

The background image shows a close-up of a DNA sequencing gel. A hand is holding a silver pen and pointing at the gel. The gel displays multiple lanes of DNA sequences, with peaks of different colors (green, yellow, red, blue) representing the four bases. The sequence 'CTCAGAGATGCTAAACTTATG' is visible at the bottom, with '660' and '670' indicating positions. The overall scene is dimly lit, with the gel's light providing the main illumination.

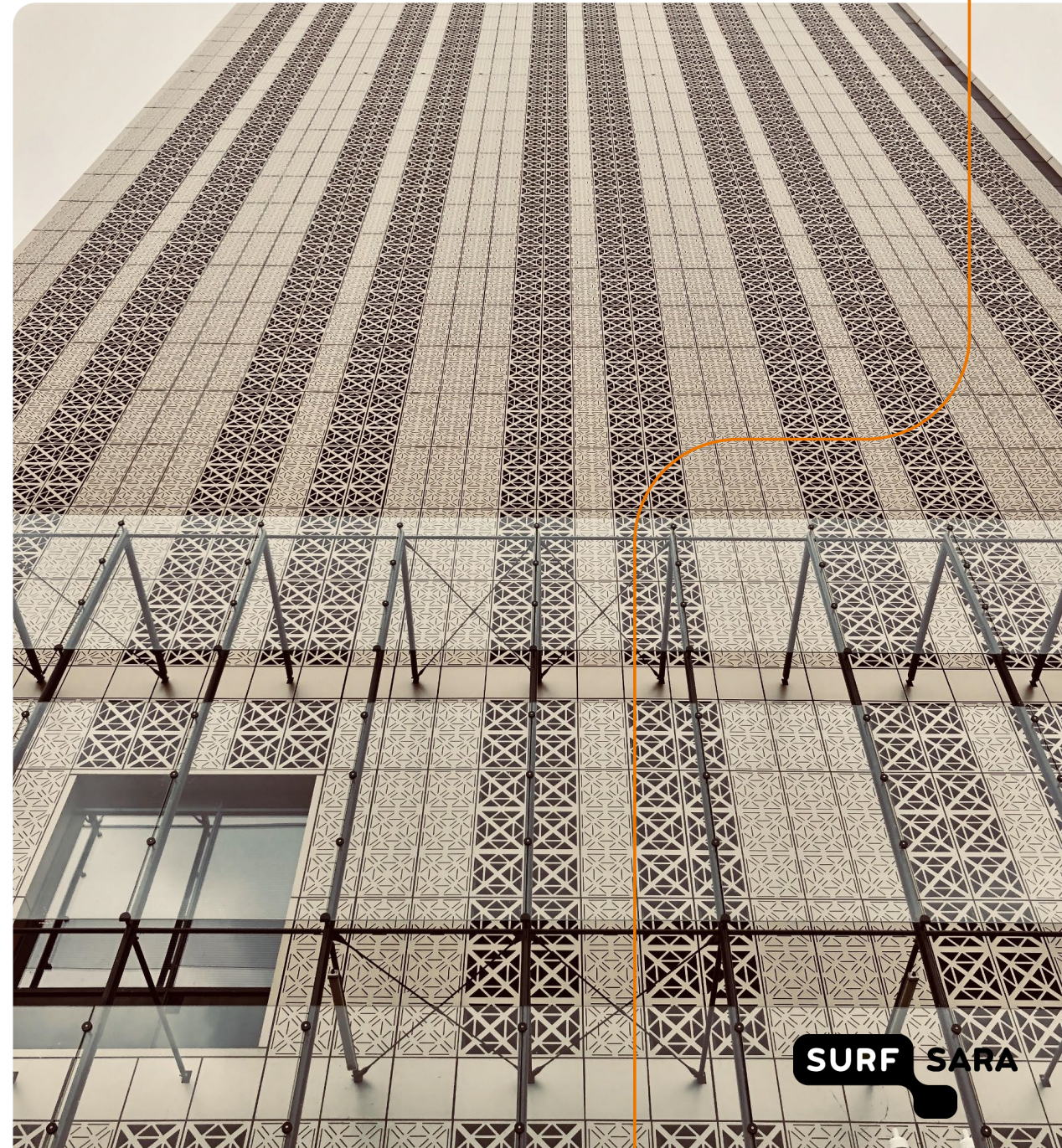
SURF RESEARCH CLOUD ET AL. UPDATE

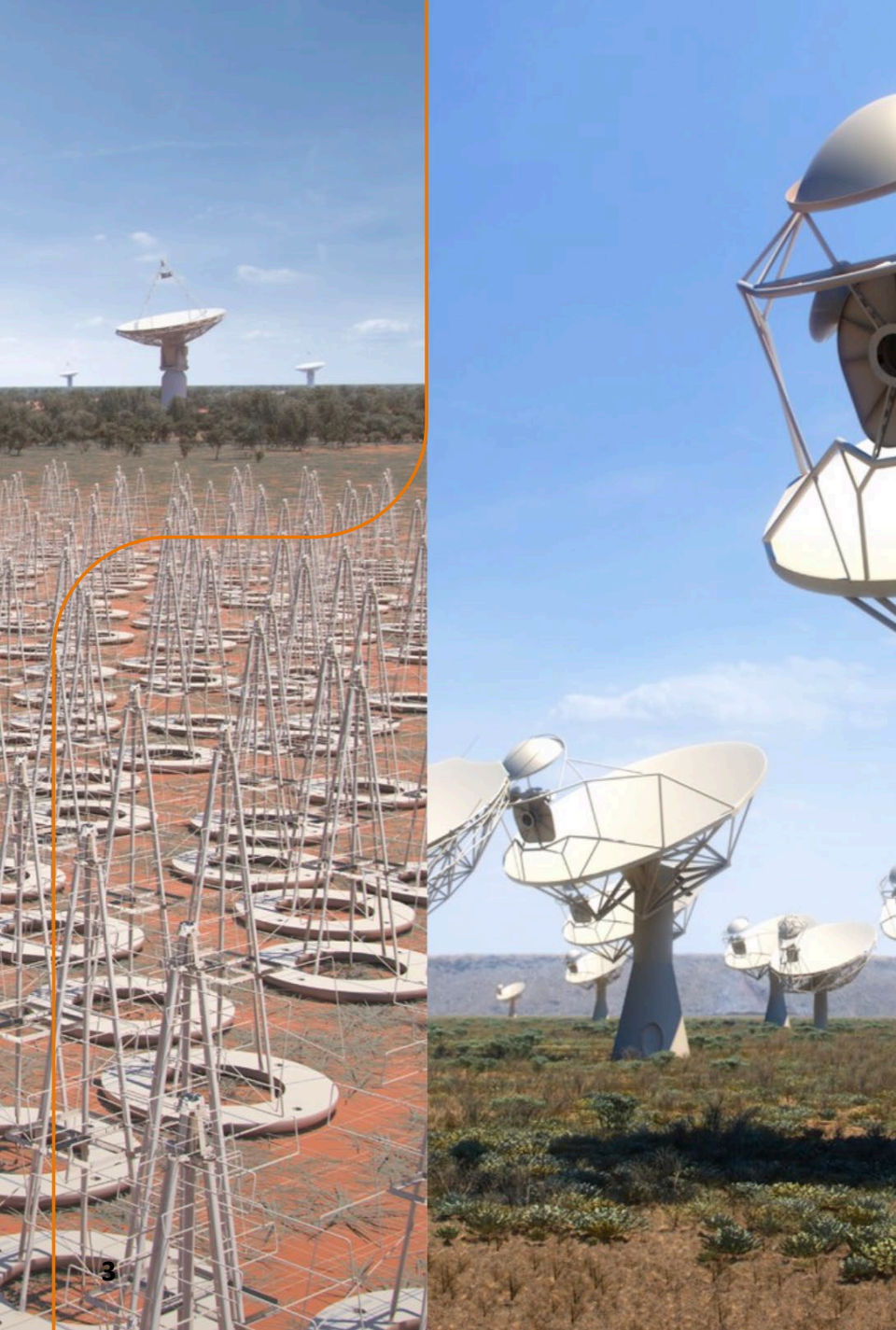
Supporting cooperation in research

Ivar Janmaat: Product manager

Agenda

- Vision
- Update Research Cloud
- Update resource providers
- Update SURFcumulus
- Update iRODS
- Update SURFresearch Access Management (SCZ)
- Update Research Drive





Vision

In our scientific quest to gain more knowledge we are producing, storing and analyzing more and more data.

(Ian Bird, CERN)

**LOFAR
2016**

7 PB

**LHC 2018
Science Data**

60 PB

Google
Searches
98 PB

Facebook
Uploads
180 PB

SKA Phase 1 2028
Science Data
600 PB

HL-LHC 2026
Raw Data
600 PB

Yearly Data Volume

Google
Internet
Archive
15 EB

SKA Phase 2 2030
Science Data
1 EB

HL-LHC 2030
Science Data
1 EB

SURF

RIKEN
NII

Genome researchers raise alarm over big data

Storing and processing genome data will exceed the computing challenges of running YouTube and Twitter, biologists warn.

Erika Check Hayden

07 July 2015

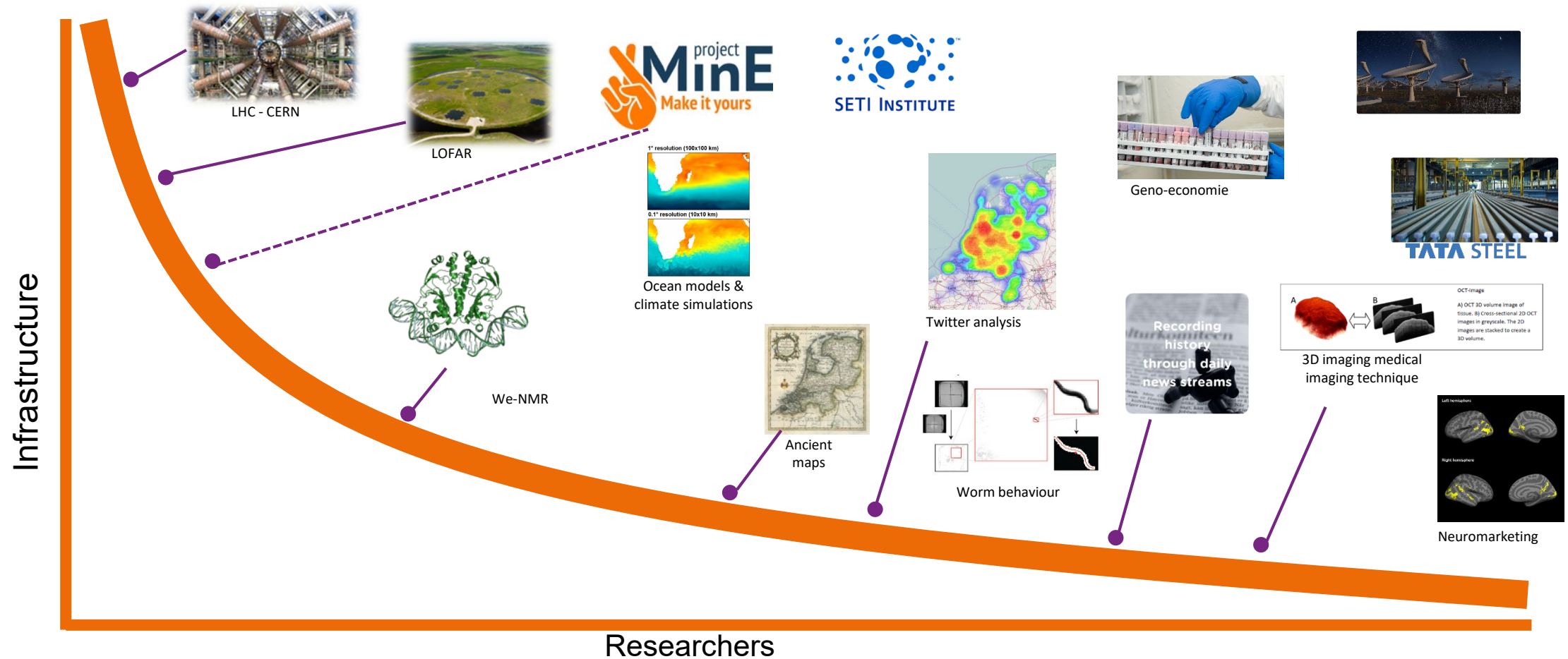
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The computing resources needed to handle genome data will soon exceed those of Twitter and YouTube, says a team of biologists and computer scientists who are worried that their line is not geared up to cope with the coming genomics flood.

“It even exceeds the 1 exabyte per year projected for what will be the world’s largest astronomy project, the [Square Kilometre Array](#)”

SURF SARA

Different disciplines with different or comparable FAIR data and compute requirements





 Marc Hijink

 2 augustus 2019

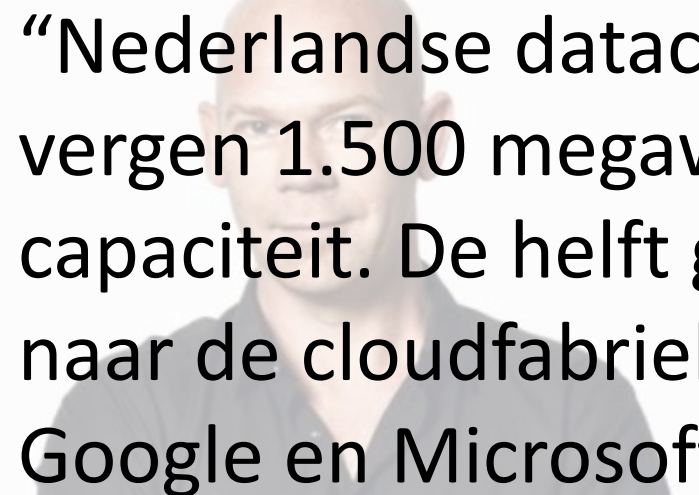
 Leestijd 1 minuut

 Opslaan in leeslijst



Het datacenter draait al op reserve

De Bennebroekerweg gaat er over in de Nieuwe Bennebroekerweg. Verder gebeurt er bar weinig bij dit weiland net onder Hoofddorp. Hier, langs de A4 en de spoorlijn Schiphol-Leiden, onder het gebulder van de Kaagbaan, moet een transformatorstation komen dat het stroomnet weer wat lucht geeft. Er is geen capaciteit om aan de groeiende elektriciteitsbehoefte in de omgeving te voldoen. Mede daarom kondigden Haarlemmermeer en



“Nederlandse datacentra vergen 1.500 megawatt aan capaciteit. De helft gaat naar de cloudfabrieken van Google en Microsoft”

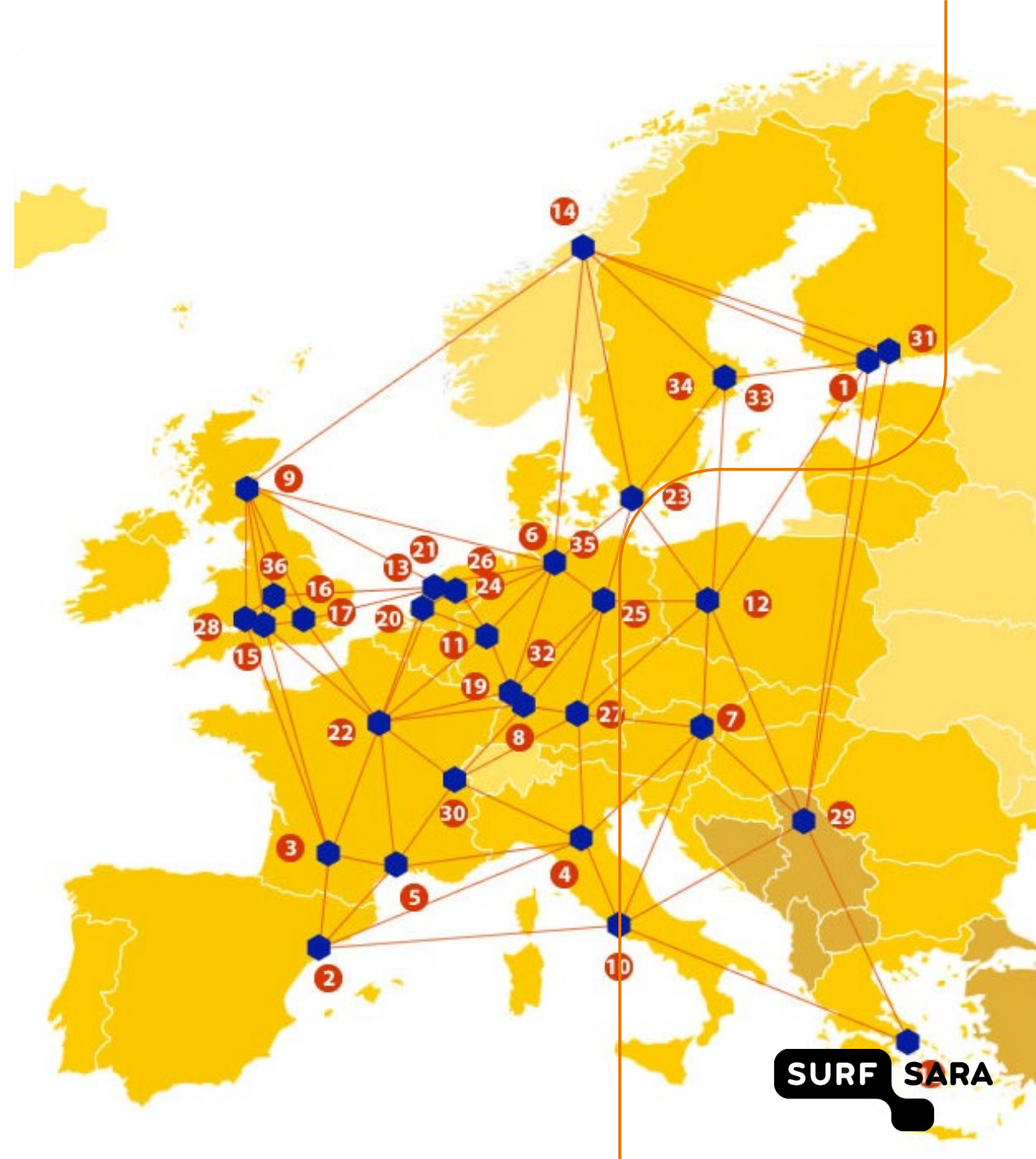
SURF SARA

SURF expertise

- Storage
- Data archiving
- Compute
- Data processing
- Research support
- Identity and access management
- Cloud computing

Collaborative frameworks

- EOSC (European Open Science Cloud)
- CS3 (Cloud Storage services for Synchronization and Sharing)
- Federated HTC (Federated OpenStack)
- EUDAT (Collaborative Data Infrastructure)
- U2CONNECT (iRODS related data management)
- GEANT (European Research Network)
- LCDRM (Landelijk Coördinatiepunt Research Data Management)



Update Research Cloud

- Development environment
- Test environment for pilots
- Production environment not yet available

MVP Januari 2020 (Linux, nog geen Windows)

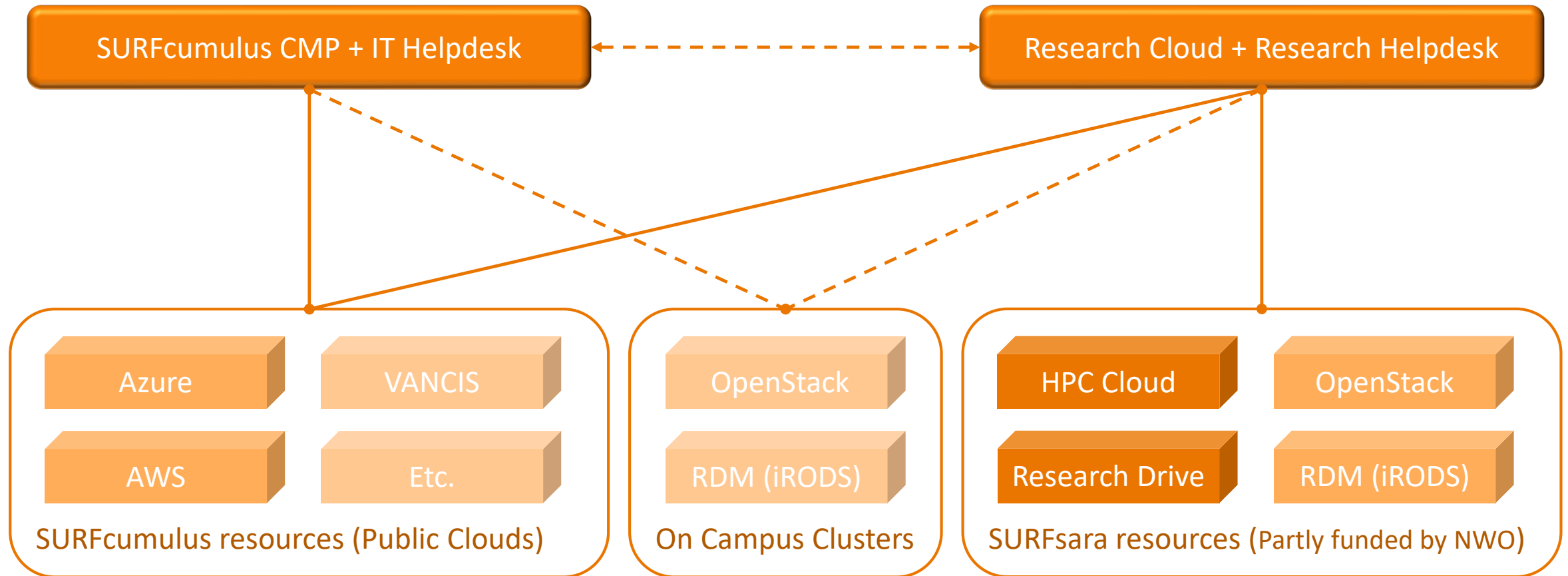
ISO 27001 audit SURFsara October 2019

PEN test December 2019

Research Cloud Pilots

Natuurwetenschappen:	KNMI
Sociale en Geesteswetenschappen:	UVA-HVA; Koninklijke Bibliotheek
Medische Wetenschappen:	A-UMC; BBMRI BIOS-VM (Datasets + R-Studio)
Artificial Intelligence:	OpenStack GPU
Research Data Management:	iRODS
Onderwijs:	HU; (Jupyter Notebook/HUB)
Computer science:	eScience TaDpole + software catalog

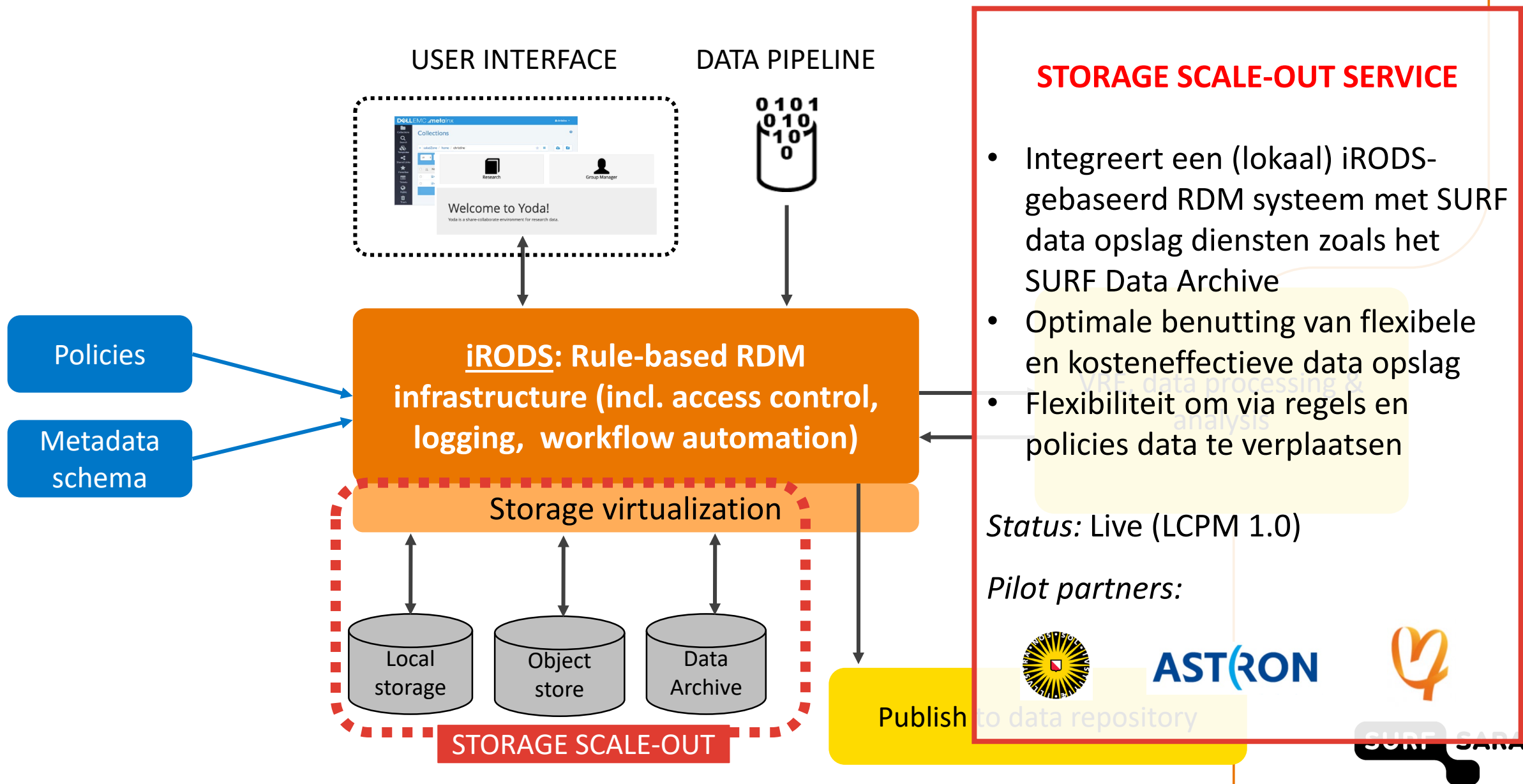
Update resource providers



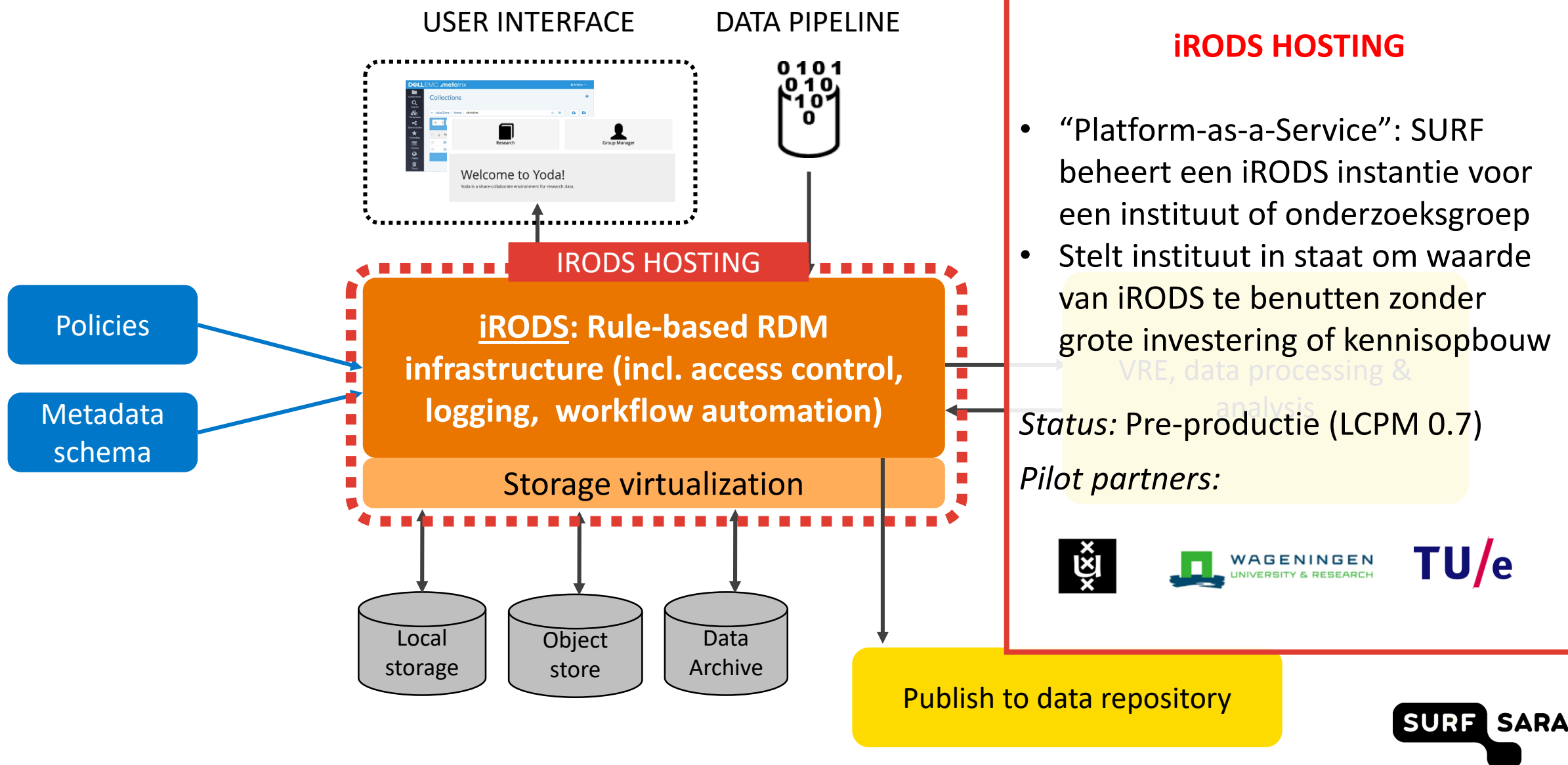
Update SURFcumulus

- OCRE aanbesteding is in voorbereiding (verwachting is dat Google, Oracle en IBM zullen inschrijven)
- CMP aanbesteding deze week afgerond (groen licht voor onderhandelingen met Cloudbolt)

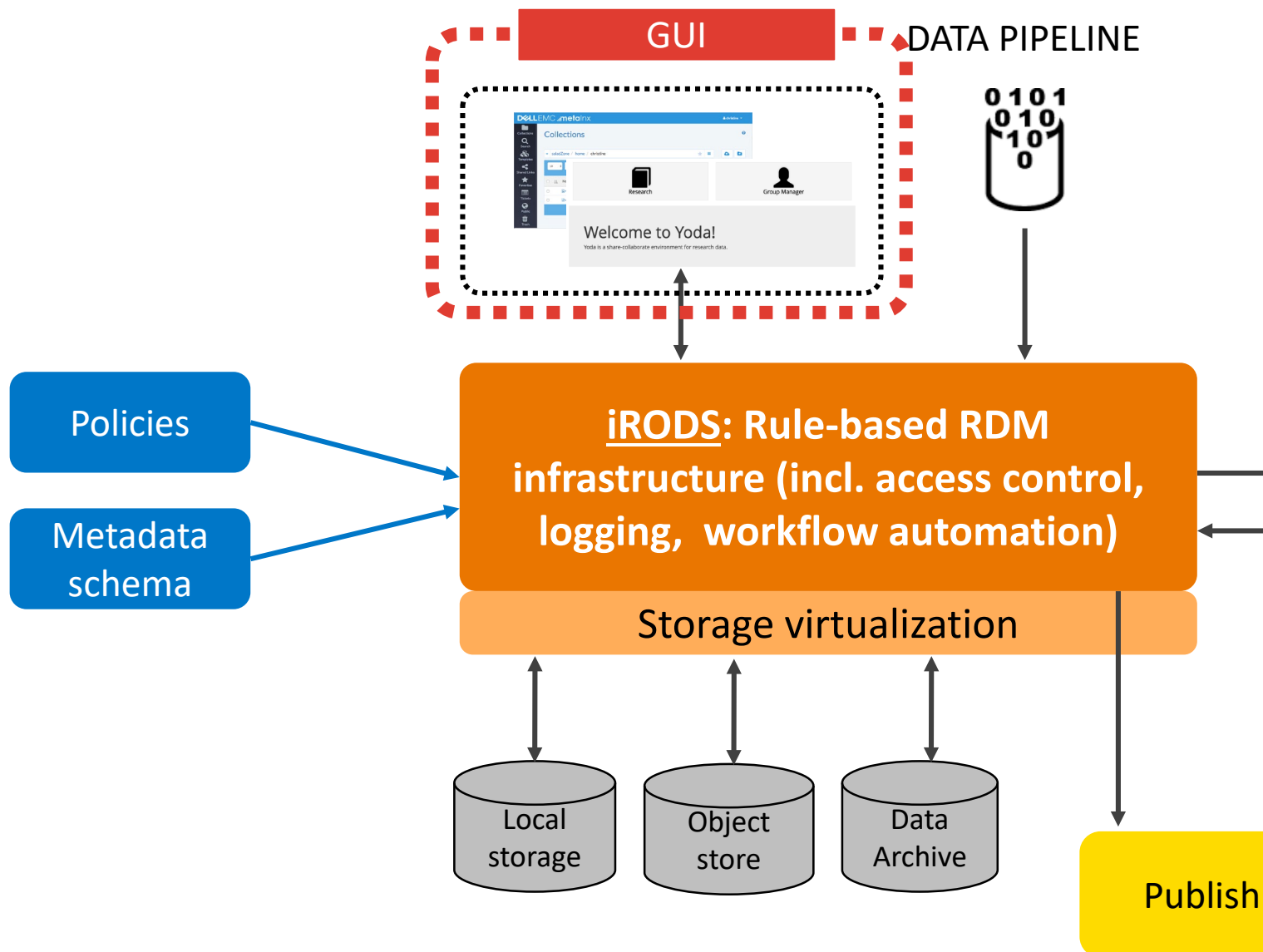
Update iRODS: *RDM Storage Scale-out service*



Update iRODS: *RDM iRODS hosting*



Update iRODS: *Graphical User Interfaces*



GRAFISCHE USER INTERFACE (GUI)

- Biedt grote groep onderzoekers toegang tot krachtige RDM functionaliteiten zonder de complexiteit van de command-line
- Werkt als 'schil' bovenop iRODS om integraal & consistent beheer van de volledige data catalogus te waarborgen.

Status: POC's & pilots (LCPM <0.5)

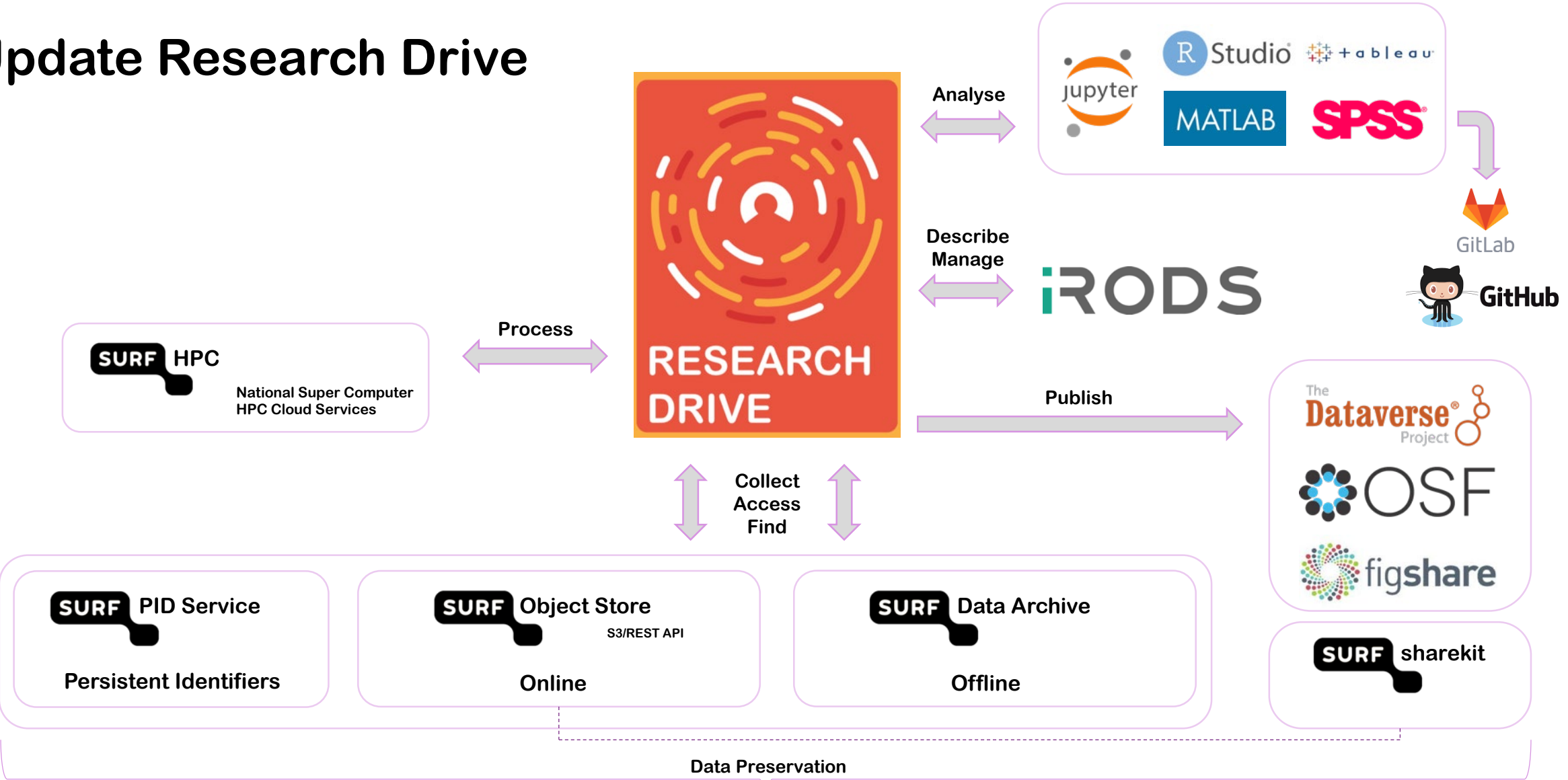
Pilot partners:

- YODA: 6 universiteiten via RDM-TEC
- ResearchDrive: Saxion hogeschool & MUMC+

Update SURFresearch Access Management (SCZ)

- SPA akkoord in jun '19 met (LCPM) v0.7
- Focus op productieversie
- Planning in productie v1 Q2 2020
- Sterke relatie met/gebruik van GEANT eduTEAMS
- CO manage wordt vervangen door SBS

Update Research Drive



Update Research Drive

- CS3 Grant for European data sharing.

Questions?