IntelePACS

4.12.1 and later | HL7 Integration Guide

intelerad

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TRADEMARKS

THIRD-PARTY TRADEMARKS

PERFORMANCE CHARACTERISTICS

The main benefits of IntelePACS are the improved image accessibility and associated time savings. There is also some indication that IntelePACS can help data integrity and help reduce operating costs in radiology. There is no significant indication that it affects or improves diagnosis accuracy and image quality. There have been some reports of adverse events associated with IntelePACS and some recalls linked to possible patient safety issues, but no strong case of adverse effects of using IntelePACS technology. IntelePACS technology is a low-risk medical device that has been used successfully and undergone continual refinements.

INTENDED USE

IntelePACS is a software application that receives digital images and data from various sources (such as CT scanners, MR scanners, ultrasound systems, R/F units, computer and direct radiographic devices, secondary capture devices, scanners, imaging gateways, or other imaging sources). Images and data can be communicated, processed, manipulated, enhanced, stored, and displayed within the system and/or across computer networks at distributed locations. Post-processing of the images can be performed using Multi Planar Reconstruction (MPR).

Only preprocessed DICOM for presentation images can be interpreted for primary image diagnosis in mammography. Mammographic images with lossy compression and digitized film screen images must not be reviewed for primary image interpretations

Mammographic images may only be interpreted using a display that is cleared, and that meets technical specifications reviewed and accepted, by your regulatory authorities.

IntelePACS on mobile devices (applicable for IntelePACS 5.1.1 or later only):

For Canada, United States, Europe, Australia, New Zealand, and South Africa only: When used with a mobile device, IntelePACS is suitable for diagnostic image review only on tested devices as specified in your Intelerad product's documentation. IntelePACS is not intended for primary diagnostic image review on mobile devices. Mobile usage for Mammography is for reference and referral only.

For all other countries: IntelePACS is not intended for diagnostic image review on mobile devices. Mobile usage for Mammography is for reference and referral only.

CONTRAINDICATIONS—None.

Caution: Federal law restricts this device to sale by or on the order of a physician.

This system does not replace the education, skill, and judgment of properly trained medical practitioners. Only properly trained and qualified individuals shall have access to and use IntelePACS and must know of its functionality, capabilities and limitations. Typical users of this system are trained health professionals, physicians, nurses, and technologists.

Downloaded Images, Workstations and Isolated Installs: You and your users must maintain IntelePACS with the most current versions, including available updates and upgrades. Delaying or refusing updates or upgrades following a recall may result in a non-compliant IntelePACS.

SAFETY ISSUES: IntelePACS is a medical device, and as such, must meet medical device safety and effectiveness requirements imposed by national regulations. Any unmonitored or unconnected use of IntelePACS, or use of IntelePACS without a valid right may put the health and safety of patients at risk as you will not be advised of the availability of any software patch, bug fix, update or upgrade nor will be informed of Field Safety Notices, Medical Device Recalls or Advisory Notices related to IntelePACS. Client and authorized users must consult national regulatory site(s) to be informed of Field Safety Notices, Medical Device Recalls or Advisory Notices related to IntelePACS. Intelerad does not have access to authorized users systems to implement corrections to prevent (or correct) occurrences of patient safety issues. You are responsible to flow down recall and patient safety information to your users. The user of the medical device must report any serious incident that has occurred in relation to the medical device to the manufacturer (Intelerad) and the competent authority having jurisdiction in their locale.

Referring Physicians Use: Images for authorized referring physicians may not be of diagnosis quality and should not be used for diagnostic purposes.

InteleConnect: Images in InteleConnect are intended for review only and are not appropriate for diagnostic purposes. Please use InteleViewer for diagnostic viewing.

CD Burning and Nuage Patient Portal: Intelerad Clients remain responsible for collecting patient consents and accesses. Images on CD and on Nuage Patient Portal are intended for review only and are not appropriate for diagnostic purposes. Please use InteleViewer for diagnostic viewing.

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DOCUMENT CONVENTIONS

Several conventions are used throughout this document. A list of these and examples of their use are provided below.

Convention	Example
Text that you enter in a field, or on a command line are in `courier font`.	In the Date field, enter `2003/04/04`.
Keyboard commands are in **SMALL CAPS AND BOLD**.	Press **CTRL+C** to copy text.
New terminology or concepts are *italicized*.	The process of automatically distributing the images is referred to as *autorouting*.
Interface elements, such as menus, buttons, options, and preferences are **bold**.	From the **Font** list, choose the desired font.
Menu selections are separated by vertical lines.	Choose **File** | **Print** to print this page.
Information that is important for a user to know when performing a task, such as prerequisite information or restrictions, is represented with a note icon .	To view reports, you must have the Report privilege enabled in your user account.
Information that is helpful to a user, such as when describing an alternate or simpler way to perform a task, is represented with a tip icon .	You can also use the **CTRL+T** keyboard shortcut to show or hide thumbnail images.

Convention	Example
Information that warns users to potential problems in the outcome of what they are doing, such as data loss or data breach, is represented with a warning icon ⚠.	⚠ Image measurements are saved for the current application session only. If you exit the application, all measurements are lost.

1
HL7 INTEGRATION

Many healthcare management systems use the Health Level Seven (HL7) standard to transfer patient information to other systems. This guide describes how to use HL7 to integrate your system with IntelePACS to manage radiological orders, procedures, and reports.

In this guide:

About This Document

This document is intended for the HL7 integrator responsible for interfacing a Healthcare Information System with IntelePACS, using HL7 version 2.3. Such a system will be generically referred to as a HIS/RIS in this document.

The required communication method is TCP/IP.

Conforming to the IHE Technical Framework

Some of the data that your system sends to and receives from IntelePACS must follow extra requirements that the HL7 standard does not specify. IntelePACS expects these extra requirements because it conforms to the Integrating the Healthcare Enterprise (IHE) Technical Framework. This framework encourages interoperability among HL7 systems and Digital Imaging and Communications in Medicine (DICOM) systems.

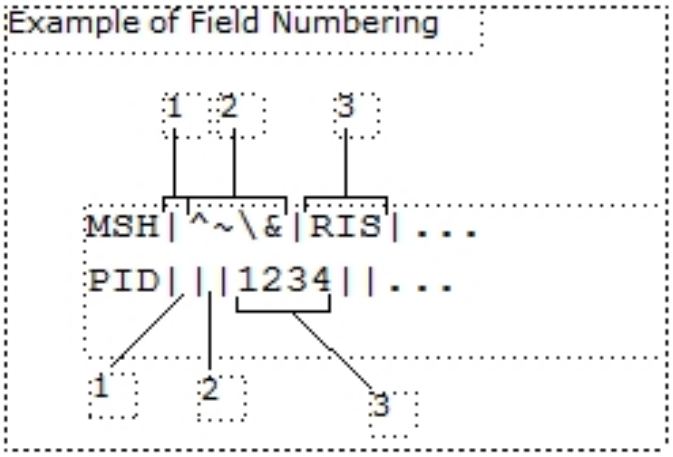
For example, the HL7 standard specifies that field OBR-18 can contain arbitrary data (HL7 2.4, section 4.5.3.18). However, the IHE Technical Framework specifies that this HL7 field must contain the accession number for an order (IHE Technical Framework, vol. II: Transactions, Rev 6.0, Table 4.4-6).

Interpreting HL7 Segments

The numbering scheme for fields in an HL7 message header (MSH) segment can cause confusion when compared with the numbering scheme for fields in other segments:

For MSH segments, field 1 specifies the field separator character. Field 2 specifies encoding characters.

For all other segments, field numbers start at 1.



In the MSH segment, field 1 must be the pipe character (“|”) and field 2 must be the caret, tilde, backslash, and ampersand characters (“^~\&”).

Inbound ADT/Orders/Results (HIS/RIS/IntelePACS)

Receiving HL7 Messages

IntelePACS expects unsolicited orders and results from the RIS/HIS. The following types of messages are accepted:

- Patient Administration (ADT)
- Scheduling Information Unsolicited (SIU)
- Order Entry (ORM)
- Observation Result (ORU)

Accepted Patient Administration (ADT) Events

The following table lists the ADT messages that IntelePACS accepts. When applying updates, IntelePACS uses the Patient Information (PID) segment only and ignores all other segments.

Field	Message	Description
Update Events	ADT^A02	Patient transferred
	ADT^A06	Transfer outpatient to inpatient
	ADT^A07	Transfer inpatient to outpatient
	ADT^A08	Patient updated
	ADT^A09	Patient departing
	ADT^A10	Patient arriving
	ADT^A12	Cancel transfer
	ADT^A17	Bed swap
	ADT^A31	Update patient information
	ADT^A32	Cancel patient arriving
	ADT^A33	Cancel patient departing
Merge Events	ADT^A18	Patient merged
	ADT^A30	Merge person
	ADT^A34	Merge patient information
	ADT^A40	Merge patient, internal ID
	ADT^A45	Move Visit

Outbound ADT/ORM/ORU (IntelePACS to HIS/RIS)

Sending HL7 Messages

Outbound orders are sent as ORM messages, while outbound reports are sent as ORU messages.

The HIS/RIS server must accept connections over a standard TCP/IP port. IntelePACS outbound interface must be configured with the appropriate IP or host name/port number. IntelePACS configuration is flexible, which allows us to modify the outbound messages to conform to many specifications.

Sample ADT Message Segments

Segment	Description
MSH	Message header
PID	Patient identification

Segment	Description
[PV1]	Patient visit
[MRG]	Merge information

Intelerad updates and stores only the patient demographic information provided in the PID segment.

Sample ORM Message Segments

Segment	Description
MSH	Message header
PID	Patient identification
[PV1]	Patient visit
ORC	Common order
OBR	Observation request
{[OBX]}	Observation results
{[NTE]}	Notes and comments

Sample ORU Message Segments

Segment	Description
MSH	Message header
PID	Patient identification
[PV1]	Patient visit
{ORC}	Common order
{OBR}	Observation request
{[OBX]}	Observation results
{[NTE]}	Notes and comments

Segment and Field Descriptions

The following sections outline the various segments that are used in the message, and lists the required (R) and optional (O) fields. Fields marked with an asterisk (*) might be required depending on the IntelePACS workflow.

MSH Segment (required for all message types submitted to IntelePACS)

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
3	180	R	Name of the sending application		Example: BIGRIS
4	180	R	Name of the sending facility		Example: ABC
5	180	R	Name of the receiving application	Can be IntelePACS.	Example: IntelePACS
6	180	R	Name of the receiving facility	Can be Intelerad.	Example: ABC
7	26	R	Timestamp of the message	This field contains the date/time that the sending system created the message. If the time zone is specified, it will be used throughout the message as the default time zone.	[YYYYMMDDhhmmss]
9	15	R	Message type	The message type must be ORM (orders), ORU (results), or ADT.	Example: ORM^001 / ORU^R01
10	20	O	Message control ID	Unique HL7 message identifier.	
11	3	O	Processing ID	P for production or T for test.	Example: P
12	60	O	Version ID (2.x is supported)		Example: 2.3

MSH-1: Field separator

This field contains the separator between the segment ID and the first real field.

MSH-2: Encoding characters

This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. Recommended values are ^~\&, (ASCII 94, 126, 92, and 38, respectively).

PID Segment (required for all message types submitted to IntelePACS)

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
2	20	O	AlternatePatientID	(External ID) Can be used with Master Patient Index, searching by external ID and integrations with regional repositories.	Example: 894 322 1029^^^NHS
3	64 (IntelePACS 4.17.1 or later) 20 (IntelePACS 4.16.1 or earlier)	R	Patient ID/MRN	This field contains the patient's medical record number. IntelePACS only accepts the first field component, PID-3.1, for the patient ID. Only one patient ID may be specified in this component.	
5	64	R	Patient Name	The family name is required. This field cannot repeat. *See the table below for the PID-5 components.	LAST NAME^FIRST NAME^MIDDLE NAME
7	26	R	Patient Date of Birth		[YYYYMMDD]
8	1	R	Patient Sex		M / F /O / NULL
18	20	O	Patient Account Number		

*PID-5 Components

Component
1. Family name
2. Given name
3. Middle initial or name
4. Suffix
5. Prefix
6. Degree

PV1 Segment (optional for all message types submitted to IntelePACS)

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
2	1	O	Patient Class	A single character is ingested in the IntelePACS database. I = inpatient, O = outpatient, E = emergency	I / O / E
3.1	80	O	Assigned Patient Location	All patient location components are visible in the worklist. If desired, configuration can be added to map the data in PV1-3.1 to a long description in the worklist and portal.	Example: 3NW
8	60	O	Referring Physician	IntelePACS uses referring physician information in several ways: • Displays it in the InteleViewer Report Viewer, the InteleBrowser Report Viewer, and the Reporting Worklist Module. • Triggers rules for RIS-driven prefetching. • Grants access to studies through auto-linking. • Automatically sends reports to referring physicians through the Report Distribution Module. If this field is empty, IntelePACS will use Ordering Provider (OBR-16) for the referring physician information. *See the table below for the PV1-8 field components.	
16	2	O	VIP Indicator	Used for the Confidential Order Workflow.	Y / N
19	20	O	Visit Number	Should be suppressed in most cases.	
20	50	O	Patient Insurance Type		Example: Medicare

*PV1-8 Field Components

Field Component	Definition / Details
PV1-8.1	Referring Physician ID A unique ID from your system for the referring physician. This ID must match the RIS ID configured in the IntelePACS user account for this physician.
PV1-8.2 - 8.4	Referring Physician Name *LAST^FIRST^MIDDLE*

ORC Segment (required for all ORM and ORU messages submitted to IntelePACS)

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
2	16	R	Placer Order Number	Can be the accession number. Must match OBR-2. Your system must not re-use the accession numbers of cancelled orders for new orders. Cancelling an order in IntelePACS is not the same as deleting an order. Cancelling only marks the status of the cancelled order with the special value “CA”.	
3	16	R	Filler Order Number	Can be the accession number. Must match OBR-3.	
5	2	R	Order Status	*See the table below for the recognized values for ORC-5.	Example: SC / IP / CM / CA / ZZ
17	60	O	Entering Organization	Entering Organization is a code for uniquely identifying the department or group to which an order or report belongs. IntelePACS uses this information to restrict access to patient information, for differentiating items in the Reporting Worklist Module, and for RIS-driven prefetching.	Example: ABC

*ORC-5 Order Status

ORC 5	Status Description
SC	Scheduled Exam
IP	Patient Arrived
OC	Order Validated
HD	On Hold
CM	Completed Exam
CA	Cancelled Exam
ZA	Dictated
ZD	Transcribed
ZE	Reports Pending
ZY	Preliminary Report
ZZ	Final (report available)
NG	Prior Order

OBR Segment (required for all ORM and ORU messages submitted to IntelePACS)

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
2	16	R	Placer Order Number	Can be the accession number. Your system must not re-use the accession numbers of cancelled orders for new orders. Cancelling an order in IntelePACS is not the same as deleting an order. Cancelling only marks the status of the cancelled order with the special value “CA”.	
3	16	R	Filler Order Number	Can be the accession number.	
4.1	248	O	Procedure or Exam code or DICOM Modality Worklist Name	IntelePACS can use this field for filling DICOM Modality Worklists (DMWL) and for RIS-prefetching. The maximum length for a DMWL name is 16 characters. Your HL7 system may specify more	Example: 42201 or ABCUSWL1

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
				than one DWML specifying them as separate subcomponents. For example: Worklist1&Worklist2&Worklist 3. The total maximum length of OBR-4 is 250 characters.	
4.2	64	R	Study Description	IntelePACS presents the second component of the Universal Service ID (OBR-4) as text to end users for the principal description for the study.The maximum length for this component is 64 characters.	
5	2	O	Priority	Without any changes IntelePACS can display Routine and Stat priority if ST and RO values are sent in this field. However, IntelePACS can accommodate up to 10 priority codes.	ST / RO
6	26	R	Requested Date/Time	This is the time at which the exam is scheduled to begin.	[YYYYMMDDhhmmss]+offset
7	26	R	Observation Date/Time	The time when the exam actually started.	[YYYYMMDDhhmmss]+offset
8	26	R	Observation End Date/Time	The date and time that the technologist completes the imaging. If this field is not supplied by the RIS, the IntelePACS server will use its own current date and time to supply this information.	[YYYYMMDDhhmmss]+offset
13	16K	O	Relevant Clinical Information / Tech notes	IntelePACS appends the contents of this field to the contents of the Reason for Study (OBR-31) field. The InteleViewer Report Viewer and the patient history panel of the To Read tab of the Reporting Worklist Module window present this combined text to the end user. Note that this field has 16K character	

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
				limit and doesn't abide by HL7 spec of 300 characters.	
15.4		O	Specialty or Reading Group	To specify a reading group, set OBR-15.3 to “IMS:HL7GS”, and OBR-15.4 to the required reading group.	Example: MSK
16	60	O	Ordering Provider	Can be the same as PV1-8. When a message does not specify Referring Physician (PV1-8), IntelePACS uses the ordering provider information to specify the referring physician. If a message specifies PV1-8, the IntelePACS ignores the OBR-16 field.	
17	40	O	Order call back phone number		Example: (555) 555-1212
18	16	R	Accession Number	The value sent in DICOM tag [0008,0050].	
19	16	R	Requested Procedure ID	If orders from your system can have multiple procedures, then your system must provide a unique ID for each procedure in the order. If your system only associates one procedure to each order, this field can be set to 1.	1
20	16	R	Scheduled Step ID	Can be set to 1.	1
24	2	R	Modality (will be truncated to 2 characters)	See the table below for the 2-letter DICOM modality codes that a scanner can use when querying IntelePACS for their worklists.	Example: CR / CT / MR / US
25	1	R	Result Status Code	*Required field only for ORU messages **See the table below for the values that Intelerad accepts.	P / F / C
28	150	O	CC Doctors list	CC Doctors list (entries can	ID1^Last^First~ID2^Last2^First2~ID3^Last3^First3

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
				repeat up to 5 times). These users will be granted access to the order and their information displayed to users of the Tech Portal and IV.	
31.2	250	O	Reason for Study (Diagnostic info)	IntelePACS prepends the contents of this field to the beginning of the contents of the Relevant Clinical Information (OBR-13) field. InteleViewer and Reporting Worklist Module present this combined text to the end user.	
32	200	R	Principal Result Interpreter	In workflows where radiologists use your system to dictate reports, your system must provide identifying information about the reporting radiologist and the time of dictation. In workflows that use the Reporting Worklist Module from Intelerad, leave this field blank. ***See the table below for the OBR-32 field components.	
34	200	O	Technician (entries can repeat)	In IntelePACS workflows with the Image Quality Review Module, your system must provide identifying information about the technologist/radiographer and the starting time of the procedure. IntelePACS uses this information to associate technical reviews of images from radiologists with the technologist/radiographer who took the images. ****See the table below for the OBR-34 field components.	Example: `VSMITH&Smitch&Valentine&Michael^20090612140317`
35	200	O	Transcriptionist		

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
44	16	O	Procedure Code	The scanner, typically a CR or DR modality, translates a procedure code to a sequence of mouse clicks, keyboard strokes, or button presses for the scanner's console. These operations would otherwise be performed manually by the technologist/radiographer. IntelePACS passes this code from your system to the scanner via the DICOM Modality Worklist. For more information on the format of this code, see the documentation from the manufacturer of the scanner.	Example: 42201

*OBR-24 Modality Codes

Code	Description
AS	Angioscopy
CR	Computed Radiography
CS	Cystoscopy
CT	Computer Tomography
DM	Digital Microscopy
DR	Digital Radiography
EC	Echocardiography
ES	Endoscopy
FS	Fundoscopy
LP	Laparoscopy
MG	Mammography
MR	Magnetic Resonance
NM	Nuclear Medicine
OT	Other
PT	Positron Emission Tomography
RF	Radio Fluoroscopy
TG	Thermography

Code	Description
US	Ultrasound
XA	X-Ray Angiography

**OBR-25 Accepted Values

Value	Result Status Code
C	Addendum report
F	Final report
P	Preliminary report

***OBR-32 Field Components

Field Component	Definition / Details
OBR-32.1	Radiologist ID A unique ID from your system for the radiologist. This ID must match the RIS ID configured in the IntelePACS user account for this radiologist.
OBR-32.2 - 32.4	Radiologist Name *LAST^FIRST^MIDDLE*
OBR-32.6	Dictation Date/Time *YYYYMMDDhhmm*
OBR-32.11	IP Address The IP address of the workstation on which the radiologist dictated a report for this order. IntelePACS only provides this information for orders that have been marked as dictated using the InteleViewer Reporting Worklist Module.

****OBR-34 Field Components

Field Component	Definition / Details
OBR-34.1.1	ID A unique ID from your system for the technologist/radiographer. This ID must match the RIS ID configured in the IntelePACS user account for this technologist/radiographer.
OBR-34.1.2 - 34.1.4	Name *LAST&FIRST&MIDDLE*
OBR-34.2	Date/Time *YYYYMMDDhhmm*

OBX Segment (required for all ORU messages submitted to IntelePACS)

Intelerad drops the OBX segment from ADT and ORM messages.

Field	Length	Required (R) or Optional (O)	Definition	Notes	Format / Example
5	64K	R	Observation value (the report contents)		Text or HTML
11	1	R	Observation result status	*See the table below for the values that Intelerad accepts	P / F / C
14	26	O	Date and time of the observation		[YYYYMMDDhhmmss]
16	80	O	Responsible Observer (signing physician)		

*OBX-11 Result Status Values

OBX-11	Observation Result Status
C	Addendum report
F	Final report
P	Preliminary report

ZDS Segment (optional for ORM and ORU messages submitted to IntelePACS)

Field	Length	Required (R) or Optional (O)	Definition
1	64	O	Study Instance UID

When your system, typically a RIS, provides the DICOM Modality Worklist (DMWL), your RIS must provide the ZDS segment. Make sure that the study instance UID that your RIS provides to the modality is the same as the study instance UID that it provides to IntelePACS. If this segment is missing, or the study instance UIDs that the modality and IntelePACS receive are not consistent, then the images might not pass validation in IntelePACS.

If your RIS can assign more than one procedure to an order, then your RIS must provide a unique study instance UID for each procedure in an order. If your RIS does not provide a DMWL, this segment is optional.

Below is an example of a ZDS segment:

```
ZDS|1.2.840.113619.2.55.3.1973400610.6285.1193307214.115^^Applic
ation^DICOM
```

If your system does not send an ORM message at scheduling time, your system can instead transmit an SIU message. However, an SIU message does not provide as many fields as an ORM message, which affects the precision and effectiveness for triggering RIS-driven prefetch rules in IntelePACS. The following message shows a sample SIU message coming to IntelePACS from an HL7 system. The fields that can be referred to by prefetching rules are in bold.

```
MSH|^~\&|RIS|BCK|PACS|PACS|20090113162500||SIU^S12||P|2.3
PID|||1234||Smith^Roger^||19700512|M
AIL|||USWL|US|BCR|200910191345
```

AIL Segment (required for all SIU^S12 messages)

Field	Definition	Format / Example
1	Set ID	
2	Segment Action Code	
3	Location Resource ID	machineWorklist
4	Location Type	machineModality
5	Location Group	entering site
6	Start Date/Time	[YYYYMMDDhhmmss]

Acknowledgments

Messages sent from PACS to a RIS should be acknowledged with a simple ACK message with an ACK code. If no answer is received, or a NACK message with an AE/AR code, the message will be resent repeatedly (this part can be configured on IntelePACS end).

IntelePACS will send an HL7 ACK message back to the RIS following each received ADT, ORM or ORU message. The ACK will be formatted as follows:

MSH — Message Header

Sequence	Length	Type	Required (R) or Optional (O)	Name
1	1	ST	R	Field separator
2	4	ST	R	Encoding characters
9	7	ID	R	Message type (ACK)
10	20	ST	R	Message control ID

MSA — Message Acknowledgment

Sequence	Length	Type	Required (R) or Optional (O)	Name
1	2	ID	R	Acknowledgment code
2	20	ST	R	Message control ID (from ORU MSH-10)
3	80	ST		Text message

Acknowledgment Codes

Code	Description
AA	Application Accept: Order has been applied.
AE	Application Error: An error has occurred. The logs contain the error description.
AR	Application Reject: IntelePACS has rejected the message.

If is RIS sending the following message:

```
MSH|^~\&|IntelePACS|BCR|ReceivingApp|ReceivingFacility|201004231
02832||ORM^O01|20100423102832|P|2.3
PID|||1927228||Brown^Roger^||19700203|M
PV1||||||||^Hibroy^M||||||||||G100423102832788
ORC|NW|AS443V7|AS443V7||OC||||||||||||BCR
OBR|||AS443V7|H1970CT1^Abdomen\S\ABD_PEL_
WO||20100423093858|20100423102832|20100423102832|||||||||AS443V
7|1|1||||CT|||||||Fell off balcony.
```

Intelepacs will provide the following ack:

```
MSH|^~\&|||||20100424102832||ACK|00111|P|2.3|
MSH|AA|20100423102832|
```

Sample HL7 Messages

This section provides sample HL7 messages for orders, patient updates, and results.

ADT messages

- Merge message

```
MSH|^~\&|RIS|BEK|INTELEPACS|PACS|200801||ADT^A34|||2.3
PID|||3322
MRG|3344
```

- Patient update message

```
MSH|^~\&|RIS|BEK|INTELEPACS|PACS|200801||ADT^A08|||2.3
PID|||1234||Brown^Roger^||19700512|M
```

- Move visit message

  An A45 event is used to signal a move of records identified by the MRG-5 - Visit Number (can be Accession Number) from the "incorrect source account identifier" identified in the MRG segment (MRG-1 - Prior Patient MRN) to the "correct target account identifier" identified in the PID-3 field.

```
MSH|^~\&|IgnoreWorkflow|Intelerad|Hl7GatewayServer|Intelerad
|||ADT^A45|||2.4
PID|||NEW_MRN||Last^First||DOB|SEX
MRG|OLD_MRN||||VISIT_NUMBER
PV1||||||||||||||||||VISIT_NUMBER
```

ORM messages

- Scheduling message

```
MSH|^~\&|RIS|BCREEK|INTELEPACS|PACS|20080124||ORM^O01|||2.3
PID|||1234||Brown^Roger^||19700203|M
PV1|||||||MHIBROY^Hibroy^M
ORC||885|885||SC
OBR||885|885|MRWL^SPINE||200710191649||||||||||885|1|1||||
CR
```

- Patient Arrived message

```
MSH|^~\&|RIS|BCREEK|INTELEPACS|PACS|20080124||ORM^O01|||2.3
PID|||1234||Brown^Roger^||19700203|M
PV1|||||||MHIBROY^Hibroy^M
ORC||885|885||IP
```

```
OBR||885|885|MRWL^SPINE||200710191649||||||||||||885|1|1||||
CR
```

- Completion message

```
MSH|^~\&|RIS|BCREEK|INTELEPACS|PACS|20080124||ORM^O01|||2.3
PID|||1234||Brown^Roger^||19700203|M
PV1||||||||MHIBROY^Hibroy^M
ORC||885|885||CM
OBR||885|885|MRWL^SPINE||200710191649|200710191649|200710291
649|||||||||885|1|1||||CR
```

- Cancellation message

```
MSH|^~\&|RIS|BCREEK|INTELEPACS|PACS|20080124||ORM^O01|||2.3
PID|||1234||Brown^Roger^||19700203|M
PV1||||||||MHIBROY^Hibroy^M
ORC||885|885||CA
OBR||885|885|MRWL^SPINE||200710191649||||||||||||885|1|1||||
CR
```

ORU Messages

- Final Report

```
MSH|^~\&|RIS|BCREEK|INTELEPACS|PACS|20080124||ORU^R01|||2.3
PID|||1234||Brown^Roger^||19700203|M
PV1||||||||MHIBROY^Hibroy^M
ORC||885|885||ZZ
OBR||885|885|||||||||||||||885|1|1|||||F|||||||48^Doe^John^^
^20090116174405|||52^Lee^Hugh^^^20090117083405
OBX|||||Original report text.||||||F
```

- Addendum Report

```
MSH|^~\&|RIS|BCREEK|INTELEPACS|PACS|20080124||ORU^R01|||2.3
PID|||1234||Brown^Roger^||19700203|M
PV1||||||||MHIBROY^Hibroy^M
ORC||885|885||ZZ
OBR||885|885|||||||||||||||885|1|1|||||C|||||||48^Doe^John^^
^200901161744|||52^Lee^Hugh^^^200901170834
OBX|||||This is an addendum<br>Original report.||||||C
```

2
OBTAINING PRINTED DOCUMENTATION

Intelerad offers printed and bound versions of product documentation free of charge. To request printed copies of Intelerad documentation, contact your Client Success manager. The printed documents will be provided within 7 days or less.

3 CONTACTING INTELERAD TECHNICAL SUPPORT

Your PACS administrator can assist you with any issues you may encounter. If you require additional assistance, you can contact Intelerad Technical Support, 24 hours a day, seven days a week.

To contact us:	Use:
On the Internet	https://serviceportal.intelerad.com/csm
By telephone	Toll-free North America: 1-866-951-6222 Sans frais Amérique du Nord (français): 1 844-467-7227 Toll-free Australia: 1-800-286-418 Toll-free New Zealand: 0800-467-723 United Kingdom: 0113-360-2615 Other: +1-514-931-7127

These coordinates and a wealth of other information are also available on the Intelerad Service Portal.

https://serviceportal.intelerad.com/csm

You should regularly check the Intelerad knowledge base for the latest version of the documentation, as well as other product-specific resources such as TechNotes, downloads, and videos.

When you contact Intelerad Technical Support to report a problem, please have at hand the following information, as applicable:

- client code and location of your IntelePACS installation
- full error message and the steps required to reproduce the problem
- AE Titles of the affected devices
- operating systems of any affected machines
- description of the problem and when it first occurred

If the problem affects a particular study, please also provide the following:

- patient ID or patient number (M.R.N.)
- accession number/requisition number
- modality type and name