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A virtual laboratory for decision support in viral diseases treatment

ViroLab Data Access Services

Objective The data access services (DAS) let distributed and heterogeneous data resources appear transparent to virtual laboratory users by hiding them and their internals behind a layer of virtualization services that provides access in a consistent, data resource-independent, and at the same time efficient way.

Data Sharing within ViroLab



Properties

- External access into the hospitals' security region is not required
- Data conversion into the RegaDB schema (also anonymization, extraction) occurs within each hospital
- Data update within the virtual laboratory (onto the collaborative RegaDB) preferably occurs regularly
- Central access for data queries is provided via the single access point (DAS)

Architecture of Data Access Services Data Handling Data access based on OGSA-DAI's core functionalities -Data ViroLab Acces: Client mainly accessors for different resources provided as Portal web service interfaces Resource discovery for identifying available resources SOAP gffrfgrfgroy w12352hodr wese134jhrd sof75066fsv fwedf76832a WS-Security and querying schema information over HTTF Data transformation for converting heterogeneous data sets into unified RegaDB schema DAS Security Handling (Shibboleth) Notification Handling (WS-Notification) Storage Handling Security Handling Authentication (SSO + SAML) Messaging 🎬 Repository 👘 User authentication based on Shibboleth's Single-Sign On (SSO) principle and SAML Laboratory 🛛 🗍 Monitoring 🐧 Authoriza (PDP) · Access control (user authorization) adapted to OGSAß DAI's limited capabilities using attribute-based access Data Handling (OGSA-DAI) control policies Data Resource Cryptography (GSI) Data Access 🥡 Data encryption and signature using trusted certificates (GSI) gffirfigsfigstry w12762bade wese124bad rad 79adioffry fiwsdf76832a Secure Data Transmission **Storage Handling** Application input and output data storage in central database, extended with meta information File DB XMI · Intermediate results shortly stored in central repository **Future Plans Development Team** Policy Decision Point (PDP) to enable dynamic authorization Contact person(s): Matthias Assel (assel@hlrs.de) GUI (Portlet) to manage access control policies Aenne Loehden, Bettina Krammer {loehden;krammer}@hlrs.de

- Parallelization of distributed queries
- Meta Query Language (MQL) to facilitate interaction between DAS, provenance system and clients

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