

DIGITAL DATA SUBMISSION PROCEDURES

DIGITAL DATA FORMAT

For digital data submission, an institution's treatment planning system must have the capability of exporting data in one of two formats:

- RTOG Data Exchange Format, Version 3.20 or later (specifications at http://itc.wustl.edu/exchange_files/tapeexch400.htm); or
- DICOM 3.0 in compliance with the ATC's DICOM 3.0 Conformance Statement

A list of commercial systems that are known to have this capability are listed on the ATC website (http://atc.wustl.edu/credentialing/atc_compliant_tps.html).

The capability for QARC to accept digital RT data using the method described below has been developed with the Advanced Technology Consortium (NIH grant CA81647).

Institutions may submit treatment planning data in one of these formats on a CD or electronically via ftp to QARC. Institutions must obtain a username and password for submission of data via ftp. To request an FTP account, please complete the FTP Account Request Form (available at www.qarc.org/DigitalData/FTPAccountRequest.pdf) and email it to ATCDICOMRT@QARC.org. Please include your name and your institution's name and address as well as the best way to contact you (i.e. phone number, e-mail address, etc.). **Allow 3 business days to process your account request.**

REQUIRED PROTOCOL DIGITAL DATA

Digital data submitted to QARC must include the following in accordance with the appropriate protocol requirements:

- CT Images
- Target volumes and normal structures per protocol;
- Beam geometry or brachytherapy source parameters
- 3D Dose distributions in absolute dose for each phase of treatment (concurrently treated beams) and for the total treatment
- DVHs for the target volumes and normal structures specified by the protocol for the total (composite) plan. Dose should be in absolute dose (Gy). Volume should be in absolute units (cm³).

Hardcopy color isodose plots for the total dose plan in 3 planes, axial, sagittal, and coronal, through the center of the target volume must be submitted along with total dose DVHs, for digital data validation.

SUBMITTING DIGITAL DATA VIA THE INTERNET

Digital treatment planning data in RTOG Data Exchange or DICOM RT format can be submitted to QARC over the Internet using FTP. **Effective April 9, 2007, the QARC FTP server will be using Secure FTP (SFTP).** Secure FTP (SFTP) uses the SSH network protocol and offers several advantages over FTP, including secure (encrypted) transport of usernames, passwords, and data, and compatibility with most firewall configurations. Please use the following steps to submit data via SFTP:

1. Complete the FTP Account Request Form and e-mail it to ATCDICOMRT@QARC.org to obtain an FTP account.
2. QARC's SFTP address is the same as the address formerly used for sending digital data via FTP (**sFTP.qarc.org**, current IP address **174.67.111.241**).
3. User names and passwords for SFTP are the same as those used for FTP.
4. For many users, the SFTP upload procedure is essentially the same as for FTP, except that a new SFTP client may be needed. SFTP client software, both commercial and open-source, is broadly available. Windows clients include [WS FTP Professional](#) (commercial), [FileZilla](#) (free/open-source) and [WinSCP](#) (free/open-source). For Linux systems, both graphical (gftp) and command-line (sftp) programs are included with most distributions.
5. [Instructions for configuring SFTP clients](#) (WS FTP Pro, Filezilla, WinSCP3, and Linux sftp)
6. Problems in connecting to the QARC SFTP server, may be caused by your institution's **firewall configuration**. An outbound connection from your computer to **TCP Port 22 on host sFTP.qarc.org** is required. (Although allowing such a connection is considered safe, it is sometimes disallowed by default.) Please consult you local firewall/network administrator.
7. Instructions for Specific Treatment Planning Systems are linked below:
 - o **CMS/XiO** [SFTP Submission of RTOG Files to QARC from CMS XiO](#)
 - o **Philips/Pinnacle** - Contact Philips support for help in installing command-line SFTP client
8. Once you are connected to the QARC SFTP server, change to the "incoming" directory. (CD incoming)
9. Create a new sub-directory within "incoming" with a name that is pertinent to the data that you are submitting (mkdirCase01423totalplan). **Please do not use spaces in directory names or filenames.**
10. Send e-mail to ATCDICOMRT@QARC.org to indicate that you have uploaded protocol case data. Please identify the study group, protocol, and case number for the submission as well as your contact information.
11. In order for QARC to confirm that your data has been received and imported correctly, please send images showing structures and the dose distribution in three orthogonal planes along with total dose DVHs. These may be screen dumps sent via e-mail as jpeg, bitmap, or tiff files or they may be hardcopies mailed to the address below.

SUBMITTING DIGITAL DATA VIA CD

Digital patient treatment planning data may be written to CD and the CD mailed to QARC. Be sure to label the CD with the study group, protocol, and case number. Include only one patient per CD. In order for QARC to confirm that your data has been imported correctly; please include hardcopies showing structures and the dose distribution in three orthogonal planes along with total dose DVHs and send to:

Quality Assurance Review Center
640 George Washington Highway, Suite 201
Lincoln, RI 02865

Contact QARC at ATCDICOMRT@QARC.org or 401-753-7600 if you have any questions.