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Using This Guide

This IT guide is designed to help you, the IT administrator, configure RAPID v8 to work effectively in your hospital or medical facility.

RAPID is the software application that allows medical professionals to review the video images from PillCam CE (capsule endoscopy) studies. RAPID can be installed on your facility’s PCs in a network environment under Microsoft Windows Network.

When correctly configured for your facility, RAPID can:

- import patient data from the HIS (Hospital Information System) or EMR (electronic medical records), simplifying patient check-in at the start of PillCam studies.
- export study reports, videos, and images to the HIS or EMR.
- use facility network resources, such as disk storage and peripherals.

Note:
For complete documentation about RAPID v8, see the PillCam® Capsule Endoscopy User Manual.

Audience and Work Tasks

This guide is intended for the IT specialist (network or system administrator).

To support the networking capabilities of RAPID, the IT administrator’s role includes:

- Creating an interface layer between the facility information system and the RAPID. This interface layer must be able to create patient data files associated with a patient and the PillCam capsule endoscopy study to be performed.
• Selecting a network location for these patient data files, which are then imported to RAPID during patient check-in.

• Determining work settings for multiple RAPID and RAPID Reader users on the network.

• Defining the export destination of patient reports to reporting formats used by the facility.

• Supporting hardware and all other applications installed in the PCs that are running RAPID.
## Chapter 2:
Software Installation

### System Requirements

<table>
<thead>
<tr>
<th>Specification</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>• Intel® Core™2 Duo</td>
<td>Intel® Core™2 Quad or above</td>
</tr>
<tr>
<td></td>
<td>• AMD equivalent</td>
<td></td>
</tr>
<tr>
<td><strong>OS (Operating System)</strong></td>
<td>RAPID:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows® XP SP3 and above, 32-bit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows® 7 SP1 and above, 32 &amp; 64 bit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows® 8, 32 &amp; 64 bit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RAPID Reader can also be installed standalone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>on:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows® Server 2003, 32- &amp; 64-bit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows® Server 2008, 32- &amp; 64-bit</td>
<td></td>
</tr>
<tr>
<td><strong>RAM</strong></td>
<td>1 GB</td>
<td>3 GB for 32-bit OSs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 GB for 64-bit OSs</td>
</tr>
<tr>
<td><strong>Disk Space</strong></td>
<td>• 1 GB for software</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 10 GB available for data</td>
<td></td>
</tr>
<tr>
<td><strong>Screen</strong></td>
<td>24-bit color:</td>
<td>32-bit color</td>
</tr>
<tr>
<td>(color and aspect ratio / resolution)</td>
<td>• 4:3 / 1024 x 768</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 16:9 / 1366 x 768</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 16:10 (8:5) / 1280 x 800</td>
<td></td>
</tr>
<tr>
<td><strong>Removable Media</strong></td>
<td>DVD-ROM</td>
<td>DVD-RW</td>
</tr>
<tr>
<td>Specification</td>
<td>Minimum</td>
<td>Recommended</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>USB</strong></td>
<td>USB 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• USB 2 HUB (all DR2s and DR3s must connect through USB2 hub unless Windows® 7 or Windows® XP with hotfix Kb908673 or SP3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• USB disk or external drivers (for data transfers) must be partitioned as NTFS</td>
<td></td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td>• Windows® Internet Explorer, version 6 or higher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Adobe® Flash® Player</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PDF Reader software such as Adobe® Acrobat</td>
<td></td>
</tr>
<tr>
<td><strong>Display Settings</strong></td>
<td>• Windows 7: Display size (DPI) should be set to Smaller – 100% (default)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Windows 8: Display size (Size of Item and Text) should be set to Smaller – 100% (default)</td>
<td></td>
</tr>
</tbody>
</table>
Installing RAPID

Software Installation

1. Disable all antivirus applications.
2. Insert the RAPID Installation DVD into the DVD drive. The RAPID installation menu screen appears.
3. Click **Install RAPID v8** and follow the instructions on the screen.

   ! Caution:
   You are prompted to:
   - close all open applications
   - disconnect all recorders
   - confirm that you have a legal license for MS Windows
   - confirm that any previous version of RAPID and the RAPID Atlas on that PC can be overwritten

4. The RAPID Atlas installation wizard starts.

   ! Note:
   Some steps may take several minutes!

5. After the RAPID Atlas has installed, the RAPID installation wizard starts.

   ! Caution:
   You are prompted to:
   - accept the licence agreement
   - select the installation directory

6. If a previous version of RAPID was installed on that PC, and if its settings were exported (see **System Wide Settings**), you are prompted to import the existing settings file. Click **Yes** to import or **No** to use the default settings in RAPID.

7. After RAPID has installed, you are prompted to insert the Help and Documentation disc.
Registration

Unrestricted use of RAPID requires registration via the Given registration center.

When you run RAPID for the first time, the registration screen appears:

1. Keep this registration window open until you finish registration.

   ![Registration Screen]

   **Note:**
   Each time you open the registration window, a new System Key appears and any Registration Key based on a previous System Key will not be accepted.

   If you click Later, you can open and use the RAPID software, but after seven uses without registering, you must first perform registration in order to use RAPID.

2. Contact the Given Imaging registration center online or by phone:
   • online: [https://portal.givenimaging.com/RapidRegistration](https://portal.givenimaging.com/RapidRegistration)
   • by phone: by calling your local Given Imaging customer support center

3. Provide the Given Imaging registration center with the following information:
   • System ID (from the registration screen)
   • System Key (from the registration screen)
   • RAPID DVD serial number (supplied with the DVD)
4. Enter the Registration Key you received from the registration center into the Registration Key field.
The registration process uses only numbers and small-caps letters.

5. Click OK.

**Silent Installation of RAPID Reader**

RAPID Reader is a version of RAPID that is provided as part of your RAPID license. RAPID Reader is almost identical to RAPID, but without ability to create videos from recorder data. It is designed for medical personnel who need to review study data or completed reports that were created in RAPID.

RAPID Reader can be installed as needed throughout your network. Rather than install it manually for each user, you can perform a silent installation (that is, install it automatically via a batch file).

**To perform silent installation:**

1. Copy the entire contents of the RAPID Reader 8 distribution (from CD-ROM or other distribution media) to a path where you have write-access (on the local PC or on a network drive).

2. From the Command Prompt window (Start > Run > cmd), run the RAPID Reader installer as follows:
   \networkpath for the RAPID Reader 8 distribution\Reader\RRInstMain.exe /nui:y

   **Note:**
   For Windows Vista and Windows 7, the Command Prompt must be opened with administrative privileges.

3. Follow the prompts and accept the EULA.
   Once the EULA has been accepted, you can install RAPID Reader silently.

4. Add the command line:
   \networkpath\Reader\RRInstMain.exe /isln:y
   (where networkpath is the full path to the location of the RAPID Reader 8 distribution) to a batch file that is run for users on the network.
To perform silent installation of the RAPID Help and documentation:

1. Copy the entire contents of disc 2 of the RAPID distribution media to a path where you have write-access (on the local PC or on a network drive).

2. From the Command Prompt window (Start > Run > cmd), run the RAPID Reader installer as follows:
   \networkpath for the RAPID v8 distribution \Help\HelpMain.exe /IsIn:y

   For Windows Vista and Windows 7, the Command Prompt must be opened with administrative privileges.
Chapter 3: Configuring RAPID IT Settings

Introduction

All users can customize RAPID from the Settings screen (from the RAPID home screen, select **Tools > Settings**). However:

- There are some settings that are relevant only in environments where there are more than one user (for example, more than one person using RAPID on the same PC, but logging in with different Windows usernames).
- Only users with Windows administrative privileges can access certain settings.

As your facility’s IT professional, it is your responsibility to control access to RAPID and to control how and where RAPID data is shared.

System Wide Settings

System-wide settings are a way to export RAPID settings and apply them to other installations of RAPID, without having to manually configure each installation. This allows consistency among multiple users for settings such as a hospital logo on the CE report or shared data directories.

System Wide settings override factory (default) settings and apply to all users on that PC; however, individually customized user settings override System Wide settings.

Throughout Settings, the System Wide checkbox appears at the bottom of each screen. If selected, the settings on that screen will be included in what is exported as an XML file.

To export settings:

1. Select **Tools > System Wide Settings > Export**.
2. Browse to directory and filename to which the file will be exported.
3. Click **Save**.
   If the export is successful, this message appears:
   
   **System wide settings export successful**

To import settings to another installation of RAPID:

1. Select **Tools > System Wide Settings > Import**.
2. Browse to file and click **Open**.
   You are prompted:
   
   *Importing will overwrite existing system wide settings. Do you wish to continue?*

3. Click **Yes**.
   If the import is successful, this message appears:
   
   **System wide settings import successful.**
   **Restart RAPID to enable the changes.**

---

**Note:**

Only an administrator can define something as a system-wide setting, or can export and import those settings.

System-wide settings affect all users on the specific PC while the user settings are user-specific. User settings override system settings!
User Groups

You can limit use of the RAPID software through user groups. Create one or more user groups in Windows. These are users who are authorized to open and use RAPID.

User groups in RAPID function as follows:
- RAPID is always available to a user who is an administrator on that PC, even if the user isn’t connected to the network.
- If a user isn’t an administrator, and the checkbox **RAPID users must belong to this user group** is selected, then the user must belong to one of the specified groups.

To apply user group settings:

1. After you have created the user groups, select **Tools > Settings**. The **Settings** screen appears.
2. In the **General** tab, select the **System Wide** checkbox at the bottom of the screen (see **System Wide Settings** on page 9).
3. In **Permissions**, select **RAPID users must belong to this network group**: and type in the user group.
   - Multiple user groups can be specified, separated by a semicolon (;).
   - These user groups can be from the active directory (such as **Given\RapidUsers**), local groups (such as **Users**), or both (such as **Given\RapidUsers; Users**).
   - For user groups defined on the network, type **[name of domain]\** before the name of the user group.
   - The number of user groups is not limited.
Shared Data Settings

RAPID generates a large amount of data. The folders needed for the different kinds of data can be local or on a server. To support data sharing and simplify the management of the data:

1. Define all the directories needed by RAPID for data (see Data Directories on page 13).
2. Define the directory for the Study Manager files (see Study Manager Shared Data Directory on page 14).

3. Define which values are system wide (see System Wide Settings on page 9).

Data Directories

- In the Video tab of the Settings screen, you determine the directories for storing raw data files and created videos.

Note: You must have administrative privileges to set define any data directories in RAPID.

- Video directory: Define the default location where RAPID stores the videos after processing the raw data into a video.

Note: These files are very large! One study may be 120 MB to 2 GB.
- **Raw data directory**: Define the default location to where RAPID can store raw data as it is copied from the recorder, before processing the raw data into a video. The files in this folder appear on the **Raw Data Files** screen.

### Regimens Directory
To allow physicians to edit and approve their regimens:

1. Create a folder that is open for read and write permissions for the relevant users.

2. In the **Settings** screen, under the **Other** tab, define the **Regimen Directory** to that created folder.

### Study Manager Shared Data Directory
The **Shared data directory** is the path where the Study Manager’s shared data resides. Shared data refers to columns that appear in the Study Manager. These columns are customizable (which appear and in which order). When multiple users are sharing data in the Study Manager, it is important to define this shared data so that all users will have a common interface.
1. In **Settings > Other** tab, define the directory for the shared data.

![Settings Window]

Note: For details about customizing these columns, see the *PillCam® Capsule Endoscopy User Manual*.

2. Select the **System Wide** checkbox.
**Import and Export Data Locations**

RAPID searches the predefined directory for patient data XML files that must conform to a predefined schema described in Chapter 4: HIS Connectivity. The files should be created from patient and procedure data that constitute the procedure work order in the information system.

The network application that creates these files must convert the data from your HIS to the file format suitable for RAPID to import during the check-in process.

The patient data files must reside in the predefined directory, either local or remote, that is accessible to RAPID and for which the users have read and write access.

1. Define the **HIS Information Directory** (where RAPID will look for the XML file). This is the input for your HIS.
2. Define the location where the report data is output (Export to directory).

Define both Results Export and Patient Summary Export: users can decide which way study findings can be exported. Both generate data, but the Patient Summary method does not include the XML data (see Folder Structure on page 26).
Chapter 4: HIS Connectivity

Introduction

The RAPID software and your HIS or EMR share data through intermediary XML files.

1. Patient information exported from your HIS is imported into RAPID during patient check-in. This *input* process simplifies the check-in and reduces errors by auto-populating fields. Input can also include information about the specific PillCam CE study that was ordered.

2. After the study has been performed, the resulting report data is *output* from RAPID and can be imported back into the HIS.

To make this data sharing work, you need to understand the structure of the input and output XML files, and how to define the directories in which RAPID will search for these files.
**Input**

The input is data exported from your HIS, converted into an XML file, and imported to RAPID. RAPID uses the import file to automatically populate fields during patient check-in.

**Note:**
Certain nodes that populate fields must contain valid data. These nodes are:
- BirthDate
- ProcedureDate
- Height
- Weight
- Waist
- UnitType
- Build
- RTLReasonForReferral
- Gender

*These node cannot be empty.* (If your HIS does not contain this data, make sure that the XML node is not present in the input file.)

The following HIS fields are **mandatory**:
- CapsuleType
- CapsuleSubType
- Sensor (mandatory for DR2 only)

HIS import will fail if value or the XML tag is missing.

For all other nodes, RAPID ignores any blank nodes (for example, `<MiddleName></MiddleName>`) and allows the field to be entered manually during patient check-in or edited in the Study Manager using Update Patient Details.

**Import File Location (HIS Directory)**

RAPID looks for the XML file in the predefined location (either a local or network directory that is accessible to RAPID). RAPID users must have read and write access to this directory.

**To set the default location:**
1. From the RAPID home screen, select **Tools > Settings**.
2. Click the **Check-in** tab.
3. Enter the path in **HIS Information Directory** (or click **Browse** to locate the path).

**Input XML File**

It is your responsibility to supply the network application that creates these files by converting the HIS data into the specific XML scheme described below. You can use any filename as long as the file is XML (with the extension .xml).

**Structure**

Here is the required structure of the XML file (shown with **sample values**):

```xml
<?xml version="1.0" encoding="utf-8"?>
<HISInformation>
  <LastName>Stafford</LastName>
  <MiddleName>Henry</MiddleName>
  <FirstName>Daniel</FirstName>
  <ID>56790021</ID>
  <BirthDate>1967-08-13</BirthDate>
  <Gender>Male</Gender>
  <ProcedureDate>2012-02-15</ProcedureDate>
  <CheckinPerson>Alan</CheckinPerson>
  <ReferringPhysician>Dr Jones</ReferringPhysician>
  <ICDCode>556</ICDCode>
  <CapsuleLotNo>111</CapsuleLotNo>
  <SensorSerNo>555</SensorSerNo>
  <CapsuleId>238141536</CapsuleId>
  <Insurance>BlueShield</Insurance>
  <ReasonForReferral>Bleeding and pain</ReasonForReferral>
  <RTLReasonForReferral>false</RTLReasonForReferral>
  <Group>HGT</Group>
  <Weight>75</Weight>
  <Height>1.76</Height>
  <Waist>0.8</Waist>
  <UnitType>0</UnitType>
  <ProtocolCode>GHYY</ProtocolCode>
  <OrderingPhysician>Dr Sharon Mathers</OrderingPhysician>
  <CapsuleType>1</CapsuleType>
  <CapsuleSubType>2</CapsuleSubType>
  <Build>1</Build>
  <Sensor>7</Sensor>
  <BatterySerialNo>1234</BatterySerialNo>
  <RecorderSerialNo>5678</RecorderSerialNo>
  <UserDataBlob>6B29FC40-CA47-1067-B31D-00DD010662DA</UserDataBlob>
</HISInformation>
```

**Input** 20  **Given Imaging**
## Node Details

All nodes (element or XML tag) are optional.

### Note:
Nodes with incorrect values can corrupt the patient check-in process. It is your responsibility to make sure that the XML generated by your HIS does not contain incorrect values.

Each node in the patient data XML file is explained below.

### Note:
Nodes that are new in RAPID v8 are marked with a shaded background.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Type</th>
<th>Meaning</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>LastName</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Patient's last name.</td>
<td></td>
</tr>
<tr>
<td>MiddleName</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Patient’s middle name.</td>
<td></td>
</tr>
<tr>
<td>FirstName</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Patient’s first name (full, not initial).</td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Patient ID used by hospital (could be SSN or other external ID).</td>
<td></td>
</tr>
<tr>
<td>BirthDate</td>
<td>Date (formatted as YYYY-MM-DD)</td>
<td>Patient’s date of birth.</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Alphanumeric string</td>
<td>Patient’s gender.</td>
<td>Male or Female (case sensitive)</td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Type</td>
<td>Meaning</td>
<td>Values</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>ProcedureDate</td>
<td>Date (formatted as YYYY-MM-DD)</td>
<td>The date on which the PillCam capsule procedure was performed.</td>
<td>legitimate date</td>
</tr>
<tr>
<td>ReferringPhysician</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>The name of the physician who referred the patient to the Ordering Physician.</td>
<td></td>
</tr>
<tr>
<td>ICDCode</td>
<td>Alphanumeric string, up to 5 chars</td>
<td>The International Statistical Classification for the health problem.</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Name or code for insurance carrier.</td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Free text field for doctors to enter symptoms or other info.</td>
<td></td>
</tr>
<tr>
<td>ReasonForReferral</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Free text field for doctors to enter symptoms or other info.</td>
<td></td>
</tr>
<tr>
<td>RTLReasonForReferral</td>
<td>Alphanumeric string If true, accepts right-to-left input for Hebrew or Arabic text.</td>
<td>For use if RTL language is input in the ReasonForReferral field.</td>
<td>true or false</td>
</tr>
<tr>
<td>Weight</td>
<td>Decimal, to 2 decimal places</td>
<td>Patient’s weight in kilos (for example, 81).</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>Decimal, to 2 decimal places</td>
<td>Patient’s height represented in meters (for example, 1.79).</td>
<td></td>
</tr>
<tr>
<td>Waist</td>
<td>Decimal, to 2 decimal places</td>
<td>Patient’s waist measurement at widest point, in meters (for example,.72).</td>
<td></td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Type</td>
<td>Meaning</td>
<td>Values</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>UnitType</td>
<td>Integer</td>
<td>Determines the unit of measurement as will appear in RAPID.</td>
<td>• If 0, kilos are converted to pounds and meters to inches.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If 1, kilos are used, and meters are converted to centimeters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Integer</td>
<td>The patient's general physique.</td>
<td>0 = Thin</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 = Normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 = Stocky</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 = Protuberant Abdomen</td>
</tr>
<tr>
<td>ProtocolCode</td>
<td>Alphanumeric</td>
<td>A predefined code for the protocol followed for this PillCam procedure.</td>
<td></td>
</tr>
<tr>
<td>OrderingPhysician</td>
<td>Alphanumeric</td>
<td>The name of the physician who ordered the PillCam procedure.</td>
<td></td>
</tr>
<tr>
<td>UserDataBlob</td>
<td>Alphanumeric</td>
<td></td>
<td>See Custom Nodes on page 25.</td>
</tr>
<tr>
<td>UserSpecificItems</td>
<td>Collection of</td>
<td></td>
<td>See Custom Nodes on page 25.</td>
</tr>
<tr>
<td></td>
<td>UserSpecificItem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CheckinPerson</td>
<td>Alphanumeric</td>
<td>The medical staff member who checked the patient in to RAPID.</td>
<td>may be predefined in RAPID</td>
</tr>
<tr>
<td>RegimenName</td>
<td>Alphanumeric</td>
<td>The name of a predefined regimen that the patient must follow before and during the procedure.</td>
<td>must be predefined in RAPID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: for COLON2, DR3 only.</td>
<td></td>
</tr>
<tr>
<td>CapsuleLotNo</td>
<td>Alphanumeric</td>
<td>Lot number on PillCam packaging.</td>
<td></td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Type</td>
<td>Meaning</td>
<td>Values</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SensorSerNo</td>
<td>Alphanumeric</td>
<td>Serial number printed on the sensor belt or sensor array.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>string, up to 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>chars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CapsuleType</td>
<td>Integer</td>
<td>The type of capsule used for the PillCam procedure.</td>
<td>1 = SB 2 = ESO 4 = COLON</td>
</tr>
<tr>
<td>CapsuleSubType</td>
<td>CapsuleSubType</td>
<td>Some capsule types have variations.</td>
<td>1, 2, or 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor</td>
<td>Integer (but can</td>
<td>CapsuleTypes and SensorTypes go together. The values (that is, what</td>
<td>3 = “8-lead sensor array” (CT 1) 4 = “3-lead sensor array” (CT 2 /</td>
</tr>
<tr>
<td></td>
<td>accept string for</td>
<td>appears when the data is exported from RAPID) for SensorType are listed</td>
<td>ESO) 7 = “SB sensor belt” (CT 1) 8 = “C2 sensor belt” (CT 4) 9 = “SB3</td>
</tr>
<tr>
<td>Note:</td>
<td>backward-</td>
<td>with their appropriate CT (CapsuleType).</td>
<td>sensor belt” (DR3 only)</td>
</tr>
<tr>
<td></td>
<td>compatibility with</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RAPID v7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BatterySerialNo</td>
<td>Alphanumeric</td>
<td>Serial number printed on the recorder battery.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>string, up to 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>chars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RecorderSerialNo</td>
<td>Alphanumeric</td>
<td>Serial number printed on the recorder.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>string, up to 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>chars</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Custom Nodes

DataBlob
This is an alphanumeric string that contains information. While DataBlobs can contain any type of information, they most commonly contain GUIDs (128-bit values that can be used to point to data in the HIS). GUIDs have the following structure: 8 hexadecimal digits, then three groups of 4 hexadecimal digits each, then 12 hexadecimal digits; for example:

6B29FC40-CA47-1067-B31D-00DD010662DA

The DataBlob allows you to reference non-text data (such as an image or a multimedia file) from your HIS. The data isn’t used by RAPID and does not appear in the PillCam CE report. However, when exporting RAPID data, the DataBlob data becomes part of the output XML.

UserSpecificItems
This is a complex node made up of up to 10 UserSpecificItem elements. Each UserSpecificItem element contains two elements:

- Key (type String, up to 11 characters): this is the label (for example, Street Address).
- Value (type String, up to 11 characters): this is the actual data for the element (for example, 142 Elm Street). It also contains an attribute called ValueType (type String, up to 5 characters), which identifies the type of data (for example, numeric).

All UserSpecificItems are displayed as a table of two columns on the last page of the CE report, where each row in the table contains a Key and the associated Value. This allows you to add custom information to the CE report.

Example

```
<UserDataBlob>6B29FC40-CA47-1067-B31D-00DD010662DA</UserDataBlob>
<UserSpecificItems>
    <UserSpecificItem>
        <Key>Patient Phone</Key>
        <Value ValueType="String">206-324-8817</Value>
    </UserSpecificItem>
    <UserSpecificItem>
        <Key>City</Key>
        <Value ValueType="String">Seattle</Value>
    </UserSpecificItem>
    <UserSpecificItem>
        <Key>State</Key>
        <Value ValueType="String">Washington</Value>
    </UserSpecificItem>
</UserSpecificItems>
```
Output

When a study has been completed and the physician finalizes the CE report, the data can be output from RAPID and made available to your HIS.

The output goes to a predefined directory. This directory contains:

- a standard PDF report
- the report text in XML format (including the UserDataBlob and the UserSpecificItems; see Custom Nodes on page 25)
- a subdirectory containing the images and video clips that were marked by the physician

Note:
Many of the nodes in the output XML are similar to those of the input, but with slight differences. Review the tables carefully!

Folder Structure

An XML output file is usually created by the physician who wrote the CE report. When the physician selects Export > Results from RAPID (from the Report tab in the viewing screens), RAPID creates a folder called xxxxxx_report, where xxxxxx is the name of the study video. The default location of this is in the same folder as the video. You can specify a different directory to be the default (in RAPID: Tools > Settings > Report > Results Export). The folder looks like:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date modified</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Files</td>
<td>02/04/2012 23:12</td>
<td>File folder</td>
<td></td>
</tr>
<tr>
<td>DONE.txt</td>
<td>02/04/2012 23:12</td>
<td>Text Document</td>
<td>0 KB</td>
</tr>
<tr>
<td>Report.xml</td>
<td>02/04/2012 23:12</td>
<td>XML File</td>
<td>3 KB</td>
</tr>
<tr>
<td>Zhu84Q3300_P.pdf</td>
<td>02/04/2012 23:12</td>
<td>Adobe Acrobat Document</td>
<td>161 KB</td>
</tr>
</tbody>
</table>

The folder contains:

- **Files** folder
  Contains data from the PillCam recorder.

- Image files
  The files naming convention is thumbnail_{id}.jpg for the image and thumbnail_{id}_localization.jpg for the localization image (the
information about where in the GI tract the image was captured). The ID is a unique number for each pair of thumbnails and their localizations.

- <study name>.pdf file
  A CE Report following the same naming for the export folder.

- report.xml file
  The XML file as described above.

- DONE.txt file
  This empty text file is created upon successful completion of the export process. Your HIS can monitor for its creation to determine when other files can be accessed.

If the physician selects Export > Patient Summary from RAPID, report.xml and DONE.txt are not created. The default location is defined in Tools > Settings > Report > Patient Summary Export.

Output XML File
The output XML file contains data, exported from RAPID, about the PillCam CE report. The data is presented as XML and can be imported by your HIS.

Structure
Here is the structure of the output XML file (shown with sample values):

```xml
<?xml version="1.0" encoding="utf-8" ?>
<report>
  <patient>
    <patient_id>56790021</patient_id>
    <name>
      <lastname>Stafford</lastname>
      <midname>Henry</midname>
      <firstname>Daniel</firstname>
    </name>
    <insurancecarrier>HRL</insurancecarrier>
    <insurancegroup>BlueShield</insurancegroup>
    <gender>Male</gender>
    <birthdate>13/08/1967</birthdate>
  </clinic>
</report>
```
<test test_id="eb89a552-afcb-4831-b60b-09adc38d3a26"
capsuletype="PillCam COLON" capsule_subtype="PillCam COLON2"
user_data_blob="String">
  <test_date>12/03/2012</test_date>
  <capsule_id>4BQASLX</capsule_id>
  <referredby>Dr Jones</referredby>
  <orderedby>Dr Sharon Mathers</orderedby>
  <icd>556</icd>
  <reasonforreferralRTL="False">Bleeding and pain</reasonforreferralRTL="False">
  <summaryRTL="False"/>
  <testfindingsRTL="False"/>
  <weight>165 lbs</weight>
  <height>69.5 inches</height>
  <waistline>31.5 inches</waistline>
  <build>Normal</build>
  <checkin_person>Alan</checkin_person>
  <capsule_lot_no>111</capsule_lot_no>
  <sensor_serial_no>555</sensor_serial_no>
  <protocol_code>GHYY</protocol_code>
  <battery_serial_no>1234</battery_serial_no>
  <recorder_serial_no>5678</recorder_serial_no>
  <sensor>8-lead sensor array</sensor>
  <start_recording_time>15/02/2012, 13:42:34</start_recording_time>
  <end_recording_time>15/02/2012, 20:06:20</end_recording_time>
  <passagetimes>
    <smallbowel_passagetime>0h 2m</smallbowel_passagetime>
    <colon_passagetime>0h 0m</colon_passagetime>
  </passagetimes>
  <thumbnail thumbnail_id="1000000" thumbnail_time="00:00:00">
    <thumbnail_image image_path="/thumbnail_1000000.jpg"/>
    <thumbnail_localization localization_path="/thumbnail_1000000_localization.jpg"/>
  </thumbnail>
  <thumbnail thumbnail_id="1000077" thumbnail_time="00:00:38">
    <thumbnail_image image_path="/thumbnail_1000077.jpg"/>
    <thumbnail_localization localization_path="/thumbnail_1000077_localization.jpg"/>
  </thumbnail>
  <thumbnail thumbnail_id="1000355" thumbnail_time="00:02:57">
    <thumbnail_sbLocationPercentage>52%</thumbnail_sbLocationPercentage>
    <thumbnail_sbTimePercentage>86%</thumbnail_sbTimePercentage>
  </thumbnail>
</test>
<thumbnail_image image_path="/thumbnail_1000355.jpg" />
<thumbnail_localization localisation_path="/thumbnail_1000355_localization.jpg" />
<thumbnail_comment>First Ileocecal Valve Image.</thumbnail_comment>
</thumbnail>

<thumbnail thumbnail_id="1000400" thumbnail_time="00:03:20">
<thumbnail_image image_path="/thumbnail_1000400.jpg" />
<thumbnail_localization localisation_path="/thumbnail_1000400_localization.jpg" />
<thumbnail_comment>First Cecal Image.</thumbnail_comment>
</thumbnail>

<thumbnail thumbnail_id="1000434" thumbnail_time="00:03:37">
<thumbnail_image image_path="/thumbnail_1000434.jpg" />
<thumbnail_localization localisation_path="/thumbnail_1000434_localization.jpg" />
<thumbnail_comment>Last Cecal Image.</thumbnail_comment>
</thumbnail>

<thumbnail thumbnail_id="1000446" thumbnail_time="00:03:43">
<thumbnail_image image_path="/thumbnail_1000446.jpg" />
<thumbnail_localization localisation_path="/thumbnail_1000446_localization.jpg" />
<thumbnail_comment>First Rectal Image.</thumbnail_comment>
</thumbnail>

<thumbnail thumbnail_id="1000470" thumbnail_time="00:03:55">
<thumbnail_image image_path="/thumbnail_1000470.jpg" />
<thumbnail_localization localisation_path="/thumbnail_1000470_localization.jpg" />
<thumbnail_comment>Last Rectal Image.</thumbnail_comment>
</thumbnail>

<UserDataBlob>6B29FC40-CA47-1067-B31D-00DD010662DA</UserDataBlob>
<UserSpecificItems>
<UserSpecificItem>
<Key>Patient Phone</Key>
<Value Value_Type="text">206-324-8817</Value>
</UserSpecificItem>
</UserSpecificItems>
# Node Details

Each node (element or XML tag) in the report XML file is explained below.

**Note:**
Nodes that are new in RAPID v8 are marked with a shaded background.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Type</th>
<th>Meaning</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>report</td>
<td>Unspecified</td>
<td>This is the parent node that contains all other nodes for the export.</td>
<td></td>
</tr>
<tr>
<td>patient</td>
<td>Unspecified</td>
<td>This is a parent node for all patient nodes.</td>
<td></td>
</tr>
<tr>
<td>patient_ID</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>This is the same patient ID as in the import file.</td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>Unspecified</td>
<td>The name node and its elements are the same as in the import file.</td>
<td></td>
</tr>
<tr>
<td>lastname</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Patient's last name.</td>
<td></td>
</tr>
<tr>
<td>midname</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Patient's middle name.</td>
<td></td>
</tr>
<tr>
<td>firstname</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Patient's first name.</td>
<td></td>
</tr>
<tr>
<td>insurancecarrier</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Name or code for insurance company.</td>
<td></td>
</tr>
<tr>
<td>insurancegroup</td>
<td>Alphanumeric string, up to 20 chars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gender</td>
<td>Alphanumeric string, up to 10 chars</td>
<td>Patient's gender.</td>
<td><strong>Male or Female</strong> (case sensitive)</td>
</tr>
<tr>
<td>birthdate</td>
<td>Date</td>
<td>Patient's date of birth.</td>
<td><strong>legitimate date</strong></td>
</tr>
<tr>
<td>clinic</td>
<td>Unspecified</td>
<td>This is the parent node for all clinic nodes.</td>
<td></td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Type</td>
<td>Meaning</td>
<td>Values</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>clinic_name</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Name of clinic or facility (appears on the top of the first page of the CE reports).</td>
<td></td>
</tr>
<tr>
<td>clinic_info</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>Additional info as needed.</td>
<td></td>
</tr>
<tr>
<td>test</td>
<td>Unspecified</td>
<td>This is the parent node for all test nodes.</td>
<td></td>
</tr>
<tr>
<td>test_ID</td>
<td>GUID</td>
<td>This is a unique string assigned by RAPID.</td>
<td></td>
</tr>
<tr>
<td>capsuletype</td>
<td>Alphanumeric string, up to 20 chars</td>
<td>The general type of capsule (SB, ESO, or COLON).</td>
<td></td>
</tr>
<tr>
<td>capsulesubtype</td>
<td>Alphanumeric string, up to 20 chars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>test_date</td>
<td>Date</td>
<td>Date on which the procedure was performed.</td>
<td></td>
</tr>
<tr>
<td>referredby</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>The name of the referring physician.</td>
<td></td>
</tr>
<tr>
<td>orderedby</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>The name of the physician who ordered the procedure.</td>
<td></td>
</tr>
<tr>
<td>icd9</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Illness or condition classification.</td>
<td></td>
</tr>
<tr>
<td>reasonforreferral</td>
<td>Alphanumeric string of up to 100 chars</td>
<td>Symptoms or reasons leading to the procedure.</td>
<td>RTL = True or False</td>
</tr>
<tr>
<td>summary</td>
<td>Alphanumeric string of up to 500 chars</td>
<td>What was entered in the Summary and Recommendations field in the Report area of video viewing.</td>
<td>RTL = True or False</td>
</tr>
<tr>
<td>testfindings</td>
<td>Alphanumeric string of up to 500 chars</td>
<td>Descriptive overview of the findings.</td>
<td>RTL = True or False</td>
</tr>
<tr>
<td>weight</td>
<td>Alphanumeric string of up to 10 chars</td>
<td>Combined with unit of measurement.</td>
<td></td>
</tr>
<tr>
<td>height</td>
<td>Alphanumeric string of up to 10 chars</td>
<td>Combined with unit of measurement.</td>
<td></td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Type</td>
<td>Meaning</td>
<td>Values</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>waistline</td>
<td>Alphanumeric string of up to 10 chars</td>
<td>Combined with unit of measurement.</td>
<td></td>
</tr>
<tr>
<td>build</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Indicates the general body type of the patient.</td>
<td>• Thin</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Stocky</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Protuber-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ant Abd.</td>
</tr>
<tr>
<td>passagetimes</td>
<td>Unspecified</td>
<td>Marks the relative time for certain milestones in the GI tract.</td>
<td></td>
</tr>
<tr>
<td>esophageal_emptying</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Marks the relative time when the capsule leaves the esophagus. Format is xh ymzs.</td>
<td></td>
</tr>
<tr>
<td>gastric_passagetime</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Marks the relative time that the capsule was in the gastric passageway. Format is xh ym zs.</td>
<td></td>
</tr>
<tr>
<td>smallbowel_passagetime</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Marks the relative time that the capsule was in the small bowel. Format is xh ym zs.</td>
<td></td>
</tr>
<tr>
<td>colon_passagetime</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Marks the relative time that the capsule was in the colon. Format is xh ym zs.</td>
<td></td>
</tr>
<tr>
<td>checkin_person</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>The name of the person who checked the patient in.</td>
<td></td>
</tr>
<tr>
<td>capsule_lot_no</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>String printed on capsule packaging.</td>
<td></td>
</tr>
<tr>
<td>sensor_serial_no</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Serial number printed on sensor label.</td>
<td></td>
</tr>
<tr>
<td>protocol_code</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Code for the patient preparation protocol.</td>
<td></td>
</tr>
<tr>
<td>battery_serial_no</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Serial number printed on the battery label.</td>
<td></td>
</tr>
<tr>
<td>recorder_serial_no</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Serial number printed on the recorder label.</td>
<td></td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Type</td>
<td>Meaning</td>
<td>Values</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>sensor</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Text describing sensor. Based on numeric value entered at input.</td>
<td>see Input XML File on page 20</td>
</tr>
<tr>
<td>start_recording_time</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Actual starting time (when the recorder first detects the capsule).</td>
<td></td>
</tr>
<tr>
<td>end_recording_time</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Actual ending time.</td>
<td></td>
</tr>
<tr>
<td>regimen_name</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Note: for COLON2, DR3 only.</td>
<td></td>
</tr>
<tr>
<td>thumbnail</td>
<td>Unspecified</td>
<td>Thumbnails are images marked by the physician.</td>
<td>there must be at least one marked thumbnail in the report</td>
</tr>
<tr>
<td>thumbnail_id</td>
<td>Numeric string of up to 20 digits</td>
<td>Identifies a specific thumbnail.</td>
<td></td>
</tr>
<tr>
<td>thumbnail_image</td>
<td>Unspecified</td>
<td>Name of the file (usually a .jpg).</td>
<td></td>
</tr>
<tr>
<td>image_path</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Full path (folder) where the image is located.</td>
<td></td>
</tr>
<tr>
<td>thumbnail_localization</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Name of the file (usually a .jpg) showing the relative position of the associated thumbnail image.</td>
<td></td>
</tr>
<tr>
<td>localization_path</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Full path (folder) where the image is located.</td>
<td></td>
</tr>
<tr>
<td>thumbnail_time</td>
<td>Alphanumeric string of up to 20 chars</td>
<td>Relative time when the thumbnail was captured. Format depends on time settings in local PC.</td>
<td></td>
</tr>
<tr>
<td>thumbnail_comment</td>
<td>Alphanumeric string of up to 50 chars</td>
<td>Notes or description about the thumbnail.</td>
<td></td>
</tr>
<tr>
<td>thumbnail_sbTime</td>
<td>Numeric string of up to 3 digits</td>
<td>Percentage</td>
<td>0 to 100</td>
</tr>
</tbody>
</table>
### Additional Information

#### Units of Measurement

Date and time values are formatted according to the local PC’s system specifications.

Passage times are formatted as Xh Ym Zs, where X are hours, Y are minutes, and Z are seconds (for example, **1h 2m 3s**).

Weight and height are set according to the requested measurement units (**Metric** or **English**) in RAPID’s settings (**General tab > Regional Settings**). Both have the unit appended to their value (for example, **83 kilos** or **185 lbs**).

#### RTL

Some nodes contain **RTL** as part of their expression (for example, **summary RTL**). This allows support of right-to-left languages, such as Hebrew and Arabic, by aligning text from right to left. The default is **RTL=false** (that is, for left-to-right languages, such as English).
Complex Nodes
Complex nodes contain multiple nested nodes.

Name
The *name* node, which is in the *patient* node, consists of three nodes denoting the last, middle, and first name:

```xml
<name>
  <lastname>Doe</lastname>
  <midname>K</midname>
  <firstname>John</firstname>
</name>
```

Test
The *test* node is also contained in the *patient* node.

```xml
<passagetimes>
  <esophageal_emptyingTime>35m 47s</esophageal_emptyingTime>
  <gastric_passagetime>1h 12m</gastric_passagetime>
  <smallbowel_passagetime>4h 8m</smallbowel_passagetime>
  <colon_passagetime>0h 23m</colon_passagetime>
</passagetimes>
```

Thumbnail
The *thumbnail* node has two attributes: thumbnail_id and thumbnail_time. *Thumbnail* contains three nodes: *thumbnail_image*, *thumbnail_localization*, and *thumbnail_comment*. The attributes image_path and localization_path are used for *thumbnail_image* and *thumbnail_localization*.

```xml
<thumbnail thumbnail_id="1" thumbnail_time="00:00:00">
  <thumbnail_image image_path="files/thumbnail_1.jpg" />
  <thumbnail_localization localization_path="files/thumbnail_1_localization.jpg" />
  <thumbnail_comment />
</thumbnail>
```

Clinic
The *clinic* node is for the name of the clinic and any additional information that may be needed relating to the clinic:

```xml
<clinic>
  <clinic_name>City Medical Center</clinic_name>
  <clinic_info />
</clinic>
```
Introduction

RAPID generates a lot of data, and this data needs to be managed. To understand your role in this process, you must first understand how the Study Manager recognizes data.

The Study Manager is the main interface for RAPID users for selecting and viewing studies. A RAPID study is the collection of images and other data associated with a specific PillCam capsule endoscopy procedure. An archive is a collection of studies.

The Study Manager uses an indexer that works as a background process. The indexer keeps track of any changes to the archive directories and their contents. When the Study Manager is opened, the indexer refreshes the list of archives and their studies.

Archives can be:

- **online**: any archive that is currently physically connected to the PC and therefore accessible by RAPID. Online data is volatile in that it is subject to whatever changes the user makes (for example, adding, deleting, moving, rename, etc.). The indexer therefore makes no permanent record of online data; the index is rebuilt each time the Study Manager is run.

- **offline**: any archive on removable media (for example, external hard disk, CD, or DVD). Offline archives are stored with permanent index pointers. This means that the Study Manager will remember an archive’s contents and display it as an offline archive, even when it has been physically disconnected from the PC. This is important as it allows users to search for specific studies or patients, even when large amounts of data have been stored offline.
The Study Manager displays a list of available archives on the left side of the screen. When an archive is selected, all of its studies are listed.

The Study Manager is also user-specific; the list of studies from any selected archive is rebuild by the indexer for that particular user, based on the user’s settings in RAPID. Therefore, two users who share the same PC, but log in using separate usernames, can see a different set of archives.

**Maintaining Archives**

RAPID archives are very large; users can quickly run out of room on their local hard disk.

**Archive Structure**

When a RAPID study is created, its default location subfolders in the folder specified in **Tools > Settings > Video > Video Creation**. There can be a separate folder for raw data transferred from the recorder and for the videos created from that data. The name of the folder, and the study file within it, is based on the following patient check-in information transferred from the recorder:
• patient’s last name
• patient’s middle initial
• patient’s first name
• patient’s ID number (in parentheses)
• date that the study was performed (format: DD MMM YY)

The study file has the extension *.gvi. For example: the folder

Doe F. John (12345) 21 Feb 12 (which is located in the predefined
Created Video directory)

contains the file

Doe F. John (12345) 21 Feb 12.gvi

An archive is one folder that contains one or more study folders.

**Moving Archives onto Removable Media**

Users can copy individual studies or entire archives onto removable media (see *File Administration* in the *PillCam® Capsule Endoscopy User Manual*).

In addition, we recommend:

1. Implement a backup policy for any shared network folder containing study data.
2. Determine what is the longest reasonable period for archives to remain in that folder.
3. When archives are older than the time specified, copy them to DVD for offline archiving.

**Backing Up the Study Manager Index**

Perform a backup of the Study Manager index to save the current results of the indexer. Since the indexer is a background process running all the time in the Study Manager, updating the index as changes are made, a backup saves a static version of the index, either as a permanent reference, or to transfer to another PC.

*Note:*
You must be logged on as Admin to have access to this utility.

1. Shut down RAPID.
2. From the Start menu, select Programs > Given Imaging> Backup and Restore Offline Studies.
3. Select **Export directory**.

4. Specify the location.

   The data is copied, uncompressed, to that location (DVD or USB drive, for example) in Microsoft Access format (a file with the extension *.*accdb*).

   When the backup is finished, this message appears:

   **Export directory successful.**

---

### Restoring the Study Manager Index

Performing a restore of the Study Manager index allows you to restore the archive list from a previously backed up database index.

**Note:**
You must be logged on as Admin to have access to this utility.

1. Shut down RAPID.

2. From the Start menu, select **Programs > Given Imaging > Backup and Restore Offline Studies**.

3. Select **Import directory**.

4. Specify the location where the *.*accdb* file is located. If there are multiple backups, select the one you want to use.

   When the restore is finished, this message appears:

   **Import directory successful.**
Use Case Example

Dr. Robert Edelson performs an average of 40 capsule endoscopy procedures each month. At the end of each month, he transfers all of that month’s studies to a DVD and labels it accordingly (for example, June 2011).

Each time he creates a DVD, he inserts it into his PC while the Study Manager is open. The Study Manager’s background indexer then automatically updates the index to include the studies on that DVD.

In October 2011, Dr. Edelson performed a capsule endoscopy on patient Marcia Blane. The report was completed and at the end of the month, the patient’s data was transferred to a DVD.

In January 2012, Dr. Edelson needed to review Marcia Blane’s report. In the Study Manager, he searched for the patient’s name and saw that her report was in the archive labeled October 2011. He located that DVD, inserted it into PC, and was immediately able to access all the data directly through the Study Manager.

In March 2012, Dr. Edelson installed RAPID Reader on his laptop. From his office PC, he backed up the Study Manager index and then restored in on the laptop. He was then able to have the same studies appearing in both the Study Manager running on his office PC and the Study Manager running on his laptop.

Since there is not automatic way to synchronize these two installations of the Study Manager, Dr. Edelson should continue to perform the back-up and restore of the Study Manager index when he creates his monthly DVDs.
Chapter 6: Troubleshooting

Introduction

This chapter covers only those troubleshooting issues that directly relate to the IT setup RAPID and the HIS connectivity. For general troubleshooting issues for RAPID or the PillCam platform, see the PillCam® Capsule Endoscopy System manual.

Patient Check-in Problems

Problem: One or more fields in the check-in process have incorrect data, but RAPID won’t let you manually edit them.

Cause: Any field populated by the imported HIS data cannot be edited. If an XML node contains an incorrect value (for example, a patient name is misspelled or the incorrect gender listed), the user cannot correct the error from RAPID.

Solution:

1. (User) Cancel the check-in process. Restart it without importing data. Enter all values manually.

2. (User) After creating the video, update the patient details manually using the Study Manager.