



dCache, list of topics

EGI Meeting on H2020

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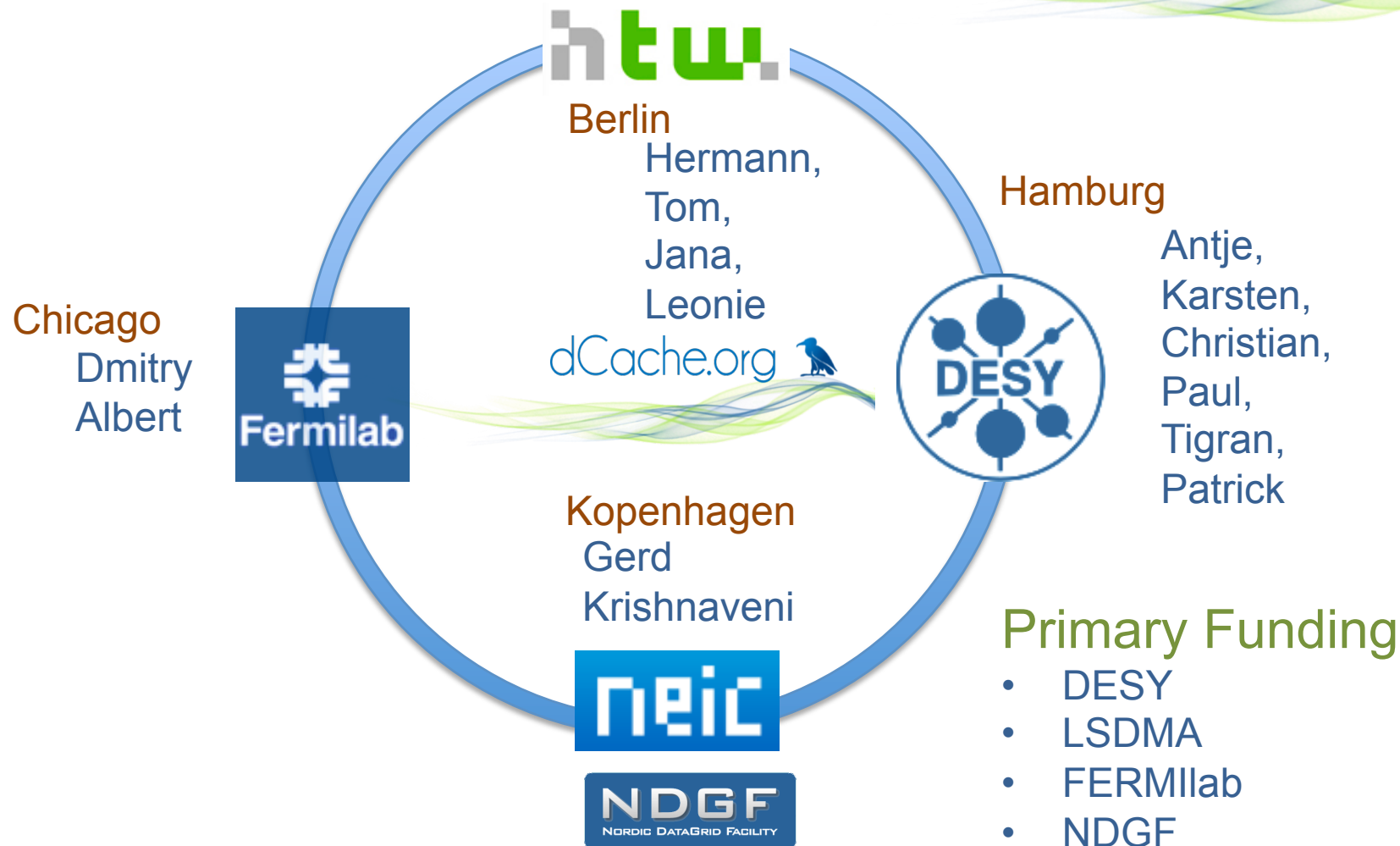
Content



- The project structure
- Project funding, customers and contacts
- Current work areas and plans

The dCache partners and team

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Primary Communities



- WLCG (Worldwide, 60 Labs)
- Photon Science (DESY)
- LSDMA (Germany)
- Intensity Frontier (FERMILab)
- CSSB (DESY, Center of Structural System Biology)

Data Lifecycle Labs (Customers)

- Energy
 - smart grids, battery research, fusion research
- Earth and Environment
- Health
- Key Technologies
 - synchrotron radiation, nanoscopy, high throughput microscopes, electron-microscope imaging techniques
- Structure of Matter

Data Service Integration Team

- **Federated Identity**
- Federated Data Access
- Metadata Management
- Archiving

Possible topics for common projects in LSDMA:

- Federated Identities
- Federated Storage systems, which could be storage clouds
- Already collaborating in storage:
 - dCache
 - UNICORE



dCache development areas

Generic development



- Extending the hierarchical storage management from Tape/Disk to Tape/Disk/Fast Media(SSD)
 - Based on rules or manual intervention
- Pushing further for standards beyond nfs and WebDAV towards cloud standards

Development for WLCG



- Contributing to the different xrootd federations (FAX and AAA)
- Collaborating with CERN DM on the WLCG http “Eco System”
 - DavIX
 - WebDAV and NFS(for local access)
 - Dynamic Http Federation
- Improving fast analysis by adding fast access layers (SSD)
- CMS Tape Disk separation effort

Development for Photon Communities

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- Small file support for Tertiary Storage and possibly for long term archiving.
- Support of HDF5 and other container formats -> means read/modify/write for dCache.
- NFS 4.1 / pNFS for fast local analysis

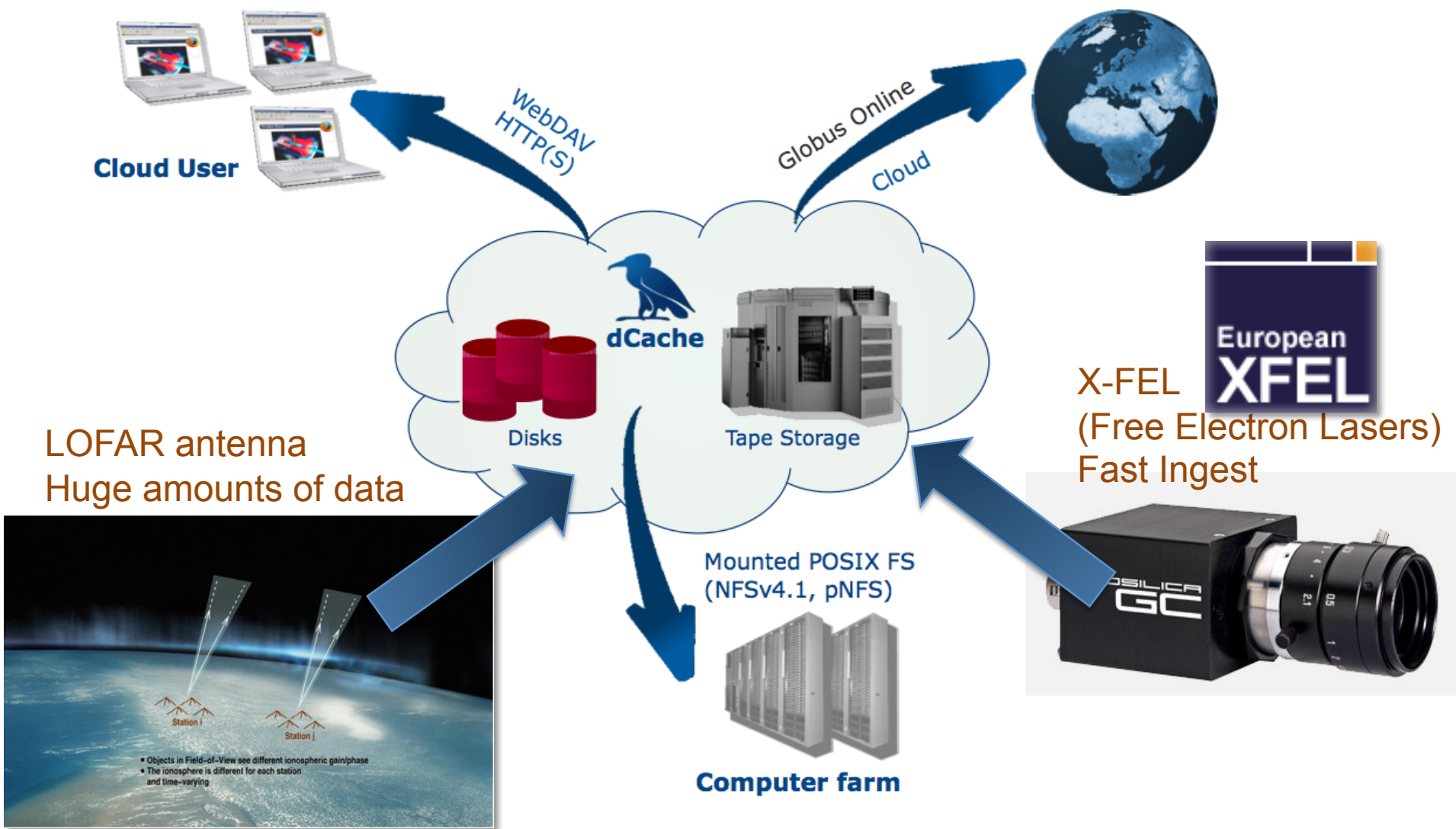
Development for LSDMA

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- Federated Identity
 - Building an IdP infrastructure (initially in Germany)
 - Supporting SAML in dCache.
 - Goal is to allow dCache access from Social Network accounts.
- Implementing CDMI (from HTW)
 - Collaboration with UNICORE
- Implementing Object stores.

Scientific Storage Cloud



Scientific Storage Cloud Requirements

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- Data can be accessed by a variety of protocols
 - Globus-online transfers via **gridFTP**
 - FTS Transfers for WLCG via gridFTP or **WebDAV**
 - Private upload and download via **WebDAV**
 - Public anonymous access via plain **http(s)**
 - Direct fast access from worker-nodes via **NFS4.1/pNFS** (just a mount like GPFS or Lustre but with standards)
- Individuals are authenticated by different mechanisms
 - X509 certificates or proxies
 - Username/password
 - SAML assertions (from IdP)
 - Kerberos tokens

Deployment of the scientific storage cloud



- Next week we will open the cloud for DESY and HTW students.
- Steps
 - Multi Protocol (support of Mobile Clients and e.g. Globus Online data transfers.
 - Multi authentication (e.g. Google account)
 - Investigation in more Web 2.0 sharing mechanisms. (Authorization)
 - Integrating in Local Infrastructure systems (DESY, FERMIlab etc)