

Working together with SURF for Earth Sciences

Utrecht, 21 Nov 2022

- SURF services and organisation
- SURF collaboration opportunities

Raymond Oonk @ SURF

Haili Hu @ SURF



Amsterdam (Science Park)



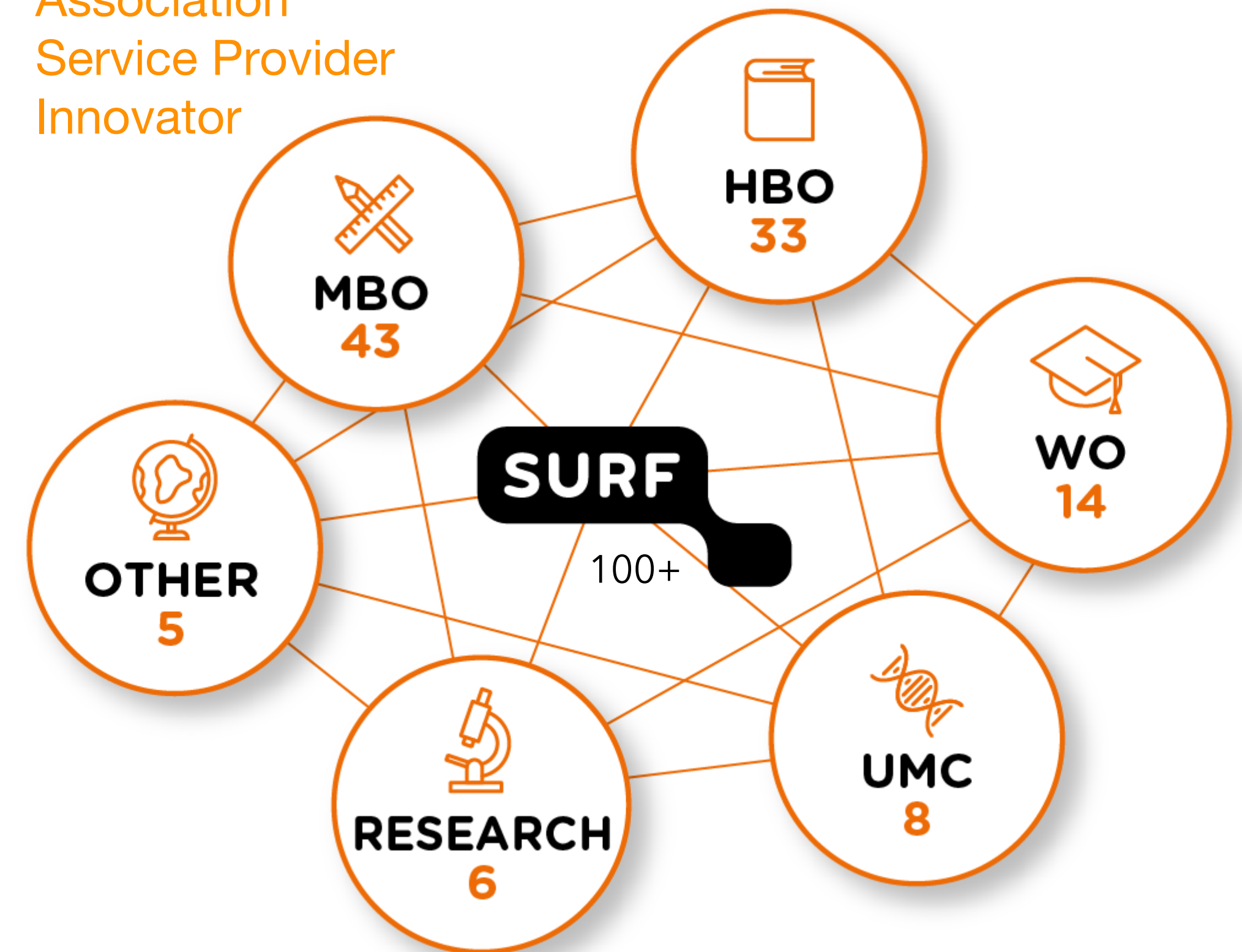
Utrecht (Moreelsepark, CS)

SURF

R. Oonk

We are SURF

- Association
- Service Provider
- Innovator



WO: Research-oriented higher education
HBO: Higher professional education
MBO: Vocational education and training
UMC: University teaching hospital

SURF is the collaborative organisation for IT in Dutch education and research

Academic Medical Centres



SURF

Members

100+ and growing

Universities for applied sciences

(+ Senior secondary vocational education institutions)



Universities



& other research institutes





Service Provider

**ICT
infrastructure &
services
(ISO 27001)**



Innovator

**Push Digital
innovation &
transformation**



Association

**Knowledge
sharing:
Expertise, training,
meeting & support**



Goals

**Acceleration of
member goals by
collaboration**

**SURF is the collaborative organisation for IT
in Dutch education and research**

SURF Services

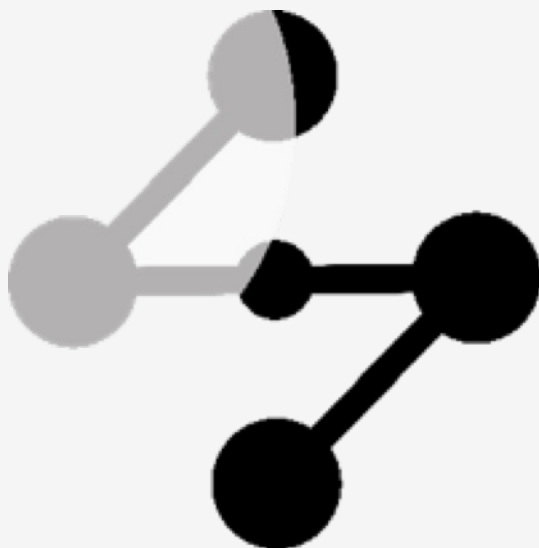
SURF develops IT services for education and research. Members and non-members can make use of these (50+) services: <https://www.surf.nl/en/services>

- Compute services
- Data services
- Network connectivity
- IaaS (Cloud / VRE)
- Security, Trust & Identity
- Digital Platforms
- Agreements with market parties
- Expertise, advice & training



SURF members have a special relationship (inbesteding) with the Cooperative for services

SURF Research (services & more)



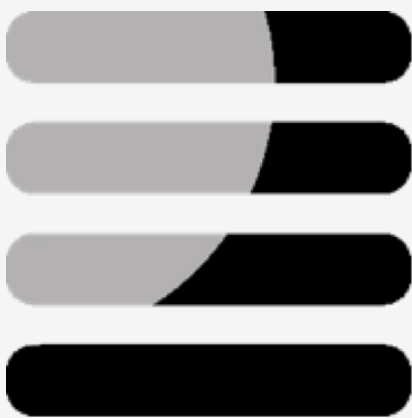
High bandwidth network
 Dedicated light paths
 Encrypted transfers
 Cyber Security
AAI / SSO

> 400 Gbps



Snellius
 Lisa
Data Processing
 Custom Cloud Solutions
SURF Research Cloud
 Public Cloud
 Experimental zone

> 100.000 cores



Ceph
dCache
 Storage DPU
Object Store
 Preservation
 EPIC PID
 iRODs

> 150 PB



Support
Training
Visualisation
Optimisation
Expertise
Collaboration



- Data center: 100% renewable energy
- High information security: ISO 27001



EUROPEAN OPEN
SCIENCE CLOUD



User Applications



Fast & Secure Network

SRC

**HPC
Cloud**

**SDA
(CCS)**

**MS4
(CCS)**

Spider

Grid

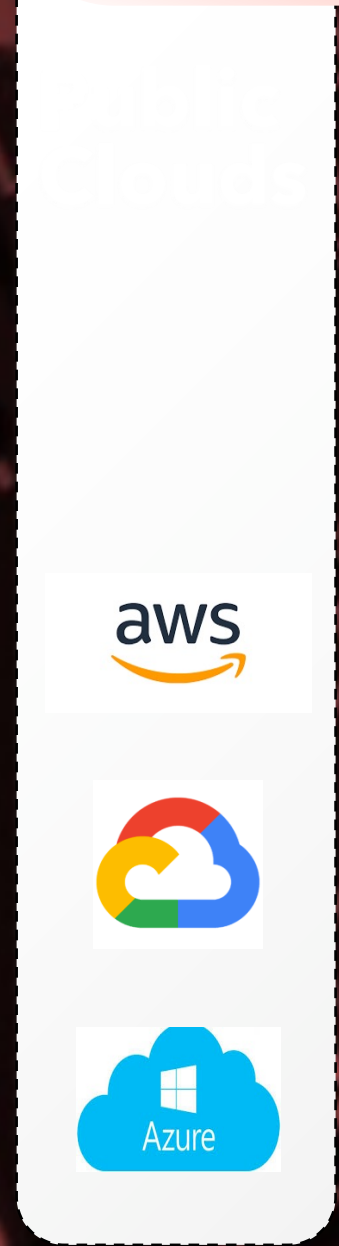
Snellius

Research Drive

**Object Store
(SWIFT)**

**Grid Storage
(dCache)**

**Tape Storage
(Archive)**



  **SURF Cloud** 

   **Hardware**

SURF Research: NWO call (NCF)

Call: <https://www.nwo.nl/en/calls/computing-time-national-computer-facilities-2022>

Budget: 823 million CPU/GPU core hours + 57 Petabyte Storage & Expertise

National Supercomputer

- Snellius (partner in PRACE)
- Lisa

Data Processing platforms

- Grid (partner in European Grid computing)
- Spider

VDC

IaaS Cloud Services

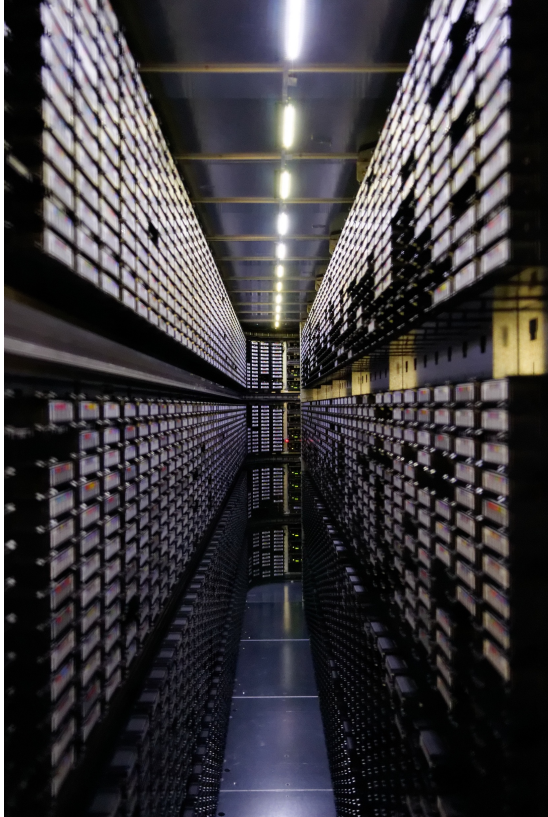
- HPC Cloud
- SURF ResearchCloud (incl. VRE)

VDC

Custom Cloud Solutions

- MS4 (co-creation & custom ops)
- Public Cloud (separate call)

VDC



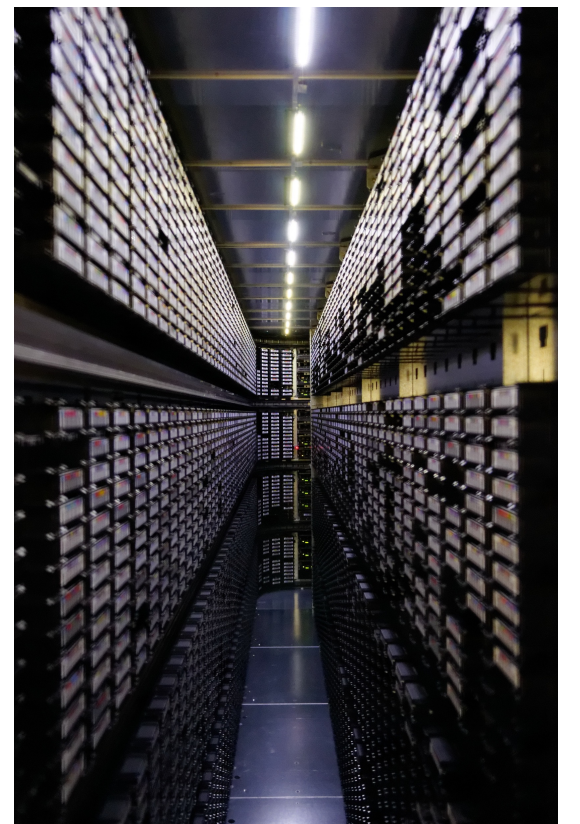
Tape robot(s)

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➤ 100 projects in Earth Sciences



Tape robot(s)

SURF

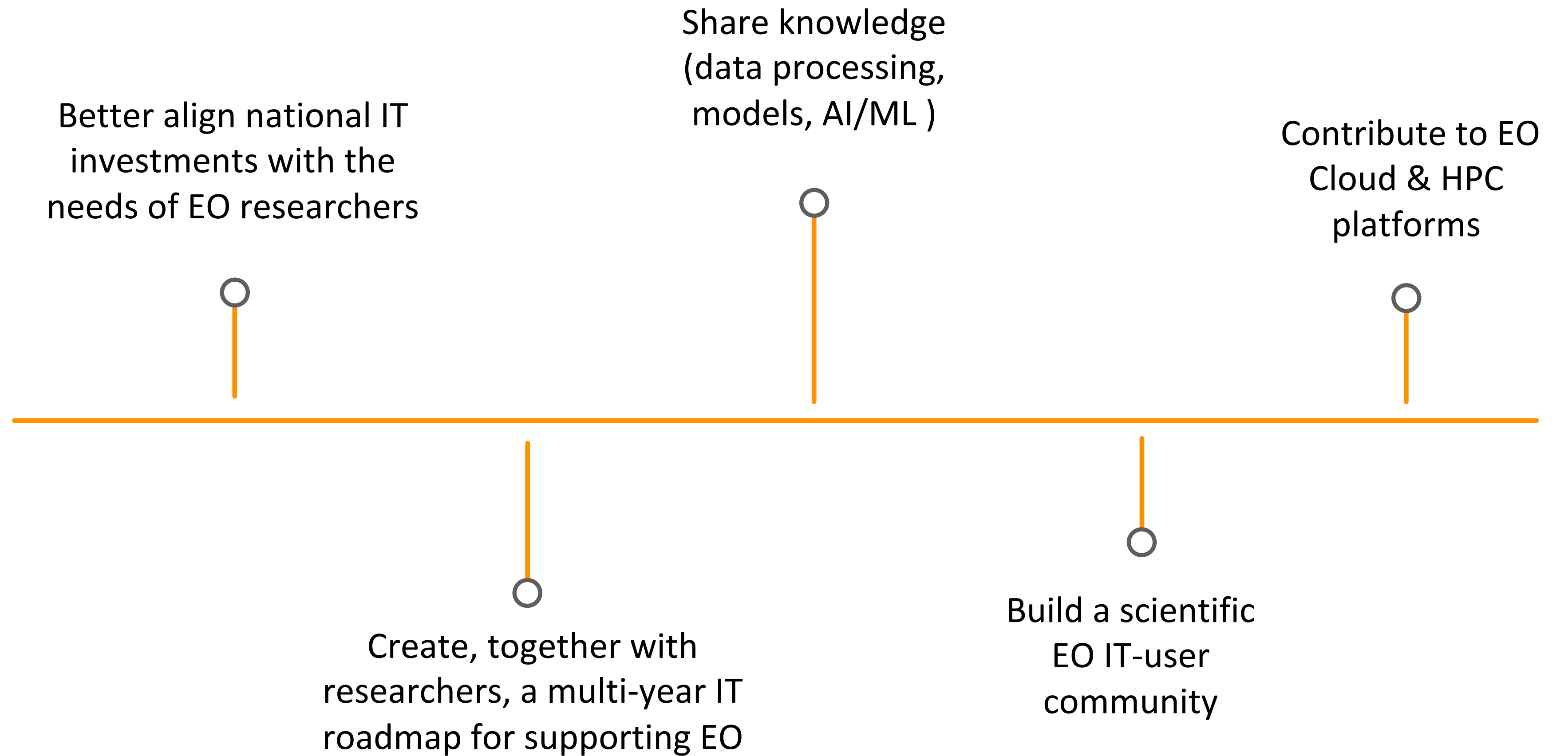
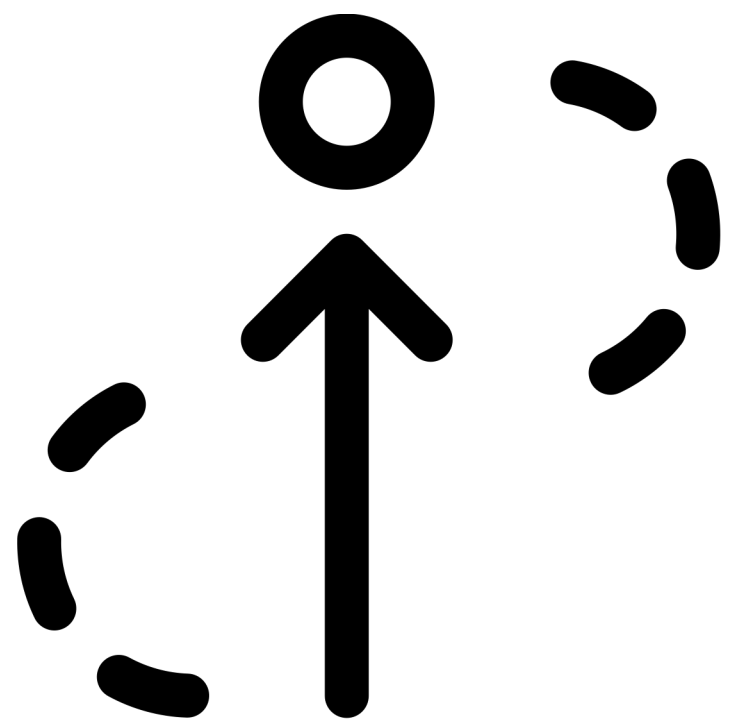
Collaborating with SURF



EO increasingly *more global and reliant on state-of-the-art IT and expertise*

SURF EO

Focus group goals



Opportunities for Earth Sciences with SURF

- 1) SURF services
- 2) NWO calls (e.g., NCF, Roadmap, Open Science Fund)
- 3) Innovation (e.g., SURF Labs , AI/HPML)
- 4) SURF EO Focus group
- 5) Connect to Local facilities: Tier-2 collaboration
- 6) Connect to Global facilities: Tier-0 collaboration
-> a.o, EuroHPC , DestinE , Grid , Public Cloud(-bursting)
- 7) European projects
-> a.o, EOSC , EURO-CC , C-SCALE , GREAT



What do you expect from

when working with Digital Twins for Earth Sciences,

- Your local infrastructure ?
- The national infrastructure (SURF) ?
- European infrastructure (e.g., DestinE) ?
- Global and commercial infrastructure ?



and what is needed to make DT's a (personal) success for you ?

Questions?

<https://servicedesk.surf.nl/>

raymond.oonk@surf.nl

haili.hu@surf.nl

Information:

<https://www.surf.nl/en>

<https://www.surf.nl/en/services>

<https://www.nwo.nl/onderzoeksprogrammas/rekentijd-nationale-computersystemen>

<https://www.nwo.nl/calls/rekentijd-nationale-computersystemen-2022>

<https://www.nwo.nl/en/calls/computing-time-national-computer-facilities-2022>

<https://www.surf.nl/en/research-it>

<https://www.surf.nl/en/research-ict/compute-services>

<https://www.surf.nl/en/research-it/apply-for-access-to-compute-services>

<https://servicedesk.surf.nl/wiki/display/WIKI/SURF+User+Knowledge+Base>



(New tape library 2022)

SURF

R. Oonk