

Umbrella, the Authentication and Authorization System for the European Photon / Neutron Facilities

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Performing experiments at the large photon / neutron facilities has experienced a boost of exciting opportunities due to novel developments in accelerator and detector techniques. In order to optimally exploit these opportunities the experimental environment has to be expanded from the traditional single-facility orientation towards techniques on a pan-European scale. Examples are remote access to experimental data or remote access to experiments (passive and active). As basis for such services, the Umbrella system has been developed as a community-wide federated authentication and authorization system. The Umbrella provides a unique and persistent EU-wide identification of a user and allows the implementation of a pan-European Single Sign On (SSO) mechanism. Umbrella is a hybrid system in the way that only the minimum data needed for an unambiguous identification is stored centrally. As much as possible of data and data handling is left with the local user offices.

Umbrella is based upon SAML with one (1) identity provider. This central element contains minimum information just sufficient for user identification. The remaining authentication and all authorization information remains at the local user offices of the facilities. A multi-level trust concept provides the necessary flexibility. Wherever possible, self-service elements and responsibility delegation are applied in order to minimize administrative load and legal restrictions. As for a bottom-up approach, user friendliness is an important issue.

A prototype is available since spring 2011 and it has been demonstrated that Umbrella could be linked with minimum effort to the SMIS- and DUO-class user office systems. As next step towards final implementation, in spring 2012 a ‘friendly user’ phase is run in order to gain real-time feedback from about two dozen users from all over Europe.

Umbrella is supported by the FP7 projects EuroFEL, PaNdata (Europe and ODI), and CRISP.

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