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HIFIS: VO Federation for EFSS

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Following the first rough ideas on Virtual Organisations (VO; Community AAI [1] based group of any size) based Enterprise File Sync&Share (EFSS) Federation [2], which were presented by HIFIS [3] on CS3 Conference 2021, we have since moved further along working on a first implementation. During Summer 2021, we have clarified the use case and identified the basic technical architecture for this future VO Federation App in Nextcloud.

When users who are distributed across multiple institutes want to collaborate within a Virtual Organisation they currently have two options: Make use of the OCM protocol [4] to share files and folders with the individual VO members who are based on remote EFSS instances. This would cause considerable effort on the sharer's side, as they need to keep track of to whom they have shared which content with. Or, as second option, all VO members have to convene on one institution's local EFSS instance, which would cause many redundant accounts and confusion on the user's side. Especially, as they need to know where to log in for working on a specific project and as they have no central entry point for all of their projects on their local EFSS instance.

We want to tackle this issue by enabling users to use federated shares with entire VOs instead of individual users. This way, every user within a VO will receive the share, no matter which EFSS instance they are based on. Updates to VO membership will also be communicated between federation members, resulting in new VO members automatically receiving existing VO shares and former VO members losing access to VO shares. Based on a new interface between EFSS and Community AAI. This whole process is planned to be GDPR compliant, too. To ensure that this interface will also work with other Community- or Infrastructure AAIs, we are collaborating with AARC to create an AARC guideline with the aim of standardizing the interface specifications.

While the initial implementation is set to be done within a Nextcloud environment, the new features will be based on existing CS3 APIs [5] and consequently be ready to also be implemented by further EFSS vendors.

[1] AARC Blueprint for Community AAIs: <https://aarc-project.eu/architecture/>

[2] CS3 Contribution: <https://indico.cern.ch/event/970232/contributions/4157924/>

[3] HIFIS Website: <https://hifis.net/>

[4] OCM Project documentation: <https://wiki.geant.org/display/OCM/Open+Cloud+Mesh>

[5] CS3 APIs GitHub page: <https://github.com/cs3org/cs3apis>; CS3 APIS are implemented in the REVA middleware: <https://reva.link/>

Primary authors: Mr KLOTZ, Andreas; Mr LEANDER-KNOLL, Matthias (KIT); Mr APWEILER, Sander (FZJ)

Presenter: Mr KLOTZ, Andreas

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