



# HIFIS

HELMHOLTZ  
FEDERATED  
IT SERVICES

# CLOUD

## VO Federation in EFSS

Andreas Klotz

Helmholtz-Zentrum Berlin

Sander Apweiler

FZ-Jülich

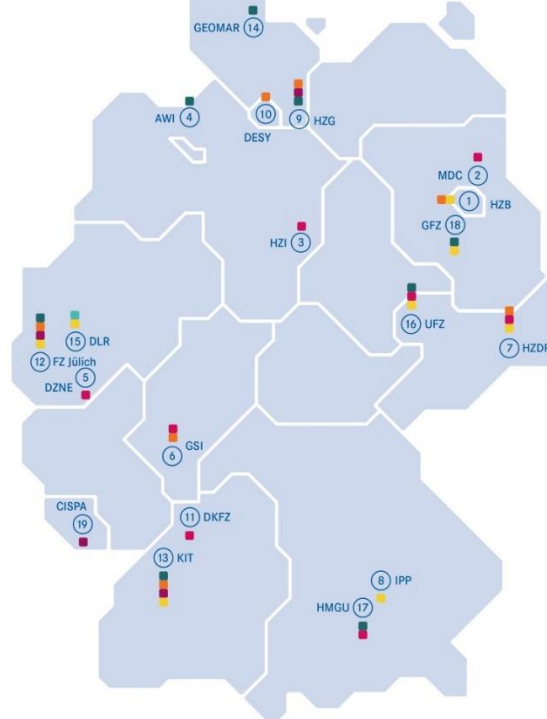
Matthias Leander-Knoll

KIT

# VO FEDERATION IN EFSS

## Helmholtz Association

1. Berlin  
**Helmholtz-Zentrum Berlin für Materialien und Energie (HZB)**
2. Berlin-Buch  
**Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC)**
3. Brunswick  
**Helmholtz Center for Infection Research (HZI)**
4. Bremerhaven  
**Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung (AWI)**
5. Bonn  
**German Center for Neurodegenerative Diseases (DZNE)**
6. Darmstadt  
**GSI Helmholtz Center for Heavy Ion Research**
7. Dresden  
**Helmholtz Center Dresden Rossendorf (HZDR)**
8. Geesthacht  
**Helmholtz Center Geesthacht  
Center for Material and Coastal Research (HZG)**

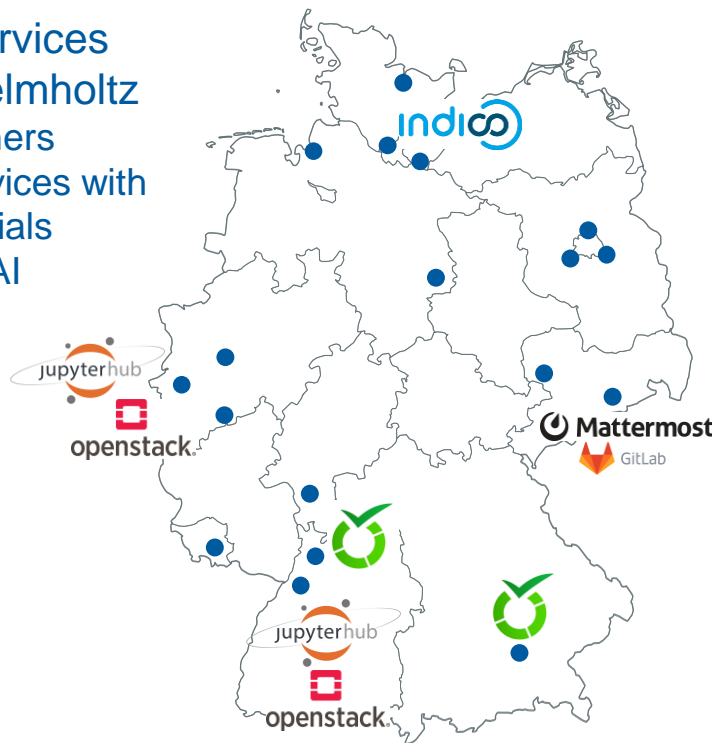


9. Hamburg  
**Deutsches Elektronen-Synchrotron DESY**
10. Heidelberg  
**German Cancer Research Center (DKFZ)**
11. Jülich  
**Forschungszentrum Jülich (FZ Jülich)**
12. Karlsruhe  
**Karlsruhe Institute of Technology (KIT)**
13. Kiel  
**GEOMAR Helmholtz Center for Ocean Research Kiel**
14. Cologne  
**German Aerospace Center (DLR)**
15. Leipzig  
**Helmholtz Center for Environmental Research – UFZ**
16. Munich  
**Helmholtz Center Munich – German Research Center for Health and the Environment (HMGU)**
17. Potsdam  
**Helmholtz Center Potsdam  
German Research Center for Geosciences GFZ**
18. Saarbrücken  
**Helmholtz Center for Information Security – CISPA**

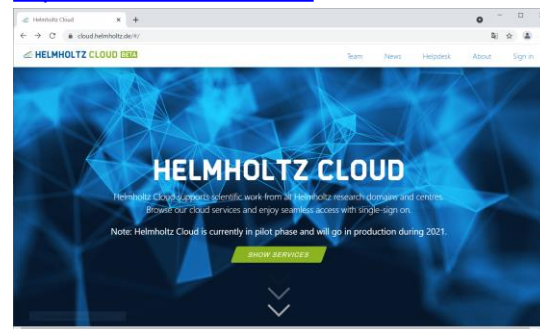
# VO FEDERATION IN EFSS

## HIFIS Cloud

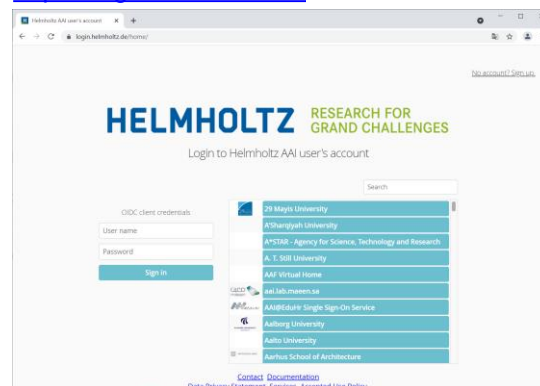
- Making existing IT Services accessible to all of Helmholtz
  - And research partners
  - Users log in to services with their home credentials using Helmholtz AAI



<https://cloud.helmholtz.de>



<https://login.helmholtz.de>



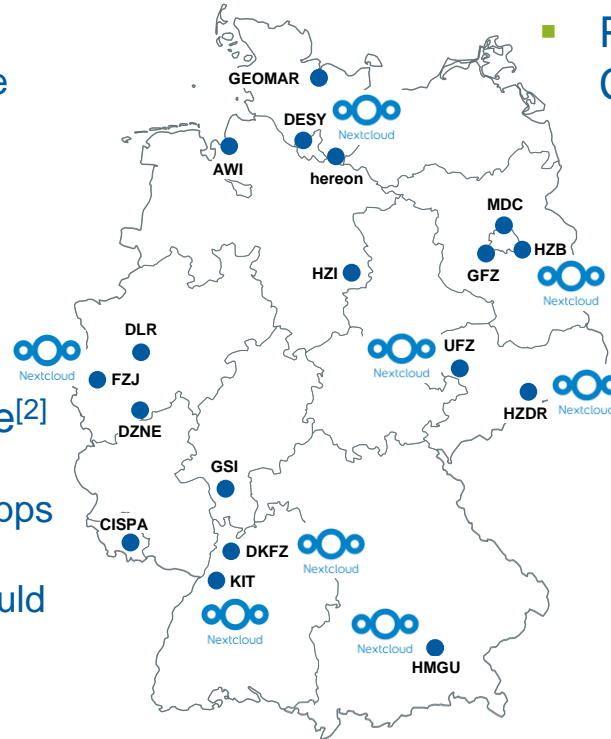
# VO FEDERATION IN EFSS

## The Enterprise File Sync&Share (EFSS) situation

- No consolidation
  - Desire for independence

- No OCM<sup>[1]</sup> federation
  - Exchange of user databases raises data protection issues

- No Nextcloud Global Scale<sup>[2]</sup>
  - Different Nextcloud versions with different apps in operation
  - Other EFSS vendors could not participate



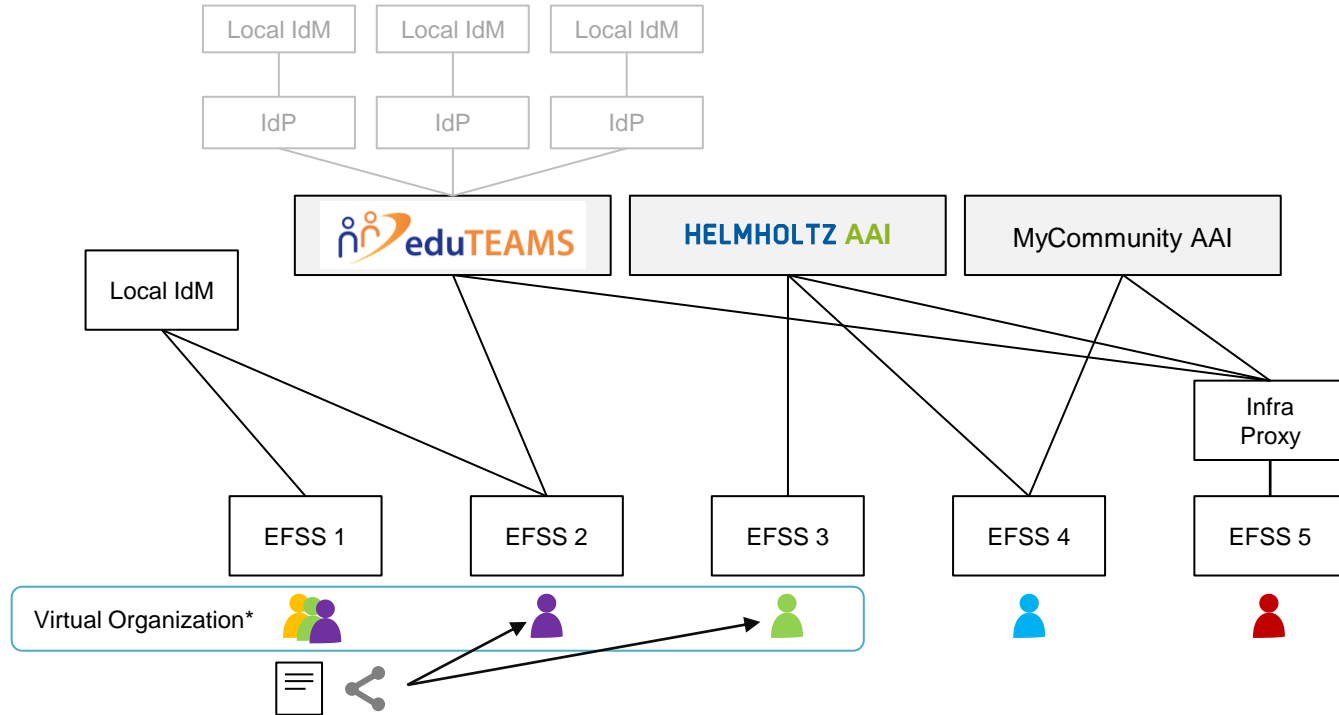
- Participation in CS3 Community

- Who were already thinking about new ways to share in EFSS
  - But only for 1:1 shares

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

[2] Nextcloud Global Scale: <https://nextcloud.com/globalscale/>

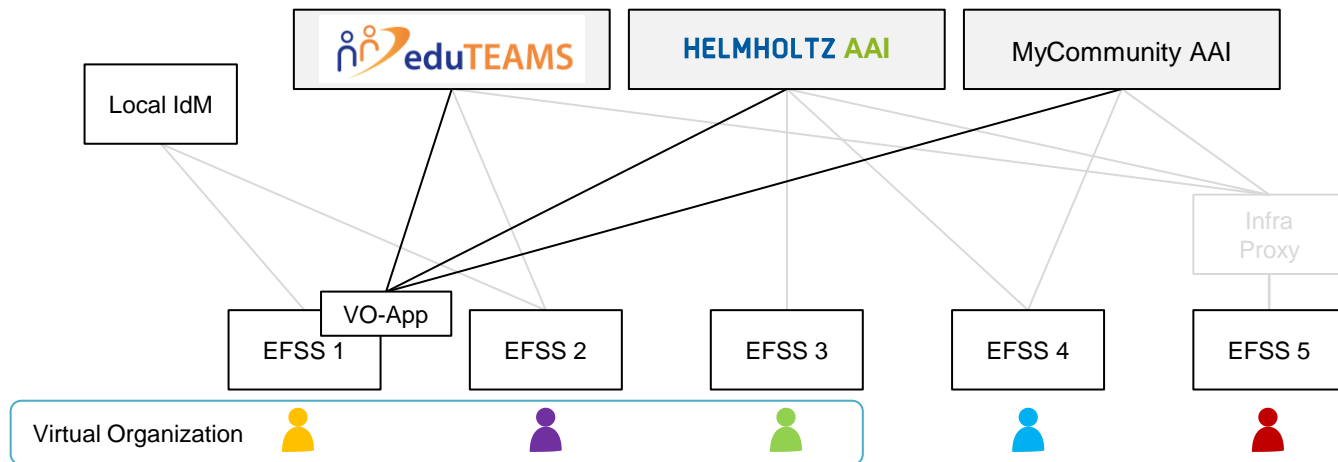
## Problem



\* a group of any size. It may just be two persons or a whole research center/community

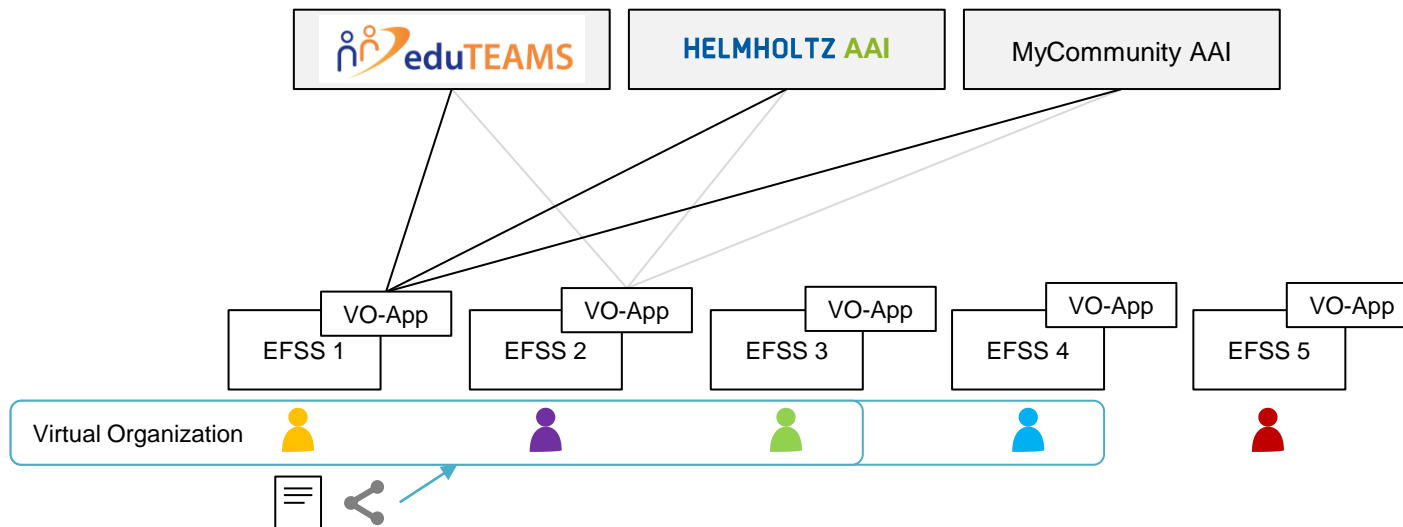
# VO FEDERATION IN EFSS

## VO-App



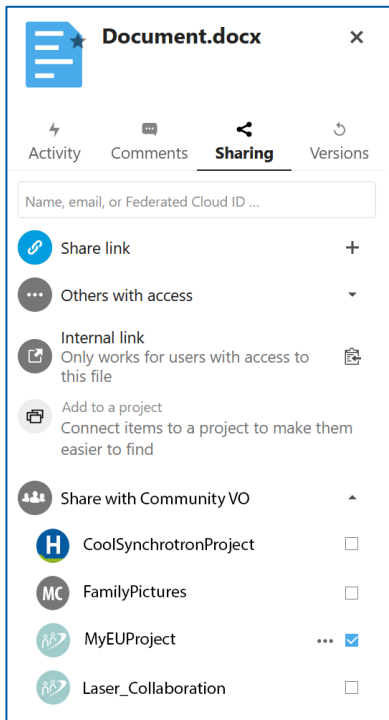
# VO FEDERATION IN EFSS

## VO-Sharing



# VO FEDERATION IN EFSS

## VO-App GUI

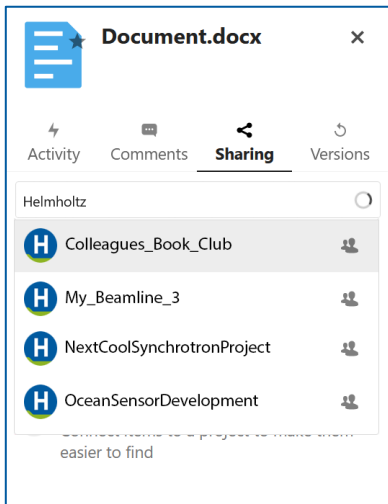


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Activity Comments **Sharing** Versions

Name, email, or Federated Cloud ID ...

- Share link +
- Others with access ▾
- Internal link  
Only works for users with access to this file
- Add to a project  
Connect items to a project to make them easier to find
- Share with Community VO ▲
  - CoolSynchrotronProject
  - FamilyPictures
  - MyEUPProject ...
  - Laser\_Collaboration



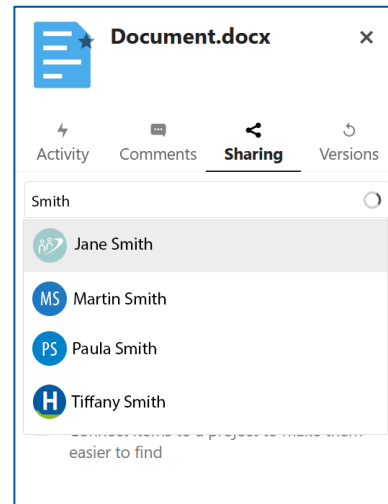
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Activity Comments **Sharing** Versions

Helmholtz ○

- Colleagues\_Book\_Club
- My\_Beamline\_3
- NextCoolSynchrotronProject
- OceanSensorDevelopment

easier to find



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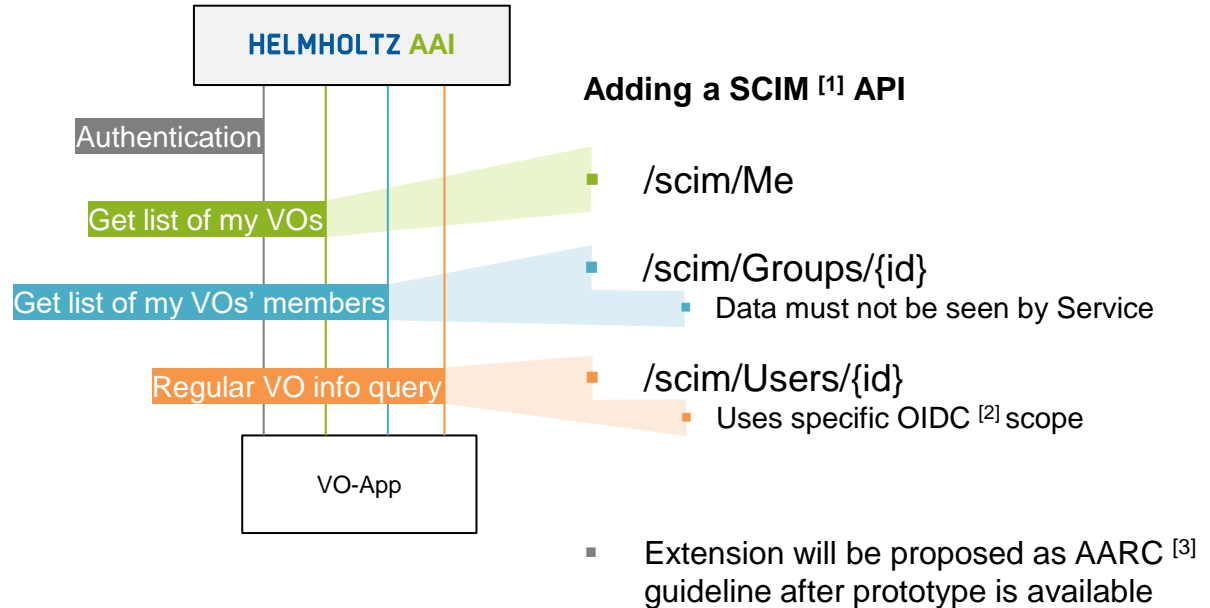
Activity Comments **Sharing** Versions

Smith ○

- Jane Smith
- Martin Smith
- Paula Smith
- Tiffany Smith

easier to find





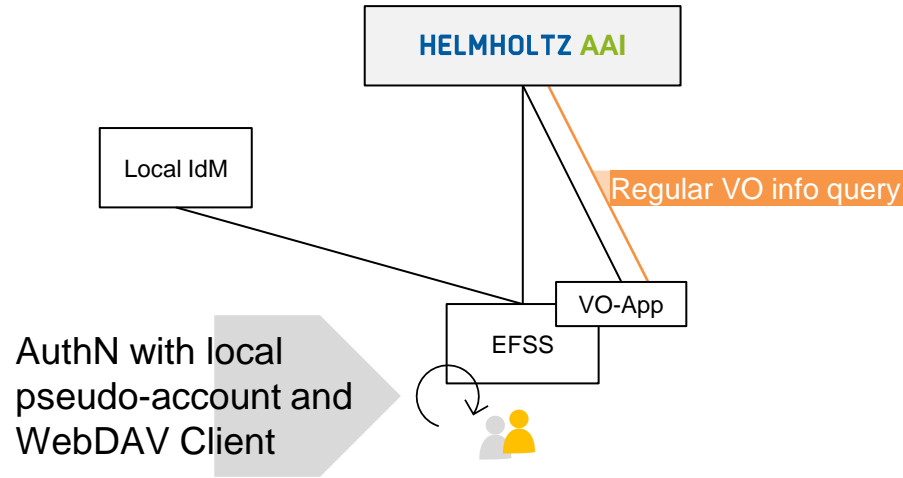
[1] SCIM Protocol: <https://datatracker.ietf.org/doc/html/rfc7644>

[2] OIDC Protocol: [https://en.wikipedia.org/wiki/OpenID#OpenID\\_Connect\\_\(OIDC\)](https://en.wikipedia.org/wiki/OpenID#OpenID_Connect_(OIDC))

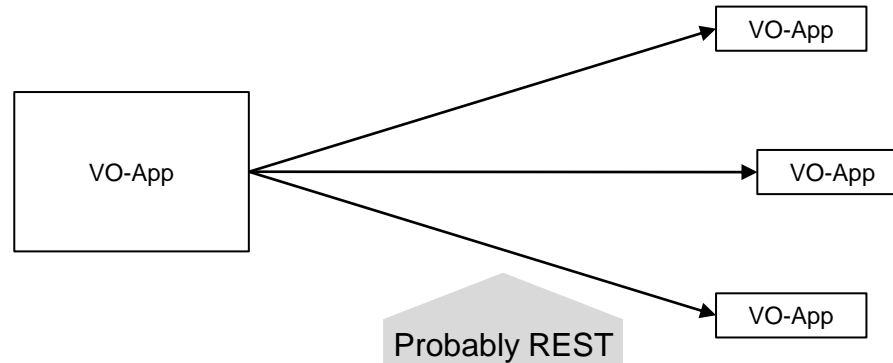
[3] AARC Guidelines: <https://aarc-project.eu/architecture/>

# VO FEDERATION IN EFSS

## The issue of pseudo-accounts



- Broadcast
  - for new shares coming from local user
  - VO membership loss
- Query
  - for new shares on VO membership gain



- Shares generated via CS3 APIs <sup>[1]</sup>
  - Which are implemented in Reva <sup>[2]</sup>

Challenges lie in large VOs  
and increasing federation size

[1] CS3 APIS: <https://github.com/cs3org/cs3apis>

[2] Reva: <https://reva.link/>

- Tenders for development currently in evaluation
- We will push for development in other EFSS solutions
- Further features like auto-WebDav-mounted VO-Folders may come
  
- Countless other applications for this technology