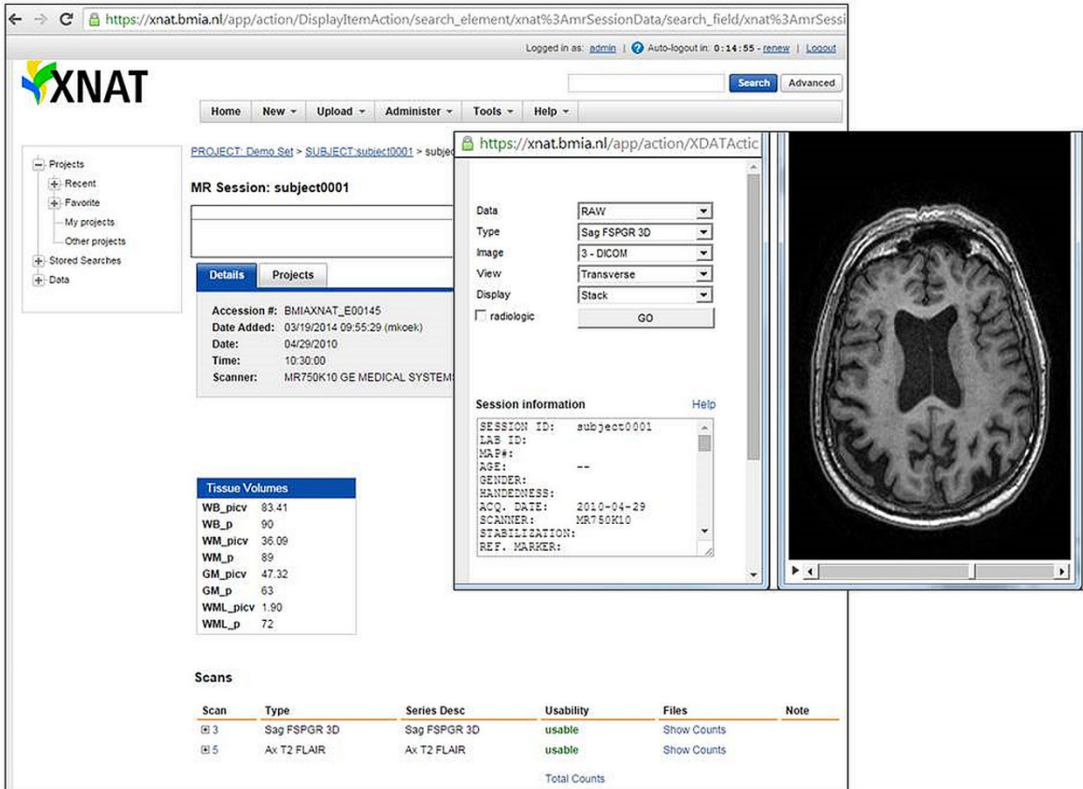


## MEETING ABSTRACT

## Open Access

# XNAT imaging platform for BioMedBridges and CTMM TraIT

Stefan Klein<sup>1\*</sup>, Erwin Vast<sup>1</sup>, Johan van Soest<sup>2</sup>, Andre Dekker<sup>2</sup>, Marcel Koek<sup>1</sup>, Wiro Niessen<sup>1,3</sup>From 1st Clinical Research Informatics (CRI) Solutions Day  
Duesseldorf, Germany. 26-27 May 2014**Characterisation**Service, imaging, open source, archive, image sharing,  
clinical trials.**Description**The XNAT imaging platform is a web service for storing,  
organizing, and sharing medical imaging data. It is based


The screenshot displays the XNAT web application interface. The main content area shows details for an MR Session for subject0001. Key information includes:

- Accession #:** BMIAXNAT\_E00145
- Date Added:** 03/19/2014 09:55:29 (mikoek)
- Date:** 04/29/2010
- Time:** 10:30:00
- Scanner:** MR750K10 GE MEDICAL SYSTEM

Below this, there is a 'Tissue Volumes' table:

Tissue Volumes	Value
WB_picv	83.41
WB_p	90
WM_picv	36.09
WM_p	89
GM_picv	47.32
GM_p	63
WML_picv	1.90
WML_p	72

A 'Scans' table is also present:

Scan	Type	Series Desc	Usability	Files	Note
3	Sag FSPGR 3D	Sag FSPGR 3D	usable	Show Counts	
5	Ax T2 FLAIR	Ax T2 FLAIR	usable	Show Counts	

On the right side, there is a 'Session information' panel with fields for SESSION ID, LAB ID, MAP#, AGE, GENDER, HANDEDNESS, ACQ. DATE, SCANNER, STABILIZATION, and REF. MARKER. A large image of an axial MRI brain scan is displayed on the far right.

**Figure 1** XNAT user interface. Example project with magnetic resonance imaging (MRI) data of the brain.\* Correspondence: [s.klein@erasmusmc.nl](mailto:s.klein@erasmusmc.nl)<sup>1</sup>Biomedical Imaging Group Rotterdam, Departments of Medical Informatics  
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on the open source eXtensible Neuroimaging Archive Toolkit (XNAT, <http://www.xnat.org>) [1]. The platform is suitable for both single-center and multi-center clinical studies with imaging data (Figure 1). Medical imaging data (in DICOM format) and image-derived data (often in non-DICOM format) are supported. Downloading and uploading is possible via the web interface, via the DICOM protocol, and via a RESTful application programming interface. Read and write access rights can be controlled per project and per user. In the context of the European BioMedBridges project and the Dutch CTMM TraIT project, two XNAT instances have been put in production. In the CTMM TraIT instance, which is especially supports multi-center clinical imaging studies, submission of DICOM imaging data is performed via the RSNA Clinical Trial Processor (CTP) to enforce proper anonymisation. In order to simplify and automate the installation of XNAT, we developed scripts based on the "Puppet" configuration software. These scripts have been made publicly available via the XNAT marketplace (<http://marketplace.xnat.org>).

### Status of development

A recent stable release of the XNAT software is used. Currently (since November 2014), we are running version 1.6.2.1. The XNAT instances are in use by several research projects. The configuration scripts are in active development, and the current release is version 0.2 alpha.

### Users

Researchers using medical imaging data.

### Links

Documentation and links to both XNAT instances and Puppet installation scripts [<http://xnat.bigr.nl>]; documentation of RSNA CTP [[http://mircwiki.rsna.org/index.php?title=CTP\\_Articles](http://mircwiki.rsna.org/index.php?title=CTP_Articles)].

### Acknowledgments

The BioMedBridges project is funded by the European Commission within Research Infrastructures of the FP7 Capacities Specific Programme, grant agreement number 284209. The TraIT project is an initiative from the Center for Translational Molecular Medicine (CTMM).

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Published: 22 May 2015

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managing, exploring, and sharing neuroimaging data. *Neuroinformatics* 2007, **5**(1):11-34.

doi:10.1186/2043-9113-5-S1-S18

**Cite this article as:** Klein et al.: XNAT imaging platform for BioMedBridges and CTMM TraIT. *Journal of Clinical Bioinformatics* 2015 **5** (Suppl 1):S18.

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