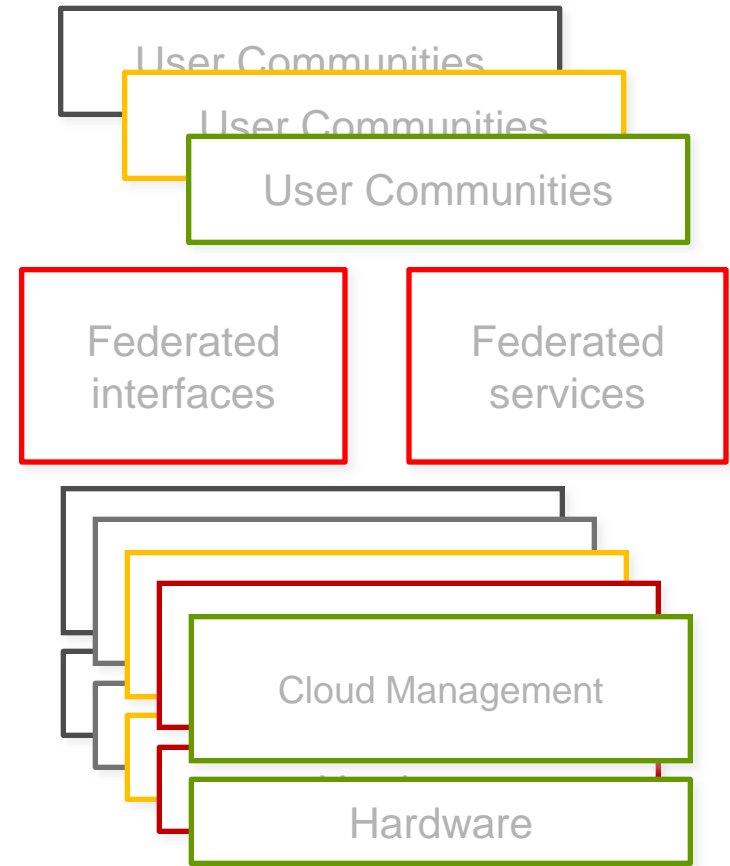


Federated Cloud update

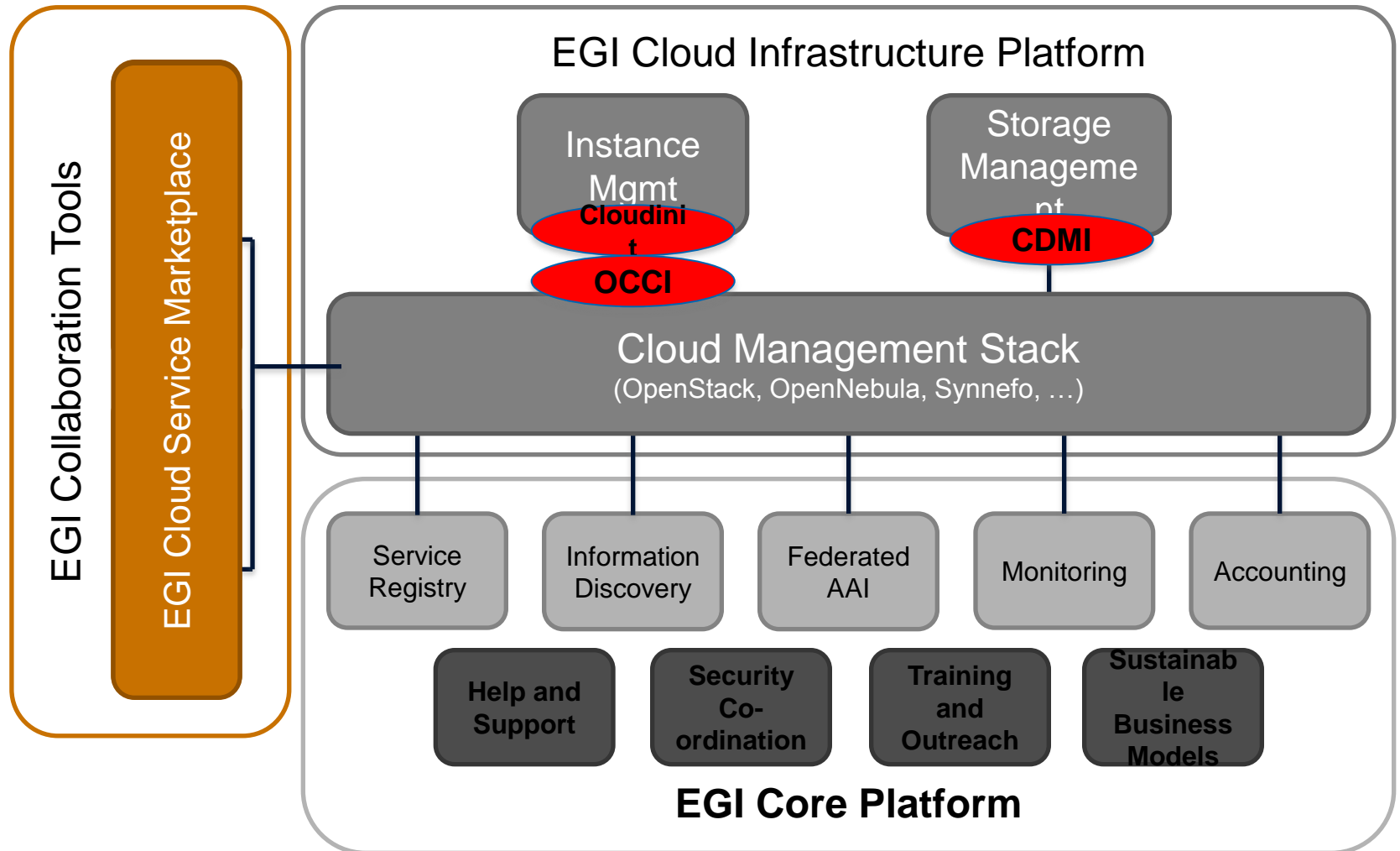
Peter solagna
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Pre-GDB Workshop



- **Standards and validation:** *Recommended* and common open standards for the interfaces and images – OCCI, CDMI, OVF, GLUE2.
- **Resource integration:** Cloud Computing to be integrated into the existing production infrastructure.
 - Security coordination, operations framework
- **Heterogeneous implementation:** no mandate on the cloud technology. Operational integration of the interfaces.



- Service deployment
- HTC over cloud
- Heavy memory applications
- Different access levels: IaaS, PaaS, SaaS
 - There are already several tools integrated
 - Continuous activity of integrating more platforms in the federated cloud



- Uniform VM Management through OCCl
 - Plugins/interfaces for Openstack
Opennebula and Synnefo
- Cloud init
 - Contextualization tool supported Extending this capability with other configuration tools such as puppet

- Standard interfaces allow uniform behavior across providers
 - EGI invested on the common interfaces from the very beginning and is committed to continue the support to those interfaces also in EGI-Engage
 - Top down approach, but this built momentum for the federation
- EGI technological evolution is also user-driven
 - User communities are already using native interfaces in their workflows
 - EGI will support user requirements for the operational integration of the interfaces
 - This can be hard work (easy for O.Stack, less easy for O.Nebula), need for clear use cases from the user communities
- Steps for operational integration
 - Monitoring of availability
 - Accounting of usage
 - Support user authn/authz in the federation

- A single point for control for the management and control of VO specific application packages across clouds
- Catalogue of available Software Appliances (AppDB)
 - Support for VO-wide image lists following the HEPiX format
 - Support requirement for endorsed images only to be distributed
 - Integration with the EGI Information system
 - Extended authentication system to support federated AAI through eduGAIN
 - Integration with external metadata repositories to provide broader support to communities and engage with other activities
 - Automated processes for VMI distribution
- Security policy for VMI endorsement being updated by EGI SPG

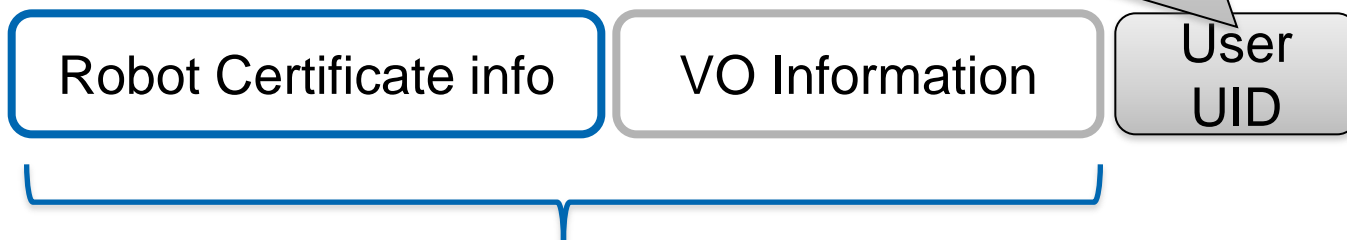
- New version of usage record for cloud resources under implementation
 - Including also VM Images ID
- Publishing scripts have been debugged to report correct usage values
- Accounting probes can report also cloud usage not performed through OCCl interfaces
 - Depending on the middleware the information can be more or less complete (user information, VO, ...)
- Normalization is still an open issue: collaboration is more than welcome!

- Currently monitored capabilities:
 - Standard interfaces: OCCI/CDMI
 - Accounting
 - Integration with AppDB: vmcatcher
- Availability calculation engine ARGO allows flexible profiles
 - Production A/R calculation engine from mid 2015
 - Will allow easier introduction of custom A/R profiles
- Introduce monitoring for native interfaces
 - Pros: a lot of probes already available from other communities. Allow certification for sites exposing only native interfaces
 - Cons: manage the credentials used for monitoring

- X509 is still the federated AuthN infrastructure *that works*TM
- X509 support implemented in Keystone, to be used with native OpenStack interfaces and OCCl
- OpenNebula supports X509 only through OCCl
- In EGI-Engage, Cloud services will lead the extension of EGI AAI framework to support new authentication technologies

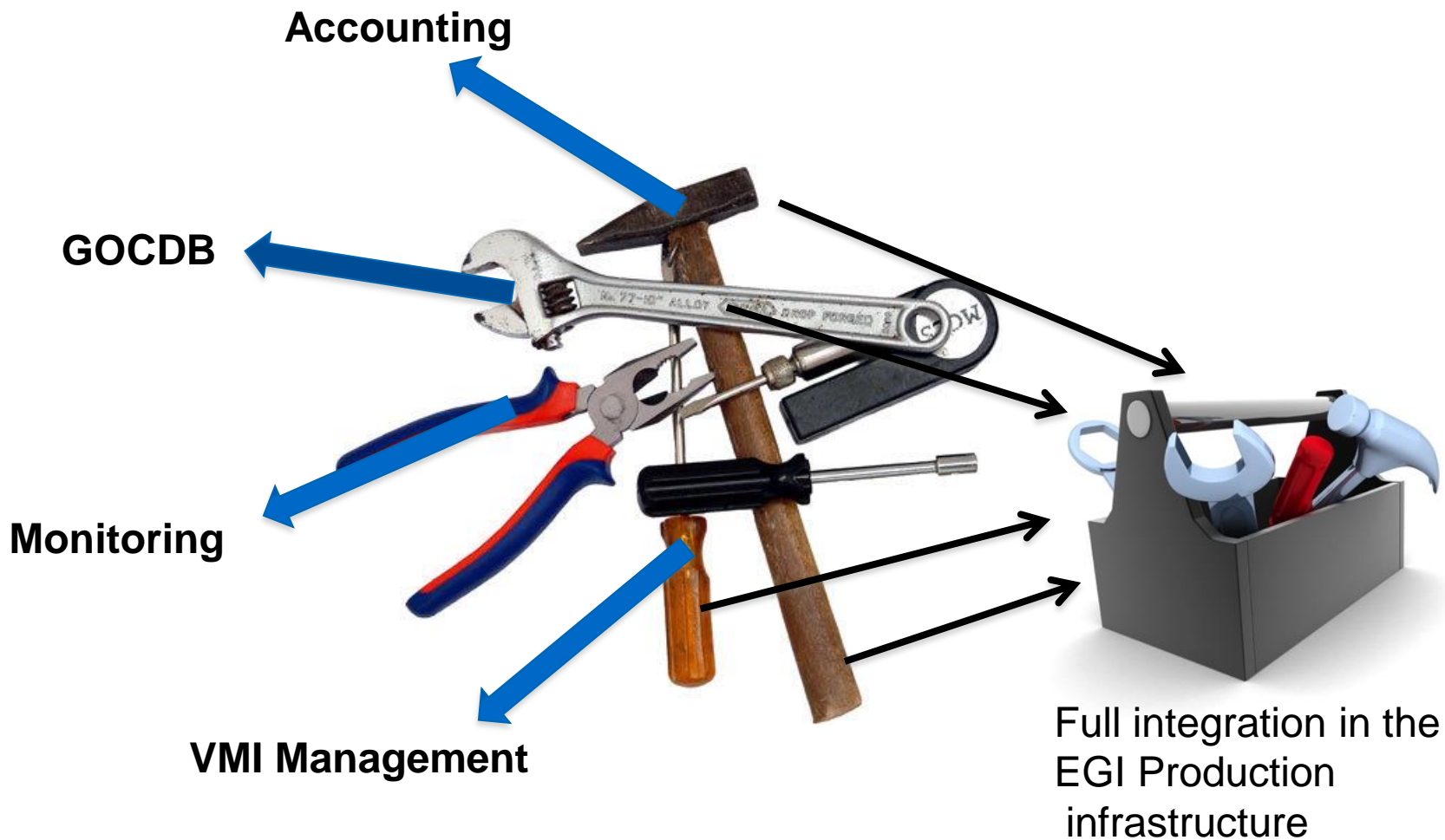
- Most of the science gateways are using robot certificates to generate short-term proxies for the users
- Use of robot certificates proxies can be extended to improve accounting and user tracking

The UID is provided by the science gateway. The user will have the same UID using different science gateways. It's a [per-user sub-proxy](#)



The same for every user of the gateway

How big research infrastructures can benefit from the EGI Fedcloud experience?



- Thanks for the attention
- Questions?