SOP: Data upload XNAT

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Version history

V1.1	Valid from. 22-12-2023	General SOP WP10 made specific for DIST
V1.2	Valid from. 05-02-2026	Addition of instructions for SURFfilesender

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1. PURPOSE

This Standard Operating Procedure (SOP) provides an overview of all steps required to collect and upload all imaging data that have been acquired within the framework of the Dutch ICH Surgery Trial (DIST) to the central imaging repository of CONTRAST, namely the XNAT of Health-RI.

2. SCOPE

This SOP applies to:

- The local principal investigator (PI) and/or his/her delegated staff of investigator-initiated research subject to the WMO, who are involved in collecting the imaging performed within the framework of the Dutch ICH Surgery Trial (DIST); and
- The local contact person (usually from the radiology department) who is involved in sending the imaging to the study team of the Dutch ICH Surgery Trial (DIST).

Sections 4, 11 and 12 are relevant for the local PI and/or his/her delegates, and provide more information on the correct collection and delivery of imaging to the local contact person responsible for

sending the imaging to the study team.
Sections 4 to 12 are relevant for the local contact person responsible for sending the imaging, with additional information on how the data should be uploaded to XNAT.

3. DEFINITIONS AND ABBREVIATIONS

BL	Baseline
CTP	Clinical Trial Processor
DIST	Dutch ICH Surgery Trial
OK/OR	Operating Room
PI	Principal Investigator
POSTOP	Post-operative
SAE	Serious Adverse Event
SOP	Standard Operating Procedure

4. MAINTAINING AN EXCEL LOG

It is important that the local PI and/or his/her delegates keep a log of the imaging performed per study participant. This is to maintain a complete overview of which imaging has been performed, to enable delivery to the local contact person responsible for sending the imaging, and so that the study team can verify whether all imaging has been received.
The Excel template in the appendix can be used for this purpose. Please complete the template in full and regularly send updates of this document to the DIST mailbox (dutchichstudie.neuro@radboudumc.nl).
Below are the instructions for completing the fields “modality” and “study moment” in the Excel template.

4.1. Naming of study moments/ timestamps

Baseline

All imaging performed prior to randomisation will be labelled BL (Baseline). Numbers indicate the chronological order. We assume that examinations with a time interval of less than 20 minutes belong together, and will therefore both be labelled, for example, “BL2”. The scan with the highest number, i.e. the scan that was performed last before randomisation, will be considered the ‘true’ baseline scan.

Examples:

- BL1: baseline CT scan performed at 18:20 in a primary stroke centre (referring centre);
- BL2: baseline CT scan performed at 19:10 after arrival at the neurosurgical centre;
- BL3: additional baseline CT scan performed at 19:40 in the neurosurgical centre prior to randomisation due to neurological deterioration.

Post-operative

The immediate post-operative scans are labelled POSTOP followed by a number, starting with POSTOP1. In some cases, based on the immediate post-operative scan, it is decided to return directly to the operating room. The immediate post-operative scan after this re-operation is then labelled POSTOP2.

Follow-up

Follow-up imaging is collected at two standard time points: a non-contrast CT (NCCT) at 24 hours (±6 hours) and at 6 days (±1 day) after randomisation. These are labelled FU24U1 and FU6D1, respectively. In principle, only one examination is performed at each of these time points.

Serious Adverse Events

If imaging is performed in the context of an SAE, this should be labelled accordingly. The SAE number (as recorded when reporting an SAE in Castor) should be included in the name. Imaging performed in the context of SAE-1 is labelled EXTRA1SAE1, where the first number refers to the SAE number. As multiple scans can be performed for one SAE, an additional sequence number is added to indicate the scan number.

Examples:

- EXTRA1SAE1: first CT scan performed in the context of SAE-1 hydrocephalus
- EXTRAE1SAE2: second follow-up CT scan performed for SAE-1 hydrocephalus
- EXTRA2SAE1: first CT scan performed in the context of SAE-2 ICH progression

Additional imaging

If additional imaging is performed, this will be labelled EXTRA, also with a sequence number.

Examples:

- EXTRANAV1: for an additional pre-operative navigation scan;
- EXTRAFU1: for additional imaging performed during follow-up outside the standard time points (24 hours ±6 hours and 6 days ±1 day after randomisation).

4.2. Naming of study modalities

Depending on the scan, the following modalities are used:

- NCCT: non-contrast CT cerebrum;
- CTA: CT angiography head (/neck) (including CTV)
- CTP: CT perfusion brain;
- MR: MRI-brain.
- DSA: digital subtraction angiography

If multiple scan modalities are combined in one examination (e.g. NCCT, CTA and CTP at baseline), this can also be indicated as such in the template.

5. UPLOADING OPTIONS FOR IMAGING DATA TO XNAT

Imaging data can be uploaded to XNAT in three different ways:

1. Using the Clinical Trial Processor (CTP) (see section 8);
2. Using scripts via the XNAT REST interface (see section 9);
3. Manually via the XNAT user interface (see section 10).

In all cases, an XNAT account is required to verify that the data have been uploaded correctly (see section 7).

If the above mentioned options are not possible, SURFfilesender can be used as an alternative. Via the contact person at the bottom of this SOP, a guest link for SURFfilesender can be requested. The pseudonymised imaging can then be sent via this link.

Before sending the images, it is important that the images are saved in a structured way. This means that all images from one patient should be stored in a folder with the study ID, and, within this folder, all studies/experiments should be saved in a folder with the study moment/ timestamp (BL1_CTA, FU24_NCCT), as described in section 4.

Example of the structure:

Subject
DIST_20001
BL1_CTA
BL1_NCCT
FU24H1_NCCT
FU6D1_NCCT

6. PSEUDONIMISATION OF IMAGING DATA

If data are uploaded via the XNAT REST or user interface, they must first be pseudonymised. The table below describes the DICOM tags that are required. The Accession Number is not mandatory. In addition, the date and time of the scans/studies are required and must therefore not be removed during pseudonymisation. Patient Comments are only required when uploading via CTP.

General

Tag	Description	Value
(0010,0010)	Patient's Name	{Studie ID}
(0010,0020)	Patient ID	{Studie ID}
(0008,0050)	Accession Number	{Timepoint}_{Modalities}
(0010,4000)	Patient Comments	Project:mrcleandist; Subject: dist_{Studie ID}; Session: {Timepoint}_{Modalities}

Example

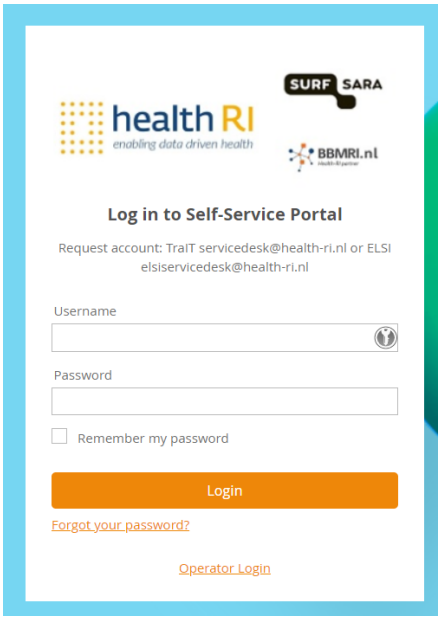
Tag	Description	Value
(0010,0010)	Patient's Name	20006
(0010,0020)	Patient ID	20006
(0008,0050)	Accession Number	BL1_NCCT_CTA
(0010,4000)	Patient Comments	Project:mrcleandist; Subject: dist_20006; Session: BL1_NCCT_CTA

7. REGISTERING FOR XNAT

First, an account must be created via the Health-RI service desk. This can be done by sending an email to: (servicedesk@health-ri.nl).
Once access to the service desk has been granted, an XNAT account can be requested by completing an online form. This form can be found by searching for XNAT and selecting the "New User Request" form, or via "Services and Request Forms" → "XNAT" → "XNAT New User Request".

Under "reason for access", indicate that you wish to upload data to XNAT. The XNAT project is "mrcleandist" or one of the centre-specific upload projects.

For more information and to be added to the correct project, please contact Adriaan Versteeg from CONTRAST WP10 Imaging Data Management.



8. UPLOADING IMAGING DATA VIA CLINICAL TRIAL PROCESSOR

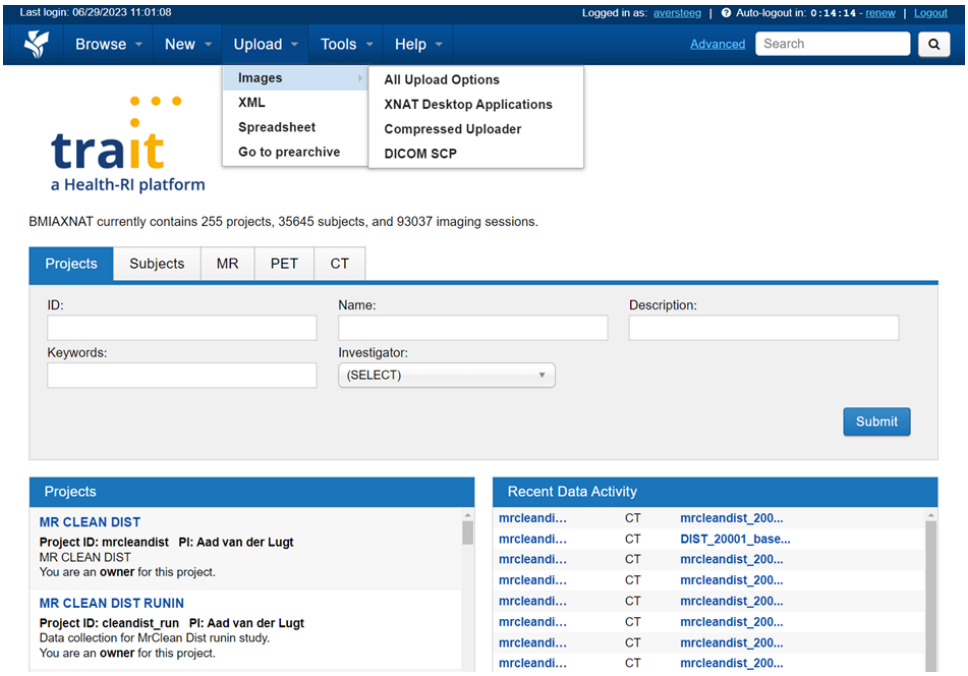
For a general explanation of how imaging can be uploaded to XNAT using a CTP, the document *"Clinical Trials Processor overview"* can be used.
For documentation, please consult the CTP website.
For examples of pipelines and pseudonymisation scripts, please contact Adriaan Versteeg from WP10.

9. UPLOADING IMAGING DATA VIA REST INTERFACE

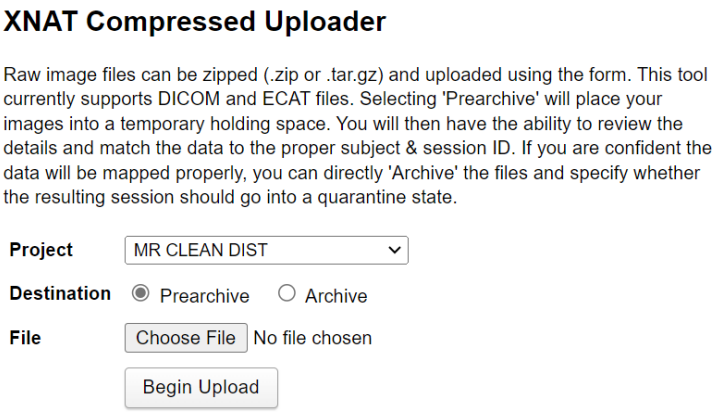
Uploading imaging data to XNAT via the REST interface can be done in several ways. One of the easiest methods is using Python and xnatpy. Two functions are available: *import_ (importing zip files)* and *import_dir (importing folders).*
For further questions, please contact Adriaan Versteeg from WP10.

10. MANUAL UPLOAD OF IMAGING DATA TO XNAT

Imaging data can also be uploaded manually via the XNAT website (xnat.bmia.nl). After logging in, the imaging data can be uploaded using the "Compressed Uploader", which can be found under Upload → Images → Compressed Uploader.



In the “Compressed Uploader”, select project “MR CLEAN DIST” (or a centre-specific project). The destination should remain set to prearchive. Then select a zip file using “Choose File”. This zip file may contain multiple studies, provided these have been combined into a single zip file. Further instructions can be found here.



11. RELATED DOCUMENTS

- DIST imaging log template
- Clinical Trials Processor overview

12. CONTACT DETAILS

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