PATIENT DICOM EXPORTER

Version 1.0.0

User's Manual

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1. Introduction

The Patient DICOM Exporter is a Windows application that batch-exports patient DICOM data from an IDMS or CDMS system to the local file system or a third-party DICOM server, such as a PACS or MIM system. Once exported, the data can be viewed directly using standard DICOM-compatible tools or ingested into a PACS server, enabling clinicians to remotely review patient images and retrieve DICOM files without requiring proprietary Accuray hardware or software.

1.1 Exported Data Organization

Patient data is exported and stored in a hierarchical directory structure on disk, organized by last name, first name, and medical ID. The following illustrates the patient-level directory structure:

```
Patient Directory  (LastName_FirstName_MedicalID)
  ├── DICOM\                    (all patient DICOM series)
  └── Plan Directory\
        ├── DICOM\                (plan-specific DICOM structures)
        ├── Documents\            (scanned PDF documents)
        ├── Fraction_Files\       (treatment fraction files)
        ├── Live_Images\          (live x-ray and setup images)
        ├── Logs\                 (treatment log files)
        ├── Plan_Files\           (plan-specific files and XML)
        └── Screenshots\          (delivery screenshots taken during treatment)
```

1.2 Exported Data Types

The following data types and plan statuses are included in the export:

- All patient DICOM files (CT, MRI, PET, RTSS)
- **All patient plans with the following statuses:**
  - Deliverable
  - Authorized
  - Disallowed
  - Under Treatment
  - Discontinued
  - Completed
- **For all plans, the following data is exported:**
  - Plan CT, MRI, PET, and other imaging modalities
  - Plan RTSS and RTDOSE
  - Plan RTPLAN and RTRECORD
  - Treatment screenshots
  - Treatment live x-ray images
  - Treatment logs
  - Treatment fraction files
  - Treatment planning files
  - PDF files attached to the patient record

> **Note:** *Accuray CyberKnife RTPLAN is a skeleton RTPLAN primarily used for OIS interface and scheduling. It contains patient demographic and treatment plan information (e.g., plan name, number of fractions, dose per fraction, LINAC energy level), but does not contain geometric or dosimetric data*

such as beam angles or collimator openings. For Radixact/TomoTherapy plans, the RTPLAN contains the complete set of delivery instructions, including MLC leaf movements.

2. Export Limitations

2.1 Plan and Record Types Not Exported

The following plan and record types are excluded from export:

- Physician (contour-only) plans
- QA plans
- LOT simulation plans
- Setup and alignment plans
- Phantom records and plans

2.2 Images Not Available for Export

The following image types cannot be exported:

- Fused moving images

3. System Requirements

Before installing or running the Patient DICOM Exporter, confirm that the following requirements are met:

- CyberKnife and/or TomoTherapy/Radixact systems running CDMS v2.6 through IDMS 3.5.x.
- For earlier CDMS systems: Microsoft .NET Framework 4.0 or later is required.
- An account with administrative privileges to log into CDMS/IDMS.
- An external USB drive or network storage location with sufficient capacity to store the exported data (space requirements vary by number of patients).

Additional Constraints

- The application does not natively support systems with multiple storage vaults. If multiple storage vaults are present, contact TC Consulting to consolidate them into a single vault before proceeding.
- Patients in an archived state must be restored before they can be exported.
- Patients archived to DVD must be restored by the user prior to export.
- Pre-CDMS (SGI) patients are not supported, as their records are already stored in a flat file system. However, SGI patients that have been imported into CDMS or IDMS will be exported normally.
- To automatically export DICOM to a third-party DICOM server, copy the provided send_dicom.bat file to the C:\CDMS directory.

4. Installation

Follow the steps below to install the Patient DICOM Exporter on the target CDMS or IDMS server.

1. Log into the CDMS or IDMS server.
2. Transfer the PatientExport.zip file to the server under C:\Temp using either network file transfer or external USB flash drive.
3. Using Windows Explorer, double-click PatientExport.zip to open the archive.

4. Select all files within the archive and press Ctrl+C to copy them.
5. Navigate to C:\CDMS and press Ctrl+V to paste the files into that directory.
6. If running on a Windows Server 2003 system, install dotNetFx40_Full_x86_x64.exe, which is included in the zip package.

5. Workflow Setup: Creating a Network Storage Location

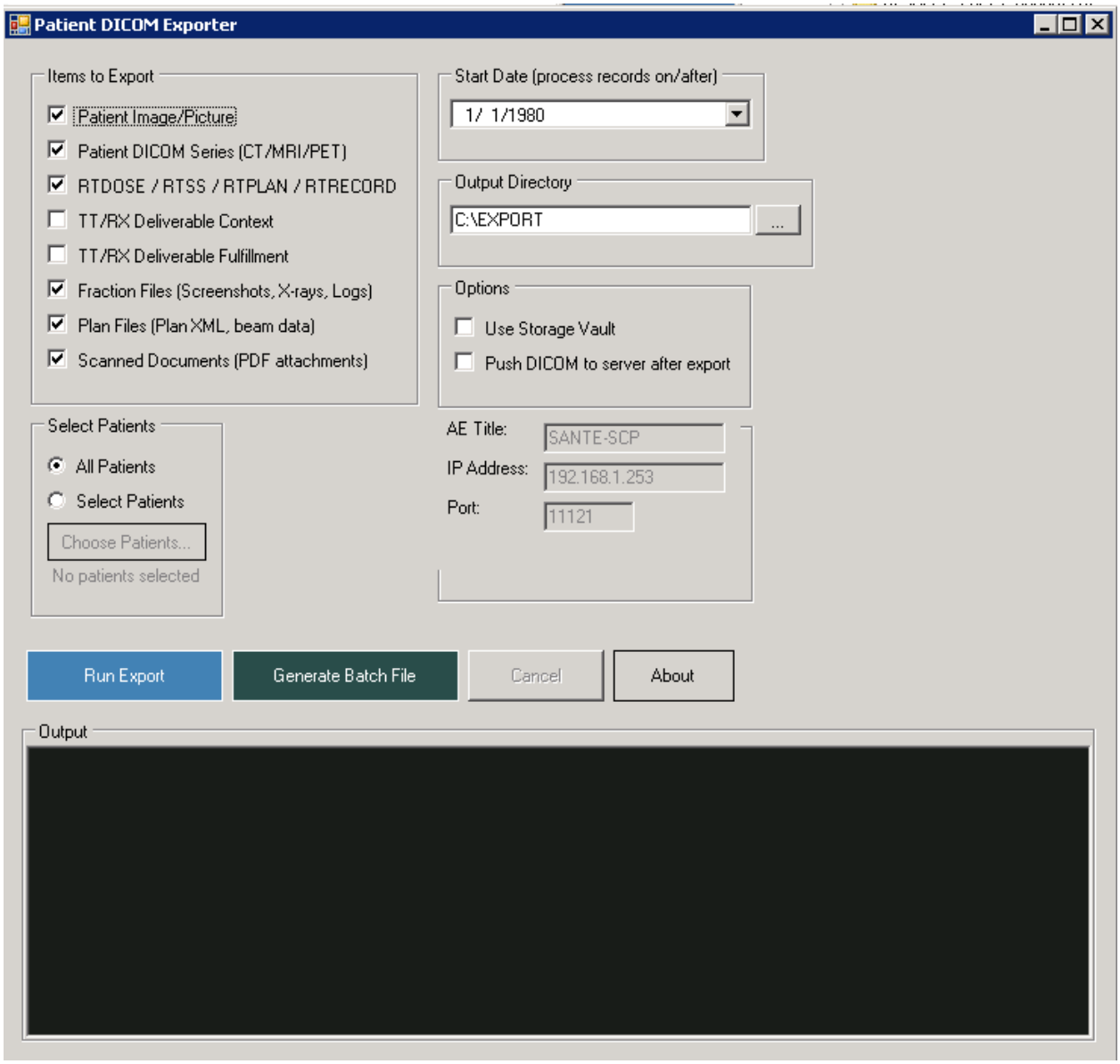
Note: *Skip this section if all patients can be fully restored onto the CDMS or IDMS system. This step is only required when patients must be processed in multiple batches. Archiving each completed batch to a dedicated network location helps track which patients have been processed and prevents unnecessary re-restoration.*

7. Log into the Multiplan or Precision workstation.
8. From the main menu, launch the System Administration application.
9. Select the Storage tab.
10. Click the + button to create a new network storage location.
11. Fill in the following fields, then click OK:
    a. Name: Extracted Patients
    b. Location Path: UNC path to the new or existing network location
    c. User Name: (enter credentials)
    d. User Password: (enter credentials)
    e. Capacity (GB): (enter available capacity)
12. Click the Check Storage Accessibility button (checkmark icon) and verify that "Yes" appears next to the new storage location. If "No" is displayed, work with IT to resolve the issue before continuing.
13. Double-click the newly created storage location. Under the Default field, select the Yes radio button to designate this location as the default archive destination, then click OK to save.
14. Close the System Administration application.
15. Launch the Patient Record Archive and Restore application.
16. Select and archive all phantom records.
17. Select and restore archived patients until the CyberKnife system reaches approximately 95% capacity.

6. Exporting Patient Data

6.1 Launching the Application

18. Log into the CDMS or IDMS server as required.
19. Navigate to C:\CDMS and double-click PatientExport.exe to launch the application.
20. The following screen will show:



6.2 Selecting Items to Export

Under the Items to Export section, select the datasets you wish to export. The available options are described in the table below:

Export Option	Description
Patient Image/Picture	Exports any JPG or PNG photo uploaded to identify the patient visually.
Patient DICOM Series	Exports all patient CTs, MRIs, and PETs imported for planning purposes.
RTDOSE / RTSS / RTPLAN / RTRECORD	Exports all planning and treatment RT DICOM objects.
TT/RX Deliverable Context	Exports all TT and RX planning and deliverable context. Unchecked by default. Enable only if the system includes a TT/RX system.

Export Option	Description
TT/RX Deliverable Fulfilment	Exports all TT and RX treatment fraction data. Unchecked by default. Enable only if the system includes a TT/RX system.
Fraction Files	Exports all fraction-related files, including screenshots, x-ray images, and logs.
Plan Files	Exports all planning-related files, including plan XML files and beam data.
Scanned Document	Exports all patient PDF attachments added to the patient record.

6.3 Configuring Export Options

21. Under Select Patients, choose All Patients, or selectively choose only those patients that require export.
22. Use the Start Date field to limit the export to patient records updated after the selected date.
23. Select an Output directory where the exported patient files will be saved.
24. Click Use Storage Vault if the system has an attached storage vault.
25. To automatically push exported DICOM to a third-party server (e.g., PACS), enable the Push DICOM to Server After Export option and update the AE Title, IP Address, and Port fields accordingly.
26. Click Run Export when all options are configured and you are ready to proceed.

6.4 Monitoring the Export Process

Once the export begins, please be aware of the following:

- The export process may take a significant amount of time to complete, depending on the number of patients and the volume of data. If the Push DICOM to Server option is enabled, additional time will be required.
- No progress updates are shown in the output log during the export or DICOM push operations. This is expected behavior.
- An elapsed timer displays the total duration of the current session.
- To stop the export, click the Cancel button.
- Upon completion, the output log will display a summary indicating how many files were copied.

6.5 Post Export Process

Once the export completes:

- If there are additional patients to export, archive all currently active patients to the new archive location (created in section 5.0 above).
- Restore the next batch or set of patients to process. In Patient Record Archive and Restore application, click on the Storage Location column to sort the list of patients by storage location. Restore only those patients which have not been processed (those that are not in the new archive location.).
- Repat steps 6.2 – 6.4 to export the next batch of patients.

6.6 Additional Features

- Generate Batch File: Click this button to generate and save a batch file (.bat) that can be used to run the same export at a later time without manually reconfiguring the options.
- About: Click this button to display program information, including version number, author, and licensee details.

7. Workflow Overview

The following flowchart provides a high-level overview of the complete patient DICOM export workflow. Refer to the corresponding sections of this manual for detailed step-by-step instructions.

STEP 1	Log into the CDMS or IDMS server with administrative credentials. *See Section 6.1*
STEP 2	(Optional) Create a new network storage location for batch archiving. *See Section 5*
STEP 3	Install the PatientExport application to C:\CDMS. *See Section 4*
STEP 4	Launch PatientExport.exe and select the items to export. *See Section 6.2*
STEP 5	Configure patient selection, output directory, and DICOM push settings. *See Section 6.3*
STEP 6	Click Run Export and monitor the output log. *See Section 6.4*
STEP 7	Upon completion, verify the exported files in the output directory. *See Section 6.4*

8. Disclaimer

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