

A General Purpose Grid and Cloud Portal to simplify Scientific Communities Integration Into Distributed Computing Infrastructures

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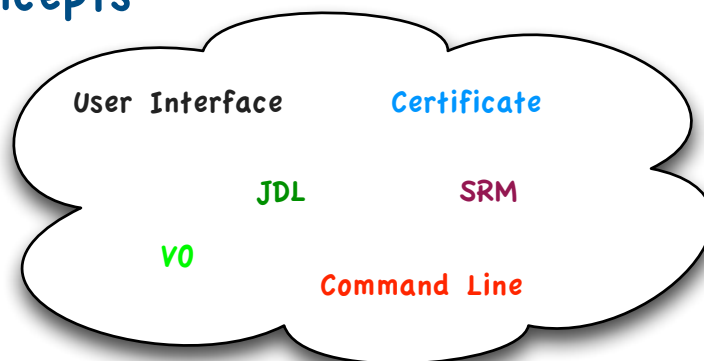
EGICF - 2012

Munich – 29/03/12

Grid Approach Problem

- For new Users Grid is complex, they must:
 - have a recognized **certificate**
 - belong to a **Virtual Organization** (Certificate is necessary)
 - know **JDL** and command syntax
 - know some basic **Grid concepts**

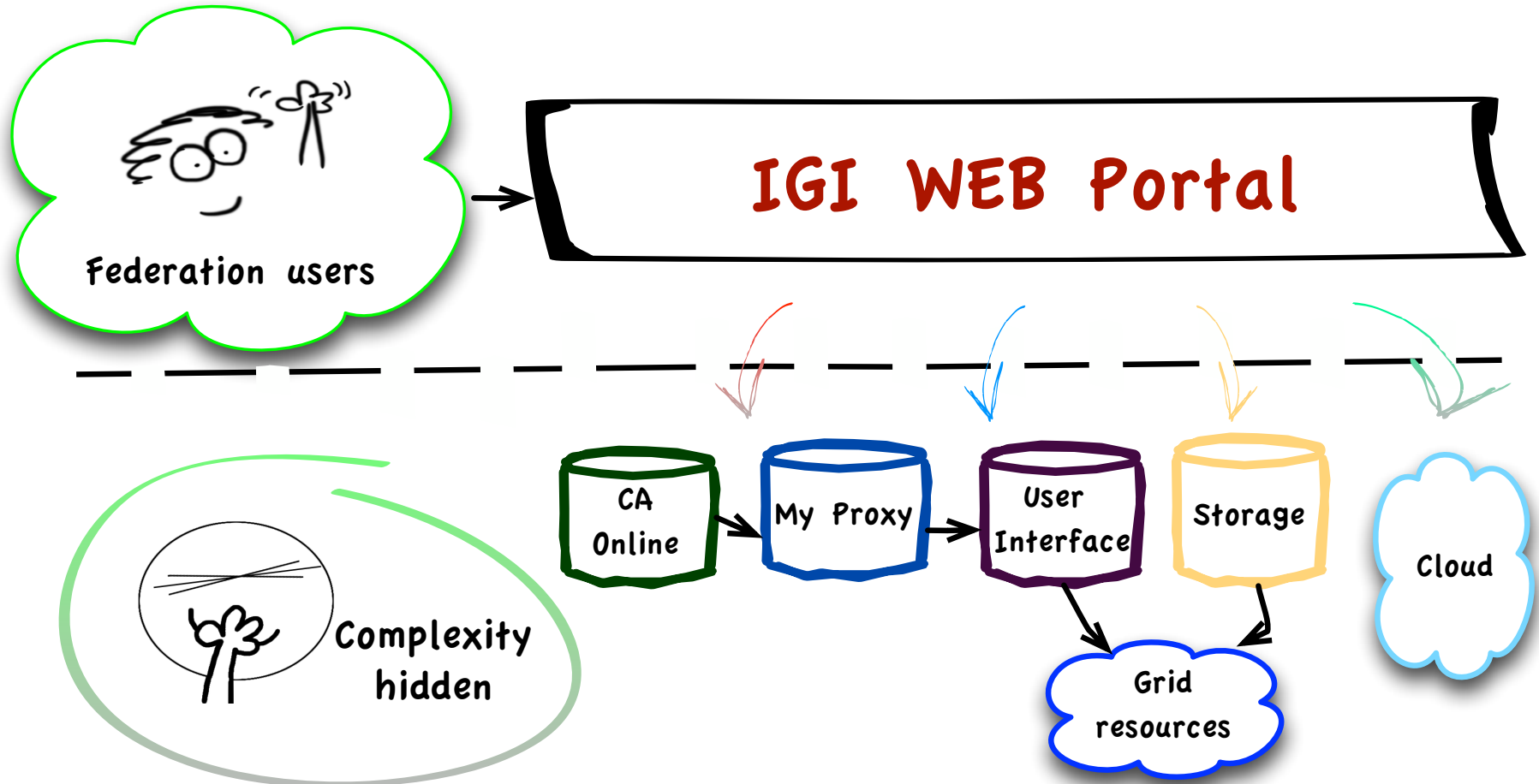
New unsatisfied
Grid User



Our solution



Our solution





Why another portal?

- Several Grid portals already exist: WS-Pgrade, GridSphere and many others....
- Our Requirements:
 - Portal open source and modular
 - General Purpose (as defined by <https://documents.egi.eu/document/80>)
 - CA-online integration
 - Workflow handling
 - Authentication based on Identity Federation
- Do the existing portals satisfy our requirements?



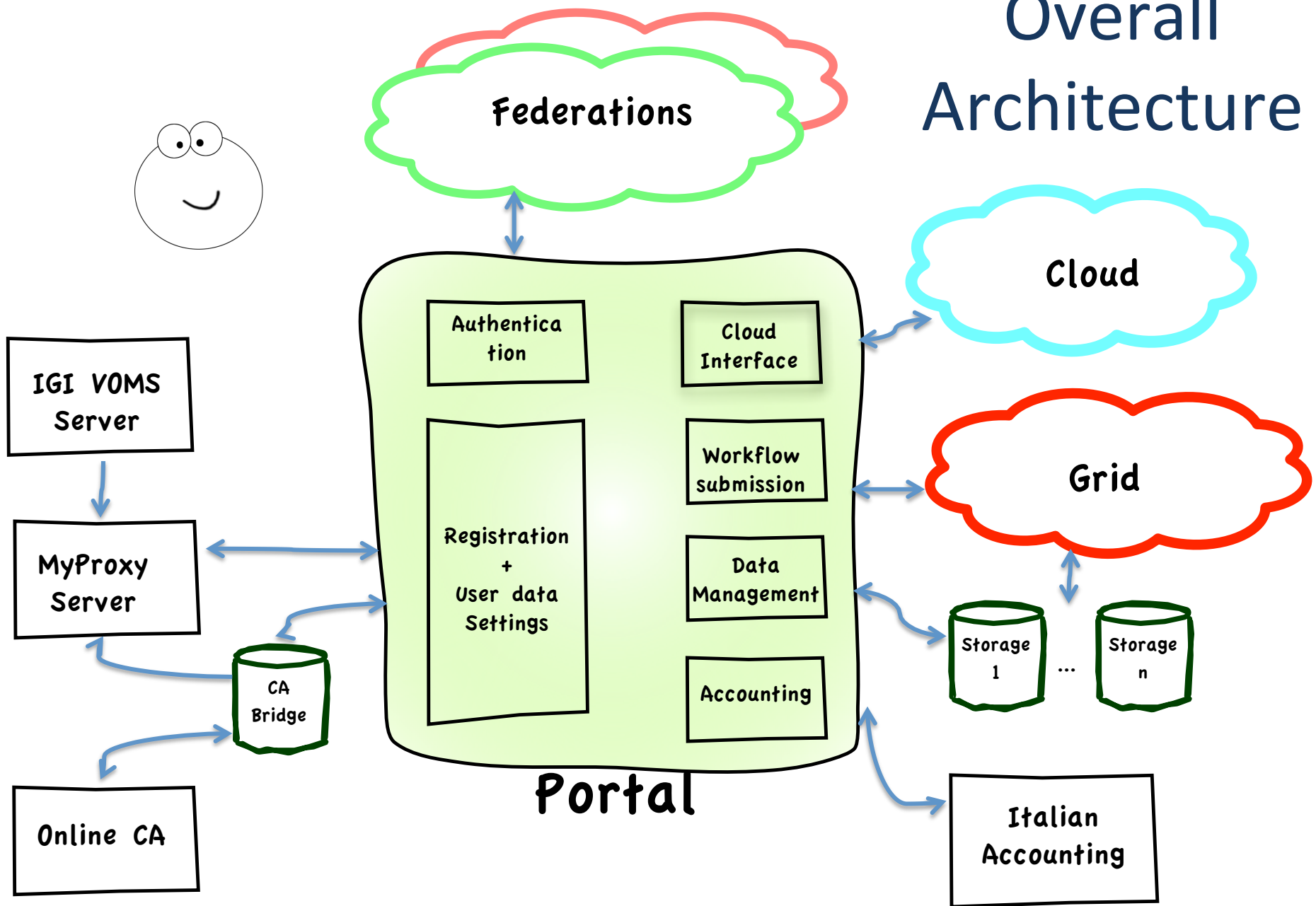
Portals comparison (2011-Q1)

	Open Source	Personal certificate	Workflow	Cloud	Modular	Federated Auth
Gridsphere	✓				✓	✓
WS-Pgrade	✓	✓	✓		✓	
Others (not General Purpose)					✓	✓

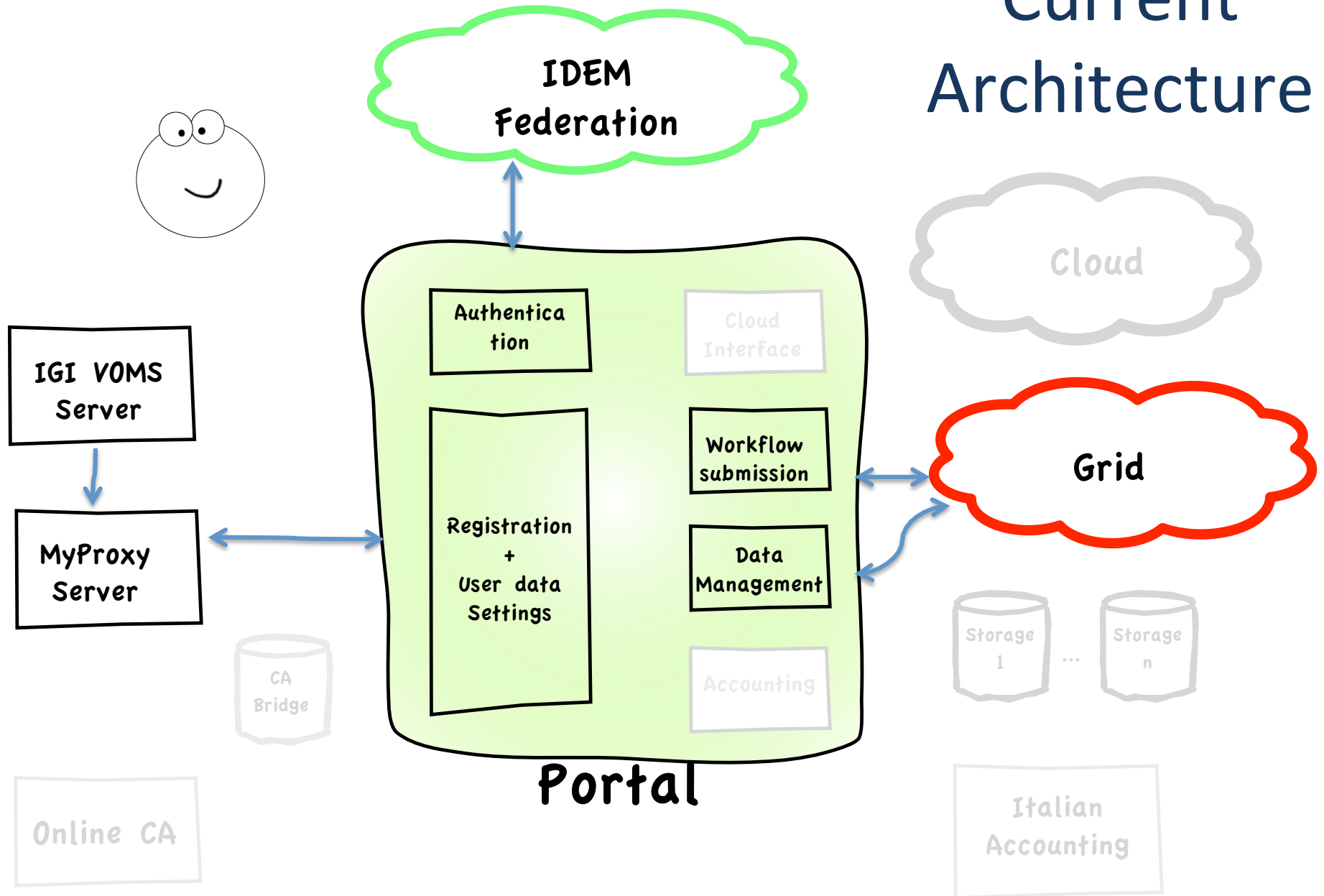
Starting point

- We have taken WS-Pgrade as a base of our work
 - Liferay based (opensource and modular due portlet concepts)
 - Workflow and data management supported
- We started developing new portlets to integrate new services and customizing WS-Pgrade portlets:
 - Federated Authentication (completed)
 - Advance Data Management (in development)
 - Cloud integration (to be developed)

Overall Architecture

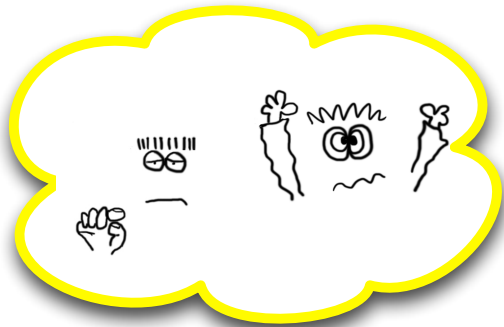


Current Architecture



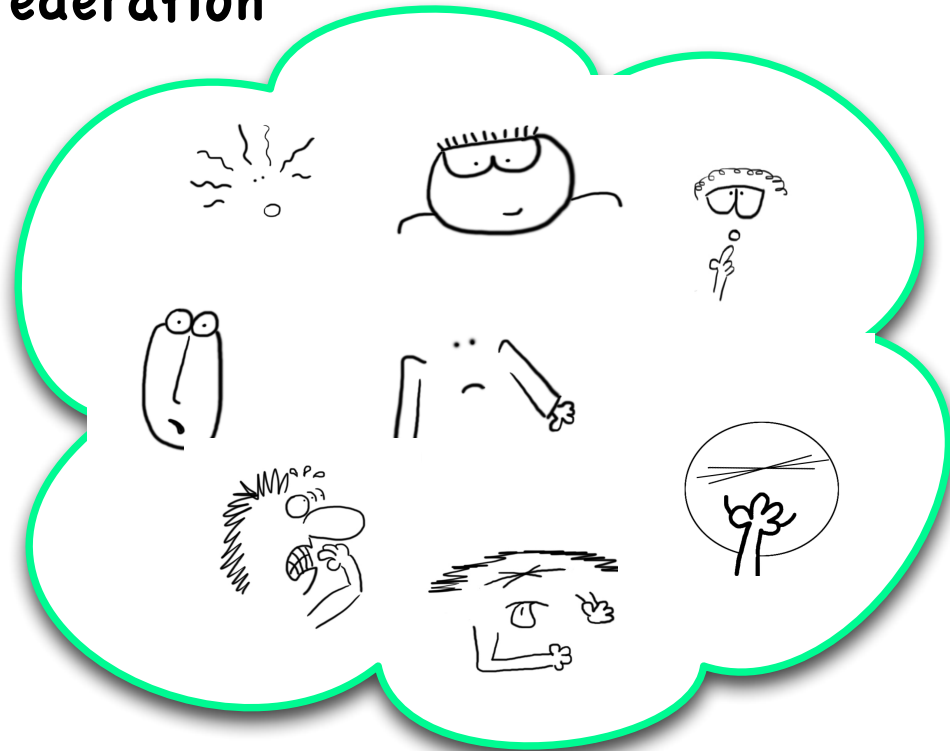
Federated authentication

- Few users have a certificate
- Many users belong to a Federation



Users with IGTF accredited
x.509 certificate

VS



Federation Users (with or without
IGTF accredited x.509 certificate)

Online CA

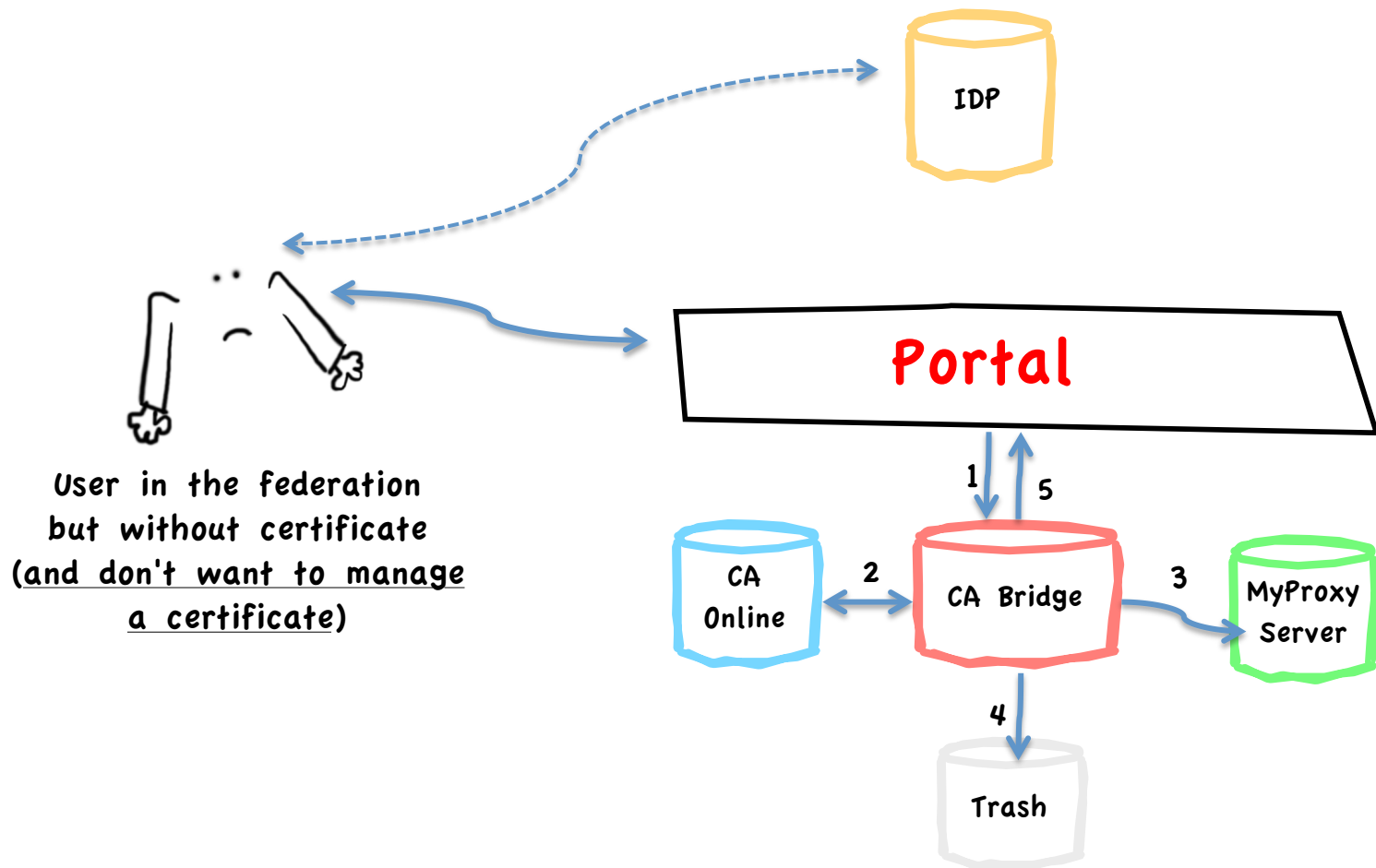
- A user with certificate → use it

<http://www.eugridpma.org/guidelines/pkp/pk-protection-1.1-20100921.pdf>

- A user without certificate → provided by online CA
 - We use the strong IDP based identification to provide users a certificate in a completely transparent way
- In this way, in both cases, the user is totally identified in any GRID environment and can use the Grid resources without (legal) limitations

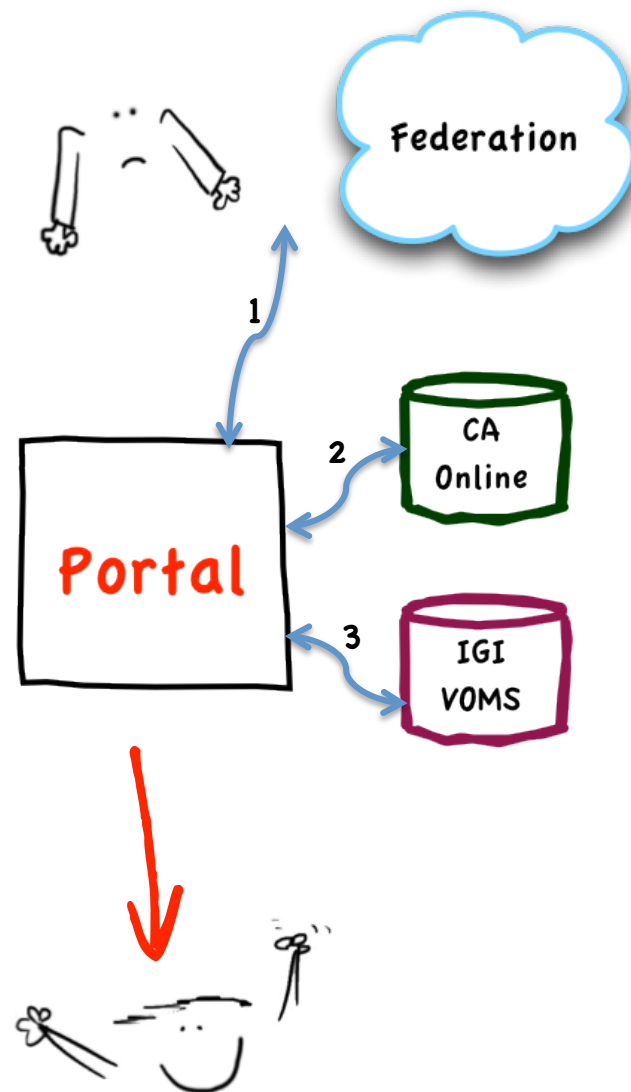


Workflow to have a certificate



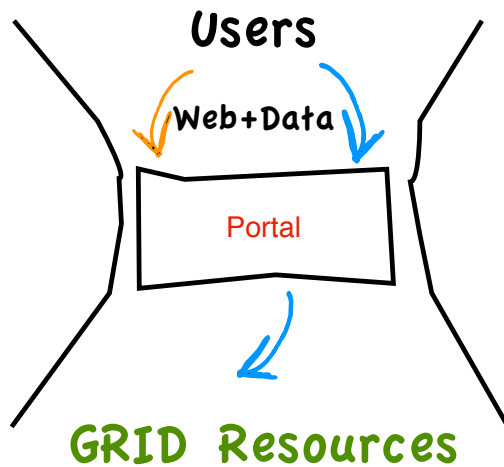
Virtual Organization

- Through CAonline we provide users with a certificate
- These users automatically belong to IGI Virtual Organization
- In future they can ask to belong to other VO's through the portal
- Users who are already members of one or more VO's can specify for each one Roles and Groups they want to use

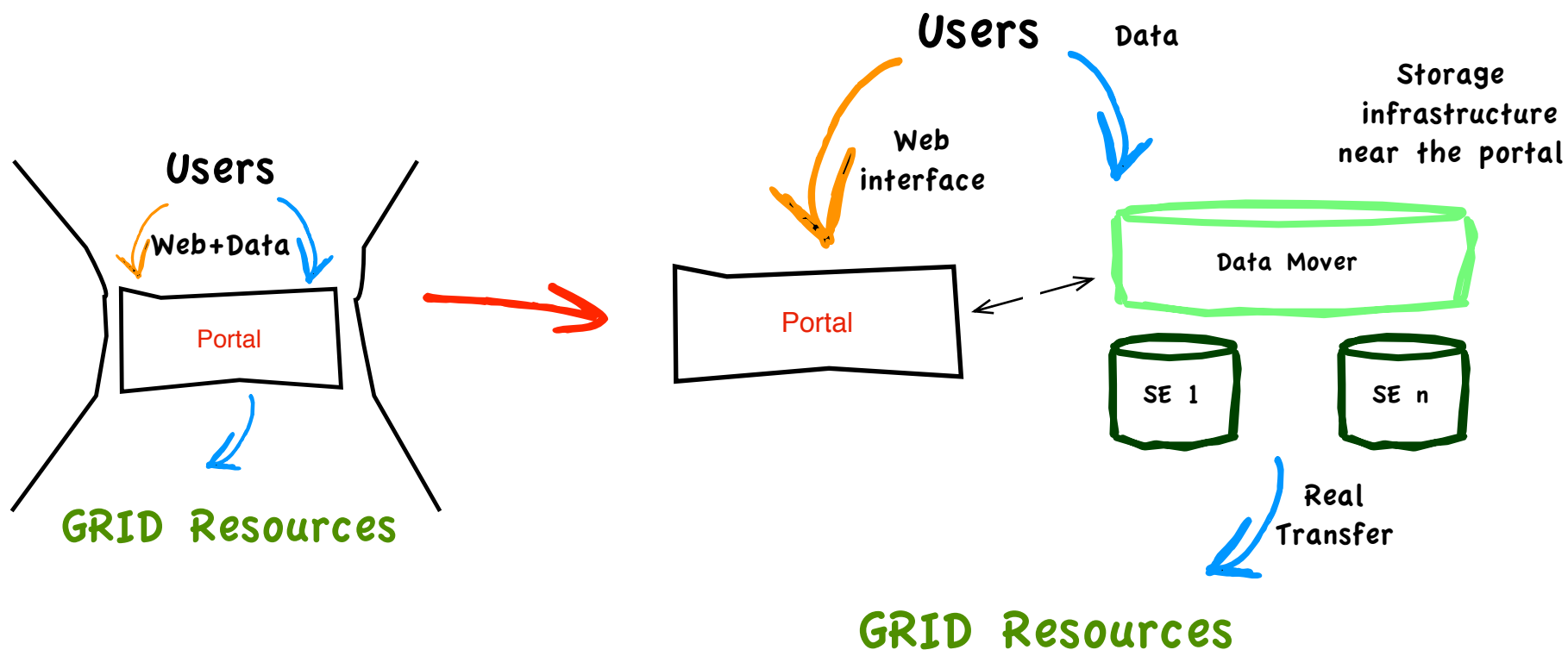




Data Management Problem



Data Management Solution



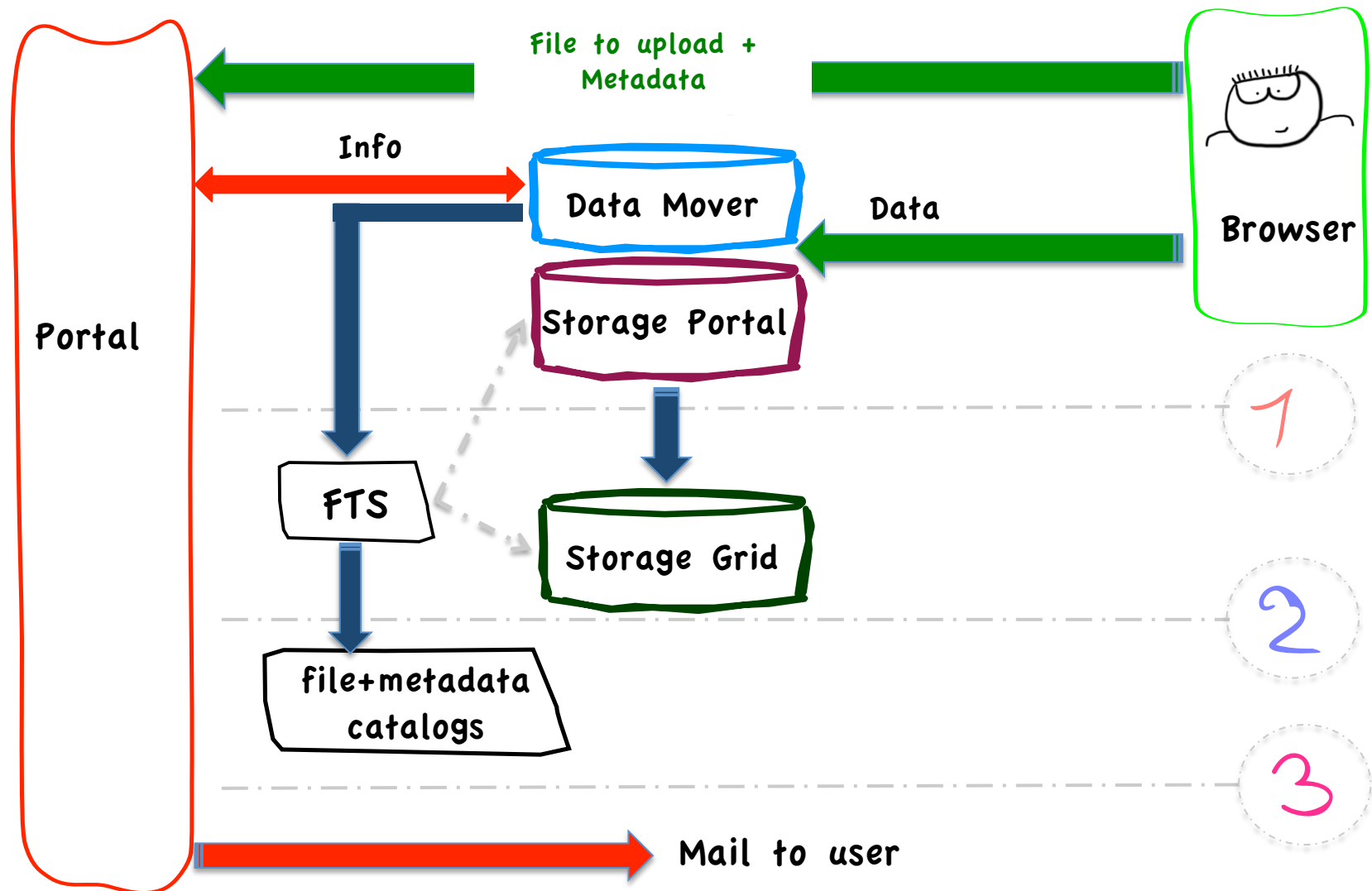


Data Management Requirement

- **Upload**
 - From local PC or remote Server
 - Very large files (10 GB)
 - Many little files (10000 files)
- **Download**
 - My job output
 - To local PC or remote Server
- **Management**
 - Move, replicate, delete Grid files
 - Interacts to File and Metadata Catalogs
- **Notifications**
 - User has to be notified: Mail, RSS, SMS ecc

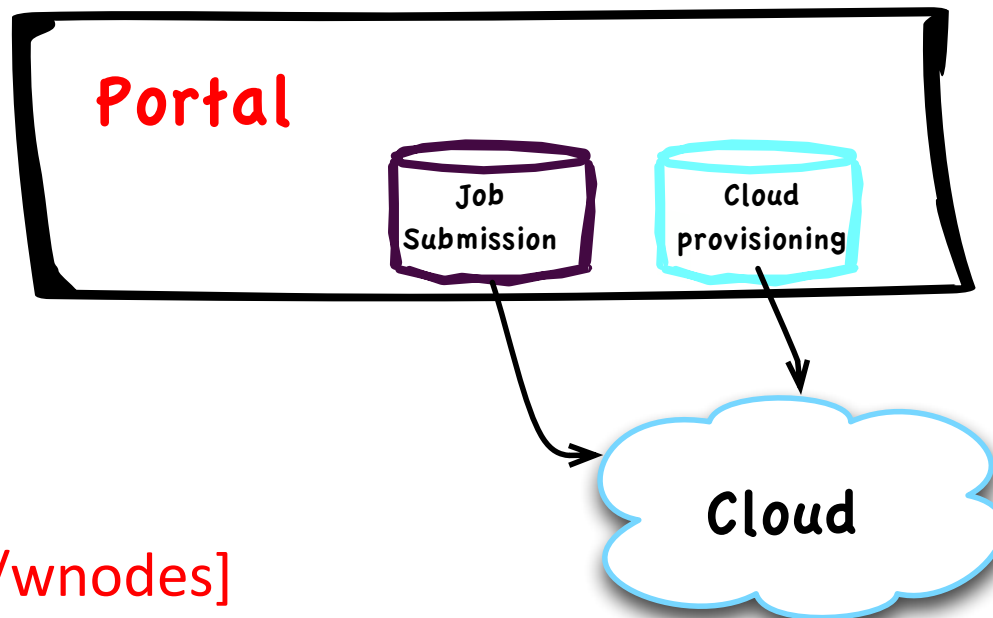


Data Management Architecture



Cloud

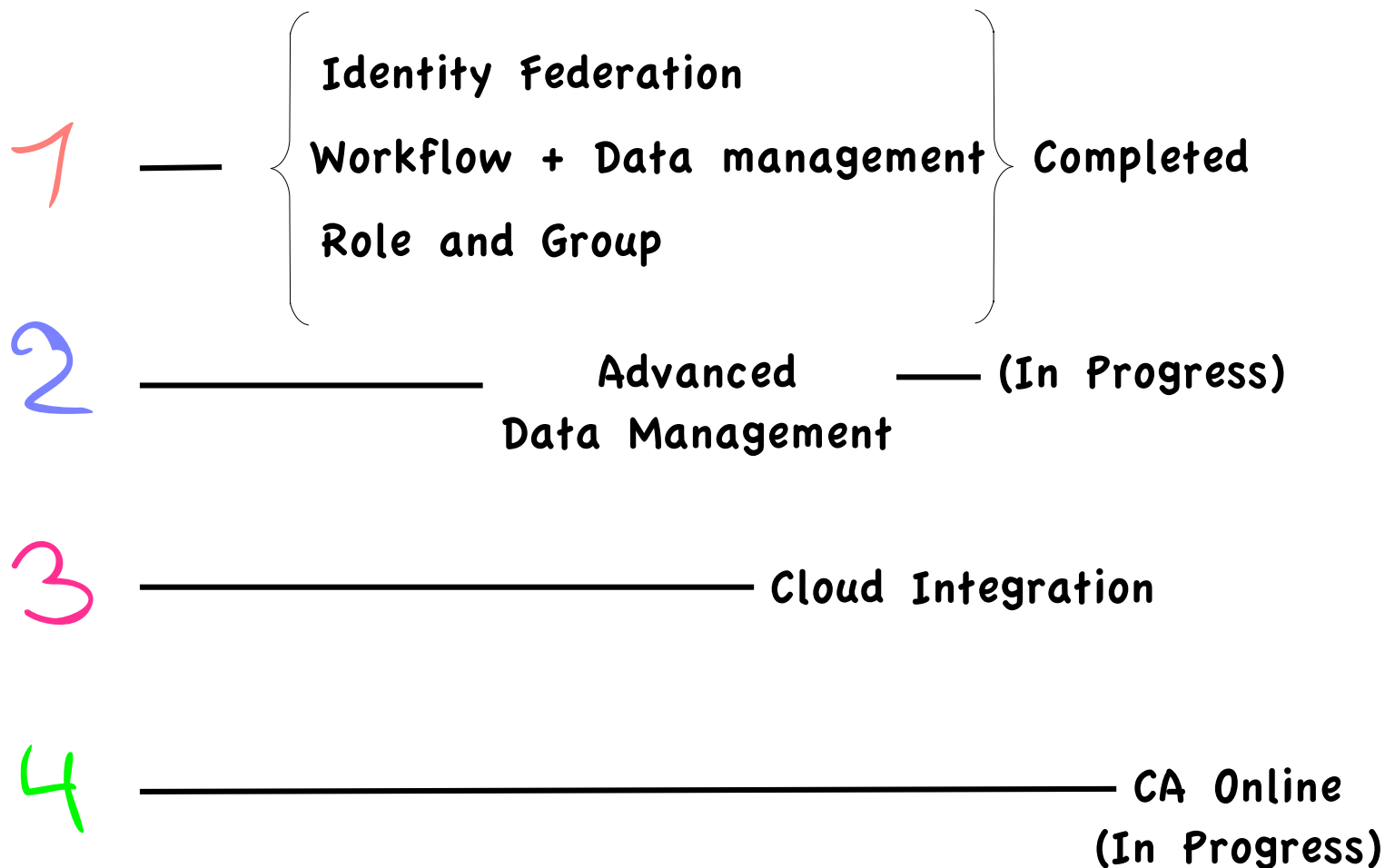
- WNoDeS integration
- Possibility to submit Grid jobs in a Cloud Environment
- Interactive Cloud resources provisioning



[\[web.infn.it/wnodes\]](http://web.infn.it/wnodes)



2012 (quarterly) - Roadmap

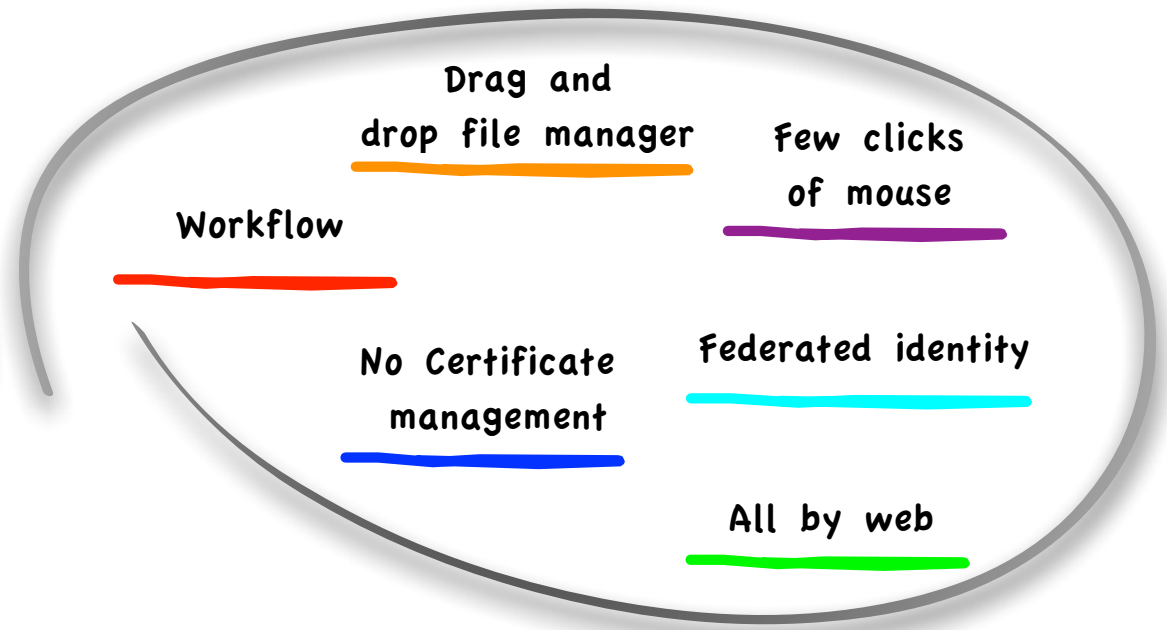
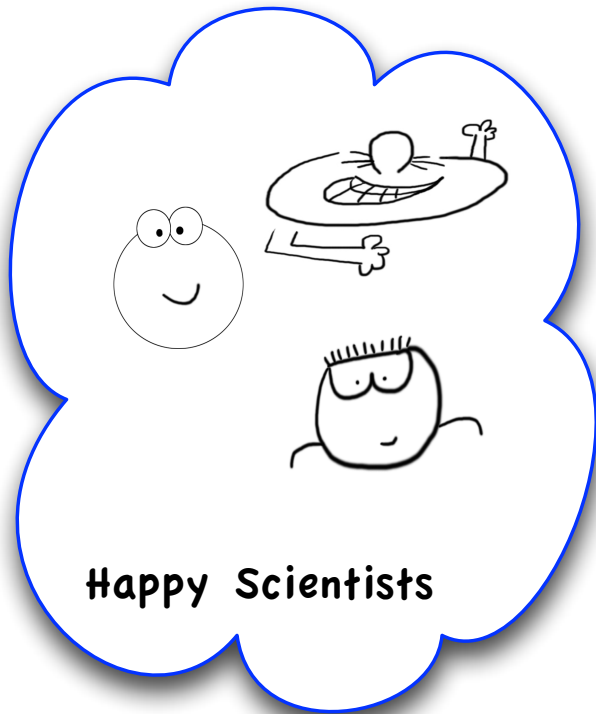




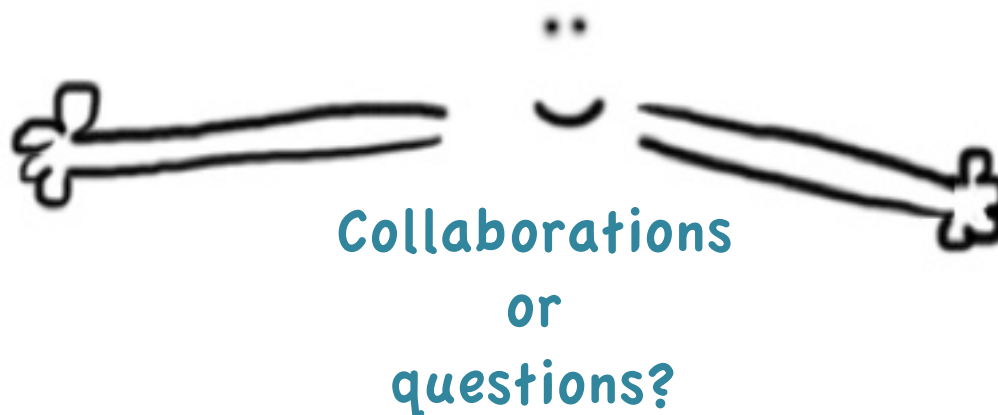
Release 0

- Release 0 is in pre-production mode
- Some experts and not experts grid users of different communities are submitting their jobs using the IGI portal to provide feedbacks
- In the near future the portal will be put in production mode

Summary



Thanks



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