SURF NATIONAL RESEARCH CLOUD

Supporting cooperation in research

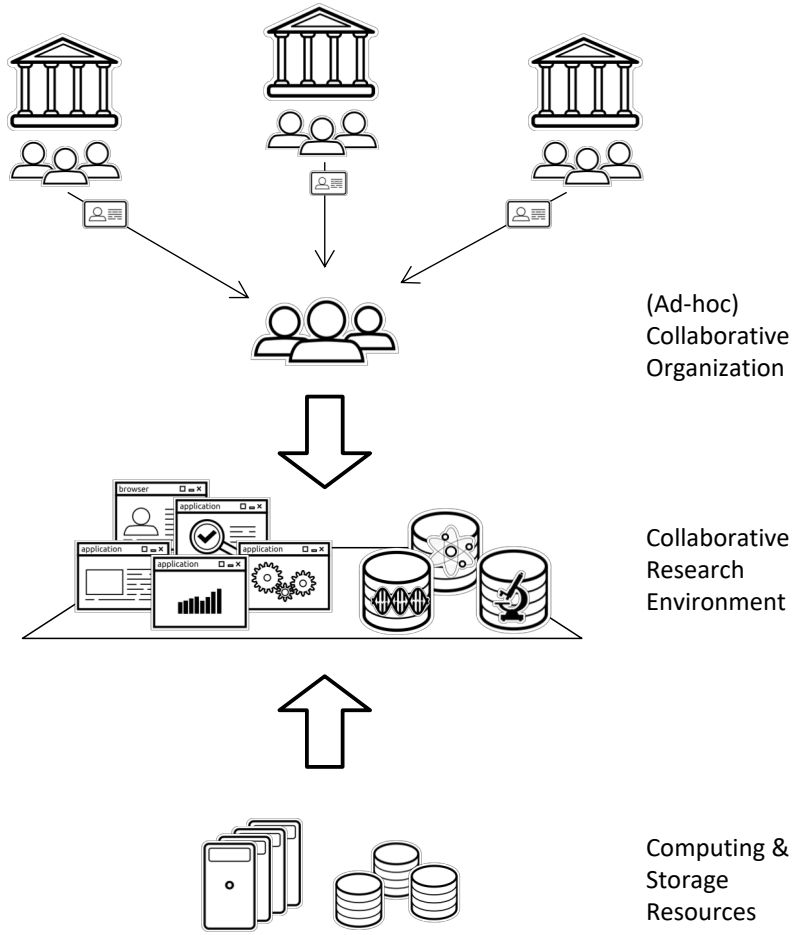
SURF SARA

SURF Research Cloud

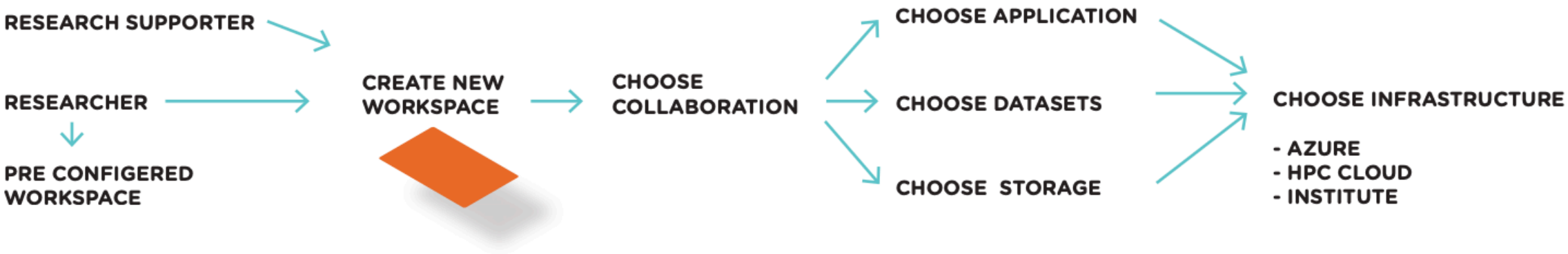
SURF Research Cloud provides a portal and a platform for:

- Creating Workspaces (VRE's)
- Working across institutes
- Accessing a broad range of services
- Accelerating research

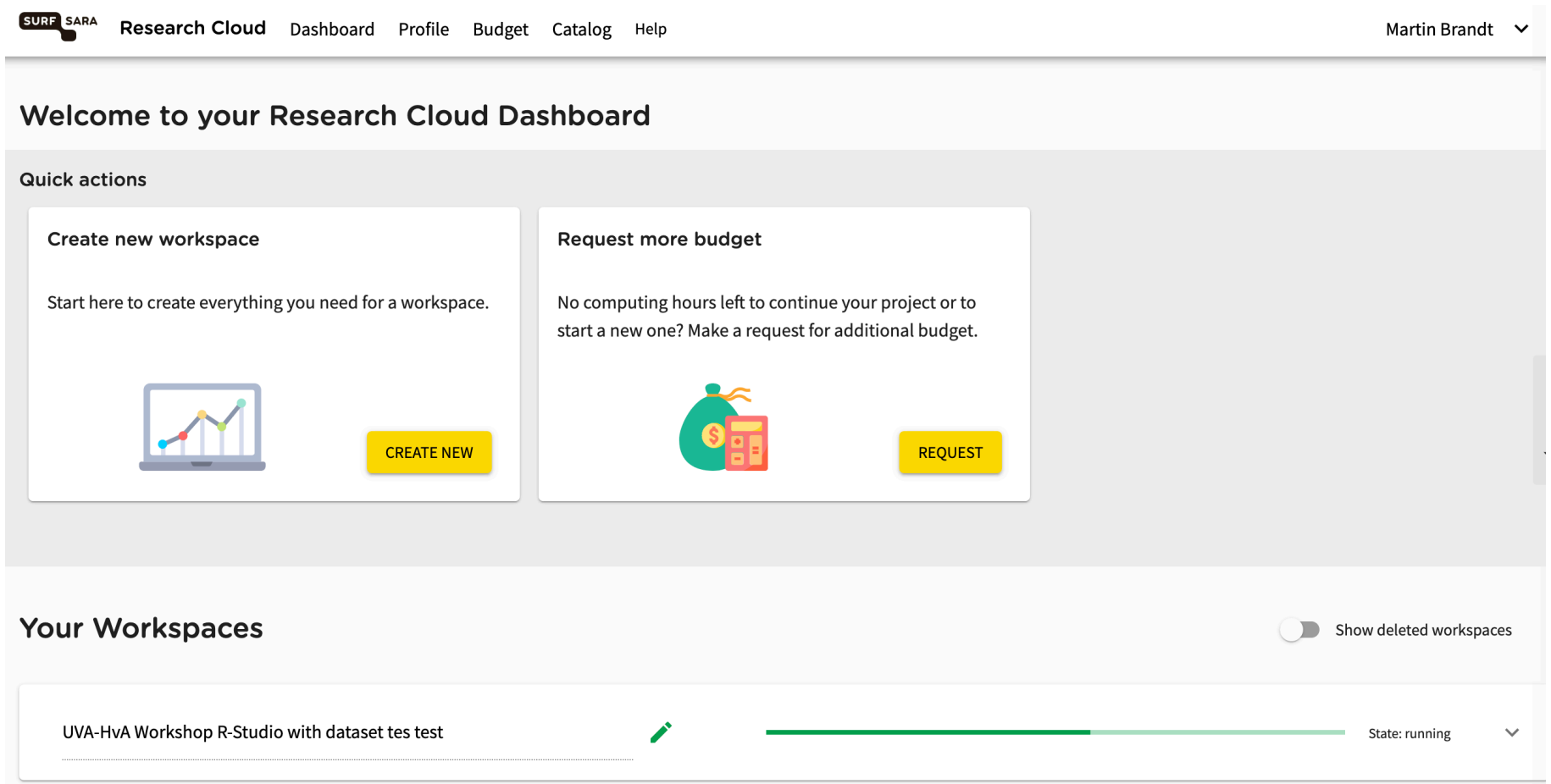
It's a SURF innovation project



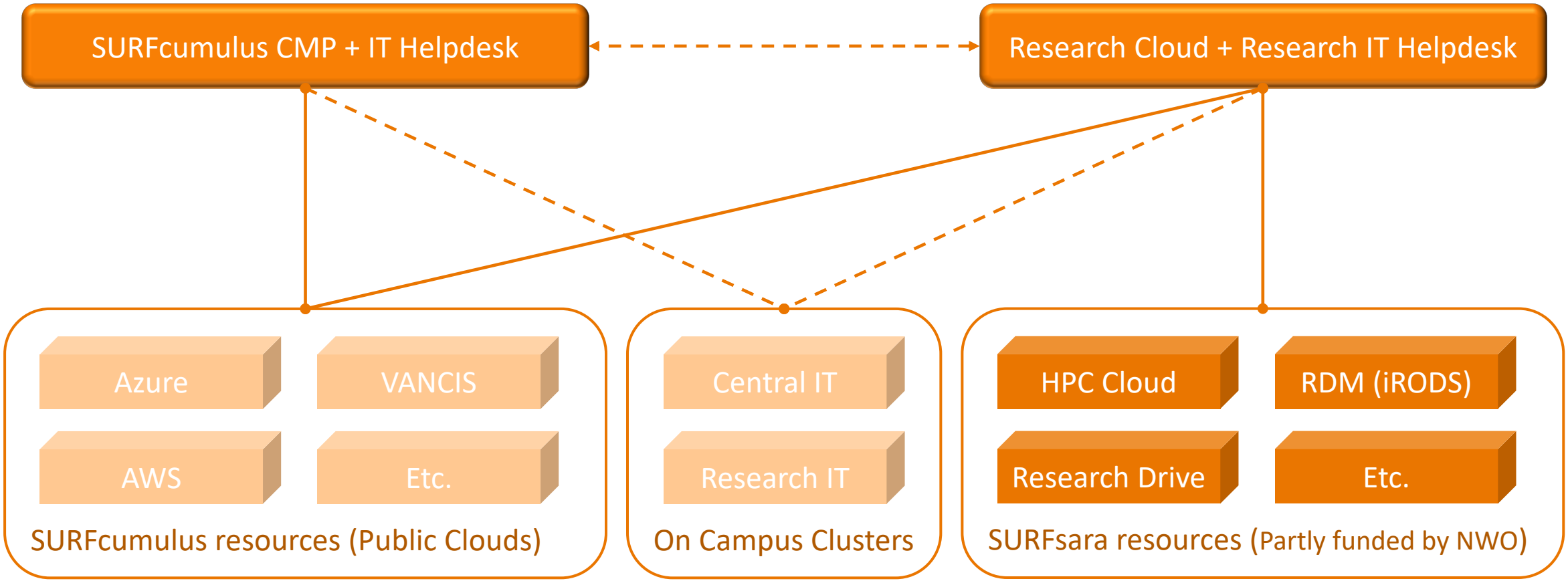
SURF Research Cloud Workflow



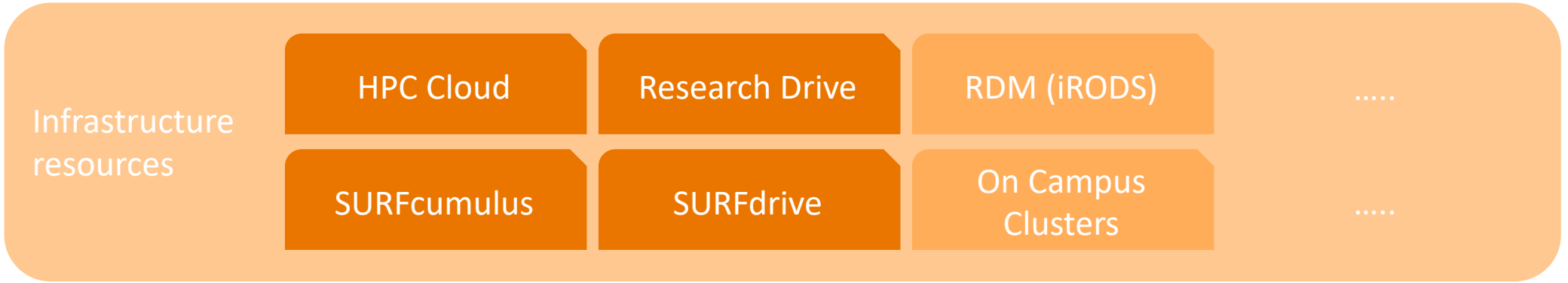
Research Cloud Portal



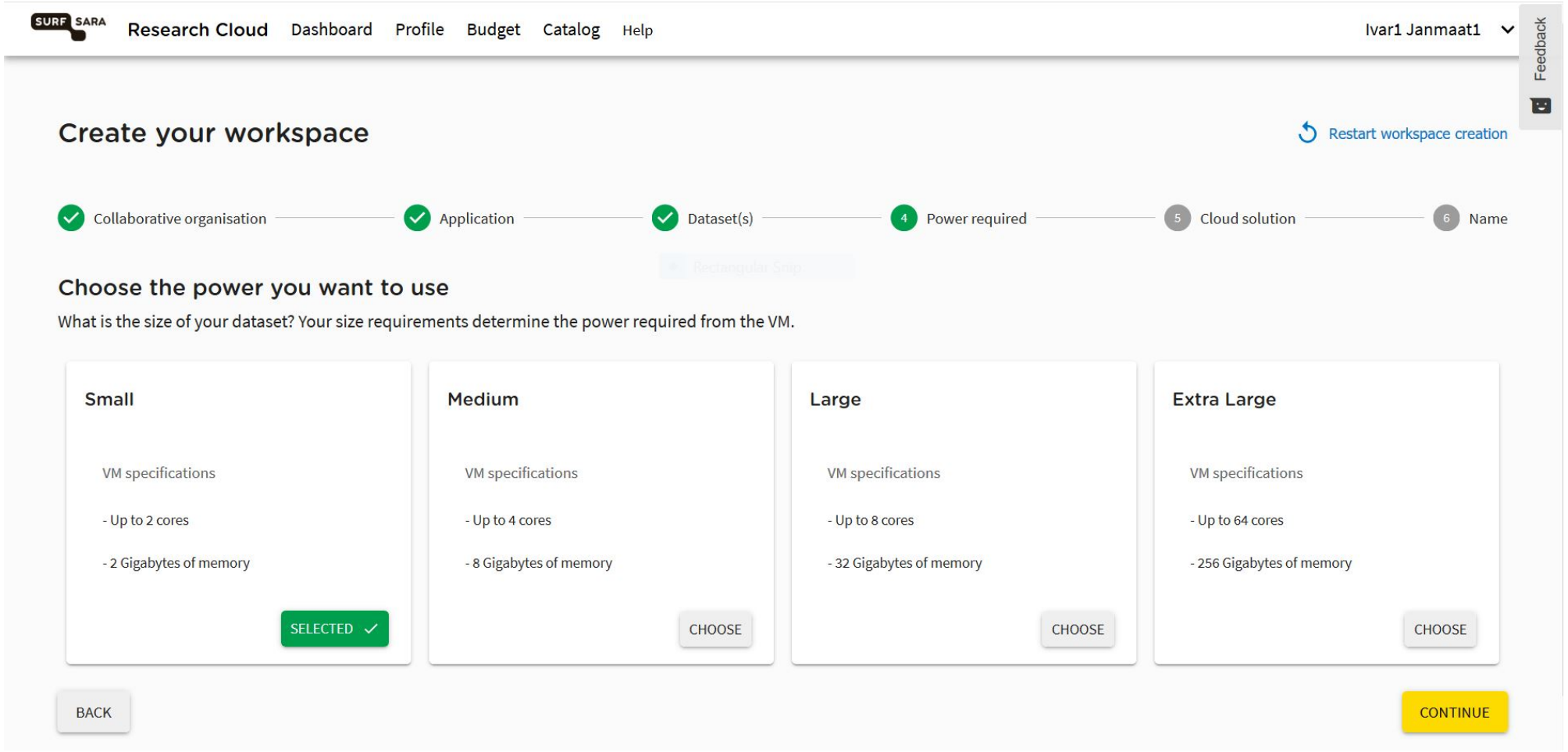
SURF Research Cloud and SURFcumulus



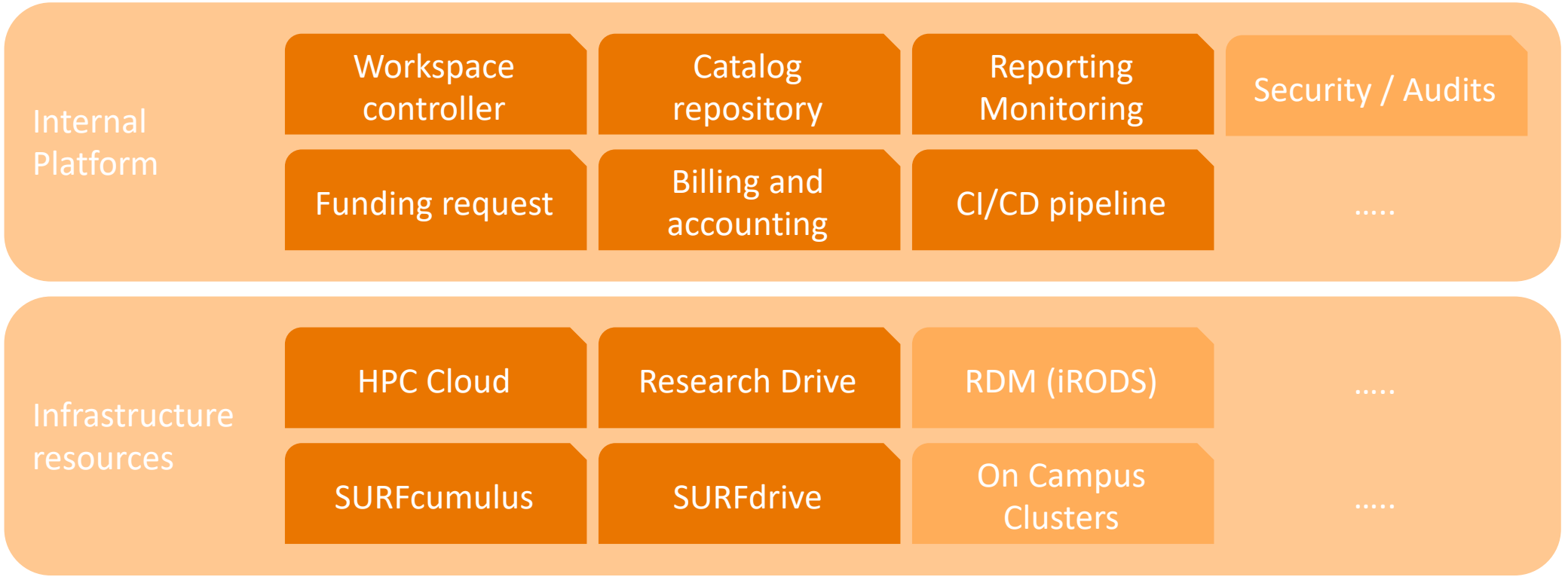
SURF Research Cloud components



Research Cloud infrastructure resource selection



SURF Research Cloud components



Billing and Accounting

Quick actions

Request more budget

No computing hours left to continue your project or to start a new one? Make a request for additional budget.

REQUEST

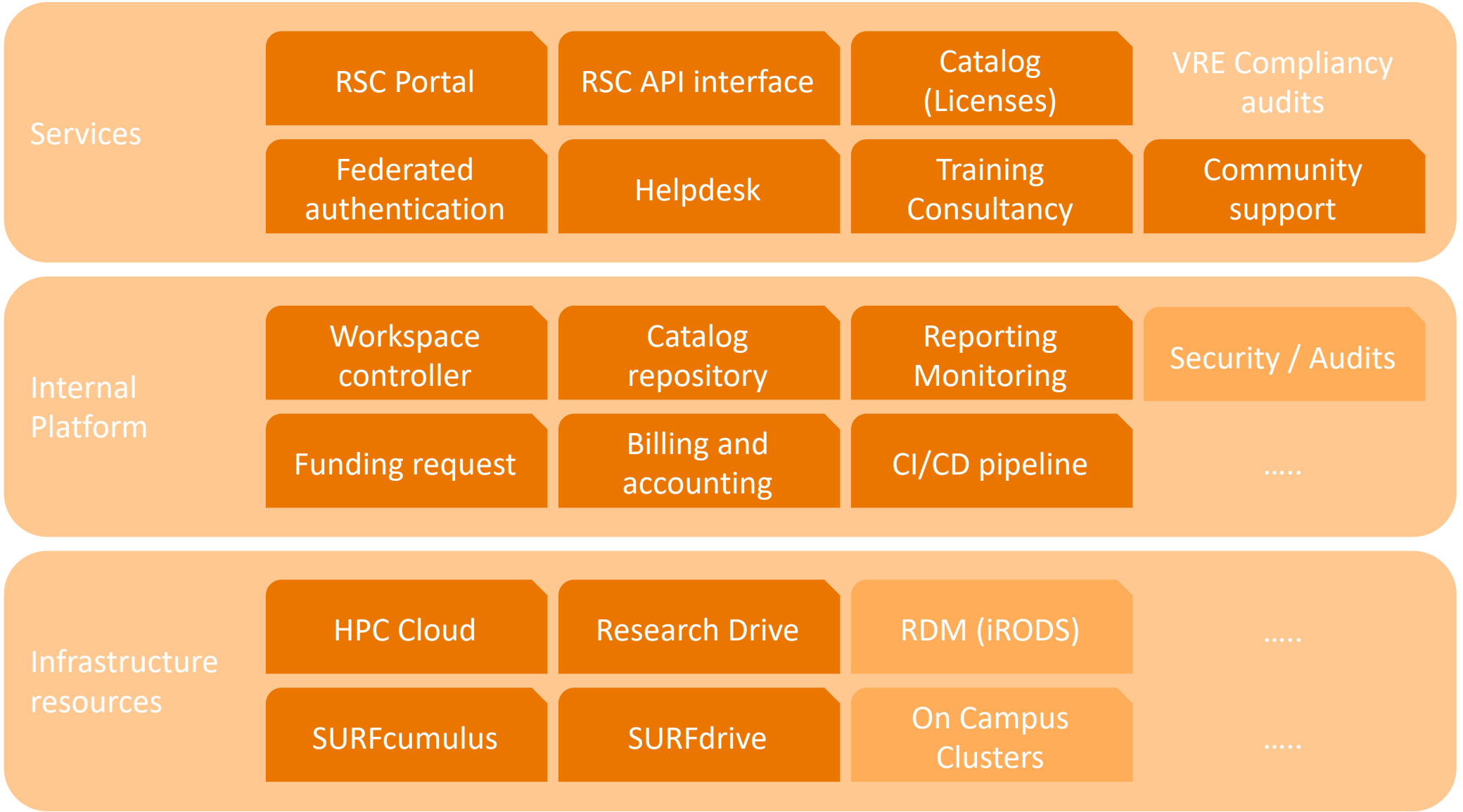
Your Budgets

This is an overview of your available budgets, also known as wallets. These wallets include the ones you own yourself, plus those which are provided to a collaborative organisation that you are member of. To start a new workspace you need to have budget available to finance this workspace.

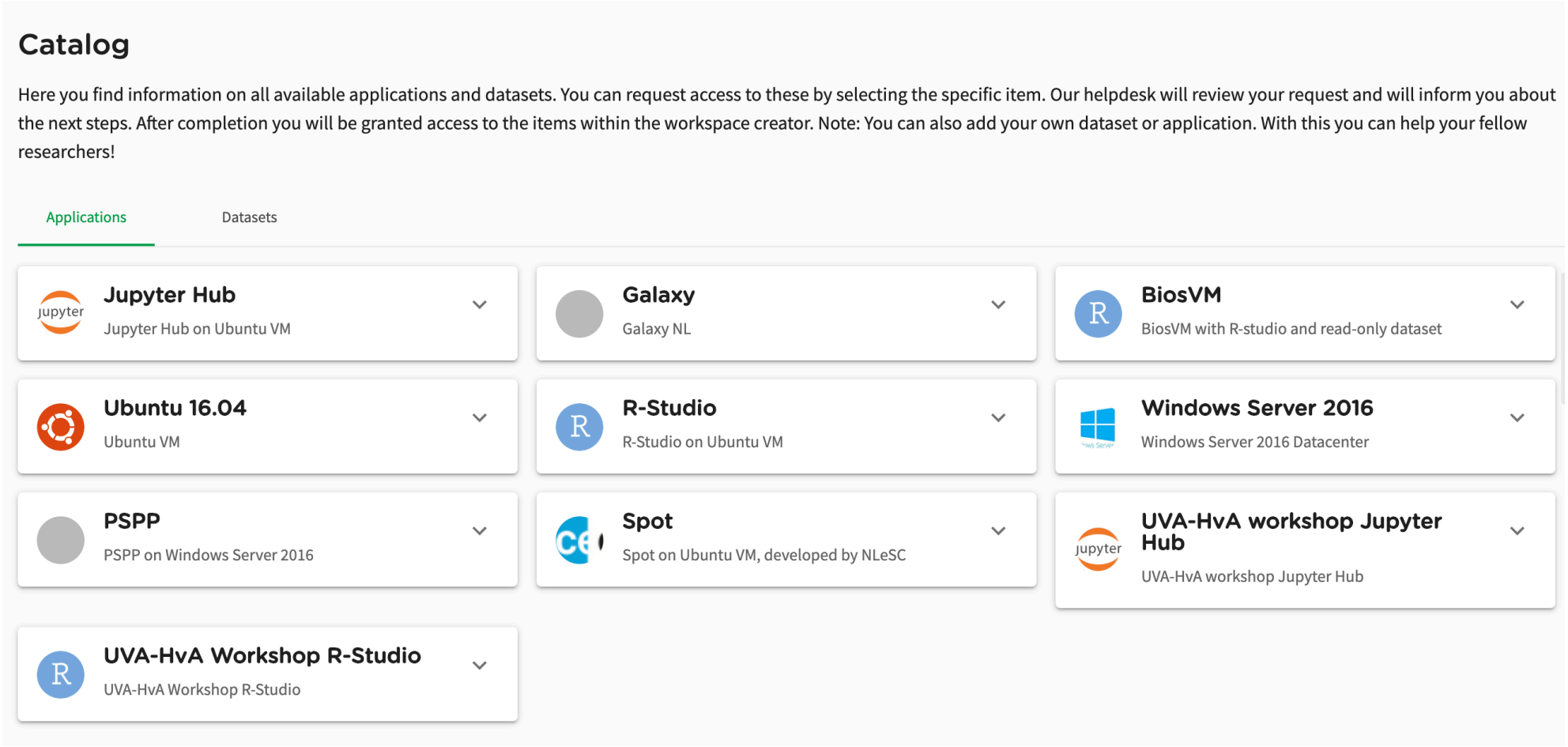
Martin SURF budget
Credits: 9338.452

Martin first budget
Credits: 9858.761

SURF Research Cloud components



Catalog: Applications and datasets



SURF Research Cloud design principles

Microservices on Kubernetes

Advantages

- Modular design -> No vendor lock-in
- Open source -> Total control of functionality and security
- Flexible in developing and adding new features -> Direct user interaction
- CI/CD pipeline -> Spin up multiple RSC frontend and backends to any PaaS provider
- Can integrate with other microservices
- Fault tolerant and scalable

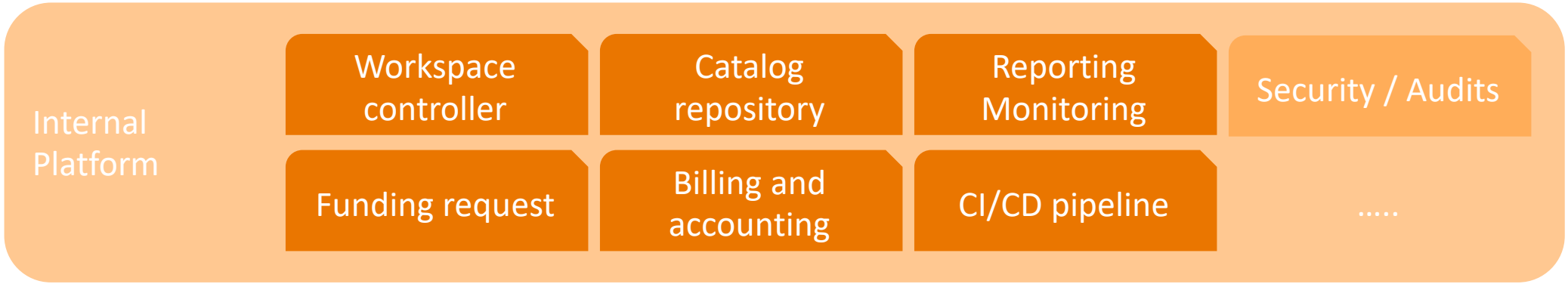
Disadvantages

- Expertise needed (CI/CD)

SURF Research Cloud roadmap

- ✓ Research Drive (auditable identity)
- ✓ SURFdrive
- ✓ Azure + AWS
- ❑ RDM (iRODS)
- ❑ CEPH, dCache, etc.
- ❑ Pilots with On Campus clusters

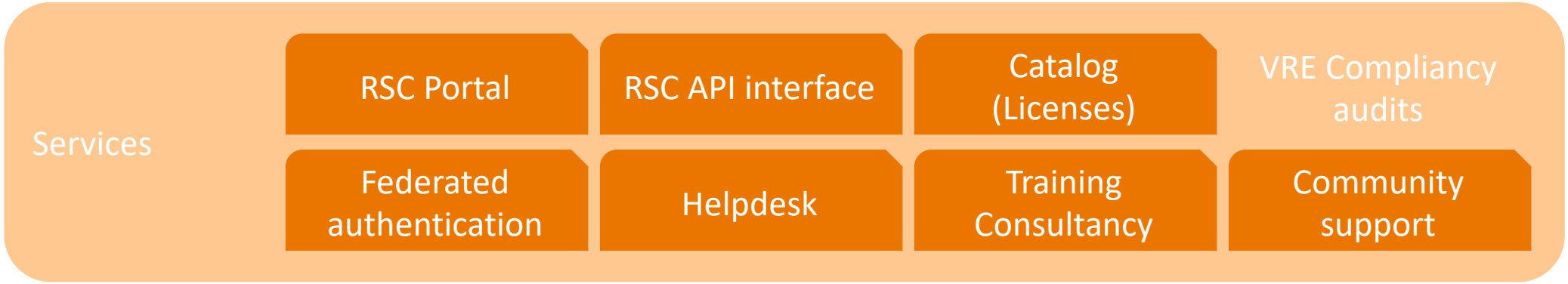
SURF Research Cloud roadmap



- ❑ Security settings for public Clouds
- ❑ ISO 27001 audit for RSC
- ❑ PEN test and code review on RSC
- ❑ Operational procedures
- ❑ White label RSC

- ❑ Add your own datasets for public use or use in specified Collaborative Organization yourself
- ❑ Add your own application for public use or use in specified Collaborative Organization yourself

SURF Research Cloud roadmap



- ✓ RSC Portal refresh
- ✓ Budgets added
- ✓ Time-based one time password (TOTP)
- ✓ Automated creation of Collaborative Organization (CO)

- ❑ Helpdesk as a Service
- ❑ Licenses for apps in Catalog
- ❑ VRE Compliancy audits
- ❑ API documentation and test facility

Other work in progress

Governance (new features and enhancements)

- Direct feedback from researchers via user interface
- Catalog items development / ownership
- Align development with EU and Dutch HPC research infrastructure requirements and goals

Finance

- It’s a SURF innovation project
- SURF Innovation budget and OPEX budget need to come together in a dev/ops way of working.

GDPR

- Research institutes, NWO and researchers all determine purposes and means -> Controllers
- SURFsara -> Processor

Conclusion

Functionality

- Designed for researchers
- Designed for collaboration
- Portal and a platform
- Reusable components and services

Technology

- Modular design
- Open-source
- Modern CI/CD setup with agile development team
- Designed for integration and co-creation

To-do

- Compliancy (audits + GDPR)
- Add more resources (SURFcumulus + RDM) -> Pilots
- Co-create and support catalog and dataset items -> Pilots
- Go to production

Questions?