Site Readiness QuickStart Guide

PACS Edition

imagination at work

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05-10011 10/05 Printed in USA

Use of this Guide

This Site Readiness QuickStart Guide is intended to provide an overview of key process steps, scheduling, resources, and critical items needed for preparing your site for delivery and installation of your PACS Solution. This Guide is applicable for all GE Healthcare PACS Solution.

You can utilize this Guide with your facilities team, system users, architects, engineers, contractors or others involved in the design and construction of your site. This Guide is written for multiple levels of interest and detail; each section is more detailed as you proceed through the Guide. Some material content is repeated in multiple sections for completeness of information within a section.

The Site Readiness QuickStart Guide contains the following sections (with targeted audiences):

- Overview (Intended for all team members)
  - Overview of the Site Readiness process

- Process Flow (Radiology Director, System Users, Facilities, Site Master DB Contact, HIS/RIS Contact, IT Dept., Modality Lead, Architect, Engineer, Contractor)
  - Map of Site Readiness process steps
  - Example of a typical schedule

- Process Details (Site Master DB Contact, HIS/RIS Contact, IT Dept., Modality Lead, Architect, Engineer, Facilities Department, Contractor(s))
  - Details for process step tasks

- Critical Items (Site Master DB Contact, HIS/RIS Contact, IT Dept., Modality Lead, Architect, Engineer, Facilities Department, Contractor(s))
  - Overview information on key site requirements, unique to a PACS System, and features needed at your site

- Assessment Lists (all team members)
  - List of critical items required prior to delivery

Your GE Healthcare Team is here to help. Your Project Manager is your GE focal point. Please contact your Project Manager with any questions.

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Picture and Archiving Communications System (PACS) QuickStart Guide

Congratulations on the purchase of your new Centricity PACS Solution!

Installation of your new GE Healthcare Picture and Archiving Communications System (PACS) requires that your site is prepared to satisfy the product's unique specifications. Our mutual goal is to prepare a quality site for delivery of your PACS Solution in a timely manner.

GE Healthcare has extensive experience assisting customers in preparing their sites for PACS equipment delivery and installation.

This Guide is intended to give you an overview of the Site Readiness process required for preparing your site for delivery and installation of your PACS Solution and contains the following:

- Site Readiness Process Flow
- Typical Project Schedule
- Support provided by GE Healthcare
- Assessment List of Site Readiness Requirements for Delivery
- Summary of Critical Items

In addition, your site specific plan and design requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM) and Final Data Center Drawings for your PACS Solution.

Please contact your GE Project Manager if you have not yet received a copy of the Pre-Installation Manual (PIM) or you can view and download it electronically via this link:

http://www.gehealthcare.com/company/docs/siteplanning

An electronic version of the Site Readiness QuickStart Guide is also available at the above link.

Your GE Healthcare Team is here to help. Your Project Manager is your GE focal point. Please contact your Project Manager with any questions.

Project Team

This Guide is intended for both experienced and inexperienced customer teams. We recommend this Guide be utilized by your team members, potentially consisting of:

- Senior Management
- Project Manager
- Architect and Engineer Team
- Construction Team
- Information Technology Representative
- HIS/RIS Representative
- Database Build Representative
- Modality Representative
- System Users
- Other personnel affected by the project

Your team's involvement is critical to the success of your project's design, construction, testing and installation process. It is very important to identify your specific team members and start team meetings early in the project in order to develop a quality project plan and an objective schedule.

A well developed and executed plan and project schedule help to minimize the possibility of delays in equipment delivery and installation thereby potentially avoiding:

- Lost revenue (loss of scheduled patient exams)
- Off site storage fees for delivered equipment (at customer expense)
- Cost overruns for construction
- Delays in overall project completion

We have frequently observed that the capabilities of the customers' project team members are critical factors to the overall success of the project. At your request, GE Healthcare can provide a list of architects, designers and contractors in your area that are familiar with medical construction projects. You may contract directly with them or have GE Healthcare provide services for additional fees based on a mutually agreed scope of work.

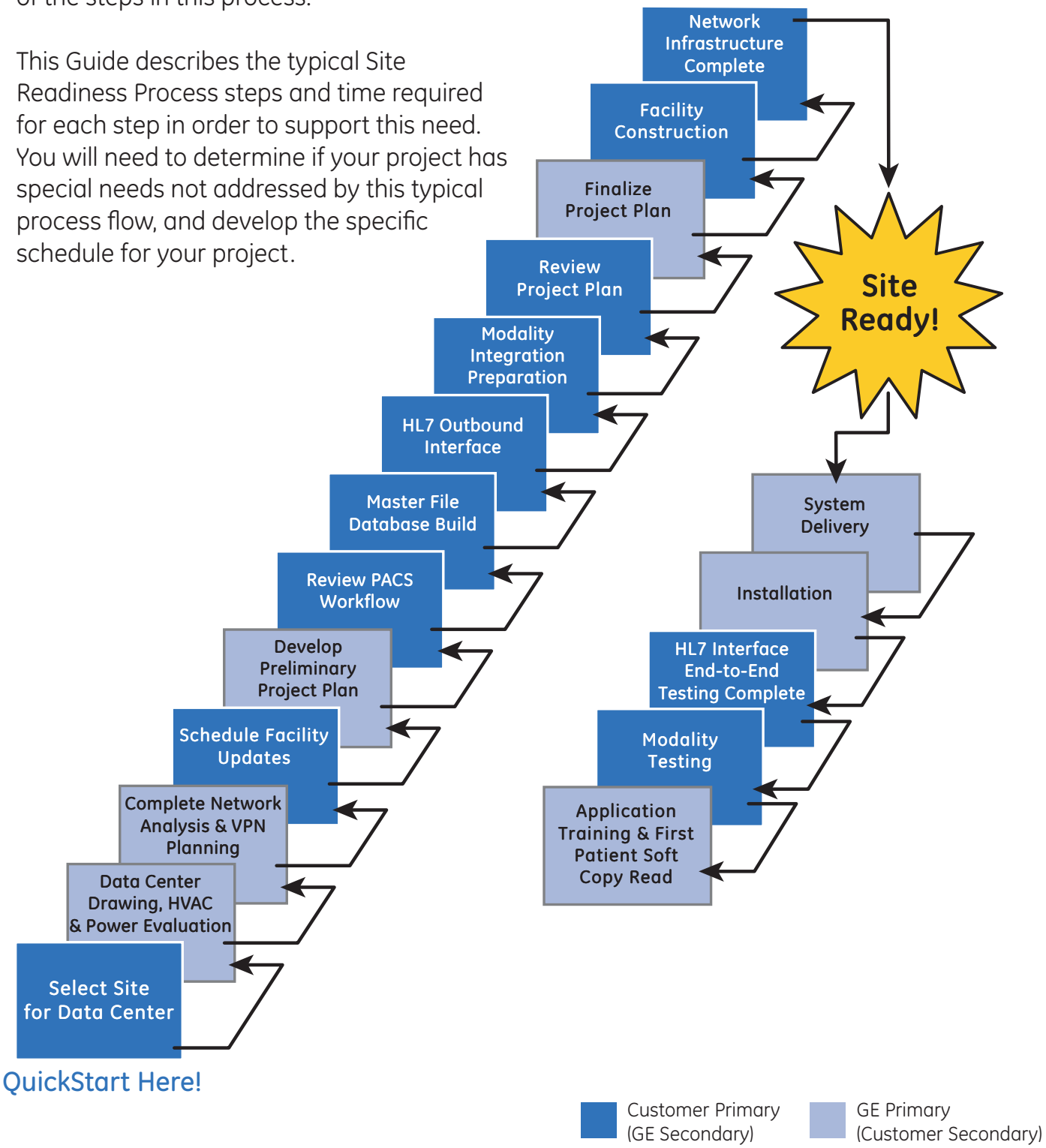
In preparation of your site you may need to contract a 3rd party to complete:

- Construction
- Network Infrastructure
- HIS/RIS Vendor Preparation for Outbound Interface Feed
- Modality Vendor Preparation/Configuration

Process Flow

An understanding of the process steps by team members supports the creation of an objective schedule. In order to do this, ALL team members should have a good understanding of the steps in this process.

This Guide describes the typical Site Readiness Process steps and time required for each step in order to support this need. You will need to determine if your project has special needs not addressed by this typical process flow, and develop the specific schedule for your project.



GE Healthcare Support

Your Project Manager

GE Healthcare provides support through your Project Manager. This support for your Site Readiness process will be provided through the following primary activities:

- Assist in assessing your site for location of your PACS Solution
- Provide data center drawing for your architect and engineer to utilize in the design of your site. An example can be found in the GE Healthcare Pre-Installation Manual (PIM)
- Provide your architect and engineer with support to interpret the specifications
- Provide supporting information to your contractor(s) for schedule development and construction planning
- Provide supporting information to your IT team for network infrastructure requirements
- Provide guidance and answer questions for your team when completing the Master File Data Spreadsheet
- Provide guidance and answer questions for your team when completing the HIS/RIS Outbound Interface
- Provide guidance and answer questions for your team when preparing for the modality integration
- Provide guidance and assistance in confirming schedule for application training
- Assist in monitoring completion of the Site Readiness Assessment for the PACS Equipment
- Assist in the coordination of delivery and installation activities

Your Project Manager is your GE Healthcare Focal Point

GE Healthcare Support (continued)

There are additional ways GE Healthcare can support your Site Readiness effort for an additional fee. GE Healthcare can:

- Provide contacts for Architecture / Design - Build firms with expertise in Data Center Facilities
- Provide Network Support contacts for your site data center and facility network infrastructure design and installation
- Provide Design-Build services to manage your project
- Provide Consulting Service contacts for improving your facility workflow, operational processes and productivity

Key Responsibilities (this is not a comprehensive list of responsibilities)

Customer

- Focus communications among team members
- Review your GE Healthcare PACS Equipment Terms and Conditions of sale
- Complete site specific construction and installation items prior to PACS Solution delivery – Refer to the Assessment Lists
- Ensure your representative is on site for Equipment acceptance at time of delivery
- Ensure your key team members are identified (see Roles and Responsibilities document in Pre-Installation Manual)
- Ensure your Team is prepared and scheduled for Go Live Training

Architect / Engineer

- Develop overall preliminary plan for customer site, and coordinate with GE Healthcare Project Manager
- Develop construction drawings and specifications (if required)
- Coordinate design with the GE Healthcare Pre-Installation Manual and Final Installation Drawings, ensuring all requirements are met
- Comply with applicable code requirements
- Coordinate plan review and approval process for permits
- Communicate with GE Healthcare Project Manager - questions and changes

Facility Contractor

- Develop and communicate construction schedule to entire team
- Obtain construction permits
- Own the construction schedule, ensure delivery dates are met
- Build the site...manage sub-contractors...deliver quality site
- Coordinate / communicate all issues with architect, engineer and GE Healthcare Project Manager
- Arrange for inspections
- Ensure Site Readiness Assessment checklists are complete prior to delivery
- Coordinate Equipment delivery
- Ensure all safety requirements are met and site is secure

Key Responsibilities (continued)

Customer IT Network Coordinator/Contractor

- Focus communications among team members
- Review your GE Healthcare PACS Network Needs with your GE Network Specialist
- Identify Facility Network additions/changes required
- Complete site specific network installation items prior to PACS Solution delivery – Refer to the Assessment Lists
- Ensure your identified IT representative is on site for PACS connectivity review during scheduled System installation

Customer Modality Coordinator/Contractor

- Focus communications among team members
- Coordinate planning and execution with Customer Modality Vendors
- Complete specific modality installation/upgrade items prior to PACS Solution delivery – Refer to the Assessment Lists
- Ensure customer identified modality representative(s) is on site for PACS connectivity review during scheduled modality connectivity process

Customer HIS/RIS Outbound Interface Coordinator/Contractor

- Focus communications among team members
- Coordinate planning and execution with Customer HIS/RIS vendors
- Complete GE standard HL7 Interface configuration prior to PACS Solution delivery – Refer to the Assessment Lists
- Ensure customer identified HIS/RIS representative(s) is on site for PACS HIS/RIS end-to-end testing

Getting Started

GE Healthcare recommends using the Site Readiness QuickStart Guide with your team as you work through the Site Readiness process to 'build a home' for your new GE Healthcare PACS Solution. This Guide is available electronically at the link below *.

Contact your GE Healthcare Project Manager with any questions or needs.

GE Healthcare looks forward to supporting you with an on-time delivery and installation for your new PACS Solution.

Please start the following critical processes: (if you have not already)

Obtain the GE Healthcare Pre-Installation Manual from your GE Project Manager*

– – –

Select the potential location(s) for your new PACS Solution

– – –

Review Current Site for Construction Needs

– – –

Review Current Site for Network Needs

– – –

Review Modality Readiness for PACS Connectivity

– – –

Review HIS/RIS Readiness for PACS Connectivity

– – –

Prepare for Master File Database Build for PACS Connectivity

* Documents are available in print (from your GE Project Manager) or by electronic media at the link below t

Process Flow

This Process Flow section provides you with a high level map of the entire process from site selection to delivery and installation of your PACS Solution.

An understanding of the process steps by team members supports the creation of an objective schedule. In order to do this, ALL team members should have a good understanding of the steps in this process.

This section describes the typical Site Readiness process steps and estimated durations of each step in order to support this need. You will need to determine if your project has special needs not addressed by this typical process flow, and then develop the specific schedule for your project.

The actual duration of your overall schedule will depend on the configuration of your equipment order, availability of your resources and the needs for your site preparation.

Also, your site specific project plan and data center layout requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM) and Order Specific updates supplied by your Project Manager.

Please contact your GE Project Manager if you have not yet received a copy of the GE Healthcare Pre-Installation Manual (PIM) or your Data Center Drawings. You can view and download the PIM electronically via this link:t

http://www.gehealthcare.com/company/docs/siteplanning

An electronic version of this Site Readiness QuickStart Guide and examples of Typical Data Center Drawings are also available at the link above

QuickStart... for a QuickFinish...

Click on the Process item on the chart to view an outline of tasks for each section

QuickStart Here!

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Schedule

A Project Plan is a commonly used tool for developing and tracking project schedules.

Some tasks are dependent and require completion of preceding tasks before they can begin. The Project Plan provided below is a sample schedule.

The duration of each task will depend on the type of project and specific needs for your site.

Your site development team will need to collaborate with GE Healthcare to determine tasks needed and duration of each task in order to create the schedule for your project.

	Task Name	Duration	Predecessors	Resource Names
1	**PACS Installation Sample Project Plan**	**98.29 days**		
2	GE Obtains Purchase Order from Custor	0 days		GE Sales,Customer
3	Order Entry into GE System	5 days	2	GE Order Entry
4	Project Manager Assigned	0 days	2	GE ZIM
5	GE Project Resources Confirmed	10 days	2	GE PM
6	Team KickOff Meeting & Site Survey Scheduled	0.15 days	2FS+10 days	GE PM,GE Sales,GE Consulting,GE Applications,GE Network,Customer Interface Specialist,Customer Project Champion,Customer Master Trainer,GE RIS Integration,Customer IT Support,GE Modality Integration,Customer Lead Rad Tech,Customer SA
7	Customer Determines Site DataCenter	1 day	6	Customer PM
8	Data Center Drawing & HVAC/Power Evaluation Supplied	1 day	6	GE PM
9	Network Analysis Performed	2 days	6	GE Network Design Engineer,Cust
10	Schedule & Perform Facility Updates	21 days	6	Customer PM,Customer IT,Custom
11	GE Manufacturing Prepares PACS Order	10 days	2FS+15 days	GE Manufacturing
12	Data Gathering for PACS Database	16 days	6FS+5 days	Customer Team,GE ZSE,GE PM,GE FE,GE RIS Integrator,GE Applications
13	RIS Interface Review Meeting	1 day	6FS+5 days	Customer RIS Team,GE RIS Integr
14	Sample RIS Messaging Forwarded (Res	1 day	13FS+5 days	Customer PM
15	Data Center Readiness	0 days	6	Customer PM
16	Network Readiness	0 days	6	Customer PM
17	Database Information Submitted	1 day	12	Customer PM
18	Modality Interface Preparation	0 days	6	Customer PM
19	RIS Outbound Interface Readiness	0 days	13	Customer PM
20	PACS Equipment Delivery & Inventory	1.5 days		GE Manufacturing,GE FE,GE PM,Customer PM
21	Core PACS Installation (D Center)	days	20	GE FE
22	Master File Database Loa	days	21	GE FE,GE ZSE
23	RIS Outbound Interface Req	days	21	Customer PM
24	RIS Connectivity Testing			Customer RIS Team,GE RIS Integration
25	RIS End-to-End Testing	5 days	24	Customer RIS Team,GE RIS Integration
26	Live RIS Outbound Interface Connected	0 days	25	Customer PM
27	Modality Integration (actual timing is dependent upon modality quantity)	2.5 days	26	GE Modality Integration,GE FE,Customer Modality
28	Modality Worklist Integration	1 day	27	GE Modality Integration,GE FE,Customer Modality
29	Modalities begin to send images to PAC	0 days	28	GE FE
30	Initial Applications Training for Master Trainers	4 days	29FS+1 day	Customer Master Trainer,GE HQ Trainer
31	Site Availability for soft Copy Reading	0 days	30	GE FE
32	Master Trainers Train Hospital Staff (i.e., technicians)	10 days	30	Customer Master Trainer,Customer Staff
33	On-Site Radiologists Support Applications Training	2.67 days	32FS+2 days	Customer Radiologists,GE Applications,Customer Master
34	PACS System GoLive	0 days	33	Customer Team,GE PM,GE FE,GE Applications
35	Hospital Rollout of PACS Usage on Web to Referring Physicians	0 days	34	Customer Team,Customer Mster Trainer
36	Service Hand-Off	0.8 days	34FS+5 days	Customer PM,GE ZOM,GE ROC Representative,GE PM,Customer
37	Follow Up On-Site Radiologists Application Training	2.67 days	36FS+14 days	Customer Radiologists,GE Applications,Customer Master

This portion of the Process Flow section outlines further task descriptions for each step. Additional details are outlined in the Process Details section.
Note: This is not a comprehensive list of tasks or requirements in the Site Readiness process. You must work with your team to define the specific scope and all tasks for your site.

Click on the section headers below to view process details for each section

Select Site for Data Center

Cycle 1 - 2 weeks

- Perform Site Evaluation specific to your PACS:
  - Data Center Needs
  - Network Assessment
  - Remote Facilities (if applicable - R-SAM, workstations)
  - Perform Broadband (highspeed internet) connectivity assessment
  - HIS/RIS evaluation
  - Confirm Hardware delivery route and responsibility for clear delivery path
- Determine if a New Data Center location is necessary, or renovation is needed to an existing location
- Finalize location for PACS Core System
- GE Healthcare Pre-Installation Manual (PIM) and order specific drawings provide necessary details
- Determine if Certificate of Need (CON) is required

Data Center Drawing HVAC & Power Evaluation

Cycle 3 days

- Evaluate Facility Updates Needed to meet Data Center space, HVAC and power requirements for your PACS Solution
- Example PACS Data Center Drawing, HVAC and Power Requirements can be found in the PIM
- Your GE Project Manager will provide any updates for your specific site configuration

Complete Network Analysis & VPN Planning

Cycle 3 days

- Standard PACS Network Requirements can be found in the PIM
- Your GE Project Manager will schedule a Network Review meeting with your network representative(s) and the GE project Network Design Engineer
- Plan timing for the Broadband Connection installation to GE
- If utilizing a storage area network (SAN) for short-term storage, your GE Project Manager will schedule a meeting to plan and review the SAN configuration

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Schedule Facility Updates

Cycle Varies

- Schedule Facility Updates to be Completed:
  - Data Center
  - Workstation Locations
  - Networking (LAN/WAN)
  - Modality Upgrades (if applicable)
  - HIS/RIS Upgrades (if applicable)
  - Broadband Connectivity

Develop Preliminary Project Plan

Cycle 1 week

- Provide your GE Project Manager Facility Update Schedule
- Provide your GE Project Manager input for timing and key team member participation
- GE Project Manager will develop preliminary written project schedule to establish:
  - Application Training Plan
  - HL7 test/live Testing
  - System Installation/Integration
  - Image Acquisition
  - End to End Testing
  - Softcopy Reading (Go Live)
- Review the PACS Application Information found in the PIM
- Review Dates for Upcoming Master Trainer & Remote Clinical Systems Administrator Sessions
- Order Master Training Kit
- Sample Project Plan can be found in the PIM

Review PACS Workflow

Cycle 2 days

- Customer to document current facility workflow
- GE Project Manager to schedule workflow review with Customer Project Manager
- Customer to document all future workflow changes and track the roll-out progress

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Master File Database Build

Cycle 4 weeks

- Customer to Review Requirements with GE Team (GE HL7 Integrator, GE Field Service, GE Applications)
- Customer to Complete Data Base Build Spreadsheet
- A copy of the Master File Data Base Spreadsheet can be found in the PIM

HL7 Outbound Interface

Cycle 4 - 8 weeks (site dependant)

- Customer to Review Requirements with GE Team (GE HL7 Integrator, GE Field Service)
- Customer to contact HIS/RIS Vendor for participation in Outbound Interface Planning
- Items to review include GE HIS/RIS Outbound Interface Specifications, GE HIS/RIS Workflow Document, GE HIS/RIS Site Survey
- Ensure Broadband connection is available for GE HL7 Integrator
- Customer to ensure HIS/RIS Outbound Interface Feed Preparation is Complete
  - Collect and forward sample messages for GE HL7 Integration review
  - Feed Preparation should be for a Test and/or Live Feed
  - HIS/RIS outbound interface feed testing will occur during the installation process
- The following documents can be found in the PIM
  - GE HIS/RIS Outbound Interface Specifications,
  - GE HIS/RIS Workflow Document
  - GE HIS/RIS Site Survey

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Modality Integration Preparation

Cycle 2 - 10 weeks (site dependant)

- Customer to Identify Modalities to be Connected to PACS
- Confirm the following for each Modality
  - DICOM Store Capable
  - DICOM Query/Retrieve Capable (where applicable)
  - DICOM Worklist Capable
  - DICOM Storage Commit Capable (where applicable)
- Customer to Provide Complete DICOM Connection Listing
  - AE Title for Modality
  - IP Address for Modality
  - Port # for Modality
- GE to supply Modality Risk Assessment based of information supplied by customer
- GE and Customer Project Manager to supply PACS AE Title, IP Address and Port #
- Customer Modality Lead to schedule Modality Updates as needed
- Customer Modality Lead to schedule update of the "Store/QR" send destination and DICOM modality worklist source for each modality connecting to PACS

Review Project Plan

Cycle 1 week

- Review Initial Project Plan provided.
- Update all task dates with expected completion dates
  - Note, Plan will indicate where tasks are dependent upon each other for completion and timing
- Application Training Planning
  - Schedule Session 1 for Master Trainer Remote Clinical System Administrator (CSA) Training
  - Schedule Mater Trainer Training at GE Training Facility
  - Plan Master Trainer Lead Technician/Site Training Dates
  - Schedule Session 2 for Master Trainer Remote CSA Training
  - Schedule GE Lead Radiologists On-Site Go t Live Training Dates
  - Schedule Session 3 for Master Trainer Remote CSA Training
  - Scheduled Follow up GE Lead Radiologists On-Site Training Dates
  - Schedule Remote Web Training
  - Develop Master Trainer Lead Enterprise Training Dates (i.e., referring physicians)

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Review Project Plan (continued)

Cycle 1 week

- Key Tasks for timing review include:
  - Data Center Readiness
  - Facility Update Readiness
  - Application Training Plan
  - SAN Configuration
  - Master File Database Build
  - HL7 Test/Live Outbound Interface Preparation
  - Modality Preparation
  - Network Infrastructure Readiness
  - System Installation/Integration
  - HIS/RIS End-to-End Testing
  - Image Acquisition
  - System End-to-End Testing
  - Softcopy Reading (Go Live)
- Confirm 3rd Party Deliverable Dates
  - Modality Updates
  - Modality Preparation
  - Broadband Interface
  - HIS/RIS Test/Live Outbound Interface
  - Facility Updates
  - Network Infrastructure
  - Data Center Construction
  - Non-Data Center Construction
- Sample Project Plan can be found in the PIM

Finalize Project Plan

Cycle 2 - 14 weeks (site dependant)

- Finalize Deliverable Tasks Dates
- Schedule Preliminary Application Dates
- Confirm any 3rd Party Vendors will have Tasks Complete
  - i.e., Modality Preparation, HIS/RIS Outbound Interface, etc.
- Finalize Project Plan and Confirm Target Go Live Date

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Facility Construction

Cycle 2 - 14 weeks (site dependant)

- Customer Project Manager communicate status updates to GE Project Manager
- GE Healthcare Project Manager support for Q&A
- Data Center Critical Path items monitored and completed
  - Rack Space
  - Broadband Connectivity
  - Network Connections
  - UPS/Power
  - HVAC
- Non-Data Center Critical Path items monitored and completed
  - Radiologist Workstation Workspace
  - Technologist Workstation Workspace
  - Modality Network Connectivity
- Monitor Site Readiness (including remote locations if applicable)
- Conduct required inspections
- Ensure completion date met: focus on Power, Network, UPS, HVAC, & User Workspace
- Confirm customer supplied hardware delivery items
- Hold periodic project team review meetings
- Ensure space available for equipment storage, if applicable

Network Infrastructure Complete

Cycle 2 - 14 weeks (site dependant)

- All network additions/updates identified during the Site Network Review are complete and ready for operation
  - The site network review was the meeting with your network representative(s) and the GE project Network Design Engineer.
- The Site Broadband Connection to GE PACS Solution Hardware
- t• SAN Configured and Connected to Network

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Site Ready!

- Site Readiness Assessment complete
  - See Site Readiness Assessment Lists Section of Guide
- Verification of Readiness completed by GE
- Schedule and finalize PACS Installation Dates
- Confirmation of Mater Trainer training reservations at GE Healthcare Education Center
- Confirmation of On-Site Application training dates

System Delivery

Cycle 1 week

- Scheduled System Arrival Date established by GE and Customer Project Managers
- System Arrival via GE carrier
- Customer Inventory of Equipment
- Equipment placed in pre-determined staging area

Installation

Cycle 1 - 4 weeks (site dependant)

- Place System in Data Center
- Connect to Broadband (highspeed internet)
- HL7 Interface Server installation and testing of test/live outbound HIS/RIS feed
- Mechanical Installation of PACS
- Master File Database Loaded
- Modality Integration
- Workstation Deployment
- Image Acquisition begins

HL7 Interface End-to-End Testing Complete

Cycle 1 - 2 weeks (site dependant)

- Customer to Ensure HL7 (HIS/RIS) test/live Outbound Interface is complete.
- GE Healthcare Project Manager and Customer Project Manager to schedule HIS/RIS Outbound Interface Testing
- Participants to include: GE HIS/RIS Integrator, GE Field Service, Customer HIS/RIS Outbound Interface Contact, Customer's HIS/RIS Vendor, Customer SA, Customer Identified Key HIS/RIS User/Contact
- Corrections identified during initial testing to be completed by customer
- Schedule re-testing of correction items upon their completion
- Customer Project Manager to confirm Master Trainer(s) are enrolled in the RA1000 New User Training course at the GE Healthcare Institute

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Modality Testing

Cycle 1 - 2 weeks

- Customer to ensure Modality Integration Preparation is complete
- GE Healthcare Project Manager and Customer Project Manager to schedule Modality Testing
- Participants to include: GE Field Service, GE Modality Integrator, Customer Modality Contact, & Customer Modality Field Service
- Customer to follow up on any identified action items during initial testing
- Schedule re-testing of correction items upon their completion

Applications Training & First Patient Soft Copy Read

Cycle 1 - 4 weeks

- GE Project Manager to work with Customer Project Manager to schedule GE Applications Specialists for on-site training
- Review Master Trainer kit provided by GE
- Select Radiologists and staff to participate in training
- Ancillary personnel support available to allow Technologist and Radiologist participation
- GE Healthcare Institute classes scheduled for Master Trainer(s)
- Attend Remote CSA Session 1
- Attend Master Training at GE Healthcare Institute
- Attend Remote CSA Session 2
- Schedule Facility Personnel for System Training with Master Trainer(s)
- Upon completion of the Master Training Program at the GE healthcare Institute the expectation is for the Master Trainer(s) to return to an operational system and begin training their staff this can include: technologists, radiologists, nursing staff, clerical staff and referring physicians
- Appropriate patient loads schedules
- PACS Soft Copy Read by Radiologist begins (Go Live)
- Attend Remote CSA Session 3

Customer Primary (GE Secondary)

GE Primary (Customer Secondary)

Site Readiness Assessment

The Assessment checklists at the end of this Guide need to be used by your Customer Project Manager and your GE Healthcare Project Manager to determine if your site is ready for installation of your PACS Equipment. It is your customer project manager's responsibility to maintain the project schedule and communicate any changes.

These checklists are provided to give a summary of PACS specific items for you and your PACS project team. GE Healthcare recommends using the Assessment checklists for guidance in planning your site readiness effort.

You can view and download the latest version of the GE Pre-Installation Manual electronically via this link:

http://www.gehealthcare.com/company/docs/siteplanning

Failure to provide any of the items by the agreed upon date(s) for the PACS Equipment delivery MAY result in:

- The inability to deliver the PACS Equipment on the requested date
- Storage and re-delivery fees for the PACS Equipment (at customer expense)
- Delay in equipment installation
- Rework or re-scheduling of contractors
- Delay in system availability and Go Live

Thank you for your diligence in making sure the assessment items are ready on time. Contact your GE Healthcare Project Manager with questions.

Assessment for Equipment Installation

The following is an Assessment checklist of critical items that must be accomplished prior to the installation of your new GE Healthcare Centricity PACS:

Note: This Assessment is available in checklist form in the 'Assessment Lists' section at the end of the document

- Data Center must be complete for the system hardware and rack placement and must be dust free
- Perform required local inspections, where applicable
- Phone line and phone for GE service personnel communication installed and operational
- Broadband connection for PACS Remote Support installed and operational
- HVAC system installed and operational
- Required power available
- UPS (Uninterruptible Power Supply) installed and operational
- Conduits and raceways for system cables installed where required
- Room construction must be complete with primer paint and must be dust free
- Ceilings and lighting fixtures installed and operational
- Permanent power and lighting for the entire data center is installed and operating (24x7)
- Necessary Network Infrastructure is installed and ready (where applicable)
- Environmental conditions meet specification
- Site must be secure so equipment and personnel will be safe
- Database build complete
- HIS/RIS outbound interface complete and prepared for test/live feed connection
- Modality integration preparation complete

Process Details

The pages of this section contain additional information to explain the process steps outlined in the Process Flow section.

In addition, your site specific plan and design requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM).

Please contact your GE Healthcare Project Manager if you have not yet received a copy of the PIM or you can view and download the PIM electronically via this link:

http://www.gehealthcare.com/company/docs/siteplanning

An electronic version of the Site Readiness QuickStart Guide is also available at the above link.

Note: Color coding of the page header process blocks follows the same as previously shown.

Select Site for Data Center

There are several ways to accommodate your GE Healthcare Centricity PACS installation at your site.

Some examples are the following:

- New Data Center
- Renovation of existing Data Center
- Replacement of Existing PACS

PACS

Existing Data Center

New Data Center

Select Site for Data Center (continued)

The specific site you select influences the complexity, schedule and cost of the project. Your GE Healthcare Project Manager will help you identify the best potential locations for optimal performance.

Some factors and questions to consider:

- Is the PACS to be located at your existing facility, new independent clinic, medical office building, or leased space?
- Will there be an off-site Data Center for Long-Term Archive Redundancy?
- Is the location appropriate for PACS weight, size, power protection, air, and other specific requirements in the Pre-Installation Manual?
- Analyze the workflow of your staff (including proximity to other facility functions)
  - Restricting System Access
  - Daily Backup Process
- Determine if space is available in your existing building to renovate if the equipment will not be placed in an existing data center.
- Are you replacing an existing PACS (in existing room)?
- Will network connectivity equipment be required at independent clinic or other hospital facilities?
- Review power and heating/cooling requirements and determine if your site will require additional work to meet the requirements.
- Confirm hardware delivery route for clear delivery path if equipment from deliver area (dock) to data center and/or workstation storage area.

Data Center Drawing, HVAC & Power Evaluation

Examples of the GE Healthcare Data Center Drawings, HVAC evaluation and Power evaluation can be found in the Pre-Installation Manual (PIM). Your Project Manager will provide an order specific set of the Data Center Drawings, HVAC evaluation and Power evaluation. The information includes all necessary input details to permit your design and construction team to create architectural and construction drawings, and to determine updates that may be needed for your data center.

Some key points to emphasize are:

- The drawings are provided in .pdf and/or Visio format for easy utilization by your design team. Hard copy example drawings can be found in the PIM. Hard copy order specific drawings will be presented during the project kick-off meeting.
- The Data Center Drawings are not construction drawings. Your architect and engineers must create the necessary set of construction drawings and specifications for your site that meet local, state and federal requirements.
- All requirement details in the PIM must be carefully reviewed, understood and implemented by your architect, engineer and contractor.
- Any changes in the design by you or your architect, engineer, contractor, Network Design Engineer or plan review agency require coordination with your GE Healthcare Project Manager. The Data Center Drawings may need to be revised to accommodate agreed design, construction, system options and location changes.

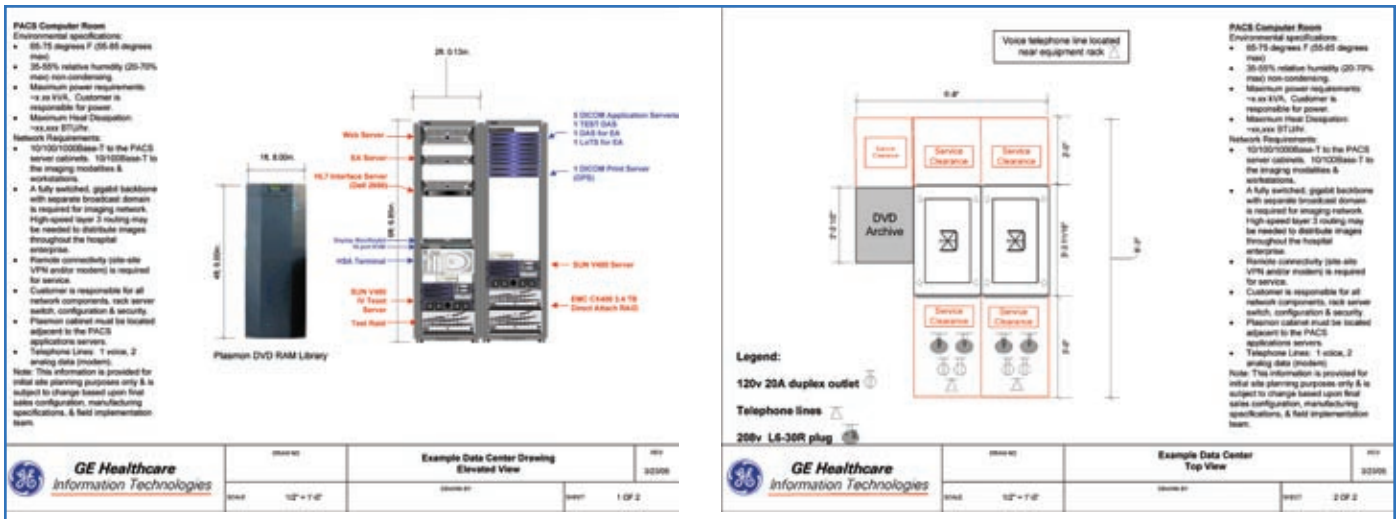
Your GE Healthcare Project Manager will assist you to prepare the Data Center Drawings, customized for your site.

Data Center Drawing, HVAC & Power Evaluation (continued)

It is imperative to enlist a competent architect, engineer contactor, and network design team. Experience in medical facility design, construction and specifically in PACS installations is highly recommended.

A sample data center drawing can be found below and in the GE Pre-Installation Manual (PIM). A site specific data center drawing will be prepared and delivered by your GE Project Manager reflecting your completed order.

Your GE Healthcare Project Manager can assist with contacts for design professionals and contractors skilled in these disciplines through the GE Healthcare's Associates Program.



Sample of GE PACS Data Center Drawing

The GE Healthcare's Data Center drawings are not construction drawings

Data Center Drawing, HVAC & Power Evaluation (continued)

Your PACS has specific power, cooling and HVAC requirements. General specifications are given in the GE Healthcare Pre-Installation Manuals (PIM) for power, Uninterruptible Power Supply (UPS), and HVAC. Your GE Project Manager will provide a site specific set of the power requirements for your order. These services must be available and operational at the time of PACS installation.

Procurement and installation lead time average is 4-6 weeks. Your GE Project Manager can assist with interpretation of requirements and contacts for equipment sources.

Power connections within the data center should consist of the following for each GE supplied Rack:

- PACS EE:
  - Quantity 2: L6-30 Nema Outlets
  - Quantity 2: L5-15 Nema Outlets
- PACS SE:
  - Quantity 4: L6-30 Nema Outlets

Infrastructure considerations include:

- Ensure Data Center Power is running through the UPS
- Determine if your facility will run redundant power from different circuits as a disaster planning measure to the data center equipment cabinet.

Name of Facility		V @ A	No. of Circuits.	Tot. A
Total Computer Room	kVA	18.51	120 @ 20	6	85.1
	BTU/HR	42484.3	208 @ 20	3	16.8
	HVAC	3.54	208 @ 30	2	23.1

KCAT	DESCRIPTION	QTY	Volts [V] Avail	Volts [V] Actual	Amps [A] 120V	Amps [A] 208V	VA @ [F]	VA Totals [F * Qty]	Watts	BTU/hr	BTU Total [BTU * Qty]	HVAC
	Centricity Radiology PACS Application Server	Yes										
	Centricity Radiology PACS Core System Hardware for ISU	Yes										
	Server Accessories	Yes										
	EMC	Yes										
	Centricity Radiology Test ISU - XL Database	Yes										
	Archive Systems	Yes										
	DAS, LoTS, DPS , HSA, Web, ITS, P2P and Mitra Broker	Yes										
	KVM and Serial Hub	Yes										
	Sub Total for UPS needs	27						18505.5			42484.3	
	Total For Computer Room							18505.5			42484.3	

Sample Data Center Power Spec

Complete Network Analysis & VPN Planning

The preparation and completion of the site Network Infrastructure is critical in order to begin the installation process of your PACS.

An assigned GE ITPS Network Design and Implementation (ND&I) Engineer will work with your IT Representative to ensure the following requirements and specifications are met prior to the implementation of the PACS Solution.

The ND&I Engineer is a specialist in PACS networking, acting as the technical interface between elements of the customer IT staff and the GE PACS project staff.

Your GE Project Manager will work with your Project Manager to schedule a Network Review meeting. Participants should include: GE ND&I Engineer and your IT representative(s).

Complete the following to begin planning:

- Review the sample PACS Standard Edition Network Requirements document found in the Pre-Installation Manual (PIM)
- Complete Network Node List, including IP Addresses (copy in PIM)
  - Your GE Project Manager can assist in completing the list of PACS devices
- Plan for Broadband (VPN) connection
- Plan for SAN configuration

Network related items to remember:

- GE Project Manager and/or ND&I Engineer is available for Q&A
- Network infrastructure influences image delivery for viewing
- Inform the GE Project Manager on Network updates/changes relative to the PACS

Project schedule related items to remember:

- Provide critical status updates to GE Project Manager
- Network Infrastructure must be completed prior to system installation/testing
- SAN Configuration must be complete prior to master file database system load
- Ensure completion date within the data center first, and then focus on other areas within your facility (i.e., modalities, emergency department, off-site connection points, etc.)

Contact your GE Project Manager when changes in the Network Infrastructure or project schedule occur.

Schedule Facility Updates

To prepare for the PACS Installation, an evaluation of the facility and each area that will be connected to the PACS will be necessary. The areas for readiness include:

- Data Center
- Workstation Equipment Location(s):
  - Radiologists Reading Rooms
  - Technologists Workstation Placement
  - Off-Site Reading Areas
  - Web Viewing Station Placement
- Network Infrastructure
- Modality Locations

The construction at your site is managed by your design and construction team. Construction related items to remember:

- Review the Site Readiness Assessment checklists to monitor progress
- GE Project Manager is available for Q&A
- Project complexity influences schedule times and risk
- Inform the GE Project Manager on design changes relative to the PACS and associated equipment
- Dedicated HVAC for the Data Center
- Uninterruptible Power Source (UPS) system
- Emergency Backup Power for critical components including data center and critical workstation areas
- Print Destinations
- Recommended room sizes and ceiling heights
- Reading room specific needs
- Clearances for equipment delivery and service
- Staging areas for unloading equipment and workstation configuration
- Access flooring and alternates for interconnect routing, power, network, etc.
- GE equipment cable length
- GE service personnel telephone
- Broadband internet connectivity
- Network connectivity
- Modality connectivity
- Workstation connectivity

Contact your GE Project Manager when changes in the design, floor plan, or project schedule occur.

Schedule Facility Updates (continued)

The construction at your site is managed by your design and construction team.

Project schedule related items to remember:

- Provide critical status updates to GE Project Manager
- Facility Readiness is a critical path item
- The facility updates can be broken into the following areas for tracking:
  - Data Center
  - Workstations
  - Modalities
  - Building Improvements
  - Network Infrastructure
- Governmental Inspections (permits, department of health, etc)
- Ensure completion date, and focus on data center readiness, network infrastructure, workstation placement areas, HIS/RIS Outbound Interface readiness and modality connectivity
- Review and identify the delivery route and method for the PACS Equipment. Verify if a local street access permit (if required) may be obtained for the delivery date(s).

Workstation Considerations:

Each workstation will require access to the PACS network backbone complete at 100 Mbps or 1 Gpbs and a 120 volt (L5-20 Nema Plug) power outlet.

You may also want to consider what emergency power will be available for any workstations you identify as critical for operation.

Additionally, you must determine if you will provide workstation uninterruptible power supply (UPS) units to enable a systematic shut down during a power outage.

Workstations types may include:

- Radiologists Reading
- Technologists
- Clinical
- Web Clients
- RA600 with or without optional print or CD burning component

Contact your GE Project Manager when changes in the facility updates occur

Develop Preliminary Project Plan

Early project planning enables on time project execution.

The earlier you develop the plan, the earlier you can identify when your PACS will be available for production use, as well as, any potential risks to your project and schedule.

In the Pre-Installation Manual, GE has provided a guideline project plan to use as the starting point to develop your site specific plan.

Your GE Project Manager will work with your team to review and develop the full project plan, and continued project tracking.

Develop a preliminary project work scope:

- Get input from your architect, builder, facilities team, and end users (technologist) of the equipment, landlord, etc.
- Review and consider unique elements for the installation of your new PACS detailed in the GE Healthcare Pre-Installation Manual (PIM).
- The standard cycles and dates for the major project work scope elements and events should be considered when developing your preliminary project schedule. The standard cycle times can be obtained from your supplier i.e., Network, Power, HVAC, etc.

Much of the Project Plan will be determined by the tasks identified during your Site Evaluation to meet the required Site Readiness. It is critical to Provide to your GE Project Manager:

- The schedule and status of this readiness
- The timing of key member participation

This will enable the GE Project Manager to develop a Preliminary Project Plan for your PACS Implementation.

Review PACS Workflow

The implementation of a PACS Solution will impact several areas of the facility. The day to day workflow processes that the departments currently maintain will need to be reviewed and in many cases altered to accommodate the new PACS Solution.

If you have selected to purchase assistance from GE Healthcare Performance Solution Team, they will assist your facility in planning for the change management of a new PACS Solution. If you have not selected to purchase PACS change management assistance from the Performance Solution Team, you will need to document and plan for the PACS impact on your facility processes prior to your system GoLive date.

Complete the following to begin planning:

- Review the current workflow and processes for each department that will be impacted by the new PACS Solution.
- Departments typically impacted may include:
  - Radiology
  - ER
  - Operating Rooms
  - Referring Physicians
  - Facility supported Imaging Centers
- Review each area as to how they work today, and review how PACS will change the way the departments will work and communicate in the future.
- Your GE Project Manager will be available to assist in gaining answers and providing a general PACS workflow overview.

Project schedule related items to remember:

- Plan how you will roll-out your new system:
  - Technical Go Live
  - System available for technologists access and training
    - Experience is gathered in image acquisition, verification and unspecified exam process.
  - Determine if all of the modalities will GoLive at one time, or will the modalities Go Live be phased in?
  - Soft Copy Go Live
  - Radiologists are trained and begin to soft copy read exams from the PACS Solution
  - Enterprise Go Live
  - Referring physicians and additional departments outside of radiology are trained for PACS access. For example, Web reading.

Contact your GE Project Manager for assistance in reviewing PACS Workflow

Master File Database Build

The preparation and completion of the Master File Database is critical in order to enable full features of your PACS.

The Master File Database (DB) will build from the HIS/RIS HL7 Interface Specification:

Complete the following to begin planning:

- Review the Master File Database information supplied in the Pre-Installation Manual (PIM).
- Review Database Build Process with HIS/RIS Integrator, Field Service Engineer and Applications Specialist
- Your GE Project Manager will schedule this review meeting with the Customer Project Manager
- Complete Master File DB Worksheet (copy in PIM)
- Schedule Master File DB review with Field Service Engineer

Your Field Service Engineer and GE Project Manager are available for questions.

Master File DB related items to remember:

- Body Parts will relate to default display protocols (DDPs)
- GE Project Manager, Field Service Engineer or GE HIS/RIS Integrator is available for Q&A
- Master File DB complexity influences schedule times
- Inform the GE Project Manager on Master File DB updates/changes relative to the PACS

Project schedule related items to remember:

- Provide critical status updates to GE Project Manager
- Master File DB must be completed prior to system installation/testing
- Ensure completion date, and focus on Master File DB Worksheet completion for PACS

Contact your GE Project Manager when changes in the Master File Database Build or project schedule occur

HL7 Outbound Interface

The preparation and completion of the HIS/RIS Outbound Interface is critical in order to enable worklist and ensure connectivity between your HIS/RIS system and the PACS.

Complete the following to begin planning:

- Review and Complete the HIS/RIS Site Survey
- Review and Coordinate HL7 PACS Specification document with your HIS/RIS Vendor/Developer
- Provide sample messages to GE HIS/RIS Integrator (ADT, ORM, ORU)
- Complete HL7 Interface Worksheet
- Review HIS/RIS Workflow document
- When PACS HL7 Interface Specifications are complete for the HIS/RIS schedule to turn on HIS/RIS Outbound Interface Feed
- Schedule HIS/RIS Testing with GE HIS/RIS Integrator

HIS/RIS Interface related items to remember:

- HIS/RIS HL7 Interface Specifications must be met
- GE Project Manager and/or GE HIS/RIS Integrator is available for Q&A
- HIS/RIS interface update quantity and complexity influences schedule times
- HIS/RIS Testing cannot begin until the HIS/RIS Outbound Interface is live, and the Master file database has been loaded into the PACS Test/Production system
- The preparation of the feed to be ready is a critical deliverable
- Inform the GE Project Manager on HIS/RIS Interface updates/changes relative to the PACS Solution

Project schedule related items to remember:

- Confirm how Worklists will be delivered and utilized
- Provide critical status updates to GE Project Manager
- HIS/RIS Outbound Feed preparation with required HL7 Integration Specifications completion is critical
- Ensure completion date, and focus on HL7 Integration Specifications and HIS/RIS Outbound Interface connectivity to PACS

Contact your GE Project Manager when changes in the HL7 Interface, HIS/RIS Outbound feed preparation or project schedule occur

Modality Integration Preparation

The preparation of each modality that will send to PACS is critical in order to ensure exam information is properly forwarded, and displayed.

Complete the following to begin planning:

- Complete Modality Assessment Sheet and forward to GE Project Manager
- Review Modality Integration Checklist (found in the PIM)
- Identify DICOM Features for each modality:
  - DICOM Store
  - DICOM Query/Retrieve
  - DICOM Print
  - DICOM Worklist
- Review each modality DICOM compliance statement and ensure that the Service Object Pair (SOP) Instance and Image Object Definitions (IOD) are supported (note, contacting your modality vendor to review this is recommended)
- GE will provide a Modality Risk Assessment based on the Modality Connection Listing provided by customer
- Identify updates/upgrades needed for each modality
- Have the PACS destinations added to each modality

Modality related items to remember:

- Schedule Modality updates with each modality vendor service engineer
- GE Project Manager is available for Q&A
- Modality update quantity and complexity influences schedule times and risk
- Inform the GE Project Manager on modality updates/changes relative to the PACS

Project schedule related items to remember:

- Provide critical status updates to GE Project Manager
- Modality DICOM Readiness and Query/Retrieve configuration are critical path items
- Ensure completion date, and focus on modality connectivity to PACS
- Ensure that Modalities will be made available for integration on date integration scheduled

Contact your GE Project Manager when changes in the modality connections or project schedule occur

Review Project Plan

The review of the preliminary project will be a coordinated effort with your GE Project Manager.

The project plan review will consist of updating the key site preparation milestones. Site readiness is a key milestone to ensure that the installation and planned Go Live can progress.

Key Site Readiness Milestones consist of:

- Data Center Readiness
- Workstation Readiness
- Network Infrastructure Readiness
- Master File Database Readiness
- HIS/RIS Integration Readiness
- Modality Integration Readiness
- System Installation Readiness

A checklist for each of the key Site Readiness milestone areas can be found in the Assessment Lists found at the back of this Guide.

Your GE Project Manager will work with your team to review and develop the full project plan, and to provide continued project tracking.

The project progress will be tracked and reviewed weekly during the course of the project implementation.

Finalize Project Plan

Following the review of the Preliminary Project Plan, a Final Project Plan will be developed.

The final project plan will reflect site readiness milestones, preliminary scheduling for applications, a target Go Live date, and post Go Live activities.

Contact your GE Project Manager when changes in the project plan schedule occur

Facility Construction

Once you obtain the permits, you are ready to begin construction. Early planning, agreement and commitment by all your project participants will help focus on the on-time delivery.

The pre-construction review meeting, at the project location, is a critical step to getting the entire team focused. This meeting is a team collaboration and should include your representative, facilities or landlord representative, the design team, the contractor's project manager and superintendent and your GE Healthcare Project Manager.

We recommend including the following in your review meeting:

- Review the Site Readiness Assessment Checklists to be completed for installation of the PACS Solution (found in the Assessment Lists section of this Guide)
- Finalize the construction schedule. Recommend: Focus on completion of the Data Center, Network Infrastructure, RIS Outbound Interface Readiness, Modality Connection Preparation and Workstation Areas in order to meet installation dates
- Set delivery dates for the PACS Solution
- Review the scope of the project and it's impact on cycle times
- Highlight critical path events / long lead items (e.g., HVAC equipment, Network Requirements, permanent power for the PACS, lighting, access floor, electrical ductwork)
- Identify roles and responsibilities for the shop drawings and submittals review process, in order to avoid schedule delays. (e.g. HVAC equipment, UPS Equipment, Network Requirements)
- Review the GE Data Center Drawings in detail with all sub-contractors to check for any issues (e.g., delivery requirements, corridor widths, etc)t

Contact your GE Project Manager when changes in the facility construction schedule occur

Facility Construction (continued)

Review meeting outline (cont):

- Review and identify the delivery route and method for the PACS. Verify if a local street access permit (if required) may be obtained for the delivery date(s).

The contractor is responsible for the schedule and adherence to it. Use this meeting to make sure all project participants commit to the current project schedule. If the parties cannot reach consensus during this meeting, schedule a timely follow-up meeting, to ensure an on-time delivery.

Publish the final written construction project schedule, and distribute it to all members of the project team, including the GE Project Manager. The project schedule determines the resource allocation timing, at GE, for your new PACS.

The customer project leader should plan and hold regular project team meetings to review project progress and issues. This is a key element to ensuring success of the project.

If there are any questions, please contact your GE Healthcare Project Manager.

Network Infrastructure Complete

The preparation and completion of the site Network Infrastructure is critical in order to begin the installation process of your PACS Solution.

Upon completion of the reviewed Network Infrastructure requirements, a review will be schedule with your GE ITPS Network Design and Implementation (ND&I) Engineer and your IT Representative.

To assist in ensuring your site is ready, please review the Site Readiness Assessment for Network Infrastructure in the Assessment Lists section of this Guide.

Your GE Project Manager will work with your Project Manager to schedule a Network Review meeting. Participants should include: GE ND&I engineer and the Customer IT representative(s).

Network related items to remember:

- GE Project Manager and/or ND&I Engineer is available for Q&A
- Inform the GE Project Manager on Network updates/changes relative to the PACS project

Contact your GE Project Manager when changes in the Network Infrastructure or project schedule occur

Site Ready

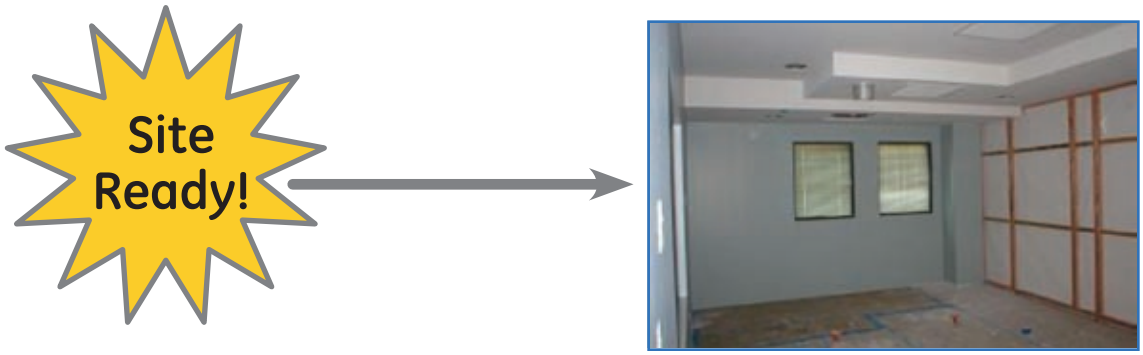
Site Readiness is critical to the efficient, on time and successful installation of your Centricity PACS. Site Readiness for the PACS installation is coordinated between you, your contractor(s) and your GE Project Manager. Use the Site Readiness Assessment Checklists, located in the Assessment Lists section of this Guide, to monitor Site Readiness.

You and your contractor(s) need to confirm with your GE Project Manager the Site Readiness schedule and provide weekly status updates.

The Site Readiness milestone will allow for dates to be confirmed for the Mechanical Installation processes. This is critical to ensure successful, on time completion of your system implementation. Also at this time your GE Project Manager will confirm your application training reservations.

GE Healthcare needs the following information from you:

- Agreement on final PACS Solutiont installation dates
- Completed Site Readiness Assessments
- Master Trainer(s) identified
- Adherence to the scheduled delivery dates; focus on Network Infrastructure, HIS/RIS Outbound Interface, HIS/RIS end-to-end testing, Modality Integration Preparation and Planning, Master File DB Build and Site Construction Requirements



If there are any questions, please contact your GE Healthcare Project Manager.

System Delivery

The delivery includes all of the PACS equipment for the Data Center and Workstation Areas and typically occurs in one shipment. The delivery is coordinated between you and your GE Project Manager. The delivery of equipment is not dependant on Site Readiness for Installation. In the event that equipment is shipped prior to Site Readiness for Installation, accommodations for safe and secure storage will need to be made.

You will need to confirm with your GE Project Manager your readiness of your site for delivery no later than 2 weeks prior to your PACS requested delivery date. The GE Healthcare manufacturing department requires this confirmation to coordinate the manufacturing integration and shipment of the System.

The primary data center equipment may ship to the site with all hardware racked and cabled. If this shipment preparation is available for your site, one single shock mount pallet which weighs approximately 700lbs will be shipped for each rack. This availability is dependent upon your site delivery path for hardware, and planning of a pre-racked shipment.

Additional data center equipment such as mass storage devices typically ship on vendor designed custom manufactured pallets, and will be dependant on model purchased. Workstations and additional peripherals will ship in Original Equipment Manufacturer (OEM) boxes stacked on standard pallets. Pallet count will be dependant on quantity of items purchased.

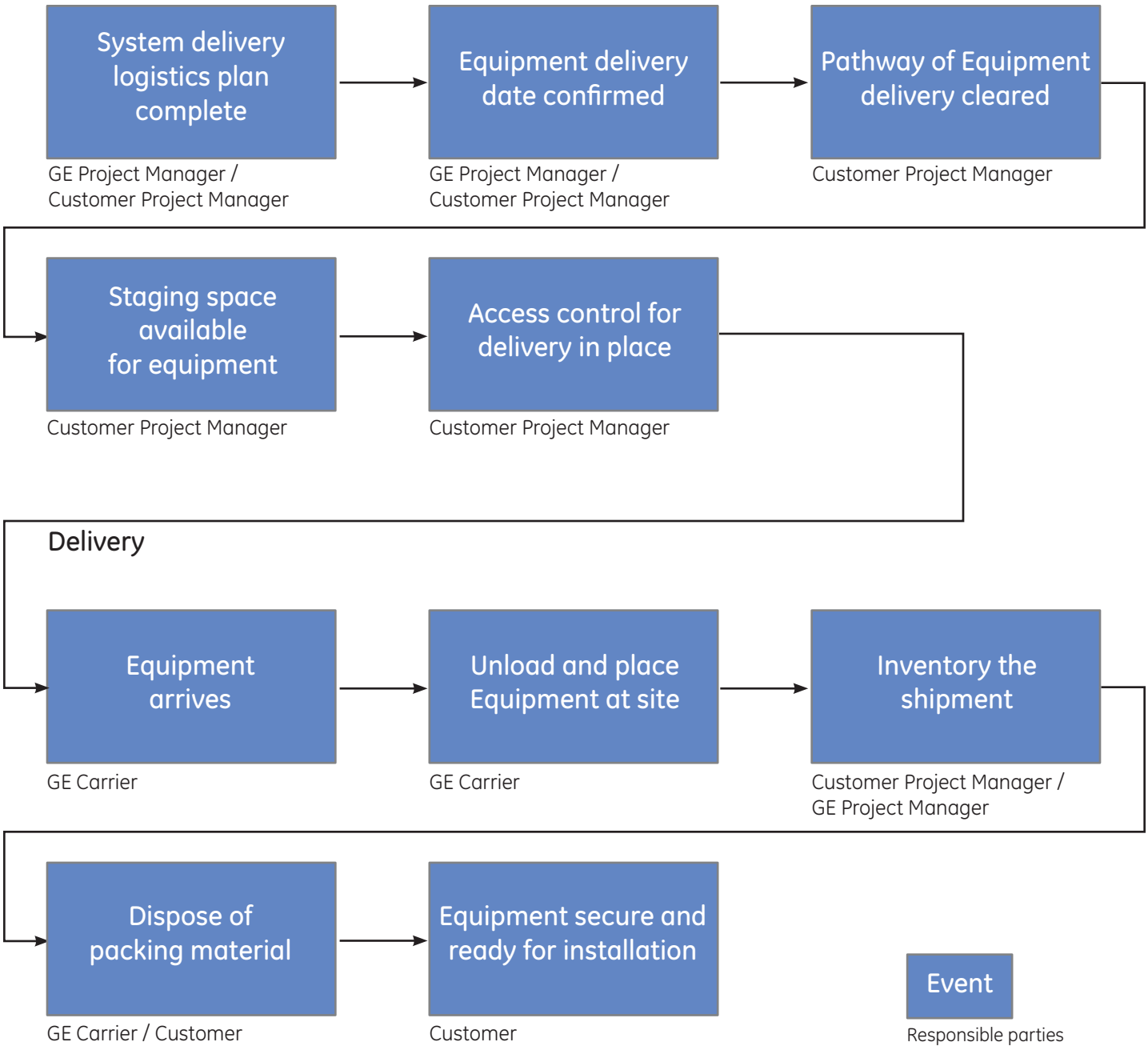
Other System Delivery consideration include:

- Scheduling GE Healthcare's early delivery items
- Scheduling specific day of equipment arrival
- Clearing of delivery pathways
- Identifying space for staging the delivered equipment
- Receipt and sign-off of shipment
- Obtain any required delivery permits or street use permits if applicable
- Inventory of delivery
- Trash removal if necessary

Contact your GE Project Manager when changes in the system delivery occur

System Delivery (continued)

Below is the flow of events prior to and during **System** delivery.



If there are any questions, please contact your GE Healthcare Project Manager.

Installation

Once the PACS Solution has arrived at your site and Site Readiness has been established, a team of GE Installers will arrive to install and connect the System components. A GE Field Engineer is assigned to install, configure and test your PACS to GE specifications.

As defined by your Site Readiness, your Broadband service needs to be operational during this phase of your installation. This enables remote installation support from other GE Team Members and will remain as the diagnostic support connected to the GE Remote Operations Center (ROC).

Installation Key Tasks include:

- Place System in Data Center
- Connect to Broadband (highspeed internet)
- Short-Term Storage available (i.e., SAN)
- HL7 Interface Server installed and testing of test/live outbound HIS/RIS feed
- Mechanical Installation of PACS
- Master File DB Loaded
- Modality Integration
- Workstation Deployment
- Image Acquisition begins

Schedule any applicable acceptance testing by your team to immediately follow the Modality Integration and system testing phase. If you plan to perform in-house testing of the System, please coordinate with your GE Project Manager to schedule applications training after you have completed the in-house testing phase.

If there are any questions, please contact your GE Healthcare Project Manager.

HL7 Interface End-to-End Testing Complete

In order for the testing to be a success you will need to plan for the following participation from your team: HIS/RIS Interface coordinator/developer, HIS/RIS order entry person, and a HIS/RIS site employee that will understand the workflow and expected results.

Your GE Project Manager will coordinate the RIS End-to-End testing with your Project Manager during the installation process.

Having patient demographics, order, and results information exchanged between the HIS/RIS and the GE PACS is important to ensure your site can work as efficiently and effectively as possible.

The interface between the HIS/RIS and the GE PACS will be implemented using an HL7 Interface Server. Once the HIS/RIS to PACS interface has been integrated on the PACS HL7 Interface Server, RIS End-to-End testing of this interface is required to ensure proper functional operation.

If your HIS/RIS vendor can supply a test HIS/RIS Outbound Interface Feed, this feed can be turned on and utilized for the testing phase. It is very advantageous to have a duplicate test phase during the coordination, configuration and RIS End-to-End testing of the HL7 Interface server.

Documentation from the HIS/RIS End-to-End testing will be used as a basis for customer acceptance of the HL7 Interface Server integration and the turn over of the HIS/RIS to PACS interfaces for additional installation, testing and acceptance of the entire PACS Solution.

You will find a sample HIS/RIS Test Plan in the GE Pre-Installation Manual (PIM).

In order for the testing to be a success you will need to plan for the following participation from your team: HIS/RIS Interface coordinator/developer, HIS/RIS order entry person, HIS/RIS Vendor, and a HIS/RIS site employee that will understand the workflow and expected results.

Your HIS/RIS Vendor should be scheduled for availability during end-to-end testing to supply any required support for changes to the HIS/RIS outbound interface that are discovered.

Your GE Project Manager will coordinate the HIS/RIS End-to-End testing with the Customer Project Manager during the installation process.

Customer Project Manager to confirm Master Trainer(s) are enrolled at the GE Healthcare Institute for RA1000 New User Training.

If there are any questions, please contact your GE Healthcare Project Manager.

Modality Testing

Upon completion of the HIS/RIS End-to-End testing the Modality Interface Testing will be scheduled and performed.

The purpose of the Modality Interface Testing is to ensure the following:

- The modalities can connect to the GE PACS and send DICOM formatted images to PACS without errors
- These images can be displayed on GE PACS free of major anomalies that prevent a recognizable image
- The studies sent to GE PACS profile correctly
- Where applicable, test DICOM modality worklists
- Where applicable, test Query/Retrieve of exam from GE PACS
- Confirm that studies can be archived

You will find a sample Modality Test Plan in the GE Pre-Installation Manual (PIM).

In order for the testing to be a success you will need to plan for the following participation from your team: Modality Interface coordinator and Modality Vendor Field Service Support.

Confirmation of the planned schedule for the configuration of the modality for the connection to PACS will be performed during the RIS End-to-End portion of the project.

In order for testing to be successful you will need to plan for your modality vendors to have personnel available and on-site during the modality integration testing.

Your GE Project Manager will coordinate the Modality Interface Testing with the Customer Project Manager.

If there are any questions, please contact your GE Healthcare Project Manager.

Application Training & First Patient Soft Copy Read

GE Healthcare Applications training offerings enable you to optimize your GE equipment at its highest performance.

Your GE Project Manager will coordinate the scheduling of your training with the GE Healthcare Applications team.

Multiple Training Choices are designed in the program and can be obtained from your GE Sales Person.

The training approach is a "Train the Trainer" Method. You will need to identify who your Master Trainer(s) will be. The "Master Trainer" will be responsible to train hospital personnel within their department and act as a point of contact to answer daily application question within the hospital.

Upon completion of the Master Trainer program at the GE Healthcare Institute the expectation is for the Master Trainer(s) to return to an operational system and begin training their staff which can include: technologists, radiologists, nursing staff, clerical staff and referring physicians.

Customers who plan and allow for the recommended time to train technologist, radiologists, and referring physicians have the highest satisfaction and efficiency in the use of their new system. Your teams' level of engagement and dedication to the training process plays an important role in the successful implementation of your new system.

If there are any questions, please contact your GE Healthcare Project Manager.

Application Training & First Patient Soft Copy Read (continued)

A typical site training plan will include the following options:

- Two identified Master Trainers attend GE New PACS User training at the GE Education facility in Waukesha, Wisconsin

- PACS Clinical System Administrator training available for your team members needing access to advanced system administrative responsibilities. This may include your PACS System Administrator, RIS System Administrator, Master Trainer(s) and Lead Technologists.
  - This training is divided into three remote sessions:

    1. Scheduled Prior to Attending Master Training at GE Education Facility in Waukesha, WI
    2. Scheduled Prior to Site Go Live
    3. Scheduled Post Site Go Live

- Four days of On-Site Radiologist Go Live application support
  - 1 day = 8 hours (Monday – Friday 9:00 a.m. – 5:00 p.m.)

- Four days of On-Site Radiologist and Master Trainer(s) Post Go Live application system review

- Web Training remote session typically for the PACS System Administrator and Master Trainers

All of our PACS Application offerings provide Continuing Education (CE) credits to your staff for completion of designed program. These offerings will optimize workflow and improve productivity.

Upon completion of the On-Site Radiologist Go Live application support a typical site will begin First Patient Soft Copy Read.

If there are any questions, please contact your GE Healthcare Project Manager.

Summaries of Critical Items

This section contains Summaries of Critical Items to optimize the installation of your new PACS.

These are provided to give a high level summary of PACS specific items to you and your design and construction teams.

Your site specific plan and design also requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM) and Final Data Center Drawings for your PACS.

Please contact your GE Healthcare Project Manager if you have not yet received a copy of the Pre-Installation Manual (PIM) or you can view and download the PIM electronically via this link:

http://www.gehealthcare.com/company/docs/siteplanning

Broadband and Network Connectivity

"GE Healthcare Remote Services Broadband"
EQUALS
A Secure Virtual Private Network (VPN)
Over Your Highspeed Internet Connection

Broadband Highlights

- High productivity, decreased costly downtime
- Proactively addresses security
  - Customer controlled and auditable
  - Secure encrypted transactions
- Improved speed and reliability vs. modem
- Single Point Access – reduce telecom costs
- All IP-based products are compatible
- Virtual applications assistance and training
- Remote installation support
- Remote diagnosis
- Monitoring by the Remote Operations Center (ROC)

Your GE Healthcare Project Manager can start you on the path to Broadband. You will need to provide the name of your facility Information Technology contact person to your GE Project Manager. This will initiate the GE Healthcare Headquarters process to assist you in getting ready for Broadband connectivity at the time of System delivery.

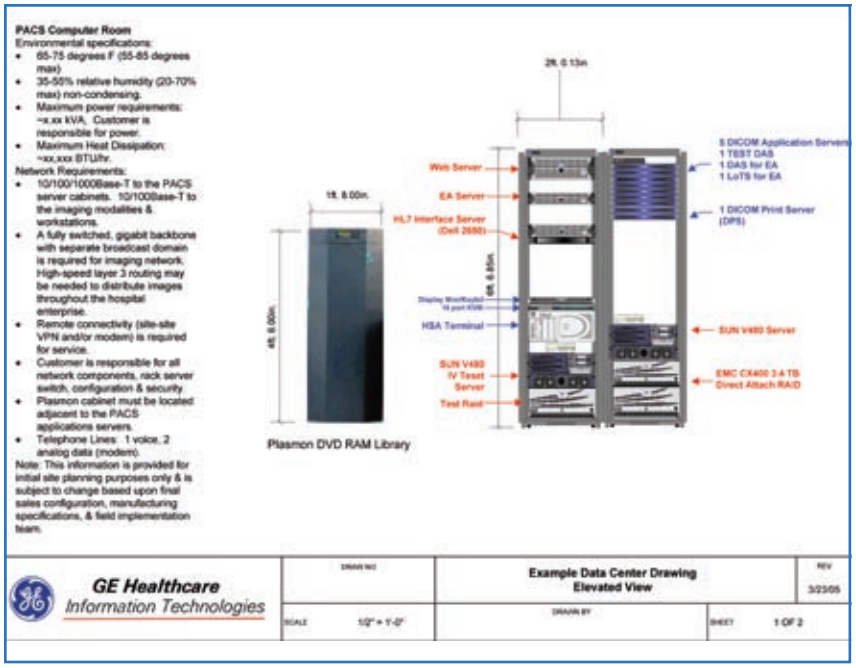
If your facility is not Broadband ready

- GE Healthcare can provide service for a fee to set-up and connect

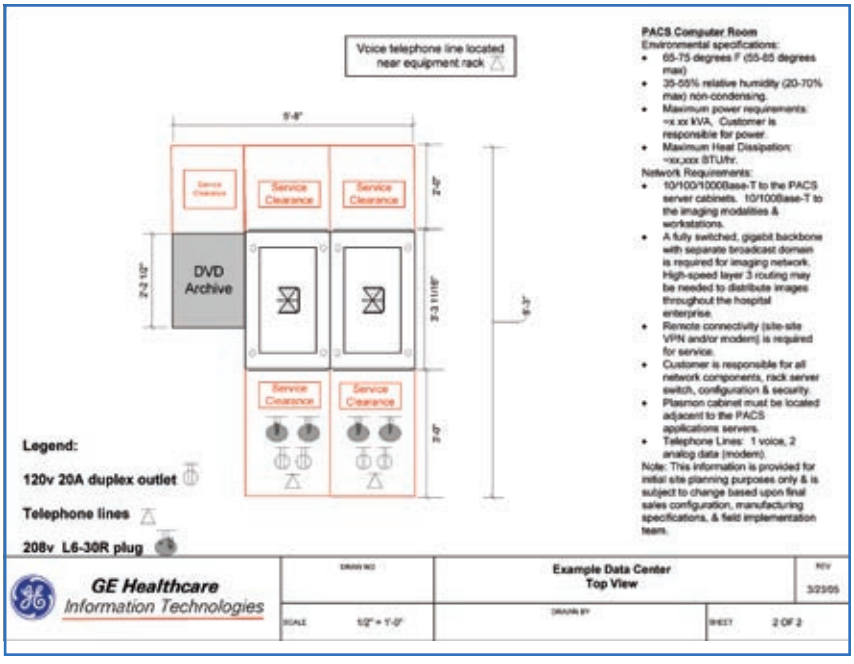
Data Center

Centricity PACS requires a completed and connected Data Center.

Refer to the GE Healthcare Pre-Installation Manual for requirements on power criteria, connection details and materials for the PACS Data Center.



Sample PACS Data Center



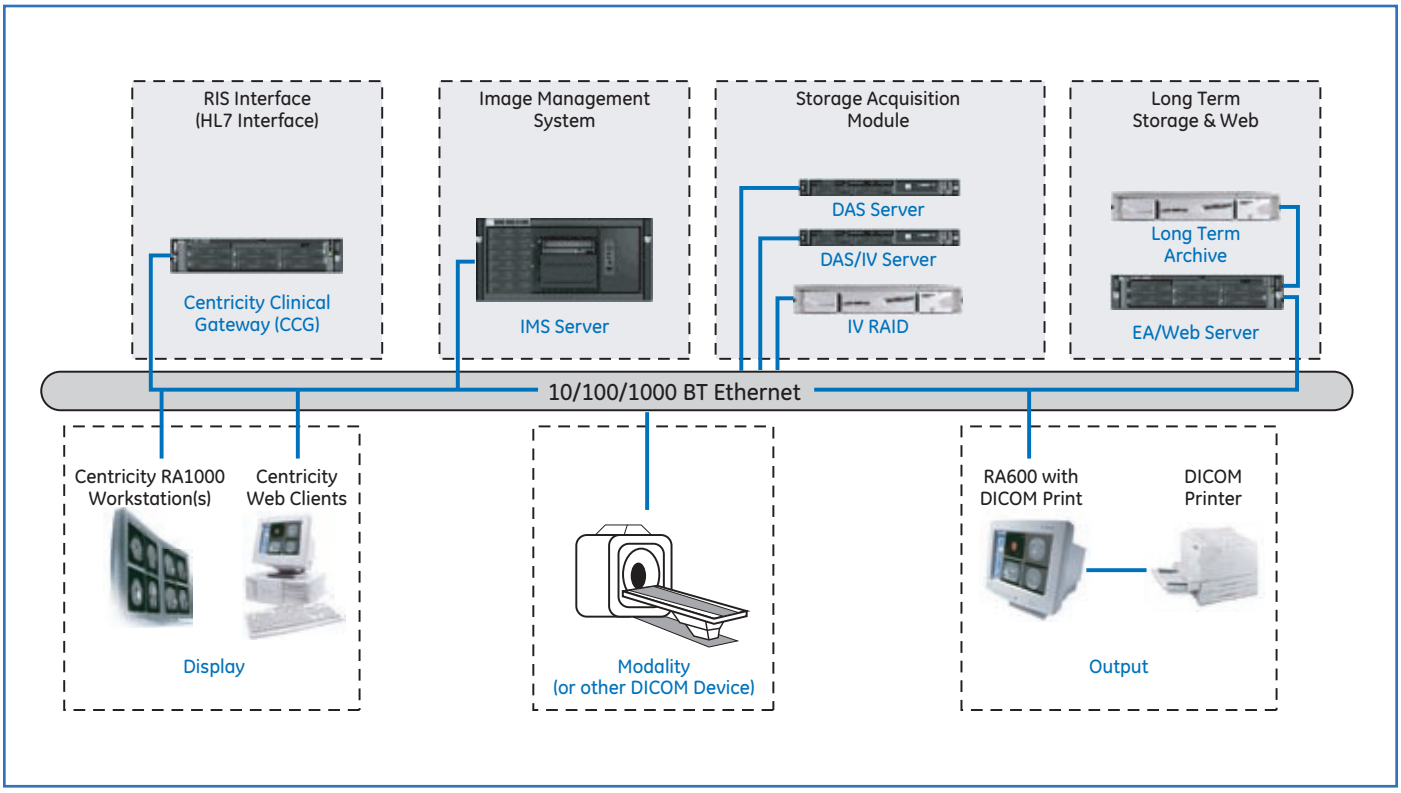
Network Infrastructure

Your PACS has specific network requirements. Specifications are given in the GE Healthcare Pre-Installation Manuals (PIM) for Data Center, Web, and Workstation Network Connectivity. These services must be available and operational at the time of PACS installation.

Procurement and installation lead time average is 4-6 weeks. Your GE Project Manager can assist with interpretation of requirements and contacts for equipment sources.

Infrastructure considerations include:

- All infrastructure cabling is tested, ready, and meets the ND&I requirements and/or specifications
- All expedited links to/from the facility enterprise network are ready and available
- Any active network devices (as applicable) are configured, ready, and available
- Short-term storage (i.e., SAN) is configured and attached to the network
- The Broadband connection is ready and available for use

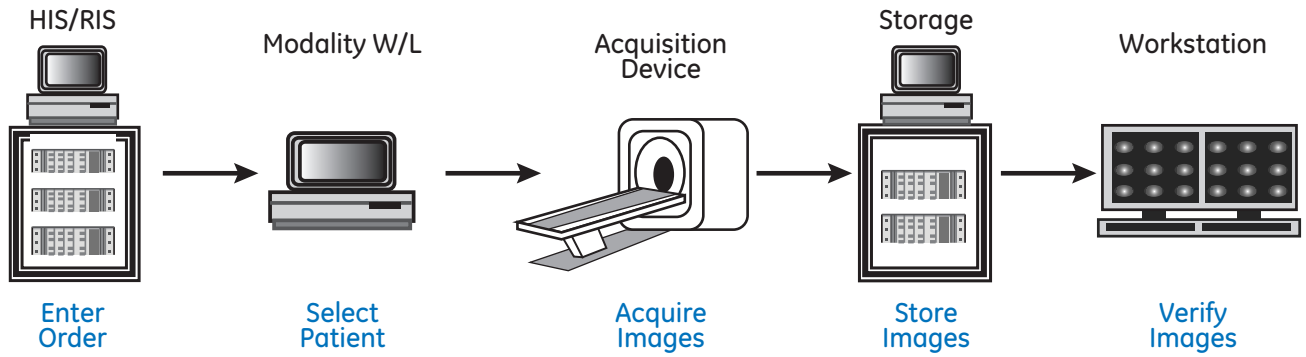


PACS Workflow

Planning the change management and impact on each department's workflow prior to your PACS Go Live will help to ensure new system success.

Workflow considerations include:

- Steps taken to complete day to day tasks
- Modalities
  - Modality Go Live Timing
  - Modality Workflow
- Departments
  - Timing of Departmental Go Live
- Training Timing
  - Master Trainers
  - Technicians
  - Radiologists
  - Enterprise Users
- System Roll-Out
  - Technical Go Live
  - Soft Copy Go Live
  - Enterprise Go Live
- Communication
  - Planning for PACS Enterprise communications



Sample PACS Workflow

Master File Database Build

Your PACS is driven by the information and field layouts within the Master File Database.

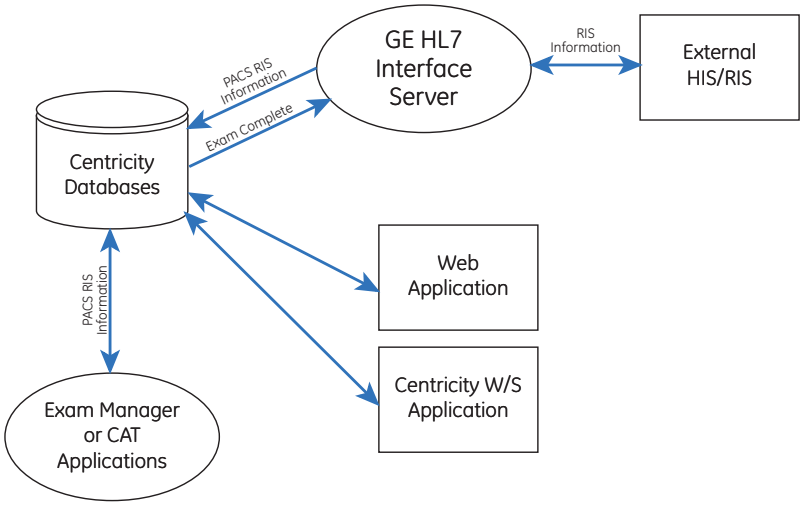
The Master File data files for the PACS will be created based on the input received on the Master File Database Worksheet. The data must be synchronized with the data that pre-exists in your HIS/RIS system.

The Master File Database Worksheet can be found in the GE Healthcare Pre-Installation Manual (PIM). The database build must be completed and submitted two weeks prior to the scheduling of the PACS delivery.

The Master File Database Worksheet completion timing average is 2 weeks. Your GE Project Manager can assist with interpretation of requirements.

Master File Database considerations include:

- Determine how body parts will be utilized for the system comparisons and default display protocols (DDPs)
- Determine how users will be added
  - Option 1 : Enter all users for system access up front (insert in the master file database worksheet and have the users pre-loaded).
  - Option 2 : Enter users into the system as they are trained (manual entry using the CAT tool).



Data Flow in PACS HL7 Interface

HIS/RIS Integration & Outbound Interface

Your PACS can be configured to auto-populate key data that is forwarded from your facilities HIS/RIS for the PACS and DICOM modality worklists.

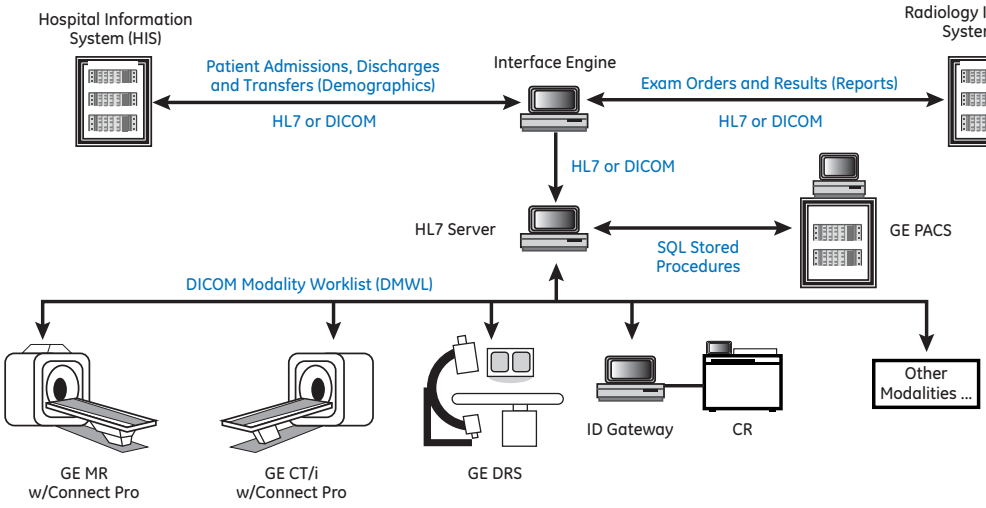
The HL7 Interface Server, which provides a communication interface between existing information systems and the GE PACS (i.e. interface to the Hospital Information System (HIS) and/or a Radiology Information System (RIS)). The PACS HL7 Interface communicates with the HIS/RIS by accepting unsolicited messages (typically HL7 or DICOM) from the HIS/RIS and converting them to SQL stored procedures for the GE PACS.

The PACS HL7 Interface also provides the functionality of DICOM Modality Worklist (DMWL). The DMWL function allows a connected modality to query the HL7 Interface Server for demographics and examination order information obtained from the HIS/RIS. The demographics and examination order information are then available locally at the modality reducing the need for manual entry.

The HL7 Interface Server Integration Process document can be found in the PIM for further review of the Integration process.

HL7 Interface considerations include:

- The HL7 Interface system is dependent upon the HIS/RIS Outbound Interface Feed being prepared and ready to turn on at the site for system installation and end-to-end testing.
- Ensure the HL7 Interface Worksheet has been followed when completing the HIS/RIS Outbound Interface.
- Review the HIS/RIS Workflow Scenarios and ensure you understand which ones relate to you're HIS/RIS system and site workflow.



Typical HL7 Interface Server Connection Diagram

Modality Integration

Your DICOM compliant modalities will be configured to connect to your PACS.

You will need to ensure that the modalities are prepared and ready to connect to the PACS.

- Ensure each modality is properly configured to provide required DICOM services (Query/Retrieve, Store, Storage Commit, Modality Performed Procedure Step (MMPS), etc.)
- Ensure modalities are properly configured to accept and process DICOM modality worklists where applicable
- Ensure each modality is properly configured to allow for DICOM store and profiling
- Ensure appropriate modalities are configured for DICOM storage commitment

Please review the Modality Integration section in the Pre-Installation Manual.

Assessment Checklist for Data Center

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ All room construction complete with primer paint, dust free and secure	
☐ Ceiling and lighting fixtures installed and operational	
☐ Power connections installed and operational (including conduits and raceways)	
☐ Network requirements/specifications met	
☐ Space for equipment racks cleared and ready for delivery	
☐ Uninterruptible power supply installed and operational	
☐ GE Service Personnel phone line and phone installed and operational	
☐ Personnel Outside Internet connectivity installed and operational	
☐ Perform required local inspections	
☐ Broadband internet connection operational	
☐ HVAC installed and operational with all environmental conditions met	
☐ Equipment deliver pathway cleared and measured	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Workstation Areas

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ All room construction complete with primer paint, dust free and secure	
☐ Ceiling and lighting fixtures installed and operational	
☐ Power connections installed and operational	
☐ Network drops installed tested and functional	
☐ Space for workstations cleared and ready for delivery with furniture in place	
☐ Perform required local inspections	
☐ Local uninterruptible power supply installed	
☐ Emergency power operational (where applicable)	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Network Infrastucture

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Network passive infrastructure (cabling) ready, including drops and uplinks (if any)	
☐ Additional active electronics ready (switches/ routers, if any)	
☐ Broadband connectivity preparation complete	
☐ Routed connection between PACS and enterprise established	
☐ All Workstation connection complete at 100 Mbps or 1 Gbps	
☐ All Modality connections to switch complete at 10 Mbps or 100 Mbps	
☐ All connections between switches complete at 1 Gbps over copper	
☐ Site IP Address List Submitted & IP Addressing established	
☐ PACS configured as a separate broadcast domain (i.e., VLan or Separate Network)	
☐ Short-term storage available and connected to network (i.e., SAN)	

It is recommended that higher connection rates be installed and utilized where possible

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for PACS Workflow

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Current Workflow Documented and Reviewed	
☐ PACS Workflow Reviewed	
☐ Go Live Phases Defined and Confirmed (i.e, Technical, Soft Copy, Enterprise)	
☐ Communication Plans Complete	
☐ Training Plans Complete	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Master File Database

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Master File Database Worksheet complete and submitted	
☐ Review of Master File Database with GE Field Service, HIS/RIS Integrator and Applications	
☐ Master File Database Worksheet updates completed (if required after review)	
☐ Initial load of system users determined	
☐ System password rules defined	
☐ Each user assigned to one user group	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for HL7 Integration

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Forwarded Sample ADT, Orders and Report Messages	
☐ Broadband internet connection prepared for configuration/installation	
☐ HL7 PACS Interface Worksheet has been followed to prepare the HIS/RIS Outbound Interface Feed	
☐ GE HIS/RIS Site Survey completed	
☐ GE HIS/RIS Workflow Document has been reviewed	
☐ HIS/RIS Outbound Interface Feed is prepared and waiting to be connected as outlined in GE specifications (test or live feed)	
☐ Hospital HIS/RIS Integration Workflow has been outlined	
☐ Confirmed test HIS/RIS feed is available	
☐ HIS/RIS End-to-End Test Plan Reviewed	
☐ HIS/RIS End-to-End Testing Scheduled	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Modality Integration

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ All modalities to connect to PACS have been identified	
☐ Modality configuration complete for DICOM store capabilities (where applicable)	
☐ Modality configuration complete for DICOM Query/ Retrieve (where applicable)	
☐ Modality configuration complete for DICOM Worklist (where applicable)	
☐ Modality configuration complete for DICOM Storage Commit (where applicable)	
☐ Modalities configured with PACS send destination information (modality vendor will need to be contacted)	
☐ Broadband internet connection operational	
☐ 3rd Party interface installations complete (where applicable). For example: Merge, NAI.	
☐ Confirm modality duplex settings with modality vendor(s)	
☐ Modality testing scheduled	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Site Readiness Assessment Checklist

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Pallet Jacks available for equipment movement upon delivery	
☐ Trash/Debris removal scheduled and planned	
☐ Equipment deliver pathway cleared and measured	
☐ Confirm deliver dock requirements (i.e., delivery vehicle with lift gate)	
☐ All items on Data Center site readiness assessment checklist complete	
☐ All items on Workstation Areas site readiness assessment checklist complete	
☐ All items on Network Infrastructure site readiness assessment checklist complete	
☐ All items on Master File Database site readiness assessment checklist complete	
☐ All items on HIS/RIS Integration site readiness assessment checklist complete	
☐ All items on Modality Integration site readiness assessment checklist complete	
☐ Schedule System Delivery	
☐ Schedule Application Training	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Notes

Notes

Assessment Checklist for Data Center

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ All room construction complete with primer paint, dust free and secure	
☐ Ceiling and lighting fixtures installed and operational	
☐ Power connections installed and operational (including conduits and raceways)	
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☐ Space for equipment racks cleared and ready for delivery	
☐ Uninterruptible power supply installed and operational	
☐ GE Service Personnel phone line and phone installed and operational	
☐ Personnel Outside Internet connectivity installed and operational	
☐ Perform required local inspections	
☐ Broadband internet connection operational	
☐ HVAC installed and operational with all environmental conditions met	
☐ Equipment deliver pathway cleared and measured	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Workstation Areas

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ All room construction complete with primer paint, dust free and secure	
☐ Ceiling and lighting fixtures installed and operational	
☐ Power connections installed and operational	
☐ Network drops installed tested and functional	
☐ Space for workstations cleared and ready for delivery with furniture in place	
☐ Perform required local inspections	
☐ Local uninterruptible power supply installed	
☐ Emergency power operational (where applicable)	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Network Infrastucture

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Network passive infrastructure (cabling) ready, including drops and uplinks (if any)	
☐ Additional active electronics ready (switches/ routers, if any)	
☐ Broadband connectivity preparation complete	
☐ Routed connection between PACS and enterprise established	
☐ All Workstation connection complete at 100 Mbps or 1 Gbps	
☐ All Modality connections to switch complete at 10 Mbps or 100 Mbps	
☐ All connections between switches complete at 1 Gbps over copper	
☐ Site IP Address List Submitted & IP Addressing established	
☐ PACS configured as a separate broadcast domain (i.e., VLan or Separate Network)	
☐ Short-term storage available and connected to network (i.e., SAN)	

It is recommended that higher connection rates be installed and utilized where possible

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for PACS Workflow

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Current Workflow Documented and Reviewed	
☐ PACS Workflow Reviewed	
☐ Go Live Phases Defined and Confirmed (i.e, Technical, Soft Copy, Enterprise)	
☐ Communication Plans Complete	
☐ Training Plans Complete	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Master File Database

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Master File Database Worksheet complete and submitted	
☐ Review of Master File Database with GE Field Service, HIS/RIS Integrator and Applications	
☐ Master File Database Worksheet updates completed (if required after review)	
☐ Initial load of system users determined	
☐ System password rules defined	
☐ Each user assigned to one user group	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for HL7 Integration

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Forwarded Sample ADT, Orders and Report Messages	
☐ Broadband internet connection prepared for configuration/installation	
☐ HL7 PACS Interface Worksheet has been followed to prepare the HIS/RIS Outbound Interface Feed	
☐ GE HIS/RIS Site Survey completed	
☐ GE HIS/RIS Workflow Document has been reviewed	
☐ HIS/RIS Outbound Interface Feed is prepared and waiting to be connected as outlined in GE specifications (test or live feed)	
☐ Hospital HIS/RIS Integration Workflow has been outlined	
☐ Confirmed test HIS/RIS feed is available	
☐ HIS/RIS End-to-End Test Plan Reviewed	
☐ HIS/RIS End-to-End Testing Scheduled	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Assessment Checklist for Modality Integration

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ All modalities to connect to PACS have been identified	
☐ Modality configuration complete for DICOM store capabilities (where applicable)	
☐ Modality configuration complete for DICOM Query/ Retrieve (where applicable)	
☐ Modality configuration complete for DICOM Worklist (where applicable)	
☐ Modality configuration complete for DICOM Storage Commit (where applicable)	
☐ Modalities configured with PACS send destination information (modality vendor will need to be contacted)	
☐ Broadband internet connection operational	
☐ 3rd Party interface installations complete (where applicable). For example: Merge, NAI.	
☐ Confirm modality duplex settings with modality vendor(s)	
☐ Modality testing scheduled	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Site Readiness Assessment Checklist

Critical items to be completed before installation

Check when complete	Notes / Issues / Action Plan
☐ Pallet Jacks available for equipment movement upon delivery	
☐ Trash/Debris removal scheduled and planned	
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☐ All items on Network Infrastructure site readiness assessment checklist complete	
☐ All items on Master File Database site readiness assessment checklist complete	
☐ All items on HIS/RIS Integration site readiness assessment checklist complete	
☐ All items on Modality Integration site readiness assessment checklist complete	
☐ Schedule System Delivery	
☐ Schedule Application Training	

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.

Terminology/Acronyms

ADT	Admission, Discharge, Transfer
CAT	Centricity Administration Tool
CE	Continuing Education
CON	Certificate of Need
DAS	DICOM Application Server
DB	Data Base
DDP	Default Display Protocol
DMWL	DICOM Modality Worklist
EE	Enterprise Edition
FE	Field Engineer
GE	General Electric Company
HIS	Hospital Information System
HL7	Health Level Seven (www.hl7.org)
HVAC	Heating, Ventilation and Air Conditioning
IOD	Image Object Definitions
IP	Internet Protocol
IT	Information Technology
LAN	Local Area Network
MMPS	Modality Performed Procedure Step
ND&I	Network Design and Implementation
NEMA	National Electrical Manufacturers Association
OEM	Original Equipment Manufacturer
ORM	Order Message
ORU	Observation Result Unsolicited (Report Message)
PACS	Picture and Archiving Communications Systems
PIM	Pre-Installation Manual
Q&A	Questions and Answers
RIS	Radiology Information System
ROC	Remote Operations Center
SAN	Storage Area Network
SOP	Service Object Pair
UPS	Uninterruptible Power Supply
VLAN	Virtual Local Area Network
VPN	Virtual Private Network
WAN	Wide Area Network
ZSE	Zone Support Engineer

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Internet – gehealthcare.com
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P.O. Box 414, Milwaukee, Wisconsin 53201 U.S.A.

05-10011 10/05 Printed in USA