

# Decentralized access to medical images in Research and Enterprise PACS Applications

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A significant activity in the classic distributed solution with computer servers and long-term storage devices of high capacity is the MeDiMed project (Metropolitan Digital Imaging System in Medicine), where the Masaryk University in Brno cooperates with a range of university and city hospitals. To be interconnected they take advantage of the CESNET2 high speed computer network. The goal of the MeDiMed project is to create shared outsourced medical multimedia data archiving and communication center (Metropolitan PACS). The presented pilot project is a parallel project next to MeDiMed. It provides an interface able to operate in DICOM standard (Digital Imaging and Communications in Medicine). It allows interchange medical images with modalities (e.g. medical devices or software application) and with existing PACS (e.g. with the mentioned MeDiMed).

## Provide a set of generic keywords that define your contribution (e.g. Data Management, Workflows, High Energy Physics)

PACS, DICOM, medical imaging grid

### 3. Impact

The pilot project uses the Globus MEDICUS project as a test DICOM interface build upon the OGSA Globus Toolkit - opensource grid implementation. This integration provides replication service and failure recovery and allows to integrate federalized authorization.

The main services of the pilot project follows SOA principle to allow flexible evolution of these services.

These follows the idea to enhance the existing Metropolitan PACS using the new concepts and allowing key features of reliability the access to the data.

### URL for further information:

<http://medicus.cesnet.cz>

### 4. Conclusions / Future plans

The pilot project is now deployed to the high speed CESNET2 network as a site-level service. The interconnection is being treated between existing Metropolitan PACS in Brno and Central Military Hospital in Prague. There is planned other distribution of the grid nodes of the pilot project into the Central Military Hospital in Prague and into the First Medical Faculty of Charles University in Prague.

### 1. Short overview

The aim of this paper is to introduce the pilot project of enterprise PACS (Picture Archiving and Communication System) in the Czech Republic which is deployed next to the existing Metropolitan PACS MeDiMed (Metropolitan Digital Imaging System in Medicine) using the service oriented architecture (SOA) style and grid technologies for distributed systems. This project follows the idea to build decentralized system used to exchange medial images.

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