

STAR 2000™



STAR RADIOLOGY REFERENCE GUIDE HL7 Lanier Dictation/Transcription Interface Guide

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Preface

The *STAR Radiology Reference Guide* is a multivolume document written for all users of the STAR Radiology system. This *HL7 Lanier Dictation/Transcription Interface Guide* provides a description of the flow of information between STAR Radiology and the Lanier Transcription System.

The Lanier Transcription System is specifically designed for transcription pools and offers the pool manager value-added management, reporting and time-saving capabilities.

Documentation Conventions

Documentation for McKesson's STAR 2000™ line of products follows these conventions:

Revisions

Text revisions are indicated by a change bar in the left margin. Paragraphs that contain grammatical changes that do not affect content are not marked.

Canadian Documentation

This volume may include documentation for Canadian users of this product. Complete sections of Canadian text are identified by "CN" and "CN Only."

Key Names

Named keys, such as ENTER, SHIFT, CTRL, and ALT, appear in this document in uppercase (capital) letters. Symbol keys are displayed according to the key name, followed by the symbol on the key in parentheses, such as hyphen (-) and asterisk (*).

Key Chords

Key chords are key entries that require you to hold down one or more keys (typically, CTRL, ALT, or SHIFT) before pressing another key. In this document, key chords are displayed as the names of each key in the chord with a hyphen (-) between each (for example, CTRL-ALT-DEL). You should press the keys in the order indicated.

ENTER

ENTER is a key on a computer keyboard used to complete an entry on a STAR system. (This key may also be referred to as NEW LINE or NL in the STAR System.)

Data Entries

Letters or words you enter in response to the system are displayed in **boldface** letters in this document. For example: Enter **Y** for Yes or **N** for No.

Selecting an Entry

This document often instructs you to "select an entry." The method you use to select an entry depends on whether you are using STAR from a terminal or IBM-compatible personal computer. Entry methods include:

- Entering the option number
- Using your arrow keys to highlight the option and pressing ENTER
- Clicking on the option using a mouse or other pointing device (PC only)

For more information about these options, see the *General Information Volume*.

Prompts

System prompts are displayed at the bottom of many STAR screens when the system requests an entry or displays a message. In this document, these prompts are indented and the text italicized, as shown in the following example:

Enter patient name--

Field Characteristics

STAR product documentation provides field explanation codes, in addition to a narrative description for each field on a screen. These codes display the maximum length of your entry in the field, the type of entry you make in the field, and whether the field is required. This information is displayed in the following format:

- DISPLAY ONLY for a field you cannot edit.
- For X-YY-Z field types, where:
 - X is the maximum number of characters permitted in the field:
 - P for a field length determined by a Parameter
 - T for a field length determined by a Table
 - U for a field having an Undefined length
 - YY is the type of entry technique permitted in the field:
 - A for Letters only
 - N for Numerals only
 - C for Characters (including punctuation)
 - AC for Letters and Punctuation only (no numbers)
 - NC for Numerals and Punctuation only (no letters)
 - AN for Numerals and Letters only (no punctuation)
 - Z is the requirement indicator of the field:
 - R if an entry is required to complete the function

NOTE: Facilities can designate that certain fields be Required. STAR product documentation does not display R for fields designated as Required by a facility.

 - O if an entry is Optional to complete the function
 - C if an entry is Conditionally required or optional
 - For YY-Z field types, where YY is:
 - TABLE LOOKUP for a field that enables you to select from a displayed table. See the *General Information Volume* for more information regarding this entry technique.
 - SPECIAL FORMAT for a field having data entry requirements not conforming to standard format. The field definition contains the specific data entry requirements for the field.
 - DATE for a field subject to the date entry conventions described in the *General Information Volume*.
 - TIME for a field subject to the time entry conventions described in the *General Information Volume*.

NOTE: For use of the Z position in this format, refer to the explanations for Z under X-YY-Z.

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INTRODUCTION

At the time of publication, this interface had been tested and certified with Lanier Worldwide, Inc. It was developed to be a base interface for use with any dictation/transcription vendor that can meet McKesson's HL7[®] specifications. Use of this interface is **not** limited to Lanier products.

The Lanier Transcription Interface was accomplished with Lanier using a standard HL7 Interface. This chapter provides a description of the flow of information between STAR Radiology and Lanier.

A Radiology exam is requested for a patient and checked into the Radiology department via Patient Check-in. At exam check-in, patient and a new order transaction are sent to Lanier system containing patient demographics and check-in data. One record is sent for each exam that is checked in on STAR Radiology. The detailed record layout is defined in the Record Layout section of this document. Please note that the Patient Check-in is actually the ordering of a Radiology exam. If the exam is revised before a diagnostic report dictation transaction is received from the Lanier system, and the Service Item Number (exam) is modified, a revision transaction is sent to the Lanier system.

The Lanier Dictation system, which consists of an interface between Lanier's VoiceWriter OS Link Dictation system and STAR Radiology, completes all processing that occurs on that system and returns a Dictation complete transaction to STAR Radiology. This transaction contains the Dictation Date and Time and the Reading Radiologist ID and might or might not contain "canned normal" codes that correspond to "canned normal" codes in the STAR Radiology system. The reports can be transcribed into the STAR Radiology system using Softkey editor or the Word Processing interface.

The Record Layout has detailed documentation of the transaction data. Upon receipt of the inbound transaction from Lanier, if there are no errors, the Reading Radiologist is logged to the Read By field in the exam and the Dictation Date/Time is logged to the Dictation Date/Time field in the Activity Tracking. This data is logged to each exam on the check-in. If the data is not valid for a particular exam, it can be edited through Activity Tracking (Dictation Date/Time) and Exam Data Entry (Read By) processors in STAR Radiology. The Dictation Date/Time is also available on the Activity Tracking report.

When a document is saved in the Lanier Transcription system, the transcription is sent to STAR Radiology in an ASCII file format. When the transcription is received from Lanier, the STAR Radiology system files the results and places the report in the Radiologist Review Queue. If the transcription is modified on Lanier after the initial report is sent to STAR Radiology, the modified report is sent from Lanier and the original report is overwritten, results are filed and the report is placed in Radiologist Review Queue. Transcription can be modified on STAR Radiology using the Softkey Editor (base feature of STAR Radiology) or the Windows Word Processing Interface.

Transcription modified on STAR Radiology is **not** sent to Lanier. Radiology Final Reports are printed from the STAR Radiology system.

The interface between STAR Radiology and Lanier is an online, real-time interface that complies with HL7 version 2.2 specifications.

Processors for the review of the interface queue, audit, and errors are available through the Interface option in the STAR Radiology Maintenance processors.

NOTE: All productivity related to the transcriptionist should be captured on the Lanier system. With the exception of editing reports, no productivity is recorded for the transcriptionist in STAR Radiology.

This document covers the communications protocol to be used, the available inbound and outbound messages, and events. It also describes the trigger events that would cause a transaction to be passed in the interface along with the segments that are sent for each event.

All references to “Outbound” indicate messages that originate on the McKesson STAR Radiology system and are transmitted to the Lanier system.

All references to “Inbound” indicate messages that originate on the Lanier system and are transmitted to the McKesson system.

Communications Protocol

The communications protocol is TCP/IP. This corresponds to the minimal lower layer protocol mentioned in the HL7 2.2 version.

The Start of Text, <STX>, character is a binary 11.

The End of Text, <ETX>, character is a binary 28.

Each segment is terminated by a carriage return, <CR>, binary 13.

Here is an example of a valid transaction:

<STX>SEGMENT<CR>SEGMENT<CR>SEGMENT<CR><ETX><CR>

USER FUNCTIONS

This section describes user functions such as activating and inactivating the Lanier Dictation/Transcription Interface, displaying interface errors, and interface parameter maintenance.

The Interface option is located in the Maintenance Functions Processor.

```

General Hospital Maintenance Functions Processor
                        Tue Sep 07, 2004 01:37 pm

Maintenance Processors
( 1) Activity Tracking          (18) Outside Film
( 2) Barcode                   (19) Outside Transcription
( 3) Charge Result Keys        (20) Parameter Report
( 4) CRT/Port Designations     (21) Patient Inq/Report Restrictions
( 5) Customer Tool Box Utilities (22) Patient Type Groups
( 6) Diagnostic Code           (23) Precanned Subgroup Add/Edit
( 7) Document/Label Output Mgt (24) Precanned Summary Add/Edit
( 8) Exam Builder              (25) Precanned Summary RTF Files
( 9) Exam/Report Status        (26) Previous Exam Check
(10) Film Room Management      (27) Printer/Output Management
(11) HBO Maintained Parameters (28) Purge
(12) Help Text                 (29) Result/Review/Final Report
(13) Interface                 (30) Sections
(14) Location                  (31) Table Code Edit
(15) Lock Table Display        (32) Table Data Edit
(16) Management Reports        (33) User Preferences
(17) Miscellaneous Parameters  (34) Utilities

Enter option number --

```

Select the Interface option. The following screen is displayed:

```

General Hospital Interface Processor
                        Tue Sep 07, 2004 01:37 pm

Interface Maintenance Processors
( 1) General Interface Parameters
( 2) HL7 Interface Maintenance
( 3) Interface Control - Clinipac Interface
( 4) Interface Control - Generic Interface
( 5) Interface Control - Lanier
( 6) Interface Control - Mammography
( 7) Interface Control - Old Interface
( 8) STAR Radiology HL7 Parameters

Enter option number --

```

When the Interface option is selected, the system displays a list of all Interfaces defined in the system. For each Interface, if it is a two-way communication, an Inbound and an Outbound line must be defined during implementation.

Select the Interface Control - Generic Interface option, and select the appropriate department.

NOTE: Option #5 is a Lanier interface, but this interface is for a Lanier Serial Interface, Non-HL7, which is no longer supported.

The Maintenance Functions Input Options menu is displayed.

```
General Hospital Maintenance Functions Processor
                                   Tue Sep 07, 2004 01:37 pm

Maintenance Functions Input Options

Option No.  Option
-----
  1      Interface Control
  2      Display Interface Errors
  3      PATIENT CARE to CLINSTAR Audit
  4      CLINSTAR to PATIENT CARE Audit
  5      Interface Parameter Maintenance

  6      HL7 Interface Functions
  7      Communication Line Status

  8      Image Manager Cold Feed Interface Functions
  9      Mammography HL7 Parameters
 10      Speech Recognition HL7 Parameters

Enter option number--
```

Interface Control

Select the Interface Parameter Maintenance option. The Interface Control Input Options menu is displayed.

```
General Hospital Interface Control Processor
                                   Tue Sep 07, 2004 01:37 pm

Interface Control Input Options

Option No.  Option
-----
  1      Outbound Interface Control
  2      Inbound Interface Control

  3      Outbound Parameter Maintenance
  4      Inbound Parameter Maintenance

Enter option number--
```


When you enter an option number to select a function, the following prompt is displayed:

Enter communication code--

Enter the communication code for the interface, or enter a hyphen (-) for a table lookup for all the interfaces defined for this system.

If you enter a code for an interface that is not installed, the system displays the following message:

Error: Invalid!

NOTE: The last two functions, Outbound Parameter Maintenance and Inbound Parameter Maintenance, are described in the section “[Interface Parameter Maintenance](#)” on page 1-16.

OUTBOUND INTERFACE CONTROL

Use this function to activate or inactivate the outbound interface. When you select this option and enter the communication code, the status of the interface is displayed as either Active or Inactive.

Activating the Outbound Interface

If the status of the outbound interface is Inactive, the system displays the following prompt:

Start the interface? (Y/N)--

If you enter **Y**, the system displays the following message:

Are you SURE you want to START the interface?--

If you enter **Y**, the system displays the following message and returns you to the previous screen:

Interface STARTING!

If you enter **N** to elect not to activate the interface, the system returns you to the previous screen, and the interface remains inactive.

Inactivating the Outbound Interface

If the status of the outbound interface is Active, the system displays the following prompt:

Halt the interface? (Y/N)--

If you enter **Y**, the system displays the following message:

Are you SURE you want to HALT the interface?--

If you enter **Y**, the system displays the following message and returns you to the previous screen:

Interface HALTING!

If you enter **N** to elect not to halt the interface, the system returns you to the previous screen and the interface remains active.

INBOUND INTERFACE CONTROL

Use this function to activate or inactivate the inbound interface. When you select this option and enter the communication code, the status of the interface is displayed as either Active or Inactive.

Activating the Inbound Interface

If the status of the inbound interface is Inactive, the system displays the following prompt:

Activate the TRANSCRIPTION IN (Y/N)? --

If you enter **Y** to activate the interface, the system displays the following message:

TRANSCRIPTION IN will be activated! Accept? (Y/N)--

If you accept, the system activates the interface and displays the following prompt:

Enter communication code, or `` to list--

If you enter **N** to elect not to activate the interface, the interface remains inactive and the following prompt is displayed:

Enter communication code, or `` to list--

Inactivating the Inbound Interface

If the status of the inbound interface is Active, the system displays the following prompt:

Inactivate the TRANSCRIPTION IN (Y/N)? --

If you enter **Y** to inactivate the interface, the system displays the following message:

TRANSCRIPTION IN will be terminated! Accept? (Y/N)--

If you accept, the system halts the interface and displays the following prompt:

Enter communication code, or `` to list--

If you enter **N** to elect not to halt the interface, the interface remains active and the following prompt is displayed:

Enter communication code, or `` to list--

Press period (.) and ENTER to return to the Maintenance Functions Input Options menu.

Display Interface Errors

This function displays any interface errors that may have occurred on the date selected. When you select this option, the system prompts you for the appropriate interface code. After you select the interface code, the system displays the following prompt:

Enter date to review [today]--

Enter the date for which you want to view the errors in either a MMDDYY or MM/DD/YY format, or press ENTER for the default of today's date. If there are no errors for that date, the following message is displayed:

None to display!

You are then returned to the date prompt. If there are any interface errors for the selected date, a screen similar to the following is displayed:

General Hospital Display Interface Errors Processor				
Tue Sep 07, 2004 01:37 pm				
Interface Error Log				
Date =	09/07/04			
TC	Trans	Dte/Tme	Patient #	Account #
NW	09/07/04		00003155	9715400002
Name				
WILLIS,BILL E				

Errors displayed are for outgoing transactions only and are caused by records not having fields that are required or are not formatted correctly.

Press period (.) and ENTER at the date and communication code prompts to return to the Maintenance Functions Input Options menu.

HL7 Interface Maintenance

From the Maintenance screen, select Interface and then Interface Control - Generic Interface. Select the appropriate department and the HL7 Interface Functions option. The HL7 Interface Functions option enables you to view the audit and queue for the interface.

General Hospital HL7 Interface Functions Processor	
Wed Jan 26, 2011 04:33 pm	
HL7 Interface Functions Input Options	
Option No.	Option
1	HL7 Queue Inquiry
2	HL7 Audit Inquiry
3	HL7 Error Inquiry
4	Errors/Audit Report Options
5	HL7 Table Processing Functions
6	HL7 Audit Re-send
7	HL7 User Maintenance
8	Remove Top Record from Interface

Enter option number--

The HL7 Queue Inquiry option displays a selection of all the interfaces defined on the system along with the number of transactions in the queue for each interface. Select the Lanier Interface whose queue you want to view.

Display in (C)hronological or (R)everse chronological order? [C]--

Enter **C** or **R** to display the queue and the following screen is displayed:

```

General Hospital HL7 Queue Inquiry Processor
Tue Sep 07, 2004 01:37 pm

Page:01                               Queued Messages for LDO
( 1) 04/28 1443 ORDER MESSAGE (ORM-001-013)      [A1]
( 2) 04/28 1443 ORDER MESSAGE (ORM-001-013)      [A2]
( 3) 04/29 1024 ORDER MESSAGE (ORM-001-013)      [A3]
( 4) 04/29 1116 ORDER MESSAGE (ORM-001-013)      [A4]
( 5) 04/29 1116 ORDER MESSAGE (ORM-001-013)      [A5]
( 6) 04/29 1116 ORDER MESSAGE (ORM-001-013)      [A6]
( 7) 04/29 1734 ORDER MESSAGE (ORM-001-013)      [A7]
( 8) 04/29 1734 ORDER MESSAGE (ORM-001-013)      [A8]
( 9) 04/29 1739 ORDER MESSAGE (ORM-001-013)      [A9]
(10) 04/29 1743 ORDER MESSAGE (ORM-001-013)      [B10]
(11) 04/30 1449 ORDER MESSAGE (ORM-001-013)      [B11]
(12) 04/30 1449 ORDER MESSAGE (ORM-001-013)      [B12]
(13) 04/30 1450 ORDER MESSAGE (ORM-001-013)      [B13]
(14) 04/30 1450 ORDER MESSAGE (ORM-001-013)      [B14]
(15) 04/30 1523 ORDER MESSAGE (ORM-001-013)      [B15]
(16) 04/30 1652 ORDER MESSAGE (ORM-001-013)      [B16]

Enter choice--

```

Select a transaction to see the segment(s) contained in the message. For example, if you select the first transaction from the previous screen, this screen is displayed:

```

General Hospital HL7 Queue Inquiry Processor
Tue Sep 07, 2004 01:37 pm

Message:  on 04/28 1443
Page:01                               Segments
( 1) MSH-010 MESSAGE HEADER
( 2) PID-010 PATIENT IDENTIFICATION
( 3) ORC-014 COMMON ORDER
( 4) OBR-011 OBSERVATION REQUEST

Enter choice--

```

The ORM message for the Lanier Outbound Interface consists of the MSH, PID, ORC and OBR segments, which are displayed in the screen above. By selecting each segment, you can view the transaction data that is being sent across the interface.

For more detailed explanations of these segments, see [“HL7 SEGMENT DEFINITIONS”](#) on page 1-31.

MSH SEGMENT SCREEN

If you select the MSH segment, a screen similar to the following is displayed:

General Hospital HL7 Queue Inquiry Processor			
Tue Sep 07, 2004 01:37 pm			
Message: on 04/28 1443			
Segment: MSH - MESSAGE HEADER			
1	509-01	ENCODING CHARACTERS	;~\&
2	6-01	SENDING APPLICATION	HBOX
3	512-01	SENDING FACILITY	A
4	9-01	RECEIVING APPLICATION	LAN
5	513-01	RECEIVING FACILITY	A
6	10-01	DATE/TIME OF MESSAGE	199704281443
7	8-01	SECURITY	*
8	12-04	MESSAGE TYPE	ORM;001;013
9	3-04	MESSAGE CONTROL ID	
10	14-01	PROCESSING ID	T
11	15-01	VERSION ID	2.2
12	633-05	SEQUENCE NUMBER	*
13	699-01	CONTINUATION POINTER	*
14	Z0174-01	ACCEPT ACKNOWLEDGMENT TY	AL
15	Z0175-01	APPLICATION ACKNOWLEDGEME	*
16	Z0176-01	COUNTRY CODE	*
F1Prev Page F2Next Page F6 Reset F7 Exit ?			

In this screen, the first column is the sequence, the second column is the data element code, the third column is the data element name, and the last column contains the data in the segment.

For more detailed information about the MSH segment, see [“MSH - Message Header Segment” on page 1-33](#).

PID SEGMENT SCREEN

The second segment of the ORM message is the PID segment. If you select this segment, a screen similar to the following is displayed:

General Hospital HL7 Queue Inquiry Processor			
Tue Sep 07, 2004 01:37 pm			
Message: on 04/28 1443			
Segment: PID - PATIENT IDENTIFICATION			
1	572-01	SET ID - PATIENT ID	*
2	581-01	PATIENT ID (EXTERNAL ID)	00002395
3	34-01	PATIENT ID (INTERNAL ID)	000002278;;;A
4	38-01	ALTERNATE PATIENT ID	3000;A3620
5	41-01	PATIENT NAME	LEWIS;CARLTON;;JR
6	582-01	MOTHERS MAIDEN NAME	Mathews
7	43-01	DATE OF BIRTH	19610110
8	42-01	SEX	M
9	597-01	PATIENT ALIAS	
10	44-03	ETHNIC GROUP (RACE)	3
11	20-01	PATIENT ADDRESS	JDAG,LK;ASLKJDF;Atlanta;GA;30345;US;C;>
12	26-04	COUNTY CODE	1
13	49-01	PHONE NUMBER - HOME	(770)757-6045
14	50-01	PHONE NUMBER - BUSINESS	
15	464-04	LANGUAGE - PATIENT	ENGLISH;E;
16	46-03	MARITAL STATUS	S
17	45-05	RELIGION	*
18	35-01	PATIENT ACCOUNT NUMBER	9622700001;;;A
F1Prev Page F2Next Page F6 Reset F7 Exit ?			

The PID segment contains patient-specific information, and the data is generated by the data elements defined in this segment for this interface. Some of the fields may be blank; this means that they are not required for this interface, and STAR Radiology may not have that particular information for this patient.

For more detailed information about the PID segment, see [“PID - Patient Identification Segment” on page 1-34](#).

ORC SEGMENT SCREEN

The next segment in this message is the ORC segment. If you select this segment, a screen similar to the following is displayed:

General Hospital HL7 Queue Inquiry Processor			
Tue Sep 07, 2004 01:37 pm			
Message: on 06/20 0701			
Segment: ORC - COMMON ORDER			
1	714-01	ORDER CONTROL	NW
2	732-05	PLACERS ORDER # (OBR)	0000008484A7691;HBOX
3	733-05	FILLERS ORDER # (OBR)	8484;HBOX
4	717-06	PLACER GROUP #	
5	718-07	ORDER STATUS	STAT CHECKIN
6	719-01	RESPONSE FLAG	N
7	735-08	QUANTITY/TIMING	
8	721-01	PARENT	
9	722-01	DATE/TIME OF TRANSACTION	200308261025
10	723-06	ENTERED BY	
11	724-01	VERIFIED BY	*
12	539-07	ORDERING PROVIDER (OBR)	
13	726-01	ENTER'S LOCATION	
14	727-01	CALL BACK PHONE NUMBER	*
15	Z0180-02	ORDER EFFECTIVE DATE/TIME	
16	Z0181-03	ORDER CONTROL CODE REASON	
17	Z0379-01	ENTERING ORGANIZATION	*
18	Z0380-02	ENTERING DEVICE	
F1Prev Page F2Next Page F6 Reset F7 Exit ?			

The ORC segment contains order information for the patient. The information is generated by the data elements defined in this segment.

For more detailed information about the ORC segment, see [“ORC - Common Order Segment” on page 1-35](#).

OBR SEGMENT SCREEN

The next segment in this message is the OBR segment. If you select this segment, a screen similar to the following is displayed:

```

                                General Hospital HL7 Queue Inquiry Processor
                                Tue Sep 07, 2004 01:37 pm
Message:  on 06/20 0701
Segment:  OBR - OBSERVATION REQUEST
1  520-05  SET ID - OBSERVATION REQU *
2  732-02  PLACERS ORDER # (OBR)      0000008484A7691; HBOX
3  733-03  FILLERS ORDER # (OBR)      8484;HBOX
4  523-03  UNIVERSAL SERVICE IDENTIF  7691;MM MAMMOGRAM BILAT;RAD;6101 DIFFUS
5  524-01  PRIORITY                    *
6  529-03  REQUESTED DATE/TIME        *
7  530-02  OBSERVATION DATE/TIME      200308261025
8  531-01  OBSERVATION END DATE/TIME  *
9  532-03  COLLECTION VOLUME         *
10 533-03  COLLECTION IDENTIFIER      *
11 534-02  SPECIMEN ACTION CODE       *
12 535-01  DANGER CODE                *
13 536-01  RELEVANT CLINICAL INFORMA
14 537-02  SPECIMEN RECEIVED DATE/TI *
15 538-02  SPECIMEN SOURCE            ;;;;B
16 539-02  ORDERING PROVIDER (OBR)    32;ADAIR;FRANK;M;MD
17 540-01  ORDER CALL-BACK PHONE NUM *
18 541-01  PLACERS FIELD #1          *

                                F1Prev Page F2Next Page F6 Reset  F7  Exit  ?

```

The OBR segment contains the order detail information for the patient. The information is generated by the data elements defined in this segment for this interface.

Press period (.) and ENTER to back out of the screens and return to the Maintenance Functions Input Options menu.

For more detailed information about the OBR segment, see [“OBR - Observation Request Segment”](#) on page 1-36.

Interface Parameter Maintenance

To implement the HL7 Lanier Dictation/Transcription Interface, the McKesson installer uses the Interface Parameter Maintenance function to define the interface parameters for the system to communicate data to the interfaced system. This function enables users to define the characteristics of the interface. If there are multiple interface lines, each line must be defined using this function.

For the Lanier Interface there may be two Inbound Interface Lines, one for the Lanier Dictation Interface and one for the Transcription Interface and two Outbound Interface Lines from STAR Radiology to Lanier for both the transcription and the dictation system.

DEFINING OUTBOUND PARAMETERS

Select the Interface Parameter Maintenance option and then Outbound Parameter Maintenance to define the characteristics of the interface. When you select this function, the following prompt is displayed:

Enter communication code--

Enter the communication code for the interface, or enter a hyphen (-) for a table lookup for all interfaces defined for this system.

A screen similar to the following is displayed:

General Hospital Interface Parameter Maintenance Processor									
Communication Code: LNO					Tue Sep 07, 2004 01:37 pm				
Updated last by: on 04/20/04 1828									
1 Description	2 Facilities	3 Port	4 HIS						
RAD LANIER OUTBOUND	A,B,C	29	Horizon Clinicals						
5 Protocol Pgm	6 Error Pgm	7 Error Log	8 Products	9 Audit	10 Days				
RAD^AHL7CT	^AHL7TCPE	AXMEXER000	X	Yes	7				
11 Inc Trans Pgm	12 Incoming Transactions								
^CCHIS1									
13 Historize	14 Same Internal #	15 HL7							
Yes	No	Yes							
Enter field number or '/' starting field number--									

Field Explanations

1. DESCRIPTION (19-C-R)

This field contains a free-text descriptive name of the interface (for example, LNO for the Lanier Outbound Interface). This name is displayed on the system list and must be unique for each interface.

2. FACILITIES (TABLE DISPLAY-R)

This field identifies the facilities serviced by the interface. When you access this field, the system displays a table of available facilities for your system. Enter the option number(s) of the facilities for which data should be communicated over this HL7 interface. To select a range of facilities, enter the option numbers of the first and last facility in the range, separated by a hyphen (-). To remove a selected facility, enter the option number of the facility to be removed preceded by a hyphen (-).

3. PORT (2-N-R)

This field identifies the port number to which the interfaced system is attached. This port is defined in the system using the Port Modification Utility. For more information about this utility, refer to the *MultiSTAR Software Environment for UNIX Operations Guide*.

4. HIS

This field displays the health information system for this interface.

5. PROTOCOL PGM (16 C-R)

This field identifies the program that manages the interface queue. For outbound HL7 interfaces in STAR Radiology, this is RAD^AHL7CT.

6. ERROR PGM

This field contains the program to run if an error occurs. For this interface, the program is ^AHL7TCPE.

7. ERROR LOG

This field identifies the system report to which the error messages generated by this interface should print. When you access this field, the system displays a table of defined reports. For STAR Radiology interfaces, select AXMEXER000.

8. PRODUCTS

This field identifies which STAR products communicate over the interface. For this interface, this field contains X.

9. AUDIT

This field identifies whether or not to turn on the audit.

10. DAYS

This field determines the amount of time, in days, to retain the audit information.

11. INC TRANS PGM

This field determines which program is used to determine the STAR transactions containing triggering events for transmitting transactions over the interface. For this interface, this field needs to be set to ^CCHIS1.

12. INCOMING TRANSACTIONS

Not applicable for this interface.

13. HISTORIZE

Although not applicable for this interface, should be set to **Yes**.

14. SAME INTERNAL #

Not applicable for this interface.

15. HL7 (1-A-R)

This field identifies whether this is an HL7 compliant interface. The Lanier Dictation Interface is an HL7 compliant interface. Enter **Y** for Yes in this field.

When you complete these fields, the system prompts you to accept the screen. Enter **Y** to accept the contents of the screen. Enter **N** to continue editing the screen. After the screen is accepted, the system displays the following screen:

General Hospital Parameter Maintenance Processor			
Communication Code: LNO		Tue Sep 07, 2004 01:37 pm	
		Updated last by: #00852 on 04/20/04 1828	
HL7 Parameters			
1 STX Character	2 ETX Character	3 Receiver Binary	4 Sending Application
11	28	Yes	HBOX
5 Receiving Application	6 Query Level	7 Number of Result Query Lines	
LAN	Single		
8 Result Query Lines	9 Minor Error Halt		
	Yes		
10 HL7 Version	11 NULL/Not Present Support	12 Encode	
2.2	No		
13 HBOXHI	14 HL7 Queue/Audit Routine		
Enter field number or '/' starting field number--			

FIELD EXPLANATIONS**1. STX CHARACTER (3-C-R)**

This field contains the character for the start of text message header. Enter the numeric value for the ASCII character set. The system displays the ASCII character in brackets ([]) to the right of your entry; if the character set is not a printable ASCII character, the system displays only your entry.

2. ETX CHARACTER (3-C-R)

This field contains the character for the end of text message header. Enter the numeric value for the ASCII character set.

3. RECEIVER BINARY (1-A-R)

This field identifies whether the start of text character from the receiver is a binary character. Enter **Y** if this is a binary character. Enter **N** if this is a non-binary (printable) character. For the Lanier Interface, set this field to **Yes**.

4. SENDING APPLICATION (15-C-R)

This field identifies the STAR Application that originates this message transmitted over this HL7 interface. The interface places this code in the MSH header segment. McKesson recommends HBOX code for STAR Radiology.

5. RECEIVING APPLICATION (15-C-R)

This field identifies the system receiving this message transmitted over this HL7 interface. This code must be unique for each receiving application. For Lanier systems, the code used is LAN.

6. QUERY LEVEL (1-A-R)

This field determines whether the system should use single level or double level queries. For the Lanier Interface, enter **S** to use single-level query since all order/check-in information needed to send the check-in and exam information resides on the STAR Radiology system.

7. NUMBER OF RESULT QUERY LINES (1-N-R)

This field identifies the number of query lines available for this interface.

8. RESULT QUERY LINES (40-C-R)

This field identifies each query line available for this interface. The system rotates through these query lines, one query at a time, to accommodate traffic over this interface.

9. MINOR ERROR HALT (1-A-R)

This field determines whether the interface should halt or continue to communicate data in the event of a minor error. Errors are classified as either fatal or minor. In the HL7 interface, the only fatal error occurs when protocol numbers are not synchronized. Enter **Y** to halt this interface in the event of all system errors. Enter **N** to only halt this interface in the event of a fatal error.

10. HL7 VERSION (6-C-R)

This field identifies the version of the HL7 standards. Enter 2.1 or 2.2 of the HL7 standard versions.

11. NULL/NOT PRESENT SUPPORT

Not applicable for this interface.

12. ENCODE

Not applicable for this interface.

13. HBOCHI

Not applicable for this interface.

14. HL7 QUEUE/AUDIT ROUTINE

Not applicable for this interface.

When you complete these fields, the system prompts you to accept the screen. Enter **Y** to accept the contents of the screen. Enter **N** to continue editing the screen. After the screen is accepted, the system displays the following prompt:

Set Product Specifications? (Y/N)—

Enter **Y** and the system prompts you for which product you want to set specifications. This corresponds to the Products field from the initial screen. Select the product and the following screen is displayed:

General Hospital Outbound Parameter Maintenance Processor			
Communication Code: LNO		Tue Sep 07, 2004 01:37 pm	
Radiology Interface		Updated last by: #00852 on 04/20/04 1828	
1 Incoming Tx OR,OU,CO	2 Incoming Pgm ^XZGI	3 Outgoing Tx CA,NO,OT,RE	4 Outgoing Pgm ^AHL7XO
5 Error Log 122	6 Error Pgm AHL7TCPE	7 SIM Department(s) CTB,CVC,MRB,NMB,NMC,RAD,RRD,USB,XRB,XRC	
8 HL7 Outbound Message		9 HL7 Outbound Tables	
10 Result Menu Name for Normal Codes			
Enter field number or '/' starting field number--			

Field Explanations

1. INCOMING TX (TABLE LOOKUP-O)

This field displays the STAR transactions containing triggering events for transmissions to STAR Radiology over this interface, as defined in the Incoming Transaction field on the first screen of the communication definition.

2. INCOMING PGM (9-C-O)

This field indicates the program used to process incoming transactions. Press ENTER to accept the default program.

3. OUTGOING TX (TABLE LOOKUP-O)

This field identifies STAR transactions containing trigger events for transmission to systems over this interface.

When you access this field, the following prompt is displayed:

Enter new `` to alter outgoing transactions [Base Transactions]--

Enter individual codes separated by a vertical bar (|), as shown in the following example:

Enter new `` to alter outgoing transactions [Base Transactions]-- CA|NO|OT|RE

You can also enter a hyphen (-) to display a menu of Transaction Codes for the system. Enter the option numbers of the transactions that trigger a data transmission.

To remove a selected transaction, enter the option number preceded by a minus sign (-).

4. OUTGOING PGM (9-C-R)

This field identifies the program used to process outgoing transactions. Enter the name of the program preceded by a caret (^), or press ENTER to accept the default program.

5. ERROR LOG (TABLE DISPLAY-O)

This field identifies the report name to which error messages generated by this interface should print. When you access this field, the system displays a table of defined reports. Select the desired report.

For more information about defined reports in the system, refer to the Print Spooler Functions chapter in the *MultiSTAR Software Environment for UNIX Operations Guide*.

6. ERROR PGM (16-C-R)

This field identifies the program used to process errors. Press ENTER to use the default error program.

7. SIM DEPARTMENT(S) (TABLE DISPLAY-O)

This field identifies the SIM departments for which the interface transaction should be processed. Select STAR Radiology departments.

8. HL7 OUTBOUND MESSAGE (SPECIAL FORMAT-O)

This field identifies the version of the messages to be transmitted over this interface. You can only edit this field for HL7 type interfaces.

When you access this field, the system displays a table of events and the messages associated with each event. The events displayed are based on your entries in the Outgoing Transactions field.

Messages for each event are defined by McKesson according to the HL7 standard. You can modify the version of the message transmitted by placing your cursor on the message line and entering the number of the version to use, or enter a hyphen (-) to display and select from a list of versions for the message.

9. HL7 OUTBOUND TABLES (TABLE DISPLAY-O)

The HL7 Interface can download STAR tables to an interfaced system or device, thus enabling a higher degree of connectivity and minimizing communications traffic. This field identifies the STAR Radiology tables to be transmitted over this HL7 interface. The system processes all additions, revisions, and deletions of outbound tables through the interface.

NOTE: If you define outbound tables, you must download them to the interfaced device before going live with this interface.

10. RESULT MENU NAME FOR NORMAL CODES

This field identifies the name of the result menu for Radiologist menu. You are able to find this name by accessing Result Menu option from Utilities option under Maintenance. Select Radiologist from the table selection and the name of the menu displays on the top line of the screen.

When you complete this screen, the system asks you to accept it. When you accept the screen, the system displays *Filed!* and returns you to the Interface menu.

DEFINING INBOUND PARAMETERS

The following screen is an example of the Inbound Interface Parameter Maintenance screen in STAR Radiology:

General Hospital Inbound Parameter Maintenance Processor			
Communication Code: LNI		Tue Sep 07, 2004 01:37 pm	
		Updated last by: #00852 on 04/20/04 1828	
1 Description	2 Facilities	3 Port	4 Status
LANIER DICT IN	A	172	Active
5 Protocol Routine	^AHL7IBR		
6 Lab SIM Departments	7 Rad SIM Departments	8 Rx SIM Departments	
	RAD		
9 Interface Audit Report Name	10 Audit Zblock	11 Audit Global	
AXMEXER0-INTERFACE ERROR REPOR		Yes	
12 Dump Queue Report Name	13 Queue Zblock	14 DCU Ports	
15 Outgoing Transactions	16 Outgoing table/s	17 Format Routine	18 PCM
19 Incoming Transactions	20 Incoming table/s	21 Process Routine	22 HL7
X			Yes
23 Line Out	24 IMNET		
Enter field number or '/' starting field number--			

Field Explanations

1. DESCRIPTION (19-C-R)

This field contains a free-text descriptive name of the interface (for example, LNI for Lanier Inbound Interface). This name displays on the system list and must be unique for each interface.

2. FACILITIES (TABLE DISPLAY-R)

This field identifies the facilities serviced by the interface. When you access this field, the system displays a table of available facilities for your system. Enter the option number(s) of the facilities for which data should be communicated over this HL7 interface. To select a range of facilities, enter the option numbers of the first and last facility in the range, separated by a hyphen (-). To remove a selected facility, enter the option number of the facility to be removed preceded by a hyphen (-).

3. PORT (2-N-R)

This field identifies the port number to which the interfaced system is attached. This port is defined in the system using the Port Modification Utility. For more information about this utility, refer to the *MultiSTAR Software Environment for UNIX Operations Guide*.

4. STATUS (DISPLAY ONLY)

This field displays the status of the interface as either Active or Inactive. This field cannot be edited.

5. PROTOCOL PGM (16-C-R)

This field identifies the program that manages the interface queue. For inbound HL7 interfaces in STAR Radiology, this is ^AHL7IBR.

6. LAB SIM DEPT

Not applicable for this interface.

7. RAD SIM DEPT

This field contains the Radiology departments for which the interface is being defined.

8. Rx SIM DEPT

Not applicable for this interface.

9. INTERFACE AUDIT REPORT NAME (TABLE DISPLAY- O)

This field identifies the system report to which the error messages generated by this interface should print. When you access this field, the system displays a table of defined reports. For STAR Radiology interfaces, select AXMEXER000.

10. AUDIT Z-BLOCK

Not applicable for this interface.

11. AUDIT GLOBAL (1-A-R)

This field determines whether the system should create an audit global of inbound and outbound messages. Enter **Y** to create the audit global; enter **N** if you do not want to

create the audit global. You must enter **Y** if you want to view an audit trail of inbound and outbound messages using the HL7 Audit Inquiry function.

12. DUMP QUEUE REPORT NAME

Not applicable for this interface.

13. QUEUE ZBLOCK

Not applicable for this interface.

14. DCU PORTS

Not applicable for this interface.

15. OUTGOING TRANSACTIONS

Not applicable for this interface.

16. OUTGOING TABLES

Not applicable for this interface.

17. FORMAT ROUTINE

Not applicable for this interface.

18. PCM

This field should be set to **No**.

19. INCOMING TRANSACTIONS (TABLE DISPLAY-O)

This field identifies the STAR transactions containing triggering events for transmissions to STAR systems over this interface. When you access this field, the system displays a menu of Transaction Codes for the system. Enter the option number(s) of the transactions that trigger a data transmission over this interface. This field should contain X.

20. INCOMING TABLES

Not applicable for this interface.

21. PROCESS ROUTINE

Not applicable for this interface.

22. HL7 (1-A-R)

This field identifies whether this is an HL7 compliant interface. The Lanier Interface is an HL7 compliant interface. Enter **Y** for Yes in this field.

NOTE: If you do not enter **Y** in this field, you cannot access the remaining screens used to define communications for an HL7 interface.

23. LINE OUT

Not applicable for this interface.

24. IMNET

Not applicable for this interface.

When you complete these fields, the system prompts you to accept the screen. Enter **Y** to accept the contents of the screen. Enter **N** to continue editing the screen. After the screen is accepted, the system displays the following screen:

General Hospital Inbound Parameter Maintenance Processor			
Communication Code: LNI		Tue Sep 07, 2004 01:37 pm	
HL7 Interface Definition		Updated last by: #00852 on 04/20/04 1828	
1 STX Character	2 ETX Character	3 Receiver Binary	4 Sending Application
11	28	Yes	LAN
5 Receiving Application	6 Query Level	7 Number of Result Query Lines	
HBOX	Single		
8 Result Query Lines	9 Minor Error Halt		
	No		
10 HL7 Version	11 HBOXHI	12 Price From	13 Multiple Merge Segments
2.2		SIM File	No
14 Broadcast ADT Changes	15 Ack Audit	16 Encode	17 NULL/Not Present Support
No			No
18 Inbound Messages	19 Outbound Messages	20 Outbound Tables	21 GUI HL7?
See Table	See Table	See Table	No
22 HL7 Queue/Audit Routine			

Enter field number or '/' starting field number--

Field Explanations

1. STX CHARACTER (3-C-R)

This field contains the character for the start of text message header. Enter the numeric value for the ASCII character set. The system displays the ASCII character in brackets ([]) to the right of your entry; if the character set is not a printable ASCII character, the system displays only your entry.

2. ETX CHARACTER (3-C-R)

This field contains the character for the end of text message header. Enter the numeric value for the ASCII character set.

3. RECEIVER BINARY (1-A-R)

This field identifies whether the start of text character from the receiver is a binary character. Enter **Y** if this is a binary character. Enter **N** if this is a non-binary (printable) character. For the Lanier Interface, set this field to **Yes**.

4. SENDING APPLICATION (15-C-R)

This field identifies the dictation system that transmits HL7 messages to STAR Radiology. The interface places this code in the MSH header segment. McKesson recommends the code LAN for the Lanier Dictation system.

5. RECEIVING APPLICATION (15-C-R)

This field identifies the system receiving messages transmitted over this HL7 interface. This code must be unique for each receiving application. For STAR Radiology, use code HBOX.

6. QUERY LEVEL (1-A-R)

This field determines whether the system should use single-level or double-level queries. For the Lanier Interface, enter **S** to use single-level query since all order/check in information needed to send the check-in and exam information resides on the STAR Radiology system.

7. NUMBER OF RESULT QUERY LINES (1-N-R)

This field identifies the number of query lines available for this interface.

8. RESULT QUERY LINES (40-C-R)

This field identifies each query line available for this interface. The system rotates through these query lines, one query at a time, to accommodate traffic over this interface.

9. MINOR ERROR HALT (1-A-R)

This field determines whether the interface should halt or continue to communicate data in the event of a minor error. Errors are classified as either fatal or minor. In the HL7 interface, the only fatal error occurs when protocol numbers are not synchronized. Enter **Y** to halt this interface in the event of all system errors. Enter **N** to only halt this interface in the event of a fatal error.

10. HL7 VERSION (6-C-R)

This field identifies the version of the HL7 standards. Enter 2.1 or 2.2 of the HL7 standard versions.

11. HBOCHI

Not applicable for this interface.

12. PRICE FROM

Not applicable for this interface.

13. MULTIPLE MERGE SEGMENTS

Not applicable for this interface.

14. BROADCAST ADT CHANGES

Not applicable for this interface.

15. ACK AUDIT

This field identifies whether the acknowledgments are stored in an audit or not. This should be set to **Yes** for the Lanier Interface.

16. ENCODE

Not applicable for this interface.

17. NULL/NOT PRESENT SUPPORT (1-A-R)

This field identifies whether the receiving application supports null and not present as defined in the HL7 specifications. Enter **Y** if the receiving application supports null or not present. This should be set to **No** for the Lanier Interface.

18. INBOUND MESSAGES

This field identifies the inbound HL7 message for Inbound interface. For the Lanier inbound interfaces, this contains the HL7 message "ORU."

19. OUTBOUND MESSAGES

Not applicable to for this interface.

20. OUTBOUND TABLES

Not applicable for this interface.

21. GUI HL7

This field is set to **No** for the Lanier Interface.

22. HL7 QUEUE/AUDIT ROUTINE

Not applicable for this interface.

When this screen is completed, the system prompts you to accept it. Enter **Y** to accept the screen. When you accept the screen, the system displays *Filed!* and returns you to the menu.

HL7 MESSAGE LAYOUTS

The Lanier Interface to STAR Radiology is an online HL7 Interface. This transmission is done via an ORM message. The main segment of information contains the Message, Patient Information and the Order information. Segment layouts can be found immediately following this section.

Outbound Records

Outbound transactions are those that originate from STAR Radiology.

There are two events that transmit an outbound order message from STAR Radiology to the Lanier system: New Order and Order Revision. Patient information and order information are included in each message.

ORM - GENERAL ORDER MESSAGE

An ORM message is triggered when a Patient Check-In is performed.

For each ORM message, the following segments are transmitted:

MSH		Message Header
	[[NTE]]	Notes and Comments (for Header)
[
	PID	Patient Identification
	[[NTE]]	Notes and Comments (for Patient ID)
	[[AL1]]	Allergy
	[PV1]	Patient Visit
]		
{		
	ORC	Common Order
	[OBR]	Observation Request Segment (Order Detail)
	[[NTE]]	Notes and Comments (for Detail)
	[
	{	
	OBX	Observation/Result
	[[NTE]]	Notes and Comments (for Results)
	}	
]	
}		

ORM Notes

The NTE segment is optional and can be included in the ORM message in four places.

The PID segment is required for each new order and is related to a particular patient.

The PV1 segment is optional and is present mainly to permit transmission of patient visit information.

STAR Radiology may not populate all the fields in these segments; it is Lanier's responsibility to parse out the data that they may not be able to store in their database.

The order message is typically the first record that the Lanier system receives for a patient. The interface record is transmitted when a patient is checked into Radiology and has an exam ordered. One interface record is sent per exam code. For example, if you check a patient in with three exam codes, three interface records are transmitted outbound from STAR Radiology to the Lanier system.

Inbound Records

Inbound transactions are generated by a foreign vendor and are routed to the STAR application.

ORU - UNSOLICITED RESULT MESSAGE

Lanier sends an ORU message (unsolicited result message) when the dictation is done (there is a trigger event on the Lanier system that generates an ORU message). Upon receiving the ORU message, STAR sends an acknowledgment message (MSA) to the Lanier system indicating that the transaction was received.

The transcription interface also sends an ORU message once the report is transcribed. The ORU messages are Unsolicited since they are generated depending on the trigger events set by the Lanier system.

For each ORU message, the following segments are transmitted:

MSH		Message Header
	[{NTE}]	Notes and Comments (for Header)
[
PID		Patient Identification
	[{NTE}]	Notes and Comments (for Patient ID)
	[PV1]	Patient Visit
]		
{		
[ORC]		Common Order
OBR		Observation Request Segment (Report ID)
	[{NTE}]	Notes and Comments
	{	
	[OBX]	Observation/Result
	[{NTE}]	Notes and Comments (for Results)
	}	
}		

ORU Notes

The NTE segment is optional and may or may not be included.

This message is generated on the Lanier system and is transmitted inbound to the STAR Radiology system. The Lanier system should have trigger events to send a record for either the Dictation Interface or Transcription Interface or both.

For each patient order (OBR segment), more results may be transmitted depending upon the number of observations generated by the order. Each result can consist of one or more result segments (OBX). Comments may be transmitted either with the OBR or any of the result segments.

HL7 SEGMENT DEFINITIONS

This section contains the data elements in each segment that are used by STAR Radiology.

Column Definitions

The segment definition tables contain several columns, which are defined as follows:

SEQ

This column contains a sequence ID which is used to identify the position of the data field within the segment. The identifier is a positive, non-zero integer.

LEN

This column indicates the maximum number of characters that one occurrence of the data field may occupy in any message.

DT

This column identifies the type of data in this field and indicates the restrictions on the contents of the data field. The following data types are found in any segment:

ST - STRING	Any display characters are allowed. String data is left justified with trailing blanks optional.
DT - DATE	Contains the date of the event and always includes a 4 digit year.
TS - TIME STAMP	Contains the exact time of an event, including the date and time.
ID - CODED VALUE	The value of this field follows the formatting rules for an ST field, except that it is drawn from a table of legal values. Examples of ID fields include physician, religion, and sex.
CN - CODE & NAME	Contains the code and/or name that corresponds to this element.
CM - COMPOSITE	A field that is a combination of other meaningful data fields. Each portion is called a component.
NM - NUMERIC	A field that contains a numeric value.

R/O/C

This column indicates the option available in a data element. The designations are as follows:

- R** Indicates this data element is required, and the message segment cannot be transmitted without the presence of this field.

- O** Indicates this data element is optional, and the message segment can be transmitted with or without the presence of this field.
- C** Indicates this data element is conditional. The message segment can be transmitted with or without the presence of this field. This is dependent on the trigger event or the presence of another piece of data in the segment.

RP/#

This column indicates if this is a repeating field. The designations are as follows:

- N** No repetition
- Y** The field may repeat an indefinite or site-determined number of times. The “#” indicates the number of times this field can repeat.

TBL#

This column contains the table number as assigned by the HL7 Executive Committee.

ITEM #

This column contains the item number associated with the element.

ELEMENT NAME

This column contains the unique identifying name of the field.

Outbound Records

Outbound transactions are those that originate from STAR Radiology.

MSH - MESSAGE HEADER SEGMENT

The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message.

Figure 1.1 MSH-01 Message Header Segment

Seq	Len	DT	R/O/C	RP/#	TBL#	Item#	Element Name
1	1	ST	R			00001	Field separator
2	4	ST	R			00002	Encoding Characters
3	15	ST				00003	Sending application
4	20	ST				00004	Sending Facility
5	30	ST				00005	Receiving application
6	30	ST				00006	Receiving facility
7	26	TS				00007	Date/time of message
8	40	ST				00008	Security
9	7	CM	R	0076		00009	Message type
10	20	ST	R			00010	Message control ID
11	1	ID	R	0103		00011	Processing ID
12	8	ID	R	0104		00012	Version ID
13	15	NM				00013	Sequence number
14	180	ST				00014	Continuation pointer
15	2	ID		0155		00015	Accept acknowledgment type
16	2	ID		0155		00016	Application acknowledgment type
17	2	ID				00017	Country code

Field Explanations

(Required fields only)

1. FIELD SEPARATOR

The separator between segment ID and the first real field. Recommended value is |.

2. ENCODING CHARACTERS

These characters define the sub-field delimiters used by all segments in the HL7 message. STAR uses a colon (:) as the field delimiter and a semicolon (;) as its primary

sub-field delimiter, thus the use of a semicolon is preferred. If necessary, any delimiter may be passed by the sending application.

9. MESSAGE TYPE

The interface uses this field to determine if the message is acceptable and to determine the program to process the HL7 message.

10. MESSAGE CONTROL ID

The number or other identifier that uniquely identifies the message. The receiving system echoes this ID back to the sending system in the MSA segment.

11. PROCESSING ID

In the customer's Live ID (ID 1), this field indicates that the sending application is passing data from its production system. Any value other than "P," which indicates the production ID, is considered an error (in the Live ID). In any non-production STAR ID, any value is valid.

12. VERSION ID

The HL7 version number is used to determine that the sending application and this interface are communicating under the same HL7 criteria.

PID - PATIENT IDENTIFICATION SEGMENT

The PID segment is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identification and demographic information that, for the most part, is not likely to change frequently.

Figure 1.2 PID-01 Patient ID Information

Seq	Len	DT	R/O/C	RP/#	TBL#	Item#	Element Name
1	4	SI				00104	Set ID - Patient ID
2	16	CK				00105	Patient ID (External ID)
3	20	CM	R	Y		00106	Patient ID (Internal ID)
4	12	ST				00107	Alternate Patient ID
5	48	PN	R			00108	Patient Name
6	30	ID				00109	Mother's Maiden Name
7	26	AD				00110	Date of Birth
8	1	ID			0001	00111	Sex
9	48	PN		Y		00112	Patient Alias
10	1	ID			0005	00113	Race
11	106	AD		Y/3		00114	Patient Address
12	4	ID				00115	County Code

Seq	Len	DT	R/O/C	RP/#	TBL#	Item#	Element Name
13	40	TN		Y/3		00116	Phone Number - Home
14	40	TN		Y/3		00117	Phone Number - Business
15	25	ST				00118	Language - Patient
16	1	ID			0002	00119	Marital Status
17	3	ID			0006	00120	Religion
18	20	CK				00121	Patient Account Number
19	16	ST				00122	SSN Number - Patient
20	25	CM				00123	Driver's Lic Num - Patient
21	20	CK				00124	Mother's Identifier
22	1	ID			0189	00125	Ethnic Group
23	25	ST				00126	Birth Place
24	2	ID				00127	Multiple Birth Indicator
25	2	NM				00128	Birth Order
26	3	ID		Y	0171	00129	Citizenship
27	60	CE			0172	00130	Veterans Military Status

Field Explanations

(Required fields only)

3. PATIENT ID (Internal Number)

The value in this field uniquely identifies the patient in STAR.

5. PATIENT NAME (last;first;middle;entitle)

The last name in the record is compared to patient's last name (identify by Unit #) on STAR in order to verify the unit number is associated with the proper patient.

18. PATIENT ACCOUNT NUMBER (nnnnnnnnnnnnnn;;;STAR facility)

This is formatted as acct#;;;facility indicator (one character). It is **imperative** that the facility indicator be sent with the account number. If no facility indicator is present, STAR cannot process the incoming header record.

ORC - COMMON ORDER SEGMENT

The ORC segment is required in both the order (ORM) and order Acknowledgment (ORR) messages. This may contain the optional OBR segment for additional order information.

Figure 1.3 ORC - Common Order Segment

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ITEM#	ELEMENT NAME
1	2	ID	R		0119	00215	Order Control
2	75	CM	C			00216	Place Order Number
3	75	CM	C			00217	Filler Order Number
4	75	CM				00218	Placer Group Number
5	2	ID			0038	00219	Order Status
6	1	ID			0121	00220	Response Flag
7	200	TQ				00221	Quantity/Timing
8	200	CM				00222	Parent
9	26	TS				00223	Date/Time of Transaction
10	80	CN				00224	Entered By
11	80	CN				00225	Verified By
12	80	CN				00226	Ordering Provider
13	80	CM				00227	Enterer's Location
14	40	TN		Y/2		00228	Call Back Phone Number
15	26	TS				00229	Order Effective Date/Time
16	200	CE				00230	Order Control Code Reason
17	60	CE				00231	Entering Organization
18	60	CE				00232	Entering Device
19	80	CN				00233	Action By

OBR - OBSERVATION REQUEST SEGMENT

The Observation Request (OBR) segment is used to transmit information specific to an order for a diagnostic study or observation, physical exam, or assessment. When observations are successfully completed, that is, when Lanier is ready to transmit the Read by and Dictation information and the transcription report to STAR Radiology, the inbound transaction includes the observation request segment (OBR) followed by the observation result (OBX) segment.

The daggered (+) items in this segment are not created by the placer (STAR Radiology). They are created by the filler (Lanier) and valued as needed when the OBR segment is returned as part of a report.

The starred (*) fields are only relevant when an observation is associated with a specimen. These may not be applicable for the Dictation and Transcription interfaces.

Fields 7 and 8 (flagged with #), are the physiological relevant times. For this interface, they represent the start and end time of the Dictation and Transcription for a particular exam.

Figure 1.4 OBR - Observation Request Segment

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	SI	C			00237	Set ID - Observation Request
2	75	CM	C			00216	Placer Order Number
3	75	CM	R			00217	Filler Order Number +
4	200	CE				00238	Universal Service ID
5	2	ID				00269	Priority
6	26	TS	C			00240	Requested Date/Time
7	26	TS	C			00241	Observation Date/Time#
8	26	TS	C			00242	Observation End Date/Time#
9	20	CQ				00243	Collection Volume *
10	60	CN		Y		00244	Collector Identifier*
11	1	ID			0065	00245	Specimen Received Date/Time*
12	60	CE				00246	Danger Code
13	300	ST	C			00247	Relevant Clinical Info.
14	26	TS				00278	Specimen Received Date/Time*
15	300	CM			0070	00249	Specimen Source*
16	80	CN		Y		00226	Ordering Provider
17	40	TN		Y/2		00250	Order Callback Phone Number
18	60	ST				00251	Placer Field 1
19	60	ST				00252	Placer Field 2
20	60	ST				00253	Filler Field 1 +
21	60	ST	C			00254	Filler Field 2 +
22	26	TS				00255	Results Rpt/Status Chng - Date/Time
23	40	CM				00256	Charge to Practice +
24	10	ID	C		0074	00257	Diagnostic Serv Sect ID
25	1	ID			0123	00258	Result Status +
26	200	CM				00259	Parent Result +
27	200	TQ		Y		00221	Quantity/Timing
28	150	CN		Y/5		00260	Result Copies To

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ITEM#	ELEMENT NAME
29	150	CM				00261	Parent Number +
30	20	ID			0124	00262	Transportation Mode
31	300	CE		Y	0124	00263	Reason for Study
32	60	CM				00264	Principal Result Interpreter +
33	60	CM		Y		00265	Assistant Result Interpreter +
34	60	CM		Y		00266	Technician +
35	60	CM		Y		00267	Transcriptionist +
36	26	TS				00268	Scheduled Date/Time +

Inbound Records

Inbound transactions are generated by the Lanier system and are routed to STAR Radiology.

MSA - MESSAGE ACKNOWLEDGMENT SEGMENT

Figure 1.5 MSA - Message Acknowledgment

Seq	Len	DT	R/O/C	RP/#	TBL#	Item#	Element Name
1	2	ID	R		0008	00018	Acknowledgment Code
2	20	ST	R			00010	Message Control ID
3	80	ST				00020	Text Message
4	15	NM				00021	Expected Sequence Number
5	1	ID			0102	00022	Delayed Acknowledgment Type
6	100	CE				00023	Receiving facility

OBX - OBSERVATION RESULT SEGMENT

The Lanier system sends the diagnostic report and the dictation report via an OBX segment (Observation Result Segment). The OBX data segment contains information about a specific request for a diagnostic service, clinical observation, physical exam, or assessment.

Figure 1.6 OBX - Observation Result Segment

SEQ	LEN	DT	R/O/C	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	SI	O			00569	Set ID - Observational Simple
2	2	ID	R		0125	00570	Value Type
3	80	CE	R			00571	Observation Identifier
4	20	ST	C			00572	Observation Sub-ID
5	65536	*	C			00573	Observation Value
6	60	CE				00574	Units
7	60	ST				00575	References Range
8	10	ID		Y/5	0078	00576	Abnormal Flags
9	5	NM				00577	Probability
10	5	ID			0080	00578	Nature of Abnormal Test
11	2	ID	R		0085	00579	Observ Result Status
12	26	TS				00580	Date Last Obs Normal Values
13	20	ST				00581	User Defined Access Checks
14	26	TS				00582	Date/Time of the Observation
15	60	CE				00583	Producer's ID
16	60	CN				00584	Responsible Observer

The OBR segment contains the order information that was sent to Lanier in the ORM message and in addition, Lanier populates the data element fields for Transcriptionist code, Reading Radiologist Code, Dictation Date and Time, Dictating Radiologist code, and Normal code (if applicable). The transcription is sent in the OBX segment.

Normal Codes - Code for “Canned Normal” Report

A Normal code of all zeros indicates an error condition on the Lanier system. The interface prints an error and rejects the transaction. Each physician has a unique set of “normals” stored on both Lanier and McKesson sides. For exams with more than one “normal”, a default “normal” is designated by the physician. Lanier may send a “Normal code” to STAR Radiology with the Dictation transaction and this code is translated when the report is transcribed. If the exam is “normal,” all the information needed, including the ASCII data for the “normal” passes to STAR Radiology and goes directly to the Report field bypassing the transcriptionist.

Upon receiving the ORU message from Lanier, STAR Radiology sends an MSA Acknowledgment message indicating that the result/observation transaction was received. Information received from Lanier via the inbound Dictation complete transaction is processed as follows. The information sent is applicable to a specific check-in and is stored for each exam in the check-in. STAR Radiology users are

responsible for the revision of any data from Lanier which does not apply to a particular exam.

Reading Radiologist: The Reading Radiologist is sent from Lanier and is stored in the Read by field for the exam. This data can be edited through Exam Data Entry and is available for review through Patient Inquiry.

Dictation Date/Time: The Dictation Date/Time are sent from Lanier and are stored in an Activity Tracking field. This field is available for display on the Tracking screen in Patient Inquiry and through the Activity Tracking function. Dictation Date/Time are also a tracking point for the Activity Tracking report.

To access the Dictation Date/Time through Patient Inquiry, select Patient Inquiry from the STAR Radiology main menu. Then, select the patient and/or Check-In number and the exam to be viewed. The system displays the exam results. Enter **T** to examine Activity Tracking data.

To access the Dictation Date/Time through Activity Tracking, select Activity Tracking from the STAR Radiology main menu. Then, select Activity Tracking, select the patient and/or Check-In number, and the exam to be viewed. The Dictation Date/Time data are displayed as follows:

General Hospital Activity Tracking Processor								
						Tue Mar 10, 2009 09:53 am		
Unit #	Name	Sx	Birthdate	Room	Physician	Srv	ICD	Status
A000001751	SMITH, GLORIA	F	05/15/1967	ICU-08	AKER, TOM	MED	10	I/P 292
						Allergies Exhibited		
Released by TAYLOR, DAN, Neurolog at 15:41 on 08/11/04								
Check-In #: 1891			Turnaround time: 0 hrs 47 mins				* = Revised	
1 Exam Name			2 Requested-For Time			3 Add-On Time		
CT HEAD WO CONTRAST 70450			08/11/04 1454			08/11/04 1454		
4 Exam Room			5 Exam Start			6 Exam Stop		
Cat Scan			08/11/04 1455			08/11/04 1460		
7 Films Prepared			8 Departure Time			9 Dictation Time		
08/11/04 1456			08/11/04 1461					
10 Transcriptionist			11 Transcription Start			12 Transcription Stop		
JOHNSON, MARY			08/11/04 1507			08/11/04 1507		
13 Clinical Results			14 Technical Results					
Complete			Incomplete					
Enter option to edit(7/8/9), examine(E) previous entries --								
Technical(T) results missing								

The Dictation Date/Time are also available as a tracking point on the Activity Tracking Report.

The fields in Exam Data Entry are updated with these results and the transcribed report is available to the Radiologist.

IMPLEMENTATION CONSIDERATIONS

User Impact

A need for additional training is expected for the hospital MIS personnel and for the Radiology personnel. Familiarity with HL7 standards and protocols and HL7 tools is helpful for setting up the interface and troubleshooting purposes. The standardized interface is beneficial because it is easy and inexpensive to maintain and provides the ability to preview data before it is sent, thus making troubleshooting easier and quicker.

PRIOR TO IMPLEMENTATION

There are several items that require consideration before implementing this interface:

- The Interface Parameters screen and the HL7 interface screen must be set up for the interface.
- It is crucial that the doctor code for the radiologist and the ID code contained in the Radiology Employee file match properly. This may take additional maintenance on the employee file.
- The hospital should be aware that each Radiology exam ordered, revised or cancelled creates an individual interface record.
- A canned normal code of all zeros indicates an error condition and the interface transaction aborts.
- Once the Mammography interface is active, the Lanier interface does not interact in any way with that interface. Therefore, Mammography system exams should be ignored by Lanier as two interfaces cannot attempt to update the STAR system successfully. Lanier should be notified of all Mammography exams as these should be processed solely by the Mammography interface.
- The Lanier system should use corporate number for unique identification of a patient. This should minimize interface issues arising due to any changes to facility logic on the STAR system in the future.
- Report chaining can be performed **only** within the STAR Radiology system. Any exam that is link eligible can be linked through the link procedures defined for the STAR Radiology product. Edits must be performed on the STAR Radiology system. Any exam, with an existing report, transmitted to the STAR Radiology system is discarded.
- All productivity related to the transcriptionist should be captured on the Lanier system. With the exception of editing reports, no productivity is recorded for the transcriptionist in STAR Radiology.

Procedural Impact

With the implementation of Lanier Transcription interface between STAR Radiology and Lanier, the reports are transcribed on the transcription system rather than using the Softkey Editor. The transcribed reports are uploaded to STAR Radiology. With the Lanier Dictation Interface, it should be noted that if there are multiple items in a check-in, it may be necessary to verify the date and time and the Read by fields updating all exams and if not, they must be manually updated on STAR Radiology Exam Data Entry.

System Impact

McKesson requires that a separate port be assigned for each direction of user data transmission. There needs to be a separate port for Outbound Interface Line and for each Inbound Interface Lines. Implementation of this HL7 interface requires MSE Release 2.20 or above, STAR Product Release 16.1 and the interfaced system is HL7 compliant.

CONVERSIONS/DATA SWEEPS

There are no conversions or data sweeps necessary to implement this enhancement.

Implementation Impact

Hospital personnel are responsible for the hardware connection between the STAR Radiology system and Lanier system. After the MSE port numbers have been established, they should be communicated to the McKesson member who is responsible for the implementation of the interface.

PRODUCT ENVIRONMENT IMPLICATIONS

As STAR database changes occur, the HL7 data directory also needs to change. STAR's interface communications program, CCCOM, is used to start and stop the HL7 interface.

INTERFACE CONSIDERATIONS

The Lanier Dictation and the Lanier Transcription Interfaces were developed using the standard HL7 format. Depending on the client, the Inbound interface lines to STAR Radiology may be set up as one inbound interface from Lanier that handles both Dictation and the Transcription information, or they may be set up as two inbound lines - one for the Dictation interface and one for the Transcription Interface. There are two outbound lines from STAR Radiology to Lanier system that send the Patient and Order information to Lanier. The Lanier system processes the transactions on their system to populate both the Dictation and the Transcription system as this is common data required for both the systems. STAR Radiology's goal is to have one interface for Dictation and Transcription using HL7 standards.

STAR does not filter out the segments (and elements within the segment) that are not used by the transcription vendor. It is the responsibility of the McKesson customer and the transcription vendor to determine which segments (and associated elements) are to be used with the transcription system.

If Lanier cannot comply with the specifications of the interface, McKesson cannot assume responsibility if the interface does not function. If Lanier does not agree to make changes to comply with the interface, McKesson evaluates the situation and make changes only on a work order basis where time and material are charged to the customer.

NETWORK CONSIDERATIONS

With the implementation of this interface, there are no adverse implications on Networking between STAR products.

Testing Guidelines

Before testing occurs, the Dictation and Transcription Interface lines must be defined and activated for the test system. The physician table and "Normal Codes" tables must be synchronized with the STAR Radiology system and the Lanier system.

Generate HL7 messages from the STAR Radiology system (at Check-in and Order Revision) to send them to Lanier Dictation and the transcription systems. The fields in the PID and ORC segments must be populated by the STAR Radiology system. Ensure that these transactions are being received by the Lanier system and there are no interface errors. These can be verified by selecting the HL7 Audit inquiry function.

When the Lanier system generates the transactions coming back to STAR Radiology, verify the information is filed correctly. The Dictation Date and Time and the Read By fields should be filled in from the transactions received from the Lanier Dictation Interface. The transactions received from the Transcription Interface should update the results in the EDE and should be available for the Radiologist Queue. Verify the report can be accessed by the radiologist, accessed in Patient Inquiry and can be printed to the Final Report printer.

The HL7 audit functions should be used to verify the transactions are being received from the Lanier system.

Risks/Exposure

McKesson takes no ownership of the integrity of the data sent from the Lanier systems. Lanier is solely responsible for the integrity of the transcription document information.

The transcribed reports are stored on the STAR Radiology system in an ASCII format. It is possible that they may not appear in the format as found in the transcription system (for example, Microsoft Word).

Any table in STAR that is used by the Lanier system must have corresponding valid values in that system. For example, the Physician master must be kept in sync across the two systems.

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■ Reader Comment Form ■

We value your suggestions for improving our documentation. Please use this form to evaluate the *HL7 Lanier Dictation/Transcription Interface Guide* of the *STAR Radiology Reference Guide* for Release 17.0.

Topic	Poor	Fair	Good	Excellent
Organization of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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