientSex	Μ	Update Rule
Accession No*	21575390000190	Update Rule
ReferPhysician		Update Rule
ScheduledDate	20110913093300	Update Rule
odyPartViewPosition		Field [ScheduledDate] value bytes
Breed		Update Rule
Neutered		Update Rule
StudyInstanceUID		Update Rule
StudyDescription		Update Rule
SymptomsNotes		Update Rule
PatientComments		Update Rule

- [5] Check for the red exclamation point icon next to the **Update Rule** field indicating that there is an error for this particular field.
- [6] Click the icon to see the current message.
- [7] Next to the icon, click **Update Rule** to view and edit the rule.

Note

The XPath Rule screen displays.

Standard XML Tree:	Select a Rule:	Conversion			
MSH GrieldSeparator GrieldSeparator GrieldSeparator GriedSeparator Gried	XPath or Fixed Value: Old String: Spliter Char: Rule Value:	HL7/MSH/@DTOfMessage	Fixed Text New String:	20041119083422	
B- VersionID D- PID D- PV1 B- ORC B- OBR	Result Preview:			Save	Close & Apply
Intire Rule Tree: HL7/0BR/@ScheduledDT	- <msh fieldsepa<br=""><sendingappl <sendingappl <receivingap <processingii <versionid ve<br=""></versionid></processingii </receivingap </sendingappl </sendingappl </msh>	arator=" " DTOfMessage="200411: ication EntityIdentifier="Centricity lity EntityIdentifier="GE" /> plication EntityIdentifier="Station1 e MessageCode="ORM" TriggerEve D ProcessingID="P" /> ersionID="2.2" />	19083422" Messac y" /> 1" /> ent="001" />	geControlID =" 000(J29a1">



This procedure explains changing the **Rule Value** for the **Schedule/Date** field using the **Conversion** rule. There are more examples of changing the **Rule Value** in the <u>Examples for Updating the Mapping Rules Using the HL7 Interface</u> on Page 39.

- [8] At the XPath Rule screen, next to the Select a Rule field select a rule type from the drop down menu.
- [9] Check the Entire Rule Tree field for the path to the message to correct the problem.
- [10] Browse the Standard XML Tree to locate the message.
- [11] Drag the message to the XPath or Fixed Value field.

Standard XML Tree:	Select a Rule:	Conversion	•		
HL7 Grield Separator Grield Separator Grield Separator Grield Separator Grield Separator Gried Se	XPath or Fixed Value: Old String: Spliter Char: Rule Value:	HL7/MSH/@DTOfMessage 20041119083422 20041119	Fixed Text New String:	20041119083422 20041119	
	Result Preview: Standard XML Rule XM			Save	lose & Apply
Entire Rule Tree: HL7/OBR/@ScheduledDT	- <msh fieldsep<br=""><sendingfaci <receivingap <messagetyp <processingii <versionid vi<br=""></versionid></processingii </messagetyp </receivingap </sendingfaci </msh>	arator=" " DTOfMessage="20 ication EntityIdentifier="Cen lity EntityIdentifier="GE" /> plication EntityIdentifier="Sta be MessageCode="ORM" Trigg) ProcessingID="P" /> arsionID="2.2" />	041119083422" Messag tricity" /> ation1" /> gerEvent="001" />	eControlID="000029a1">	

- [12] Copy the data from the Rule Value field and paste it to the Old String field.
- [13] Type in the correct string into the **New String** field.
- [14] Click Save.

D Note

The new message displays in the **Standard XML** field.

- [15] Click Close & Apply.
- [16] Check that the Data Mapping Matrix screen displays no errors.

PatientName*	Update Rule
- LastName	Update Rule
- FirstName	Update Rule
- MiddleName	Update Rule
PatientBirthDate	Update Rule
PatientSex	Update Rule
AccessionNo*	Update Rule
ReferPhysician	Update Rule
ScheduledDate	Update Rule
BodyPartViewPosition	Update Rule
Breed	Update Rule
Neutered	Update Rule
StudyInstanceUID	Update Rule
StudyDescription	Update Rule
SymptomsNotes	Update Rule
PatientComments	Update Rule

[17] At the **Data Mapping Matrix** screen, click **Export to File** to save the new XML file to the XML message folder on the external storage device.

Section 7: Using the Notification URL Test Screen

The purpose of this screen is to test the connectivity between Image Suite, the HL7 Gateway, and the third-party system.

	🕖 In	nageSuite HL7 Interfac	
	HL7	Configuration Data Map	ping Matrix Notification URL Test HL7 Interface Log Message HL7Gateway Log Message
		ImageSuite WebServio	ves Simulator
		PatientID:	PID123456
		First Name:	
		Last Name:	ab
		PatientBirthDate:	19781101
		PatientSex:	Μ
		AccessionNo:	Acc654321
		Study Date:	20111020
		StudyInstanceUID:	
		TokenId:	ca36d0d2-1ae2-4714-ad85-79ef93ed5176
URL for t	he	Breed:	Breed Code
third-part	v.	Species:	
svetem	.,	Notification URL:	
System			
			Send
		c .	
		Comments:	function more in to should the pertural connection between large Crite. UI 7 Category and 2rd and y system
		2. You can leave the a	bove fields value with blank.
	HL7 F	Receiver Status: Runni	ng HL7 Sender Status: Running SOAP Listener Status: Stopped Last Message: 2011/10/20 10:30:48

[1] At the **Notification URL Test** screen, click **Send** to test the connectivity between Image Suite, the HL7 Gateway, and the third-party system.

nfiguration	Data Mapping Matri	Notification URL Test	HL7 Interface Log Message	HL7Gateway Log Message		
ImageSuite W	ebServices Simulat	or				
PatientID:	PID123	3456				
First Name:						
Last Name:	ab					
Patient Birth Da	ate: 19781	101				
PatientSex:	М					
AccessionNo	Acc65	4321				
Study Date:	201110	025				
StudyInstance	UID:				T	
TokenId:	587c8	Error	-	X		
Breed:	Breed	-				
Species:		Send mes	sage to 3rd party system fa	iled, error message is:		
Notification U	RL: http://	Message	Type Unsupported		d=&accession_number	
				ОК	Send	
Comments:						
1. The purpos	e of this function pa	age is to check the networ	k connection between Image?	Guite, HL7 Gateway and 3rd par	ty system.	
2. You can lea	ave the above fields	s value with blank.				

[2] Check that no error message is displayed.

Section 8: Description of Screens

HL7 Configuration

JImageSuite HL7 Interface	_¥1.0.0.0 (10.95.16.47)		
HL7 Configuration Data Mappin	g Matrix 🛛 Notification URL Test 🗍 HL7 Interface Log Message 🗍 HL7Gatew	ay Log Message	
HL7 Receiver Setting			
HL7 Listening Port:	1235		
SOAP_OUT URI:	http://localhost:8166/HL7Interface.asmx	Port Number:	8166
HL7 Sender Setting			
3rd Party IP Address:	127.0.0.1	3rd Party Listening Port:	1237 📫
3rd Party Code Page:	Unicode (UTF-8)		•
SOAP_IN URI:	http://localhost:8166/HL7Service.asmx	Port Number:	8166 🛨
Notify URL Action:	No Action		
	Save Configuration Update Settings For HL7 Interface	Restore Setting	gs For ImageSuite
HL7 Client Simulator - EMF	R System		
HL7V2 Text:			
Start Listening	Stop Listening Open File		Send
IL7 Receiver Status: Running	HL7 Sender Status: Running SOAP Listener Status: Running		.:

Button or Field	Description
Title	Your current Image Suite computer's IP address will be combined into the title text. If you need to configure the third-party system's IP address for the HL7 Gateway, you can refer to this IP address.
HL7 Receiver Setting	(Image Suite Port)
HL7 Listening Port	The port for the third-party system. The HL7 Receiver Service listens on this port to receive new messages.
	Important
	Keep this port as the default.
SOAP_OUT URI	After the HL7 Receiver Service receives a new message from the third-party system, the HL7 Receiver Service will transfer the XML format message to this Web Service.
HL7 Sender Setting	
3rd Party IP Address	IP Address of the third-party EMR/EPR/PM system.
3rd Party Listening Port	Port number of the third-party EMR/EPR/PM system.
3rd Party Code Page	From the information received from the third-party EMR/EPR/PM, select the correct code page from the drop-down list.

Button or Field	Description
Notify URL Action	Instructs the system what action to take. The selections are:
	No Action - default
	• Notify LIDL to EMD overteen
	Notify URL to EMR system
	 Write ORL to local file - You can find the file name from C:\Progream Files\Image Suite\GXWeb\Site\web.config. The item key name is HL7URLSavingPath, under the appSettings section.
	Important
	The settings will take effect only after Image Suite and the HL7 Interface have both been installed. Once the settings are saved, they will take effect immediately without having to restart the system.
Save Configuration	Used to save the configuration settings to the Image Suite computer. The new settings will not take effect until the service is restarted.
Update Settings For HL7 Interface	You can simulate the process for the third-party system to send messages and check the current XPath. Click Update Settings For HL7 Interface to update the SOAP_OUT URI parameter to http://localhost:8080/HL7Interface.asmx The XML string will be sent to the HL7 Interface Web Service. The HL7 Gateway Receiver and Sender service will be restarted and the new settings will take effect.
Restore Settings For ImageSuite	You can restore the SOAP_OUT URI for ImageSuite. Click Restore Settings For ImageSuite. The URI changes to http://localhost /ImageSuite/WebServices/
	HL7Interface.asmx . The HL7 Interface stops receiving the XML messages sent by HL7 Receiver Services . Messages are received by the Image Suite Web service. The HL7 Gateway Receiver and Sender service will be restarted and the new settings will take effect.
HL7 Client Simulator-	You can type the HL7V2 text into this field, but its recommended that you click Open File
EMR System	to select the HL7V2 text file stored on the Image Suite computer. Then click Send to send the HL7V2 text to HL7 Gateway Receiver Service .
Start Listening	Starts the SOAP Listener . The button is disabled while the current status is RUNNING . You can see the current status in the bottom status bar. If you updated the XPath, and need a new HL7 Message to check the XPath. Click Start Listening to start the listener.
Stop Listening	Stops the Interface listener. If the current status is already Stopped , this button is disabled.
Status Bar (along the	bottom of the screen)
HL7 Receiver Status	Indicates the current status of the HL7 Gateway Receiver Service. If the status is stopped, you can click Update Settings For HL7 Interface or Restore Settings For ImageSuite to start it for HL7 Interface or ImageSuite, respectively.
HL7 Sender Status	Indicates the current status of the HL7 Sender Service when using the Notification URL Test in the Interface. If the status is stopped, you can click Update Settings For HL7 Interface or Restore Settings For ImageSuite to start it for HL7 Interface or ImageSuite, respectively.
SOAP Listener Status	Indicates the current HL7 Interface listener status. When the status is Running , the Interface listens for new messages sent by the HL7 Gateway. The listener will automatically stop after it receives a message; you can then validate and modify the XPath.

🔿 Note

- When you start the HL7 Interface application, you must click Update Settings For HL7 Interface.
- Before you close the HL7 Interface, you must click **Restore Settings For HL7 Interface**, otherwise the Image Suite cannot receive messages from the HL7 Gateway.
- If you have clicked **Update Settings For HL7 Interface**, the Interface receives a message from the HL7 Gateway, and calculates the value according to the current XPath, then the **Data Mapping Matrix** screen displays.
- This screen will list all of the items for an order. The value is automatically calculated by the current XPath.
- The asterisk * indicates the field is a required.

Data Mapping Matrix

7 Configuration D	ata Mapping Matrix	Notification URL Test HL7 Inte	face Log Message HL7Gateway Log Mes	ssage	
MessageType*				Update Rule]
PatientID*				Update Rule	
PatientName*				Update Rule]
- LastName				Update Rule	
- FirstName				Update Rule	
- MiddleName				Update Rule	
PatientBirthDate				Update Rule	
PatientSex				Update Rule	
AccessionNo*				Update Rule	
ReferPhysician				Update Rule	
ScheduledDate				Update Rule	
BodyPartViewPositi	n			Update Rule	
Species				Update Rule	
Breed				Update Rule	
Neutered				Update Rule	
StudyInstanceUID				Update Rule	
StudyDescription				Update Rule	
SymptomsNotes				Update Rule	
PatientComments				Update Rule	
ChipID				Update Rule	
/eterinarian				Update Rule]
Import Fr	om File	Import From ImageSuite	Export To File	Export To ImageSuite	



The Data Mapping Matrix tool conducts an initial validation of the data. If the length, format, or value of the data is not correct, an exclamation point in a red circle appears to the right of the field. Mouse over the icon for a message tip. The asterisk * indicates the field is required.

Button	Description
Import From File	Read the XPath from a selected file.
Import From Image Suite	Read the XPath from the Image Suite software.
Export To File	Save the current edited XPath to an external file.
Export To Image Suite	Save and apply the current edited XPath to the Image Suite software.
Update Rule	If the value in any field is not valid or is not the value you want, click Update Rule to see the current XPath settings and to update them. When you click Update Rule , the XPath Rule screen displays.

XPath Rule



Button or Field	Description
Left Panel	
Standard XML Tree	This section displays the entire node in the XML message received from the HL7 Gateway. The node(s) in blue and bold font is the valid node that can be used. If you mouse over the node, the node value will be displayed as a tool tip. Click any of the nodes in the Standard XML Tree , and the current node OuterXML content is displayed in the Standard XML tab in the right panel of the XPath Rule screen.
Entire Rule Tree	Indicates the current XPath rule tree. Click the Rule XML tab in the right panel to display the current rule XML, just as a reference.

Button or Field	Description
Right Panel	
Save	Saves the current rule to the Entire Rule Tree.
Close & Apply	Applies the new XPath rule to your current field and closes the screen.
Result Preview	After you click Save , the system will auto calculate the new value according to your new XPath rule settings. If the new value is not what you expected, you can continue to modify the rule.

Button or Field	Description
Select a Rule	
Important	and you will find the ourrently supported rule drep down list including Morgo. Substring
Split. Single Value. Co	nversion, and Date Time Parser. Each of these rules is explained below. You must select a
rule first and then set t	he rule content.
SingleValue	This is the basic rule. You can use this rule to choose an XPath, to auto calculate a
	runtime value, or to enter a fixed text. Using this rule, you can drag a node from the Standard XMI Tree to the XPath or Fixed Value field. If you want to type text, select the
	Fixed Text check box, then enter the strings in the Fixed Text field.
	Select a Hule: Split *
	XPath or Fixed Value:
	Spit By Index: 1 👻
	Save Close & Apply
	Result Preview:
Merge	You can use this rule to combine strings.
	Select a Rule:
	XPath or Fixed Value 1: V Fixed Text
	XPath or Fixed Value 2:
	Separator:
	Rule Value:
	Save Close & Apply
	Result Preview:
	There are two VDeth or Fixed Value fields for your input. Follow the same suids lines as
	Single Value. You can enter words into the Separator field to join the two parts. For your
	reference, the Rule Value field auto calculates the rule value after you change the above
	settings.

Description of Screens

Button or Field	Description
Split	Use this rule to obtain a part of a string.
	Select a Rule: Split 💌
	XPath or Fixed Value: Image: Fixed Text Split By Index: 1 Rule Value: Image: Fixed Text
	Result Preview:
	Use this rule to split a string and fetch specified parts from the strings. The Split rule contains a SingleValue rule for the user to enter the target string. The SingleValue rule can be dragged or entered into the XPath or Fixed Value field. The Split By field is used to specify a split character. The Index field is used to specify which part is to be used. For example: If the target string is PI-123456 , you want to get the 123456 in the target string, you can enter - as the Split By value, and 2 as the Index value.
Substring	Use this rule to obtain a part of a string.
	Select a Rule: Substring XPath or Fixed Value: Start Index: 1 Rule Value:
	Save Close & Apply Result Preview:
	First, drag an XML node into the XPath or Fixed Value field or enter your words. Then select the Start Index and Length values. For your reference, the system auto calculates the value and displays it in the Rule Value field.

SERVICE MANUAL

Button or Field	Description
Conversion	
	XPath or Fixed Value: Image: Fixed Text Old String: New String: Spliter Char: Image: Fixed Text Rule Value: Image: Fixed Text
	Save Close & Apply Result Preview:
	First, drag an XML node into the XPath or Fixed Value field or enter your words Then, enter the old string and the new string. For example, if your want to change "SC" to "XO" enter "SC" into the Old String field, and "XO" into the New String field. The system will search for a match of the whole word in the Old String and replace it with the New String if an exact match is found. If the old string or the new string contains special characters, such as a comma (,), you can use the Spliter Chars field. There are three splitter characters: a comma (,), an upper-case letter i (I), and a semi-colon (;). You must specify your splitter character after you enter the old string and new string. For your reference, the system auto calculates the value and displays it in the Rule Value field.
Date Time Parser	Select a Rule DateTimeParser
	XPath or Fixed Value: Image: Fixed Text Date Parts Sequence: Year/Month/Day Fulle Value: Image: Fixed Text
	Save Close & Apply Result Preview:
	In the HL7 standard, the DateTime string format should be yyyyMMdd. If a site cannot support this standard, use the DateTimeParser rule to parse the string. The DateTimeParser rule contains a SingleValue rule for you to choose the target strings. You can use an XPath or enter fixed text here. Then specify the Date Parts Sequence : year/month/day, day/month/year, or month/day/year and enter a splitter string. For example, if the target string format is 2011-12-31, enter a dash - as the splitter string. The Result Preview field will automatically calculate the rule value. If the preview is not in yyyyMMdd format, then your input parameter is not valid. Check and re-enter the parameters. You may not always need a splitter string. For example, if the date time string in the XML file is 12312010 (format: ddmmyyyy), select Day/Month/Year in the Date Parts Sequence field and leave the Spliter Char field blank.

Notification URL Test

🕖 Im	ageSuite HL7 Interfa	ce_V2.0.0.1224 (10.95.55.202)	- • ×
HL7C	Configuration Data Ma	apping Matrix Notification URL Test HL7 Interface Log Message HL7Gateway Log Message	
	-ImageSuite WebSen	rices Simulator	
	PatientID:	PID123456	
	First Name		
	First Name:		
	Last Name:	ab	
	PatientBirthDate:	19781101	
	PatientSex:	Μ	
	AccessionNo:	Acc654321	
	Study Date:	20111020	
	StudyInstanceUID:		
	TokenId:	ca36d0d2-1ae2-4714-ad85-79ef93ed5176	
	Breed:	Breed Code	
	Species:		
	Notification URL:		
		Send	
	Comments:		
	1. The purpose of thi	s function page is to check the network connection between ImageSuite, HL7 Gateway and 3rd party system.	
	2. You can leave the	above fields value with blank.	
HL7 R	eceiver Status: Run	ning HL7 Sender Status: Running SOAP Listener Status: Stopped Last Message: 2011/10/20 10:30	:48 .;;

The fields on the Notification URL Test screen are display-only.

Button	Description
Send	Sends a URL notification message to the EMR system.

HL7 Interface Log Message

🕖 ImageSuite HL7 Interface_V2.0.0.1224 (10.95.55.202)	
HL7 Configuration Data Mapping Matrix Notification URL Test HL7 Interface Log Message HL7Gateway Log Message	
2011-10-20 10:30:48.1314 INFO Begin processing SOAP session id: 1 on thread id: 1 2011-10-20 10:30:48.3254 INFO Session status history: 2011-10-20 10:30:48.130487 IncomingSOAPEnvelopeReceived -> 2011-10-20 10:30:48.193490 OutgoingSOAPEnvelopeGenerated	*
2011-10-20 10:30:48:3254 INFO End processing SOAP session id: 1 on thread id: 1 2011-10-20 10:30:48:3254 INFO End processing SOAP session id: 1 on thread id: 1 2011-10-20 10:30:48:3254 INFO Bencivery HL7, JNL Port set to: 1275 2011-10-20 10:30:48:3256 INFO Bencivery HL7, JNL Port set to: 1275 2011-10-20 10:34:29:7661 INFO Sender, HL7, OUT_Port set to: 1270.0.1 2011-10-20 10:34:29:7661 INFO Sender, HL7, OUT_Port set to: 1277.0.1 2011-10-20 10:34:29:7661 INFO Sender, HL7, OUT_CodePageCode set to: 65001 2011-10-20 10:34:29:7661 INFO Sender, HL7, OUT_CodePageCode set to: 65001 2011-10-20 10:34:29:7661 INFO Sender, HL7, OUT_CodePageCode set to: 10:0code (UTF-8) 2011-10-20 10:34:29:7661 INFO Sender, HL7, OUT_CodePageCode set to: 10:0code (UTF-8) 2011-10-20 10:34:29:7661 INFO SoAP_OUT Log Enabled 2011-10-20 10:34:29:7661 INFO SoAP_OUT Log Enabled 2011-10-20 10:34:29:7661 INFO SoAP_OUT Log Enabled 2011-10-20 10:34:29:7661 INFO Sender SOAP_ IN_URI set to: Http://Aocalhost.8166/HL7Service.asmx 2011-10:20 10:34:29:77661 INFO Sender SOAP_ IN_URI set to: Http://Aocalhost.8166/HL7	
2011-10-20 10:34:29.7771 INFO I Try to restart services: HL7GW_RCV 2011-10-20 10:34:29.7771 INFO I HL7GW_RCV Is stop at first 2011-10-20 10:34:30.5482 INFO I HL7GW_RCV Is stop at stopped 2011-10-20 10:34:30.5482 INFO I HL7GW_RCV Is stop at stopped 2011-10-20 10:34:30.5482 INFO I HL7GW_RCV Is stop at stopped 2011-10-20 10:34:30.5482 INFO I HL7GW_SND] has been restarted successful 2011-10-20 10:34:30.5482 INFO I HL7GW_SND] has been stopped 2011-10-20 10:34:30.8012 INFO I HL7GW_SND] has been stopped 2011-10-20 10:34:31.2842 INFO I HL7GW_SND] has been restarted successful 2011-10-20 10:34:31.2842 INFO I Export proping SOAP receiver. 2011-10-20 10:34:31.2942 INFO Export proceiver. 2011-10-20 10:34:31.2942 INFO Export proceiver. 2011-10-20 10:34:31.3242 INFO Export proceiver. 2011-10-20 <	
2011-10-20 10:34:31:35 (2) ERROR (1) TTP could not register URL <u>http://+:1235/HL7Simulator.asmx/</u> because TCP pot 1235 is being used by another ap 2011-10-20 10:34:31:334) ERROR (1) TTP could not register URL <u>http://+:1235/HL7Simulator.asmx/</u> because TCP pot 1235 is being used by another ap 2011-10-20 10:34:31:334) ERROR (1) at System. ServiceModel Channels. Shared Http TransportManager.OnOpen() at System. ServiceModel Channels. TransportManager.OnOpen(TimeSpan timeout) at System. ServiceModel Channels. TransportChannelListener/OnOpen(TimeSpan timeout) at System. ServiceModel Channels. TransportChannelListener/OnOpen(TimeSpan timeout) at System. ServiceModel Channels. TransportChannelListener/OnOpen(TimeSpan timeout) at System. ServiceModel Channels. CommunicationObject Open(TimeSpan timeout) at CSH eHealth.MessageDevices. SOAPMapter SOAPServer Controler.SOAPReceiver.Start(String un) 2011-10-20 10:34:31.3942 INFO End starting SOAP reciever on <u>http://localnost.1235/HL7Simulator.asmx</u> . Result: False	plication. E
HL7 Receiver Status: Running HL7 Sender Status: Running SOAP Listener Status: Stopped Last Message: 2011/10/2010:30:48	

Use this screen to view the HL7 Interface Log messages. The only messages that you need to be concerned about are those at the ERROR level.

HL7 Gateway Log Message

HL7Configuration Data Mapping Matrix Notification URL Test HL7 Interface Log Message HL7Gateway Log Message
Receiver NTServiceHost Receiver SOAPClientAdapter Sender HL7OutboundAdapter Sender NTServiceHost Sender SOAPServerAdapter
2012-09-20 16:29:29 329487 [Information] Try to intialize entity in path: C:\Program Files\Image Suite\HL/Gateway\Manager\Receiver\HL/GW_RCV\Bin Vertices S0AP_OUT Vertices S0AP_OUT 2012-09-20 16:29:29 374788 [Warning] Failed to resolve: CSH eHealth Messaging Registry, Version=1.1.0.0, Culture=neutral, PublicKey Token=null 2012-09-20 16:29:29 374788 [Warning] Try to resolve: C:\Program Files\Image Suite\HL/Gateway\Manager\Receiver\HL/GW_RCV\Bin C:\Program Files\Image Suite\HL/Gateway\Manager\Receiver\HL/GW_RCV\Bin 2012-09-20 16:29:29 374788 [Utermation] Initialize entity succeeded. 2012-09-20 16:29:29 357489 [Debug] [initializes Suitesher agent in entity SOAP_OUT[30a6tcb-3168-4c2]=04-53667356ea4}]. 2012-09-20 16:29:29 357489 [Debug] Registeming LPC subscriber: Push nucle: 6343528437538022413 2012-09-20 16:29:29 3561489 [Debug] Registeming LPC subscriber: Push nucle: 6343528437538022413 2012-09-20 16:29:29 3561489 [Debug] [initialize retify in outperformation to the 10:5435284374374371. 2012-09-20 16:29:29 3561489 [Debug] [initializes publicher agent in entity SOAP_OUT[30a6tcb-3168-4c2]=ae0f-35644aba769]. 2012-09-20 16:29:29 3561489 [Debug] [Initialize romect with subscriber successfully. Push nucle: 10:6345528437538022413 2012-09-20 16:29:29 3561489 [Debug] [Initializes retify in retify 5OAP_OUT[33a6tcb-3168-4c2]=ae0f-35644ba769]. 2012-09-20 16:29:29 3561489 [Debug] [Initializes Responser agent in entity SOAP_OUT[33a6tcb-3168-4c2]=ae0f-35647556ea4]. 2012-09-20 16:29:29 357489 [Debug] [Initializes Responser agent in entity SOAP_OUT[33a6tcb-3168-4c2]=ae0f-35647556ea4]. 2012-09-20 16:29:29 357489 [Debug] [Initializes Responser agent in entity SOAP_OUT[336tcb-3168-4c2]=ae0f-35647556ea4]. 2012-09:20 16:29:29 37489 [Debug] [Initializes Responser agent in entity SOAP_OUT[336tcb-3168-4c2]=ae0f-35647556ea4]. 2012-09:20 16:29:29 37489 [Debug] [Initializes Responser agent in entity SOAP_OUT[336tcb-3168-4c2]=ae0f-35647556ea4]. 2012-09:20 16:29:29 374480 [Debug] [Initializes Responser agent in entity SOAP_
The receiver status, kunning The Sender Status, kunning SOAP Listener Status, kunning

Use this screen to view the HL7 Gateway log messages for communication with third-party EMR/EPR/PM systems. Use the arrows at the top right to view all of the tabs.

Tab	Description
Receiver	This screen displays the HL7 Gateway Receiver HL7_IN interface log. The HL7_IN Interface can receive messages sent from the FMR system
Receiver NT Service Host	This screen displays a log when parsing HL7 text message to XML message.
Receiver SOAP Client Adapter	This screen displays the HL7 Gateway Receiver SOAP_OUT interface log. The HL7Gateway will send the XML message out via this interface.
Sender HL7 Outbound Adapter	This screen displays the HL7 Gateway Sender HL7_OUT interface log. The HL7_OUT interface can send the HL7 text message to the EMR system via this interface.
Sender NT Service Host	This screen displays a log when parsing the XML message to the HL7 text message.
Sender SOAP Server Adapter	This screen displays the HL7 Gateway Sender SOAP_IN interface log. The HL7 Gateway can receive the XML message via this interface.

Body Part/Position Mapping

Important

- You must have a list of procedure codes from the third-party EPM/EMR/PM for this procedure.
- You can use this procedure to update the **Procedure Codes** for the third-party EMR/EPR/PM.
- You must access the **Service Configuration** screen on the Image Suite computer to update **Procedure Codes** for the third-party EMR/EPR/PM.
- The password for Service Configuration is Service1.

For Software Version V2

Carestream	Service Configu	iration	? 🔀
- Alton			
DICOM Settings	Procedure Code Species Bodypart	ViewPosition	
SMS Setting			
Modality Setting			
Body Part/Positi Mapping ≡			
HL7 Setting			
Modality Worklist -			
	Export Cfg Import Cfg C	iompare Cfg Upload Exit]

- [1] At the Service Configuration screen, click Body Part/Position Mapping.
- [2] Acquire the list of procedure codes from the customer's third-party EMR/EPR/PM.

DICOM Settings SMS Setting SMS Setting Modality Setting Body Body	Procedure Code Corestrecom Procedure Code Species Bodypart ViewPosition	Species Boo	dypart	ViewPosition	
HL7 Setting Modality Worklist	OK	LATERAL OBLIQUE SPECIAL UNSPECIFIED VD Xtable			

- [3] Click the Add icon.
- [4] From the list of procedure codes, update one code at a time:
 - Type a code in the **Procedure Code** field.
 - Select the Species from the drop down menu, if the system is using the veterinary application.
 - Select the **Body part** from the drop down menu.
 - Select the ViewPosition from the drop down menu.
- [5] Click OK.

D Note

The new Procedure Codes display as a list in the screen.

[6] Do Step 3 - Step 5 for all of the procedures codes on the list from the customers third party EMR/EPR/PM.

- [7] To save the **Procedure Codes** to the Image Suite computer, click:
 - Upload
 - Exit

For Software Version V3

🔏 Important

The procedure for body part position mapping is performed from the Modality Worklist screen in the user interface.



- [1] From the Modality Worklist screen, click the System Menu icon.
- [2] At the System Menu, click System Configuration.



[3] Click System Settings.

Carestream	System Configur	ration ? 🗙
B-System Settings 	System Settings	
- Body Part Synonym - Body Part/Position	Station Name ImageSuiteWSD	🔲 Scan Demo Mode
Procedures Password Policy Markers	Institution Name Carestream Health R&D Hospital	🔲 QA By Study
Reject Reason Order Entry Tutor	Auto Logout Time (Minute(s)) 60	
···· Measurement Tool B··Display Settings ··· Display Settings	Formatting	C Auto Generate
W/L Preset Overlay Setting	Patient Name Input Format Family Name, Given Name, Middle Name	Patient ID auto generation Patient ID Prefix
- Print Settings - Rule Settings - Data Routing Rule	Patient Name Display Format	
···· Delivery Preferences	Date Format	 Accession Number auto generation Accession Number Prefix
		Save

[4] At the System Configuration screen, under System Settings on the left panel of the screen, click Body Part Position.

Carestream		System Config	juration		?×	
 System Settings System Settings Image Processing Body Part Synonym Body Part Monthematic Procedures Password Policy Markers Reject Reason Order Entry Tutor Measurement Tool Display Settings W/L Preset Overlay Settings Print Settings Print Settings Delata Routing Rule Delivery Preferences 	Body Part/Position New Body Part Dev Body Part Dev Body Part Dev Body Part Dev Body	New View Position	Ed	t IEC Threshold +/-0.5 Store IEC Expo Store system lo (alphabet chara maximum) Store custom b be partially DIC chars maximum Store custom b be non-DICOM	Delete Delete U U U U U U U U U U U U U U U U U U	On-Line Help menu
	CR	CsI	GoS		Reset	
<>	Rotation Type	No Rotation	<u>_</u>		Exit	

D Note

The Body Part/Position screen displays.

Important

When configuring the procedure code, only the first body part & view in the list for the procedure code is mapped. You cannot map one procedure code to multiple body part/views through the HL7 message.

[5] For the procedures for body part and position settings, click the ? icon at the top of the screen for the On-Line help menu.



[6] Use the topics listed in the On-Line Help screen to Add, Edit, Delete and select DICOM tags for **Body Part/View**.

Examples for Updating the Mapping Rules Using the HL7 Interface

Updating the Mapping Rule for the Message Type



Use this procedure to update the **Mapping Rule** for the **Message Type** from SC, SD, or SE to XO.

- [1] At the HL7 Interface screen, click Update Settings For HL7.
- [2] Browse to the XML message file from the third-party EMR/EPR/PM.
- [3] Click Open File to display the .txt (XML message) file in the HL7V2 field on the HL7 Interface screen.
- [4] Click Send.

Note

The Data Mapping Matrix screen displays.

7 Configuration Data Mapping Matrix	Notification URL Test	HL7 Interface Log Message	HL7Gateway Log Message		
MessageType*				Update Rule	
PatientID*				Update Rule	
PatientName*				Update Rule	
- LastName				Update Rule	
- FirstName				Update Rule	
- MiddleName				Update Rule	
PatientBirthDate				Update Rule	
PatientSex				Update Rule	
Accession No*				Update Rule	
ReferPhysician				Update Rule	
ScheduledDate				Update Rule	
BodyPartViewPosition				Update Rule	
Species				Update Rule	
Breed				Update Rule	
Neutered				Update Rule	
StudyInstanceUID				Update Rule	
StudyDescription				Update Rule	
SymptomsNotes				Update Rule	
PatientComments				Update Rule	
ChipID				Update Rule	
Veterinarian				Update Rule	
Import From File	Import From Imag	eSuite Ex	port To File	Export To ImageSuite	

At the Data Mapping Matrix screen, click Update Rule to open the XPath Rule screen for the Message Type.

🗍 XPath Rule - [MessageType*]	×O.
Standard XML Tree:	Select a Rule: Conversion 1. Choose "Conversion" Rule
HL7 MSH PD ORC FileOrderControl FileOrderNumber QuarkityTiming OrderingProvider XP ath field @ OBR	XPath or Fixed Value HL7/0RC/@0rderControl Fixed Text SC Old String [SC New String X0 Spliter Char: , 3. Input "SC" into the "Old String" field Rule Value: X0 Input "X0" into the "New String" field
	4. Click "Save" button Save Cloce & Apply Result Preview.
Entrie Rule Tree: Conversion HL7/DRC/@OrderControl	 - <orc ordercontrol="SC"></orc> <fillerordernumber entityidentifier='Acc654321" /> <QuantityTiming> <QuantityTiming> <QuantityTiming> <OrderingProvider IDNumber=' felix"="" physician="" referring=""></fillerordernumber>

- [5] Next to the Select a Rule field, select Conversion from the drop down menu.
- [6] Follow the path displayed in the Entire Rule Tree panel to browse to the Order Control node in the Standard XML Tree panel.
- [7] In the Standard XML Tree panel, select the @Order Control node.
- [8] Drag the @Order Control node to the XPath or Pixel Value field.
- [9] Type the procedure code, SC that needs to be changed into the Old String field.

D Note

Multiple procedure codes that need to be updated to **XO** can be typed in the **Old String** field. Example: Type **SC**, **SD**, **SE** in the **Old String** field and type **XO**, **XO**, **XO** in the **New String** field.

- [10] Type the new procedure code, XO into the New String field.
- [11] Click Save.
- **[12]** Check that the **Results Preview** field displays the correct information.
- [13] Click Close & Apply.

Updating the Body Part View Position from OBR-4 to OBR-44

- [1] At the HL7 Interface screen, click Update Settings For HL7.
- [2] Browse to the third-party XML message file.
- [3] Click Open File to display the .txt file in the HL7V2 field on the HL7 Interface screen.
- [4] Click Send.

Note

The Data Mapping Matrix screen displays.

7 Configuration Data Mapping Matrix Notification	on URL Test HL7 Interface Log	Message HL7Gateway Log Message		
MessageType*			Update Rule	
PatientID*			Update Rule	
PatientName*			Update Rule	
- LastName			Update Rule	
- FirstName			Update Rule	
- MiddleName			Update Rule	
Patient Birth Date			Update Rule	
PatientSex			Update Rule	
AccessionNo*			Update Rule	
ReferPhysician			Update Rule	
ScheduledDate			Update Rule	
BodyPartViewPosition			Update Rule	
Species			Update Rule	
Breed			Update Rule	
Veutered			Update Rule	
StudyInstanceUID			Update Rule	
StudyDescription			Update Rule	
SymptomsNotes			Update Rule	
PatientComments			Update Rule	
ChipID			Update Rule	
/eterinarian			Update Rule	
Import From File	oort From ImageSuite	Export To File	Export To ImageSuite	1

[5] At the Data Mapping Matrix screen, next to the Body Part View Position field, click Update Rule.

D Note

The XPath Rule screen displays.

🕖 XPath Rule - [BodyPartYiewPosition]						
Standard XML Tree:	Select a Rule	SingleValue	×			
E H.7 ⊕ MSH ⊕ ORC Click the "OBR" node to see th ⊕ ORC Click the "	XP ath or Fixed Value e XML			V Fixe	ed Text	
Catentine © OlderryPosite © QuartyTrop © OlderryPosite © QuartyTrop © OlderryPosite © QuartyTrop © QuartyTr	the "XPath or Fin de to the "XPath Result Pierlers	xed Value" field to or Fixed Value" fie	use OBR-4 value	value	Save	Close & Apply
Entile Rule Tree: HL:7/DER/OrderingFacillyName/@OrganizatorName	Standard/ML Ruie - <obr setid-<br=""><universal «OrderingP - <quantity </quantity </universal </obr>	XML OBR='0001" Obser ServiceIDC_dentifier Provider IDNumber= Timing> y>20110622 /Timing> sacilityName@rgani	vationDT='20110(='OBR-4'/) Referring Physic antity> zationName='OBR	522000000.99 ian Felix" />	95' ScheduledDT="	20110623'>
						M

- [6] In the Select a Rule field, select Single Value from the drop down menu.
- [7] Follow the path displayed in the Entire Rule Tree panel to browse to the Organization Name node in the Standard XML Tree panel.
- [8] In the Standard XML Tree panel, select the Organization Name node.
- [9] Drag the Organization Name node to the XPath or Fixed Value field.
- [10] Click Save.
- [11] Check that the **Results Preview** field displays the correct information.
- [12] Click Close & Apply.

Corestream	Service Configuration	? 🗙
DICOM Settings SMS Setting Modality Setting Body Part/Pos Modality Worklist	HL7 Recv Port No 1235 for Software Version V2 only HL7 Send IP Address 127 . 0 . 0 . 1 Pot No 1237 Code Page 65001	
HL7 Setting -		Save button
	Export Cfg Import Cfg Compare Cfg Upload	Exit

HL7 Setting Screen from Service Configuration



- You can use the **Service Configuration** screen to view or update the HL7 settings after you have completed the procedures in <u>Using the HL7 Interface from the Image Suite Computer on Page 7</u>.
- Access the Service Configuration screen on the Image Suite computer.
- The password for Service Configuration is Service1.

Button	Description			
Export Cfg	Export configuration settings to an external storage device.			
Import Cfg	Import configuration settings from an external storage device.			
Compare Cfg	Compare an old configuration to a new configuration.			
Upload	After you click the Save button, you must click Upload before Exit.			
Exit	Leave this screen.			

Configure the SOAP URI Port Number

🕖 ImageSuite HL7 Interface	e_¥1.0.0.0 (10.95.16.47)	_ 🗆 ×				
HL7 Configuration Data Mapping Matrix Notification URL Test HL7 Interface Log Message HL7Gateway Log Message						
HL7 Receiver Setting						
HL7 Listening Port:	1235	1235 🚆				
SOAP_OUT URI:	Nttp://localhost:8166/HL7Interface.asmx Port Number: 8166					
HL7 Sender Setting						
3rd Party IP Address:	127.0.0.1 3rd Party Listening Port: 1237 👻					
3rd Party Code Page:	Unicode (UTF-8)					
SOAP_IN URI:	http://localhost.8166/HL7Service.asmx Port Number: 8166 =					
Notify URL Action:	No Action					
	Save Configuration Update Settings For HL7 Interface Restore Settings For ImageSuite					
HL7 Client Simulator - EMF	AR System	-				
HL7V2 Text						
Start Listening	g Stop Listening Open File Send					
HL7 Receiver Status: Running	HL7 Sender Status: Running SOAP Listener Status: Running	.:				

Field/Button	Description
Port Number	At times it may be necessary to update the Port Number for the Receiver (SOAP_OUT URI) or the Sender (SOAP_IN URI) for the HL7 interface, such as when a port is being used by another application. By default, the Port Number field will use the same port that is in the URI field.
Update Settings For HL7 Interface	Use to update the SOAP_OUT URI parameter to http://localhost:8080/ HL7Interface.asmx. The XML string will be sent to the HL7 Interface Web Service. The HL7 Gateway Receiver and Sender service will be restarted and the new settings will take effect.
Receiver Setting - (SOAP_OUT URI)	The default URI setting for Image Suite is: http://localhost/ImageSuite/WebServices/ HL7Interface.asmx There is no default port number.
Sender Setting - (SOAP_OUT URI)	The default URI setting for Image Suite is: http://localhost/8166/HL7Service.asmx There default port number is 8166.
Save Configuration	Used to save the configuration settings to the Image Suite computer. The new settings will not take effect until the service is restarted. An error message will be displayed if the port is in use. In this case, more than one HL7 Interface tool may have been launched. If the HL7 Interface tool does not respond, use the WINDOWS Task Manager to close the application.

Note

- When you start HL7 Interface application, you must click Update Settings For HL7 Interface.
- Before you close the HL7 Interface, you must click Restore Settings For HL7 Interface, otherwise Image Suite cannot receive messages from the HL7 Gateway.

Publication History

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Carestream Health, Inc. 150 Verona Street Rochester, NY 14608