Good Morning and Welcome Back!

We trust you have a productive and an enjoyable time here in Utrecht!

Universiteit Utrecht

Let's collaborate!

Ton Smeele
ITS/ResearchIT, Utrecht University

Agenda

- University Utrecht's use of iRODS
- Collaborative development with iRODS

Utrecht University use of iRODS

Our usage of iRODS: Research Data Management

Research

Collaborate safely as a group
-> membership self-managed by researchers

support for sensitive data

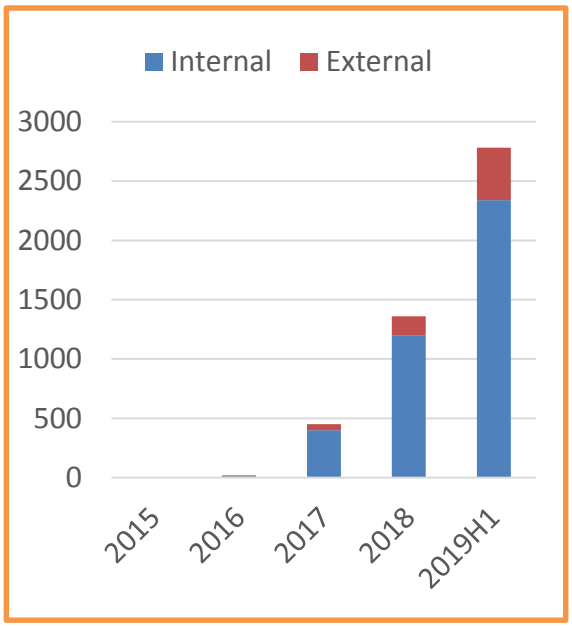
Vault

Maintain integrity, deposit a folder in the vault
-> metadata can vary per community,
-> datamanager approves deposit

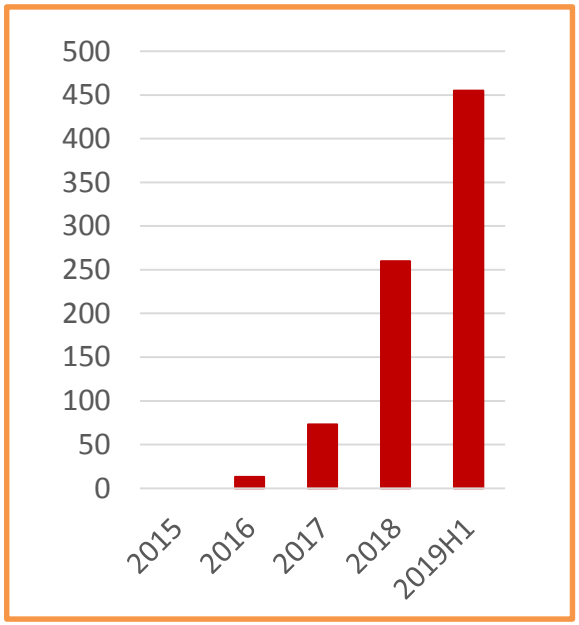
Allow FAIR reuse, publish a data package
-> datamanager approves publication, DOI citable data

see UGM 2018 paper and presentation:https://irods.org/ugm2018/

Utrecht University iRODS managed research data



2800 Users (440 external)
8 production zones

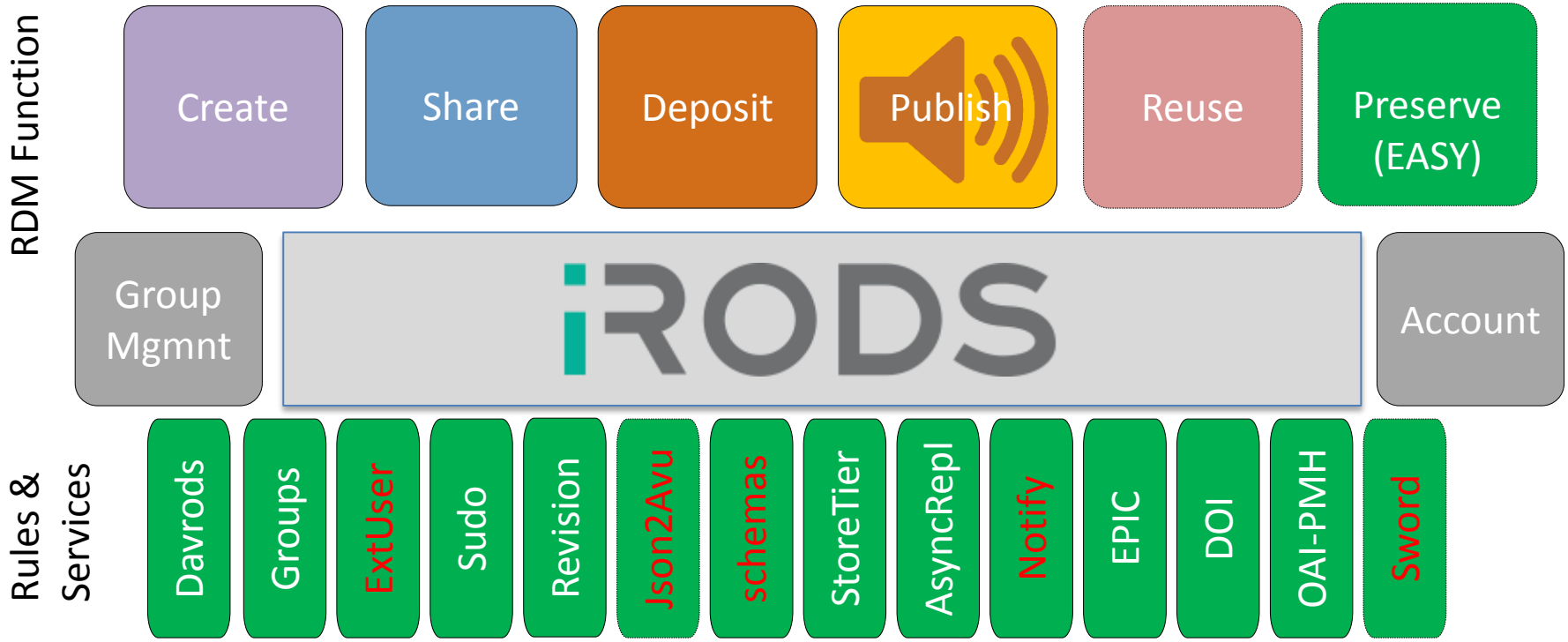


450 TB Data

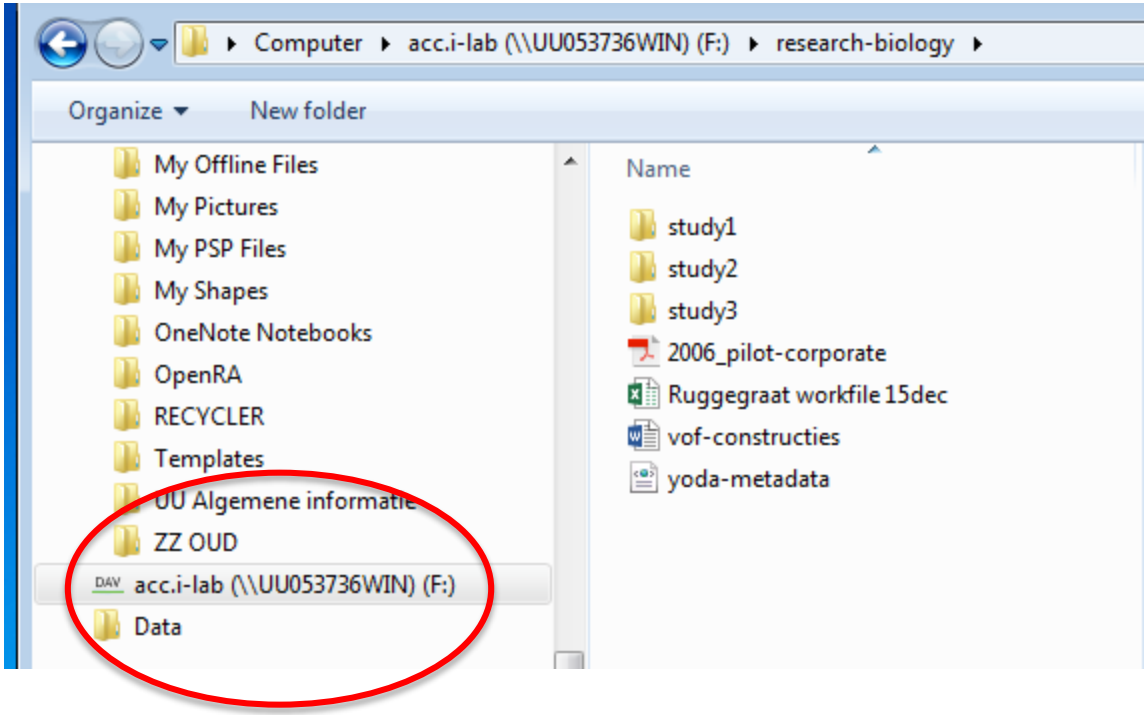
production instances only, figures are indicative

YODA

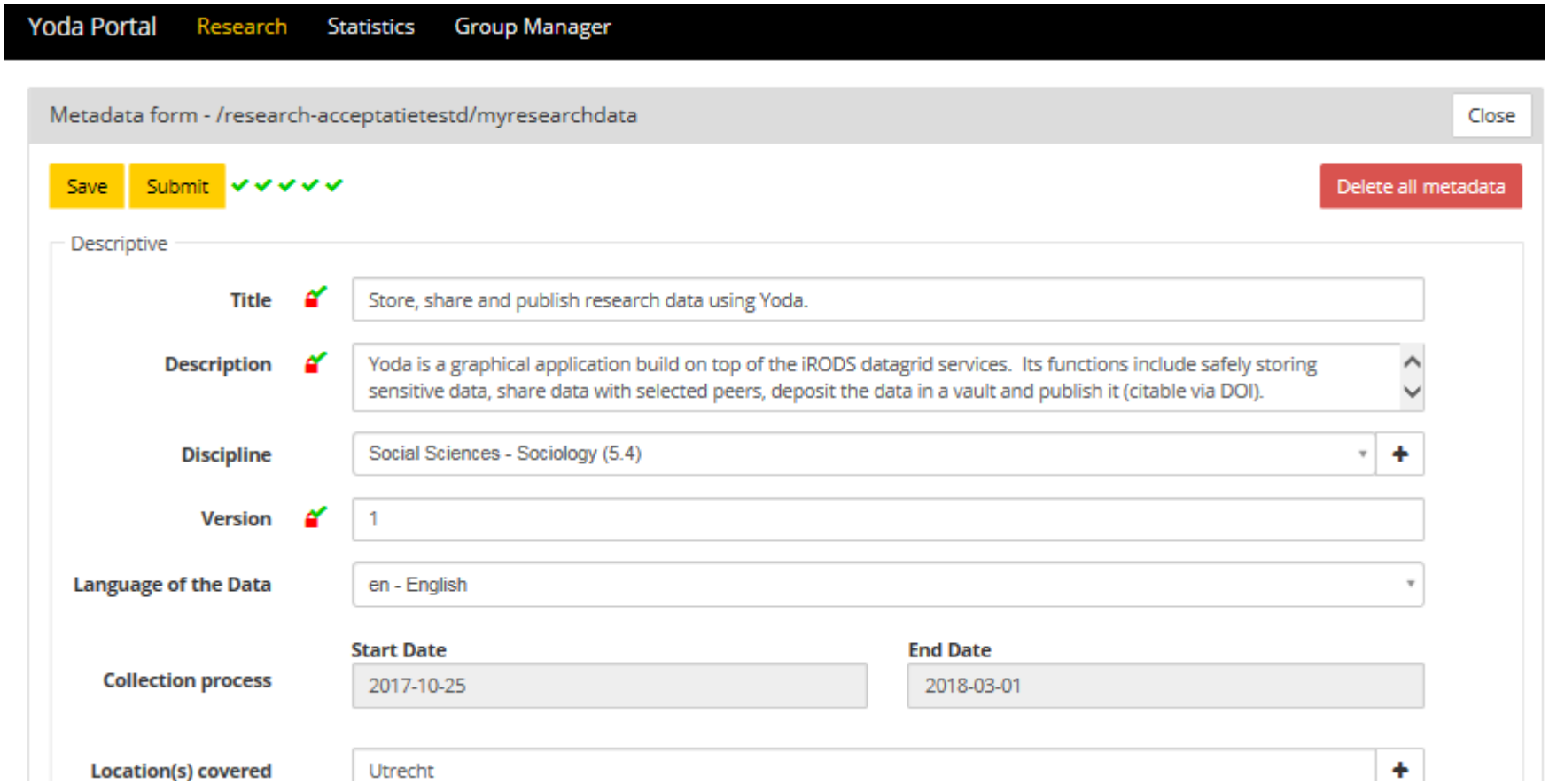
iRODS implementation for Research Data Management



Collaborate during research via the Yoda disk



WebDAV access from anywhere on any workstation using Davrods



Annotate with metadata using a configurable schema-driven form

Yoda roadmap & strategy – collaborative approach

- **Development priority: Data Reuse / open science**
  - restricted-data request
  - controlled data distribution
  - long term preservation: export/copy to DANS Easy

- **Development priority: Data Quality**
  - collaborative vocabulary/ontology management
  - deposit, publish and reference experiment methods
  - data post-processing pipelines

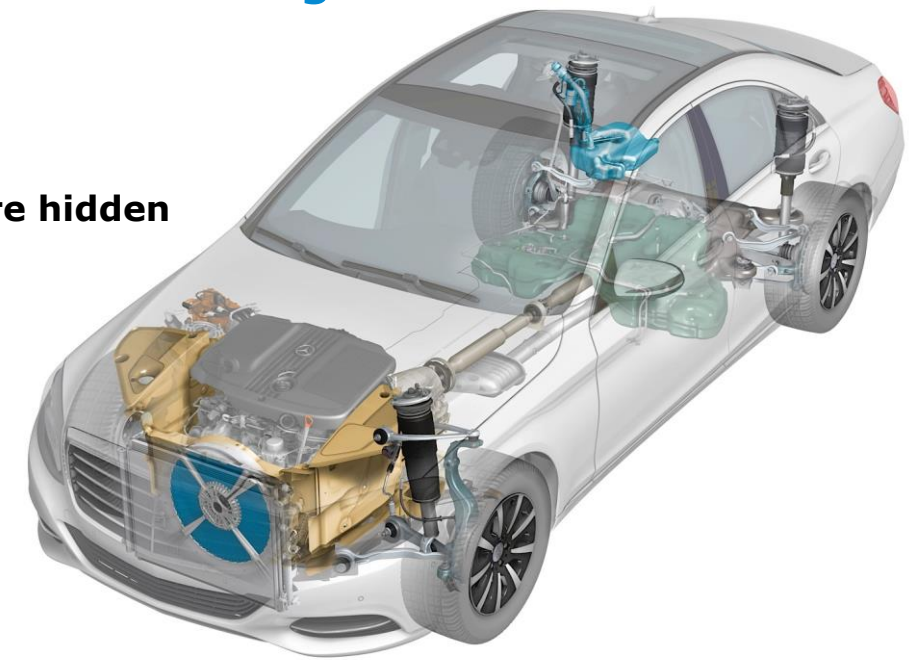
Via collaborative development!

- iRODS = common framework
- establish symbiotic relationship with iRODS Consortium
- collaborate with SURF and Dutch universities on a joint suite of *plugins*

Collaborative development with iRODS

The Principle of Information Hiding

- **Internal parts and operations are hidden**
- **well-documented interfaces**
- **standardized interaction**



*Information hiding has facilitated a dramatic **increase of scale***

David Parnas, 1972

The Free and Open Source software revolution

- **Enables large-scale functions from reuse of software components in software development**
  –> collaborative software development across enterprises
  –> "standardized" license model
- **Improves productivity and time to market**
- **Significantly lowers cost per Source Line of Code**

*Collaborative model is **required** to create and maintain **large-scale software functions***

Example of transition to Open Source

CERN 12-June-2019:

"Migrating to open-source technologies, taking back control using open software"

The initial objective was to investigate ***the migration*** *from commercial software products (Microsoft and others)* ***to open-source solutions, so as to minimise CERN's exposure to the risks of unsustainable commercial conditions****. By doing so, the laboratory is playing a pioneering role among public research institutions, most of whom have recently been faced with the same dilemma. MAlt is a multi-year effort and it will now enter a new phase with the first migrations*

https://home.cern/news/news/computing/migrating-open-source-technologies

iRODS is much like ProductLine software

- **Provides a common, integrating framework**
- **Supports variation via plug-in model**
- **Could have more agreed upon guidelines and practices**

iRODS can act a foundation for collaborative development

Organizational strategies for use of open source

1. **Adopt open development practices**
2. **Use open source tools for development**
3. **Use open source components in software stack**
4. **Create open source software and contribute to others**
5. **Establish symbiotic relationships with strategic open source projects**

How well are you prepared for open source software and ditto data?

Lundell et al., 2017

Being part of the "iRODS development" community

- **Challenges**
  - geographical distance (even a few km)
  - cultural distance
  - expertise areas differ
  - focus and priorities can differ
  - there is no "coordination"
  - organizational context issues

- **Best practice**
  - personal relationships are key: trust
  - use boxed scope of work: commitment
  - people with compatible expertise areas
  - ensure management support
  - just do it!

Hackathon to support collaborative development

- **Build personal relationships with peers involved in iRODS**
  - meet iRODS team members 1:1
  - learn about similar challenges and solutions at other organizations

- **Extend an application function together**
  - create designs that leverage iRODS
  - obtain/help to fix a particular use case issue
  - contribute/publish code to enhance iRODS or to fix a bug

STARTS AT 9 AM TOMORROW

Use the whiteboard at the registration desk to add your Hackathon topics

Let's Collaborate!

Thank you