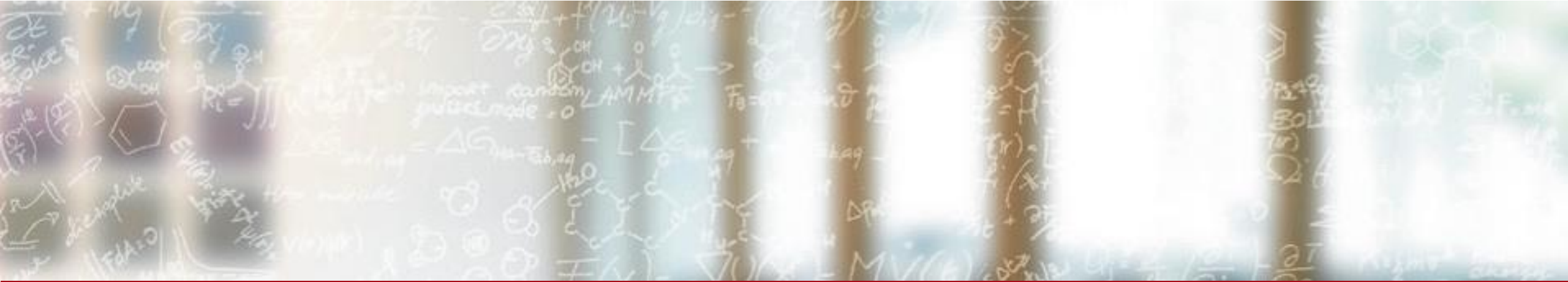




CSCS

Centro Svizzero di Calcolo Scientifico
Swiss National Supercomputing Centre

ETH zürich



CSCS Business Model for Partnerships

hpc-ch forum on financial aspects of HPC

Pablo Fernandez

10th October, 2025

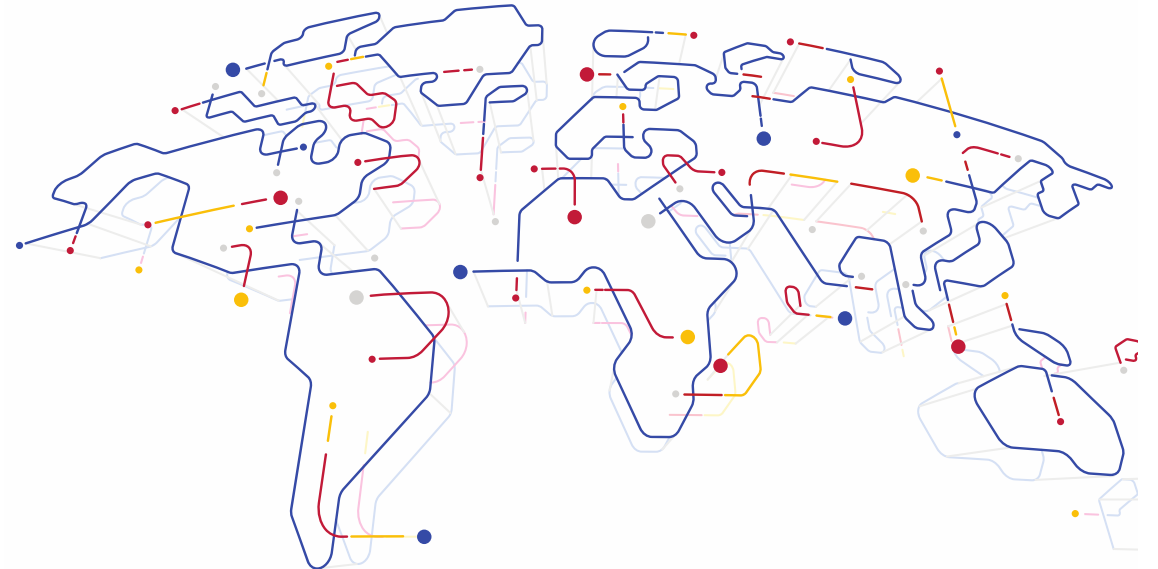
Agenda

- Value, competences
 - Core mission, partnerships
- Products & services
 - Infrastructure and Platforms
 - Products
- Distribution
 - Audiences
 - Organization
 - Channels
- Admin & finances
 - Legal framework
 - Cost recovery

CSCS Mission

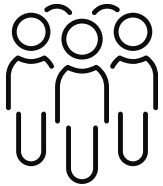
«We develop and operate a high-performance computing and data research infrastructure that supports world-class science in Switzerland»

- Located in Ticino since 1991
- A unit of the Swiss Federal Institute of Technology, ETH Zurich
- National and international collaborations in the research of new technologies for HPC with strong emphasis on innovation.



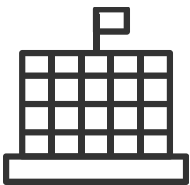
CSCS in numbers

Staff



- 130 collaborators
- 25 nationalities
- Official language: English

Building



- 2'600 m² office buildings
- 2'000 m² machine room
- «Free cooling» with lake water

User Lab



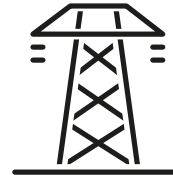
- 2'300 users
- 120 projects

Budget



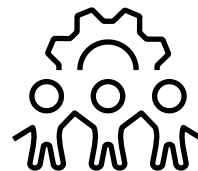
- CHF 30 Mio. operating budget
- CHF 25 Mio. IT investment

Electricity



- Currently 11 MW
- Possible extension to 25 MW
- 100% hydro-electrical source

Third-party



- MeteoSwiss, NCCR Marvel, PSI, CHIPP, Empa, ETH Zurich, SDSC, USI, UZH, CTAO, SKAO...
- ~20% of the budget

A RI connected to experiment, computational science, and the world

PSI



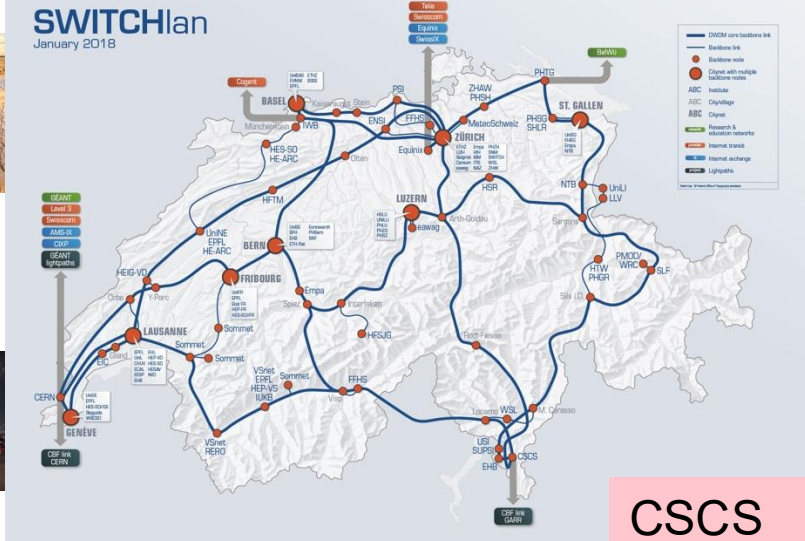
MCH



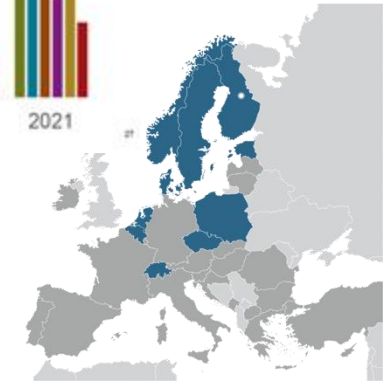
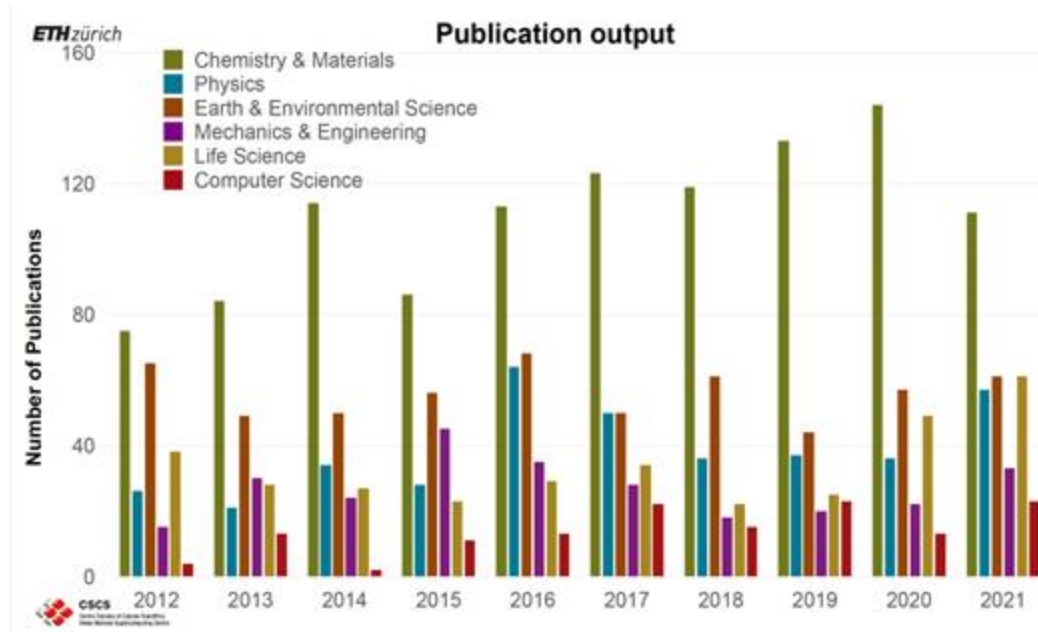
SKAO
CTAO



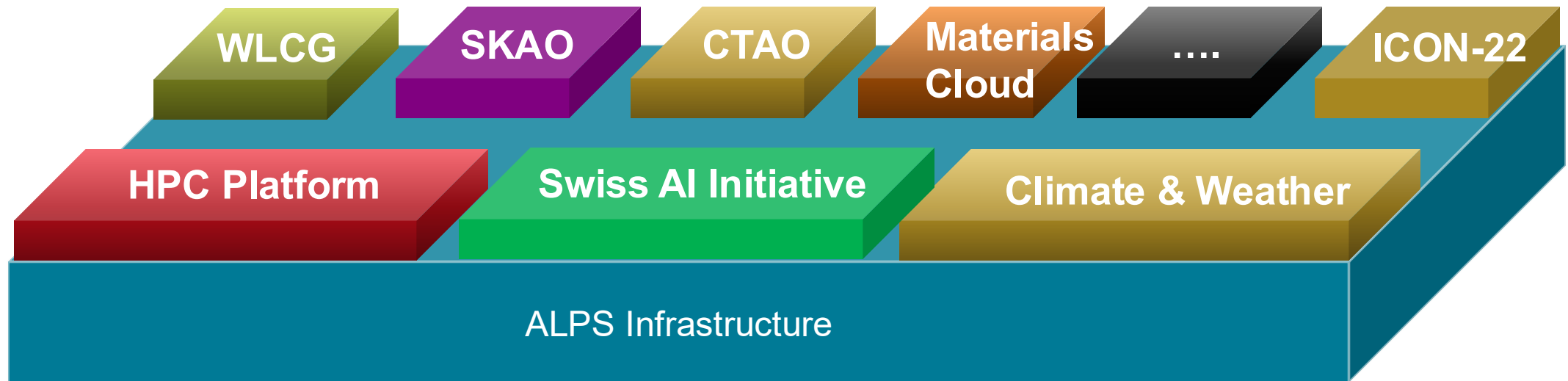
CERN



CSCS



Alps Infrastructure and expertise



- Software-defined infrastructure

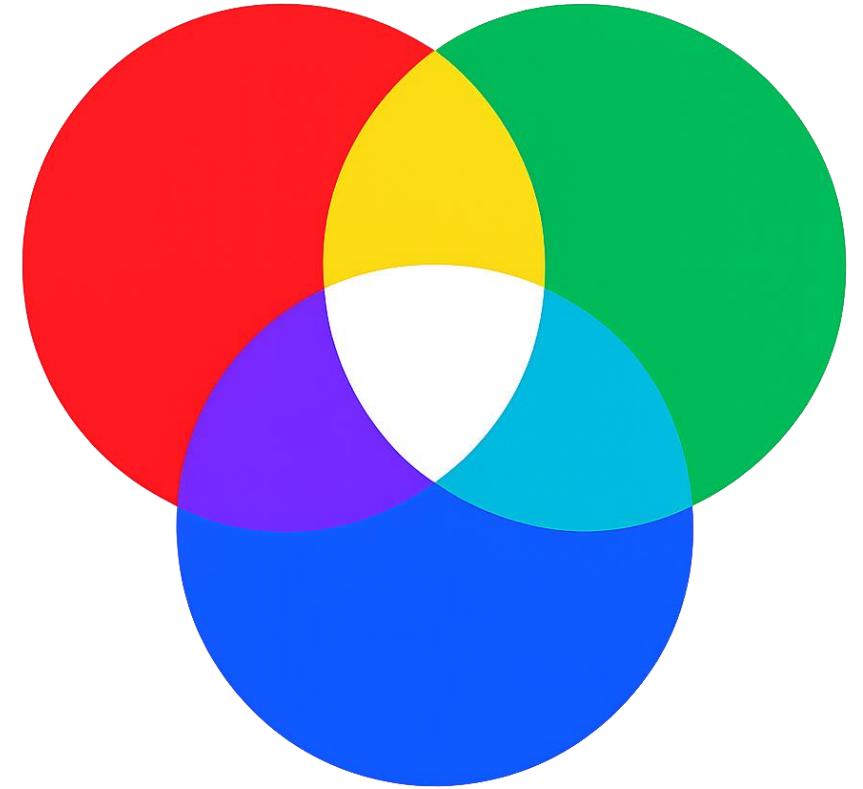
- Multiple architectures
 - Mostly GH200 and AMD Rome
- Lugano (CSCS) – main facility
 - PUE 1.2, 100% Hydro power
- Other sites at EPFL, PSI and Bologna

- Highly qualified staff

- Leading edge technologies and services
- Software and libraries for scalability
- Cloud and HPC convergence
- Flexible business model
- Connected to an international network

Key value proposition

- Performance and productivity
 - Scalability, bandwidth, low time-to-solution
 - APIs for automated workflows
 - Cost reduction, economies of scale
- Competences
 - Latest technologies, training
 - Other national and international research projects
 - Funding opportunities
- Shared big infrastructure
 - Focus just on the software and use cases
 - Elasticity, hero runs, cloud business model
 - Green energy



Types of audiences

High degree of
standardization

cscs2go

Access through simple,
web-based purchasing in
Switzerland

- Individual Pis
- Including public and private sector

User Lab

Access through peer
review

- Individual Pis

Institutional Customers

Access through standard
collaboration agreement.
Many users behind, one
single contact person
providing first level support.

- UZH
- Empa
- USI
- SDSC
- ...

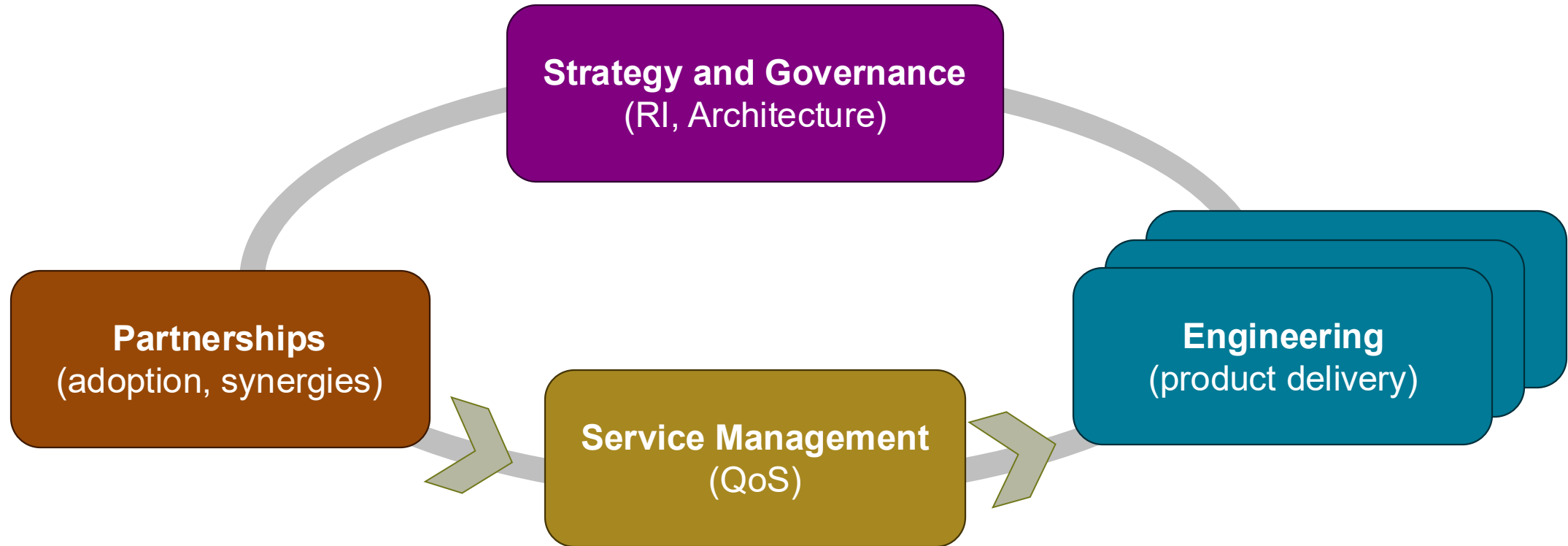
High degree of
customization

Science Communities

Access through non-
standard collaboration
agreements.

- MeteoSwiss
- CHiPP
- MARVEL
- PSI
- CTA, SKA
- ...

CSCS service organization



Staff is structured by area of expertise

Priorities discussed quarterly, SAFe – agile – methodology

The GTC in a nutshell

- GTC in place since 2012 for non-dedicated systems (we call them HPC Resources)
 - Dedicated systems is still possible, but not aligned with today's hardware strategy
- Establishes high-level goals and priorities
 1. User Lab
 2. National mission (MeteoSwiss)
 3. Large research projects from the ETH Domain
 4. Scientific collaborations with Swiss Universities
 5. Others
- Cost-recovery economic model
 - Basic services free of charge (physical space, big cooling loops, internet connection)
 - CSCS purchases hardware in advance, then recovers these costs with fees, then purchases more hardware
 - Part of the costs may be requested beforehand, in case of large amounts.
 - Fees cover hardware, manpower, maintenance, electricity, licenses, etc.
- Legal boilerplate included (ownership, security, data protection, warranties, liability, invoicing, force-majeure, confidentiality, notices, termination, jurisdiction)
- Only for public sector. Private sector goes to cscs2go.

cscs2go – A gateway to our HPC Platform

- Highly standardized offering
 - Clearly defined packages with different price tags
 - Access to our share platforms
- Low entry barriers
 - Online creation of accounts and payments (goal: immediate access)
 - Free entry level package for testing
 - Reduced bureaucratic load
- Public and private sector in Switzerland for Research, Development and Innovation
- Higher risk for CSCS (of unused resources) means higher costs.
- Separate, more commercial T&C

<https://2go.cscs.ch/>



CSCS tariffs for the HPC Platform for Academia

(For Open Science. Valid from January 2025)

<https://2go.cscs.ch/>

Subscription

Intended for institutions and big research teams

(minimum CHF 50'000 per year)

- Compute MultiCore (1 node = 2x EPYC 7742)
 - CHF 0.49 per node-hour
- Compute GPU (1 node = 4x NVIDIA GH200)
 - CHF 2.85 per node-hour
- Online Storage
 - CHF 65.00 per TB per year
- Data Protection (on tape)
 - CHF 16.00 per TB per year
- Long term storage
 - CHF 600.00 per TB per 10 years

Pay per use

Intended for smaller research teams

(no minimum)

- Compute, per node-hour

	< 10'000 nh	10'000 - 50'000 nh	>50'000 nh
AMD Rome 2x EPYC 7742	CHF 1.04	CHF 0.87	CHF 0.69
	< 2'000 nh	2'000 - 10'000 nh	>10'000 nh
Grace Hopper 4x GH200	CHF 6.11	CHF 5.09	CHF 4.07

- Online Storage
 - CHF 65.00 per TB per year (subscription)
- Long term storage
 - CHF 600.00 per TB per 10 years

CSCS tariffs for the HPC Platform for Industry

(valid from January 2025)

<https://2go.cscs.ch/>

Pay per use

Intended for smaller research teams

(maximum CHF 20'000 yearly)

- Compute, per node-hour

	< 10'000 nh	10'000 - 20'000 nh
AMD Rome 2x EPYC 7742	CHF 1.77	CHF 1.48
	< 2'000 nh	2'000 - 4'000 nh
Grace Hopper 4x GH200	CHF 15.27	CHF 12.73

- Online Storage

- CHF 65.00 per TB per year (subscription)

Pay per use

Intended for big or multiple research teams

(minimum CHF 20'000 yearly)

Discussion on alignment is needed beforehand

- Compute, per node-hour

	20'000 – 50'000 nh	> 50'000 nh
AMD Rome 2x EPYC 7742	CHF 1.48	CHF 1.18
	4'000 – 10'000 nh	> 10'000 nh
Grace Hopper 4x GH200	CHF 12.73	CHF 10.18

- Online Storage

- CHF 65.00 per TB per year (subscription)