

SURF services portfolio

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8 service domains

More than 100 educational and research institutions in the Netherlands cooperate in SURF to pool scarce resources and expertise, avoid duplication, streamline innovation and use resources efficiently. This collaborative approach is central to SURF's mission. In the SURF cooperative, we work together to develop or jointly procure reliable, state-of-the-art facilities and services. We do this across 8 service domains, each designed to address specific and widely-perceived needs in the education and research sector. Each service domain represents a collection of similar services, applications, knowledge and joint activities.



Identity & access management

Provides cross-sector IT infrastructure to manage identities and access based on mutual collaboration, standardisation and trust. This allows for easy access to systems of different institutions and service providers.



Network connectivity

Ensures robust and reliable connections between institutions, individuals and services – both nationally and internationally – thereby enabling seamless cooperation.



Security

Delivers solutions to protect data, privacy and infrastructure so that together we can ensure a safe and secure digital environment for education and research.



Compute

Provides powerful computing facilities and infrastructure to support complex simulations and research.



Storage & data management

Provides services for storage, processing and sharing of research data throughout the life cycle of the data so that it is processed securely, reliably and sustainably while safeguarding public values.



Publishing

Takes care of tools and platforms for sharing and disseminating research results and educational resources to promote open knowledge sharing.



Flexible education

Facilitates the development of an agile and flexibly organised education system so that students have more agency over their learning pathways.



Procurement & delivery

Optimises procurement and delivery of IT resources and content by pooling demand and issuing joint tenders to ensure optimal user conditions and opportunities for the institutions.

SURF

Our structured approach with these 8 service domains allows us to collectively cover essential elements of the digital infrastructure that are needed for state-of-the-art education and research.



Identity and access management





Access managed securely and reliably

In the SURF cooperative, we work towards better and more agile research and education in the Netherlands. We are committed to ensuring security, autonomy, inclusion and accessibility for all stakeholders, be it students, lecturers, researchers, staff members or guest users.

Mutual collaboration, standardisation and trust are essential to enable and simplify access to the systems of different institutions and service providers. We translate this into a cross-sector IT infrastructure for managing identities and access; in other words, who has access to which systems and when. Scalable and flexible. Globally connected while remaining locally rooted in the Netherlands.

Institutions in the SURF cooperative work on this infrastructure together, but each under its own direction and responsibility. They do this by:

- Sharing and further developing a vision on and expertise in Identity Access Management.
- Establishing agreement frameworks.
- Developing and updating solutions to manage identities and access (SURF Access).

SURF

Expertise

In the SURF cooperative, we share knowledge and develop a joint vision on Identity Access Management themes in workshops and knowledge sessions. Additionally, we establish **agreement frameworks** to safeguard trust, privacy and security. We monitor and, where necessary, influence national and European regulations and other relevant developments and translate these into solutions for the stakeholders in SURF.

SURF Access

SURF Access is an integrated solution based on open standards for **managing identities** of individuals (students, lecturers, researchers, staff members and guest users) and **access to digital resources and applications** in Dutch education and research. Safe and straightforward.

1. Secure access

Solutions to facilitate access to applications for specific users.

A single interface These solutions provide an interface for applications and institutions to which you connect once and are then directly linked to other connected applications and institutions. Institutions and applications set the interface up themselves based on their own governance and processes within the SURF framework. This way, they can safeguard security and mutual trust.

Authorisation

The solutions offer flexible and role-based authorisation management which can be:

- coarse-grained and centrally organised for the entire institution;
- fine-grained and decentrally organised for research collaborations;
- flexible for internal and external users.

2. Reliable identity

Solutions to manage reliable identities.

eduID: A single reliable digital identity for everyone who wants to log in to all affiliated institutions and services, such as:

- Students: before, during and after their studies
- Researchers
- Lecturers and staff members
- Access for external/guest users

Institution IDs: Assistance for IDs of Dutch and international institutions when logging in to the systems of institutions and services during studies or appointment.

Extra reliable login: for services with sensitive data or to prevent the abuse of accounts. Additional security for access to a service with Multi-factor authentication or other additional security measures.



Students *do* have access to ELO but *not* to financial administration



Person



- name
- date of birth
- personal email
- etc.

A person is given a digital identity by an institution or has an eduID. This identity is verified and trusted within the agreement framework.



University [X]

- University [X]
- Faculty [A]
- Student



UAS [Y]

- UAS [Y]
- Faculty [A]



Partnerships

- Member consortium [A]
- Admin. cooperation [B]

Verified characteristics are assigned **centrally** to a person or group (and persons are added to groups) through fixed, formal processes and roles. Or this is **delegated** to group administrators, for example.

Required for ELO

- University [X] ✓
- Student ✓

ELO University [X]



Required for financial admin.

- UAS [Y] ✓
- Employee ✗

Financial admin. UAS [Y]



Required for access to services under consortium [A]

- Member consortium [A] ✓

Computing service, data service, Wiki from different providers

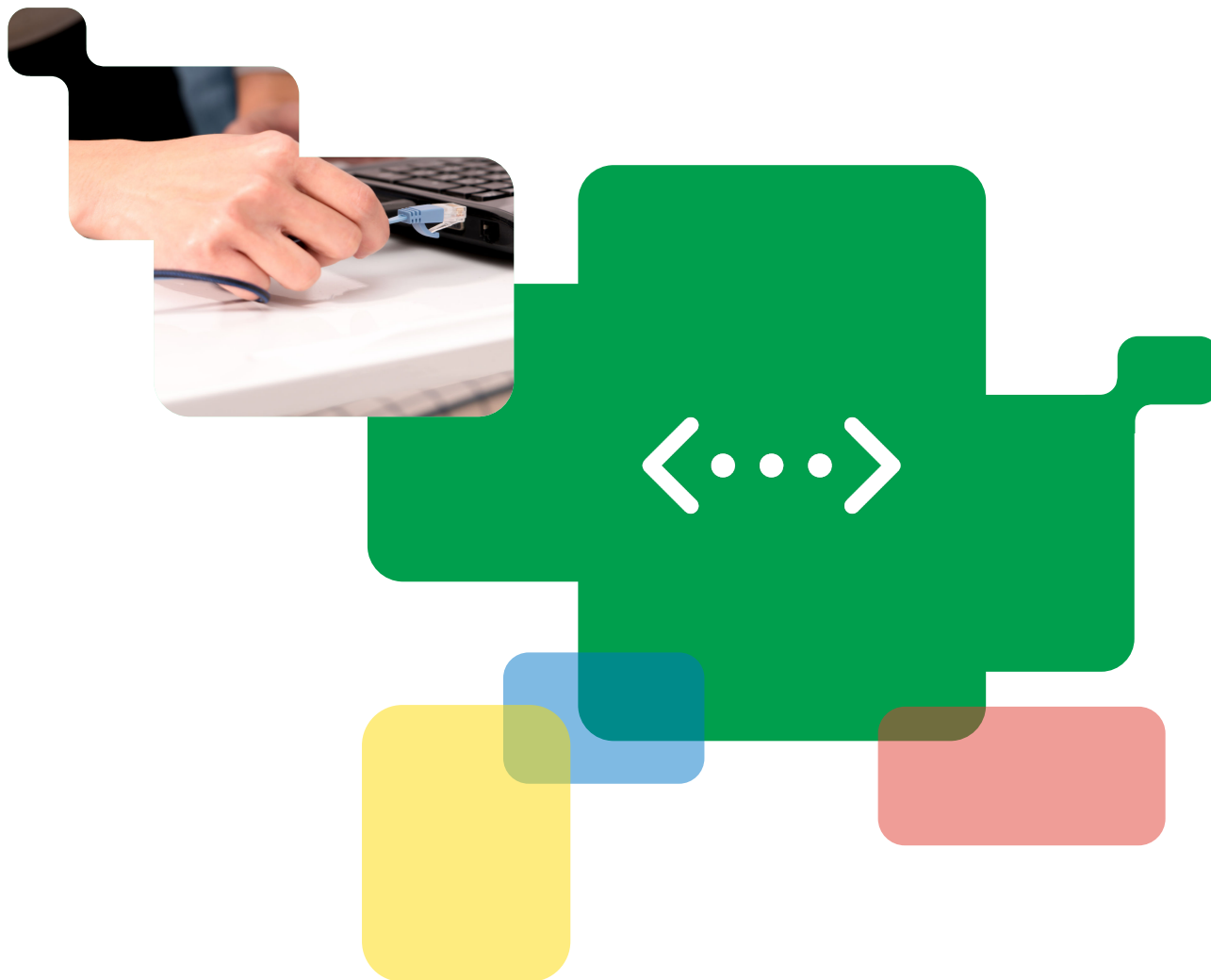


An administrator determines which characteristics a person must have to access an application

With their digital identity, the person has access to the systems for which this person has the right characteristics



Network connectivity





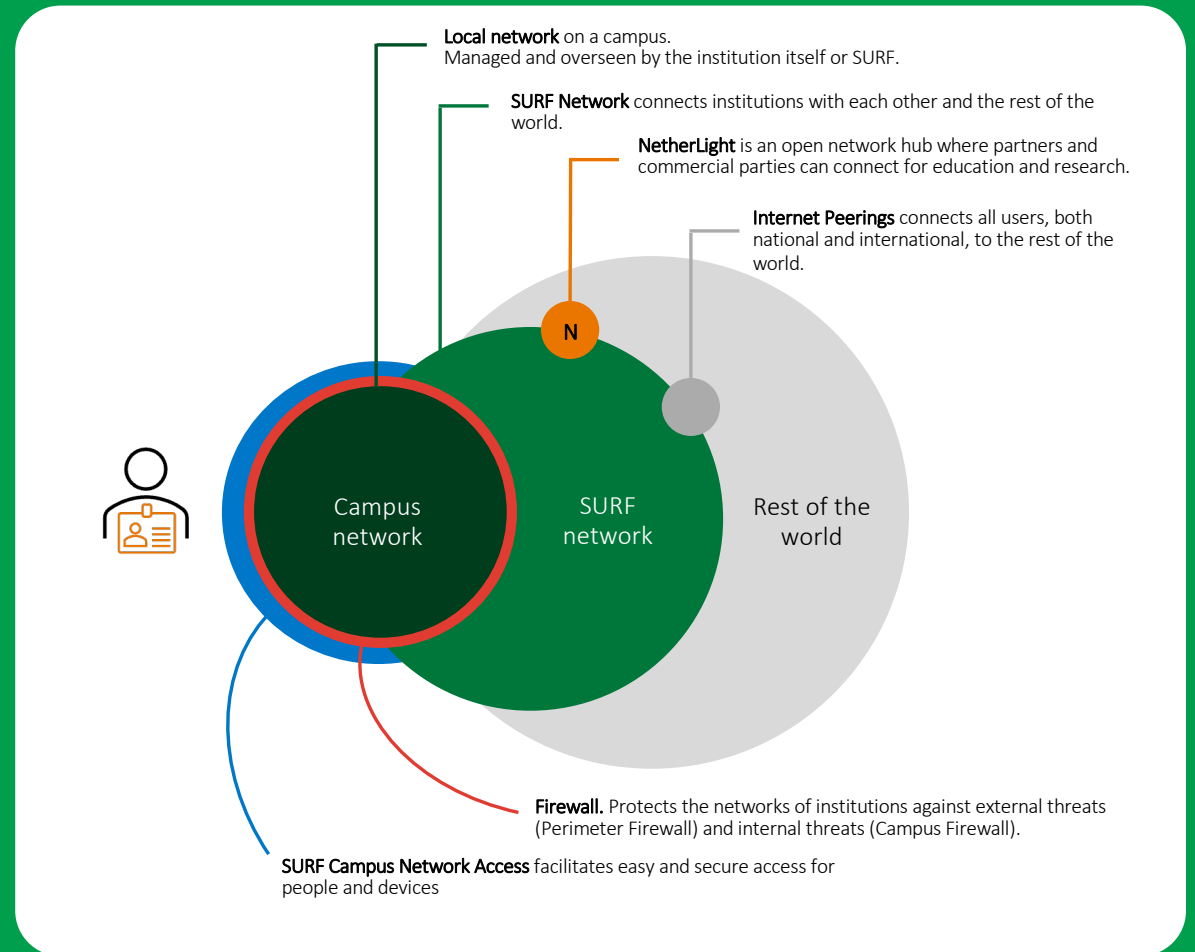
Seamlessly and reliably connected with each other

In education and research, being connected is vital. SURF's network connectivity connects people, institutions, services and devices, and facilitates barrier-free collaboration worldwide. Reliable, secure and high-quality technology is essential for optimal cooperation. By providing robust infrastructure, services and expertise, we support the innovation and progress needed to shape the future of education and research.

Under the SURF umbrella, institutions work together with national and international partners in education and research (as well as suppliers) in three areas to achieve barrier-free and reliable network connectivity:

- **Taking a leading position is essential.** We need the latest, most advanced technology to bring about the desired connectivity and achieve our ambitions in education and research. This is why we carry out ongoing research and continuously innovate and improve our solutions.
- **Unlimited possibilities.** In coordination with members but also external parties, we offer specialised network solutions that meet complex and demanding needs and international standards.
- **For all of us.** All members benefit from our state-of-the-art network connectivity, which we develop with the knowledge and experience gained through our continuous efforts.

SURF





| Seamlessly and reliably connected with each other

Drawing on our vision, we focus on the innovation of network technology, international collaboration and robust security and reliability. This allows us to develop services tailored specifically to institutions. We also share knowledge and expertise to provide the best possible support for education and research.

SURF's network services offer students, lecturers, researchers and staff members access to secure campus networks. Institutions can choose to organise and manage their campus networks themselves or outsource all or part of this to the SURF organisation. SURF offers various service levels to this end, ranging from (mostly) self-managed to fully managed solutions overseen by SURF.

The campus network connects users to the rest of the world via the SURF network. This includes high-bandwidth connections to research facilities through NetherLight, or internet connectivity to the rest of the world. In the area of international connectivity, SURF works closely with other National Research & Education Networks (NRENs) that are similar to SURF to provide access to global research and education facilities.

SURF Campus Network Access

Simple and secure access to institutions' fixed and wireless networks for people and devices through:

- **eduroam**, a global standard that gives students, lecturers, staff and guests access to the institutional network (via Visitor Access);
- **IoTroam**, which connects IoT devices to the institution's network in a secure and traceable manner.

SURF Campus Network

Future-proof campus network which SURF manages and oversees itself. This is well-integrated with other network services, with SURF assuming the procurement burden:

- **Wired**, a wired connection to the campus network.
- **Wireless**, Wi-Fi connection to the campus network.
- **IoTnet**, wireless connection of low-power sensors and other IoT devices.
- **Campus Firewall*** protects institutions against internal threats at network level.

** we protect institutions' networks against external and internal threats.*

SURF Network

Advanced and protected connectivity via the SURF network:

- **Internet**, open and reliable worldwide internet access optimised for education and research, secured in part by SURF CERT.
- **Private Connectivity**, shielded communication between institutions within the SURF network, and via NetherLight to third parties.
- **Time & Frequency**, transfer of highly accurate time and frequency signals.
- **Perimeter Firewall*** provides network-level protection against external threats.

NetherLight

An open network node in which national and international education and research partners connect to share large data streams. NetherLight also facilitates shielded connectivity between service providers and institutions connected to the SURF network:

- **High Bandwidth Private Connectivity**, shielded, quality connectivity to research and other partners outside the SURF network.
- **Cloud Private Connectivity**, shielded connectivity to service providers.

SURF Domain Names

Easy registration and management of internet domains, including DNS resolving, DNS nameserving with DNS management and security options such as DNSSEC.



SURF



Security





| Creating a safe learning and working environment together

Students, researchers, lecturers and other staff must be able to learn, work and collaborate in an open and secure environment for research and education to thrive. Safety cannot be taken for granted; threats change, technology evolves, and social and societal contexts are in constant flux. Safety and security are critical issues we need to continuously work on together. We protect data, privacy and infrastructure – ultimately ensuring the safety of individuals and institutions.

SURF institutions collaborate on security in four areas:

1. Increasing awareness.
2. Developing and managing solutions to safeguard the security of technology and safety of individuals.
3. Strengthening institutions, including their organisational structure.
4. Facilitating collaboration around security.

In this way, SURF offers a wide range of products and services for institutions to create a safe learning and working environment.

SURF

Awareness

SURF institutions develop and share knowledge to increase awareness:

- **Centres of expertise** pool and share sharing knowledge about cybersecurity and privacy.
- **Cyber Save Yourself**
An awareness campaign that raises awareness of security and privacy issues among staff and students in a playful way.

Technology

Solutions institutions can implement to help users but also institutions themselves to make day-to-day work, learning and research safer.

- **SURF Mailfilter** is an effective tool for managing email flows and filtering unwanted email.
- **eduVPN** enables secure access to unreliable networks. This way, you always have secure internet access and access to your organisation's shielded systems.
- **SURF SOC** monitors cybersecurity threats and potential attacks on institutional infrastructure and shares knowledge with all the institutions connected to SURF.
- **SURF CERT** provides 24/7 support for security incidents as well as tools to optimise security
- **SURF Certificates** for secure connections between clients and web servers.

Cooperation

Institutions work together in different communities to develop and share knowledge, skills and experience with a view to designing integral security policies for institutions

- **SCIRT** is a forum for discussing and analysing the latest cybersecurity threats.
- **SCIPR** this community works on improving the maturity level of information security and privacy.

Organisation

Solutions that enable institutions to monitor, evaluate and optimise their security policies and measures.

- **OZON/NOZON** practising how to respond to cybersecurity crises.
- **SURF Audit** provides insight into governance, risk and compliance and how they are organised.

Other SURF service domains

Security is not an isolated concept but is woven into all of SURF's services and activities, including Procurement (Vendor Compliance) and Identity and Access Management (secureID).

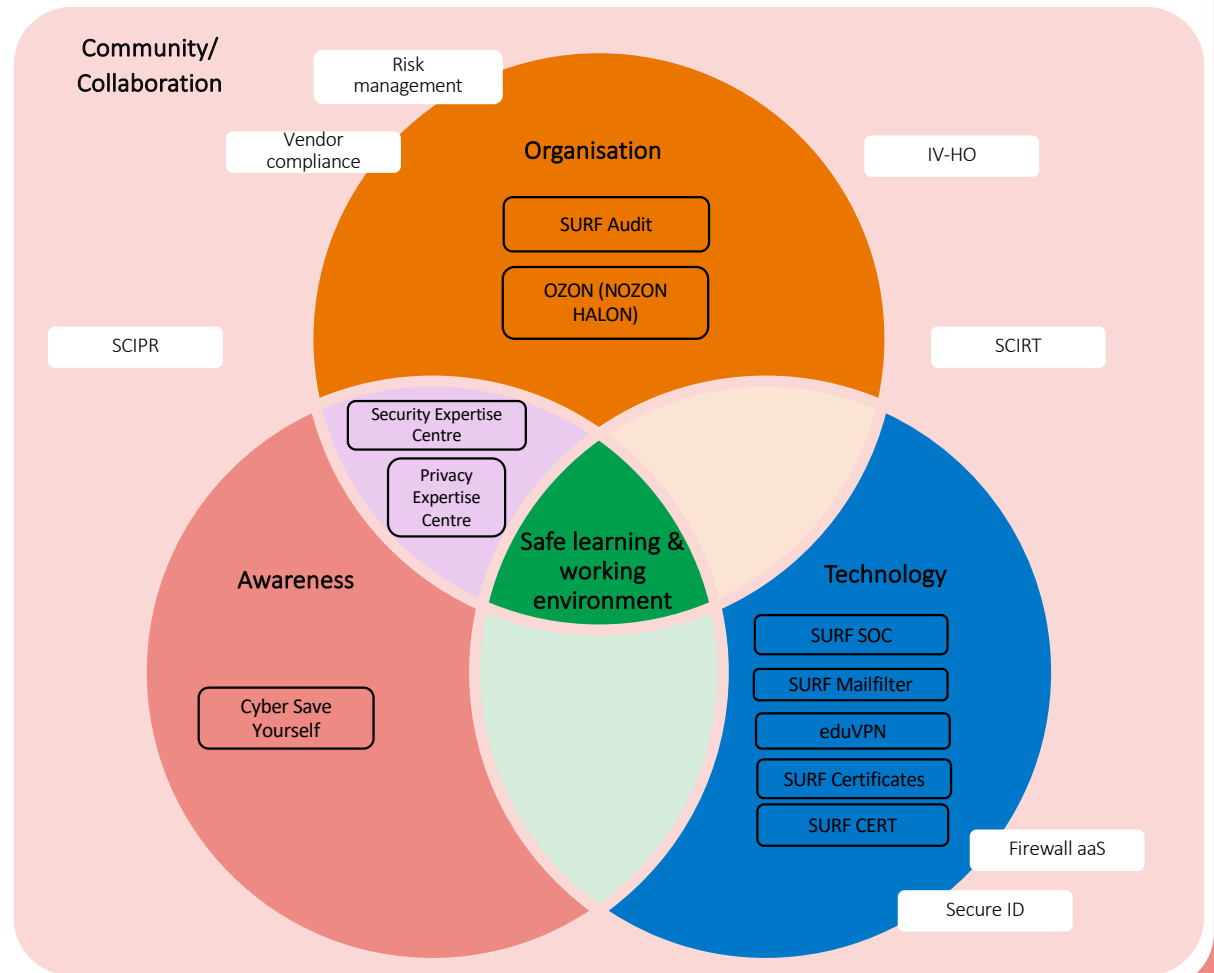


Creating a safe learning and working environment together

By working together in these four areas, institutions can create a safe and secure learning and working environment for students, researchers, lecturers and other staff members.

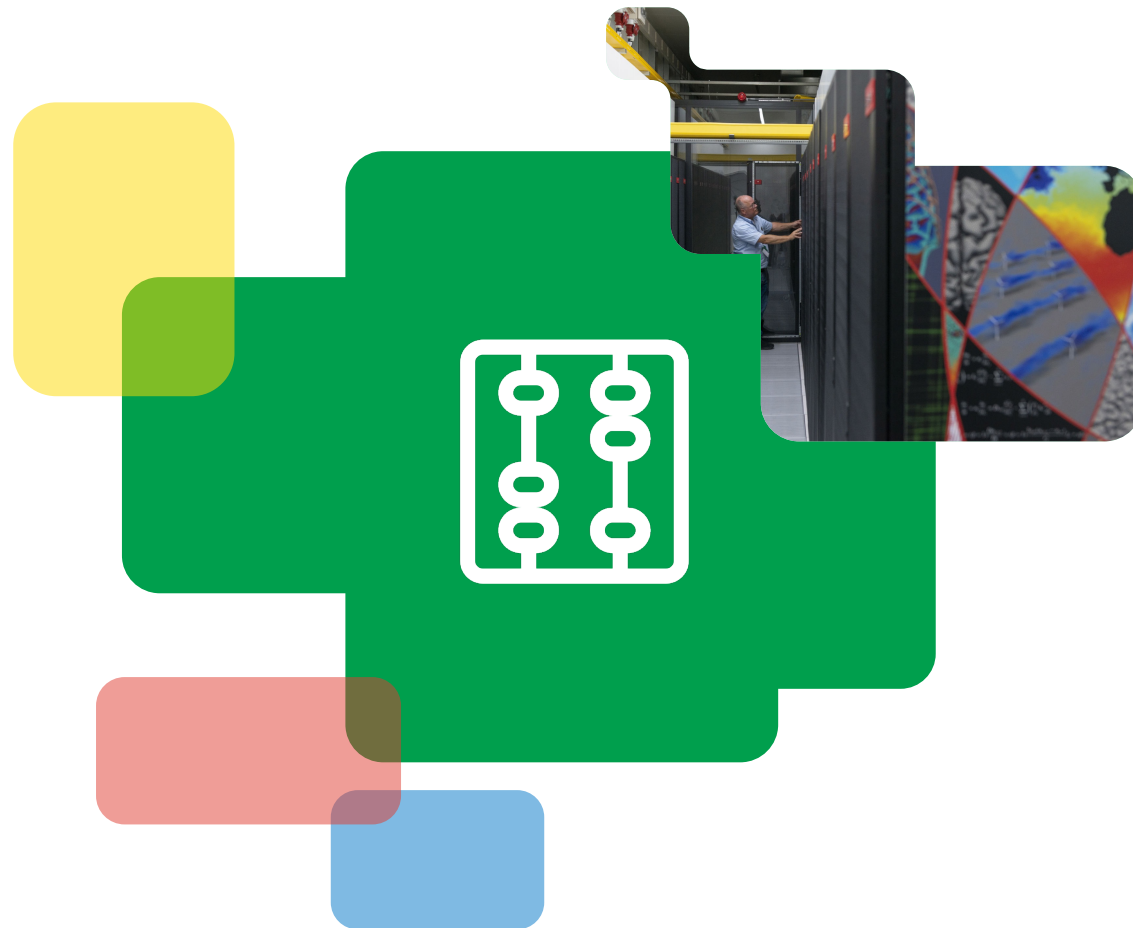
These four pillars reinforce each other. When institutions and users use technology correctly, day-to-day security is safeguarded. Institutions also work together to ensure that technology and behaviour around this technology are up-to-date by jointly monitoring the context of current (and future) use and by testing current policies and measures.

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Compute





Large-scale computing power for public advancement

Whether it concerns high-energy physics, climate research or drug development, scientific datasets are becoming increasingly vast and research ever more complex. Large-scale computing power is crucial for generating insights from these datasets

Computing infrastructure supports the generation, processing and analysis of large amounts of data. This benefits research conducted with scientific instruments such as telescopes or satellites. It can also be used to identify, map and better understand the world around us through complex simulations or digital twins.

Computing infrastructure is also increasingly being used to train AI models, such as for applications in healthcare, business and agriculture.

The demand for computing power is virtually limitless, but at the same time there is a growing need for specialist support and barrier-free access. SURF provides researchers in the Netherlands with large-scale computing services that are cost-effective and accessible. Besides raw computing power, we also offer advice and training. Our services can also be used for educational purposes.

SURF

Our ambitions for research in the Netherlands:



Delivering accessible computing services so that all researchers in the Netherlands can benefit from these services, both now and in the future.



Growing in step with researchers' computing needs, through innovation, so that capacity never limits scientific progress.



Helping researchers harness the power of AI to gain new insights and share them in practical ways.



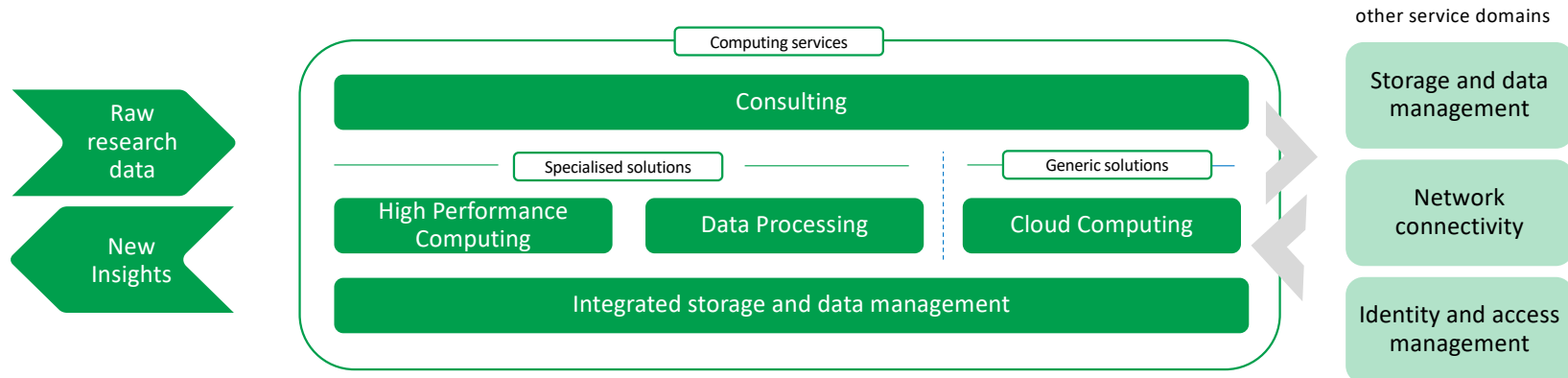
Connecting platforms and projects in the computing landscape so that local, European and commercial can be used optimally.



Assisting researchers with advice on complex topics such as sensitive data, IT architecture or application optimisation.



Large-scale computing power for public advancement



High Performance Computing

With the Dutch **Snellius** supercomputer and the European **LUMI** supercomputer at their disposal, researchers can perform large-scale computations. Examples include complex simulations involving interdependent variables or training by means of an AI model. Both supercomputers come equipped with extensive standard configurations and software for various applications.

Computational tasks are executed sequentially, which gives researchers access to immense computing power when they need it.

Data Processing

We also offer **Grid** and **Spider**, our high-throughput computing platforms for processing large datasets such as those generated by scientific instruments.

Grid is part of a federated European infrastructure designed to process the world's largest datasets, while Spider is a local variant that allows for tailored solutions.

Both platforms are typically used for long periods and are an invisible backbone for many scientific instruments.

Cloud Computing

Researchers with modest computing needs who prefer a user-friendly and flexible environment can turn to our cloud services.

Through **SURF Research Cloud**, they can set up environments on SURF's own cloud infrastructure or opt for public cloud providers. This computing and storage capacity can easily be scaled up or down as needed.

SURF's cloud services also offer a rich catalogue of reusable components and tools for handling sensitive data and support 24/7 web applications.

Consulting

In addition to core computing and storage services, we also offer researchers specialist assistance in the areas of **visualisation**, **machine learning**, **High Performance Computing (HPC)**, **High Throughput Computing (HTC)** and **cloud services**.

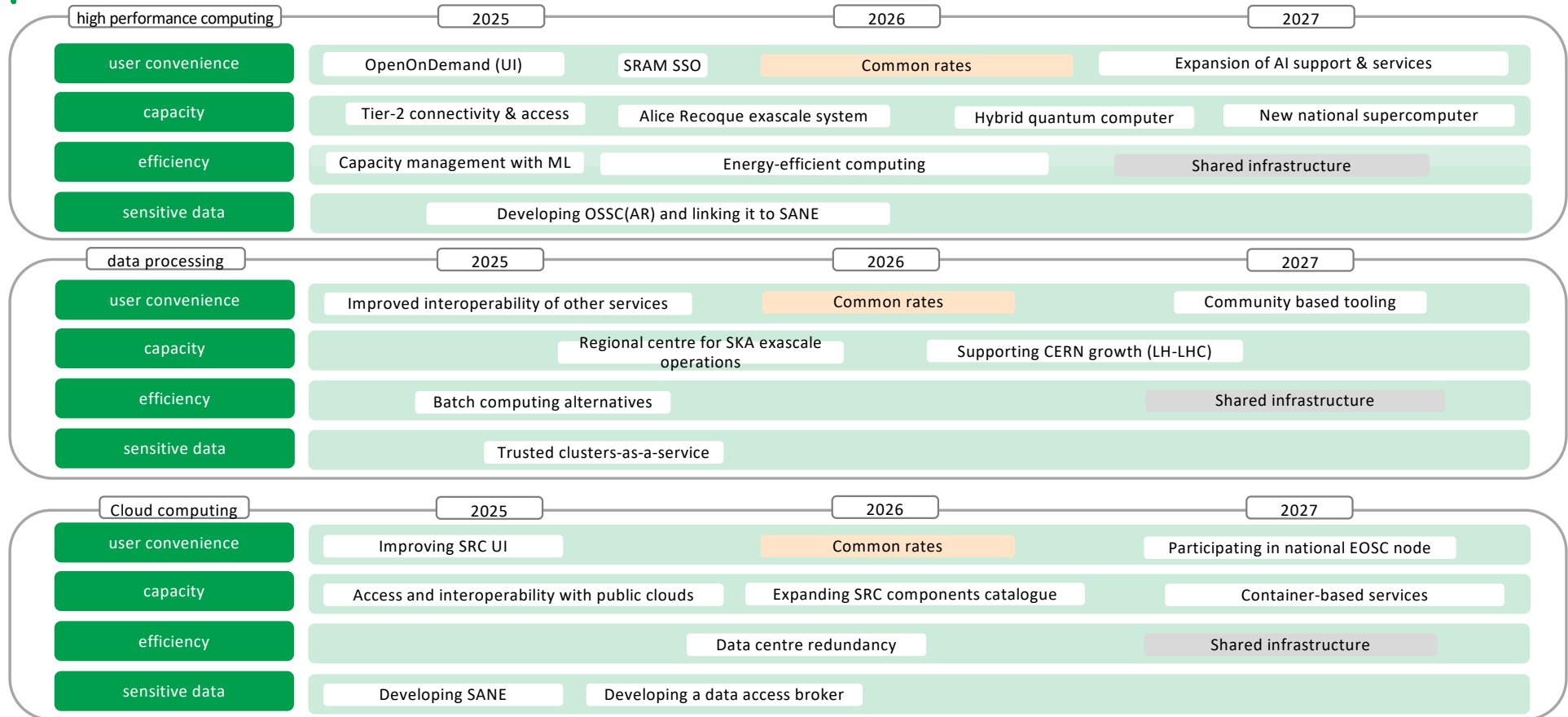
This way, we help researchers by offering advice on how to work on public clouds, how to use AI or how to design solution architecture, for example.

Some of this support is included in our services; additional capacity can be purchased for large projects.





Roadmap for computing services



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Storage & data management





Reliably Organized Data

Data are the fuel for research. They form the foundation for scientific and applied research and contribute to knowledge development, innovation, and informed decision-making. Ensuring the integrity, availability, and reliability of data is essential for maintaining trust in science. Therefore, we want research data to be stored, processed, and shared reliably without unwanted external influences or interference.

Within the domain of Storage and Data Management, we have three key priorities:

1. Optimising and managing storage
2. Enabling seamless research collaboration
3. FAIR data management

In addition to the priorities above, we consider digital autonomy and working from a user perspective important. Our storage and data management services use infrastructure that we manage ourselves, the data centers are located in the Netherlands, so that data is stored securely and we retain full control. During the development of our services, we put researchers' workflows and needs at the center. We work closely with our members, via user groups and co-creation, to continuously improve our services and develop new solutions.

Finally, we help members exchange knowledge and experiences with each other, wholly in the spirit of the SURF cooperation.

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Optimising and managing storage

Given the rapid growth of research data, a scalable storage infrastructure is required. Data are automatically tiered and placed in the appropriate type of storage at the right time to balance performance, cost, and long-term accessibility.



Enabling seamless research collaboration

In today's research landscape, collaboration across institutions, disciplines, and borders has become the norm. We facilitate data sharing, fast and reliable data transfer, and direct connections to computing environments and applications for data analysis.



FAIR data management

We ensure that our services enable researchers and research supporters to make research data Findable, Accessible, Interoperable, and Reusable (FAIR) by leveraging metadata and open standards while maintaining strong governance and compliance.



Reliably Organized Data

We support the full lifecycle of data, from creation and processing to sharing and long-term preservation, in several domains.

Domain storage and data management has a lot of interaction with other service domains. We facilitate secure and seamless access to data through integration with SURF's IAM solutions. At the same time, we enable fast, reliable transfer of large datasets and direct connections to powerful computing environments, such as high-performance computing (HPC), data analysis platforms, and AI, so researchers can process and analyse their data without unnecessary barriers or delays.

Through our publishing domain, researchers can archive and publish data in repositories.

Share & collaborate

SURFfilesender is a data transfer tool that allows you to easily and securely send files and datasets in one go.

If you want to store data, access it anytime and anywhere, and collaborate on data with anyone (even outside institutional boundaries), you can use SURF's sync-and-share services based on Nextcloud. There are two options: **SURFdrive** for personal cloud storage up to 1 TB, and **Research Drive**, a specialized environment for research collaborations.

Store & backup

We offer both online disk storage and offline tape storage. This combination gives us flexibility: we can store and process both small and large amounts of data. Since we retain full control, we optimise our storage infrastructure to deliver the performance needed for research data. To store data sustainably and cost-effectively (even in large volumes) we offer the following storage and backup solutions:

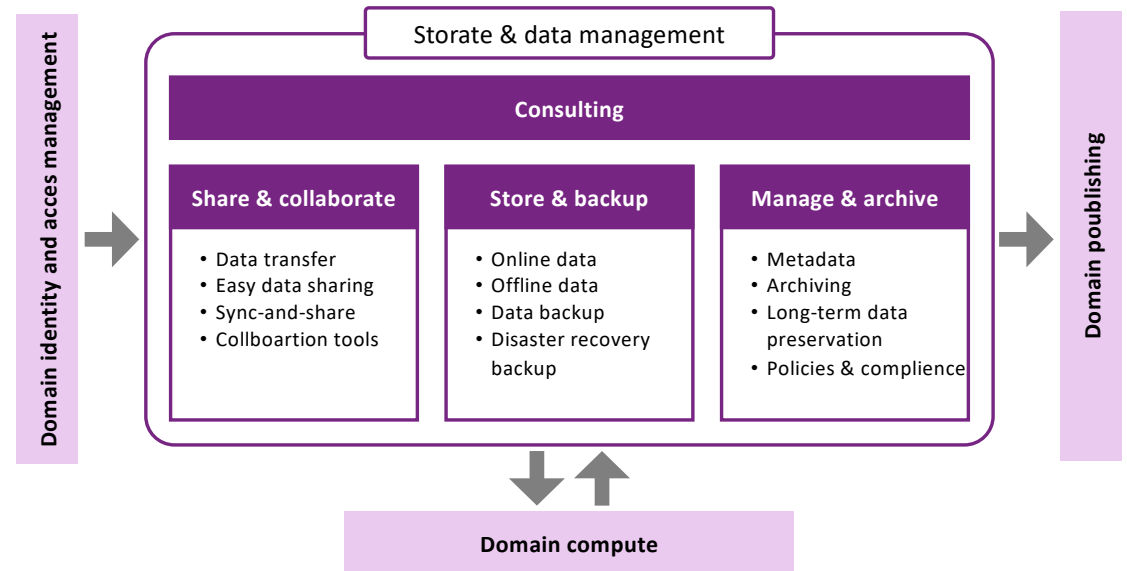
- **Data Archive:** Long-term storage of large datasets on cold storage (tape infrastructure).
- **Object Store:** Scalable, flexible storage for various types of data, from small to large files and volumes.
- **Back-up:** Creating secure and reliable backups of data as a foundation for data protection in case of data loss or malware/ransomware attacks.

Manage & archive

When research projects reach their final phase, datasets can be stored in the **Yoda Hosting** service, which offers metadata functionalities, assigns DOIs, and provides integration with various storage backends such as **Data Archive** and **Object Store**.

Consulting

We assist researchers to find the right solution for their workflows. Sometimes existing services are sufficient, sometimes custom solutions are needed. For larger or more complex challenges, we would be pleased to collaborate with you through our consulting services.





Publishing





Knowledge circulation as the norm

Knowledge development and innovation is an iterative process that builds on existing knowledge and innovations. It is vital for the socio-economic development of the Netherlands that knowledge can circulate freely in an ethical and organic way. This applies not only within the sector (lecturers, other staff members, students and so on) but also in collaboration with businesses, professional organisations and society as a whole.

In the SURF cooperative, knowledge circulation is boosted through:

- sharing expertise on knowledge circulation;
- developing solutions to facilitate sharing, consulting and reusing knowledge in various forms.

Through our expertise and solutions, we demonstrate the possibilities and benefits of knowledge sharing for different target groups. We help to do this in the right way and under the right conditions.

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Expertise

Within SURF, institutions share knowledge on specific themes.

– Information about copyright is available at

auteursrechten.nl

– Information about open educational resources (guidance on practical as well as policy & strategy issues) is available at edusources.nl

Source systems

SURF offers solutions for storing knowledge products, metadata creation, publication through various channels but also for integrating existing systems.

- **SURF Sharekit** is a Repository as a Service (RaaS) for sustainable storage of research publications, digital educational resources and students work. These resources can be made publicly accessible or shared within specific groups.
- **SURF Data Repository** Reliable long-term storage for large datasets that ensures accessibility after a research project is completed.
- **iBron** (iSource) allows institutions to manage sharing of knowledge products by linking internal source systems (such as LMS) with third-party applications like plagiarism detection software (ShareControl).
- **Direct integrations** make it possible for institutions to connect their repositories to portals so that knowledge products can be published immediately.

Portals

Knowledge products stored in source systems can be made digitally accessible findable, visible and reusable through one or more portals:

- **Edusources** for open educational resources.
- **Publinova** for practice-oriented research.
- **Knowledge Bank for Universities of Applied Sciences [HBO Kennisbank]** for student work.

SURF Publishing Tools

SURF provides a number of tools to support publication and management of resources. These tools work in conjunction with our solutions but can also be used independently.

- **CopyrightCheck** helps institutions navigate copyright issues related to open educational resources, their own work and copyrighted materials.
- **Persistent Identifiers** (PIDs) ensure that your data remains findable even if its location or infrastructure changes (such as ISBNs for books). Even if the location or underlying infrastructure changes, the reference remains intact. SURF offers the PID service in partnership with the European Persistent Identifier Consortium (ePIC).



Knowledge circulation under institutional management

In a world of dispersed and highly diverse source systems and portals, SURF offers solutions for institutions to store and publish knowledge products securely. By connecting everything, SURF ensures that the content of all repositories is accessible to everyone [or all target groups]. This flexibility allows institutions to set up portals tailored to specific target groups, both within and beyond institutional boundaries, while maintaining control of those portals.

Institutions decide directly or indirectly, through SURF, which knowledge products in their source systems are shared, when and with whom. Additionally, SURF provides researchers, lecturers and support staff with various publishing tools.



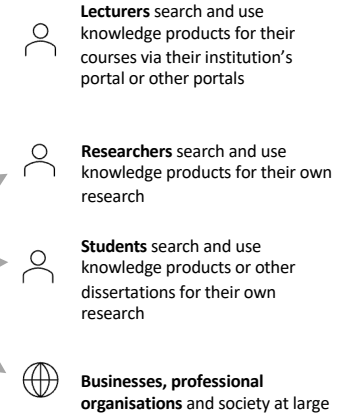
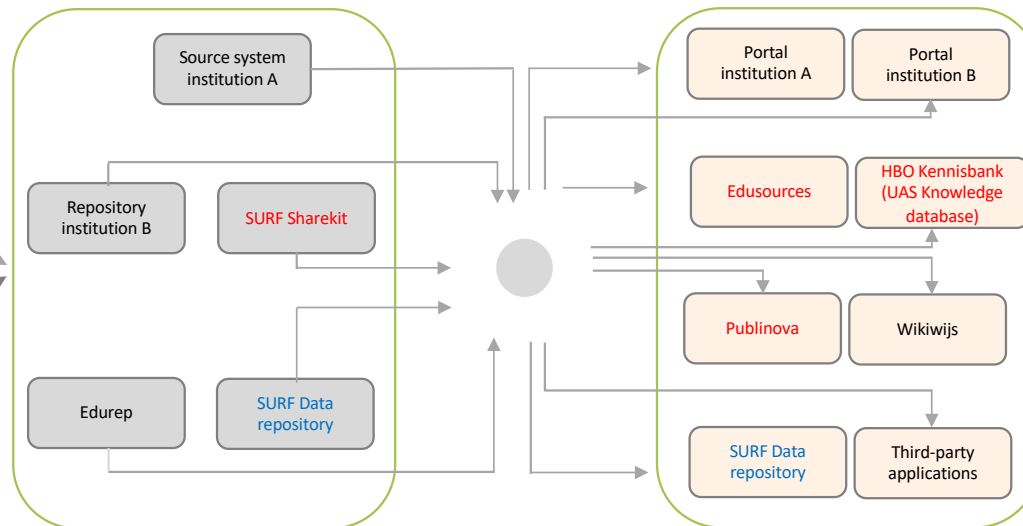
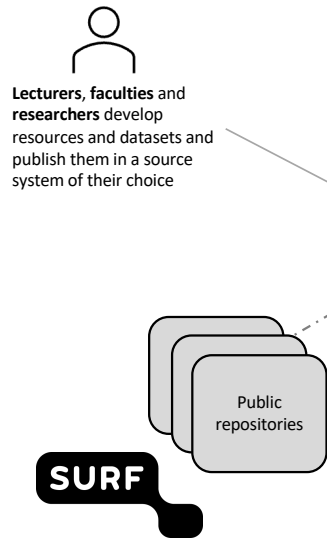
Creators publish



Institutions support and manage the publication process



Users search





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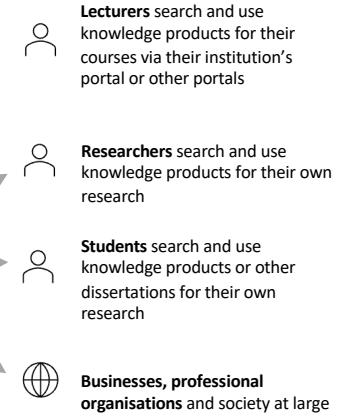
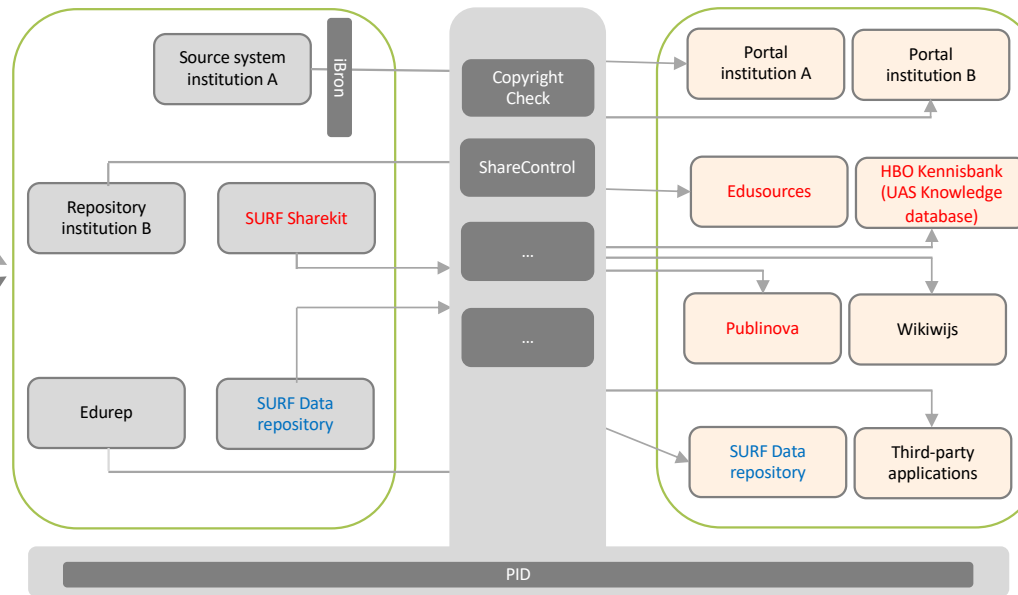
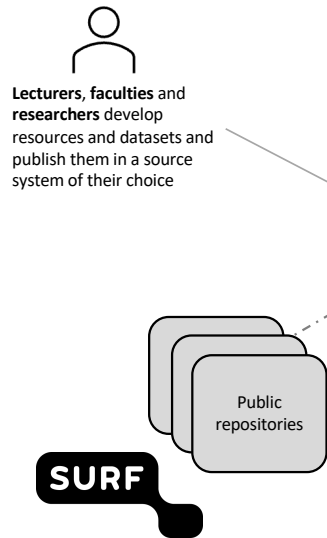
Creators publish



Institutions support and manage the publication process



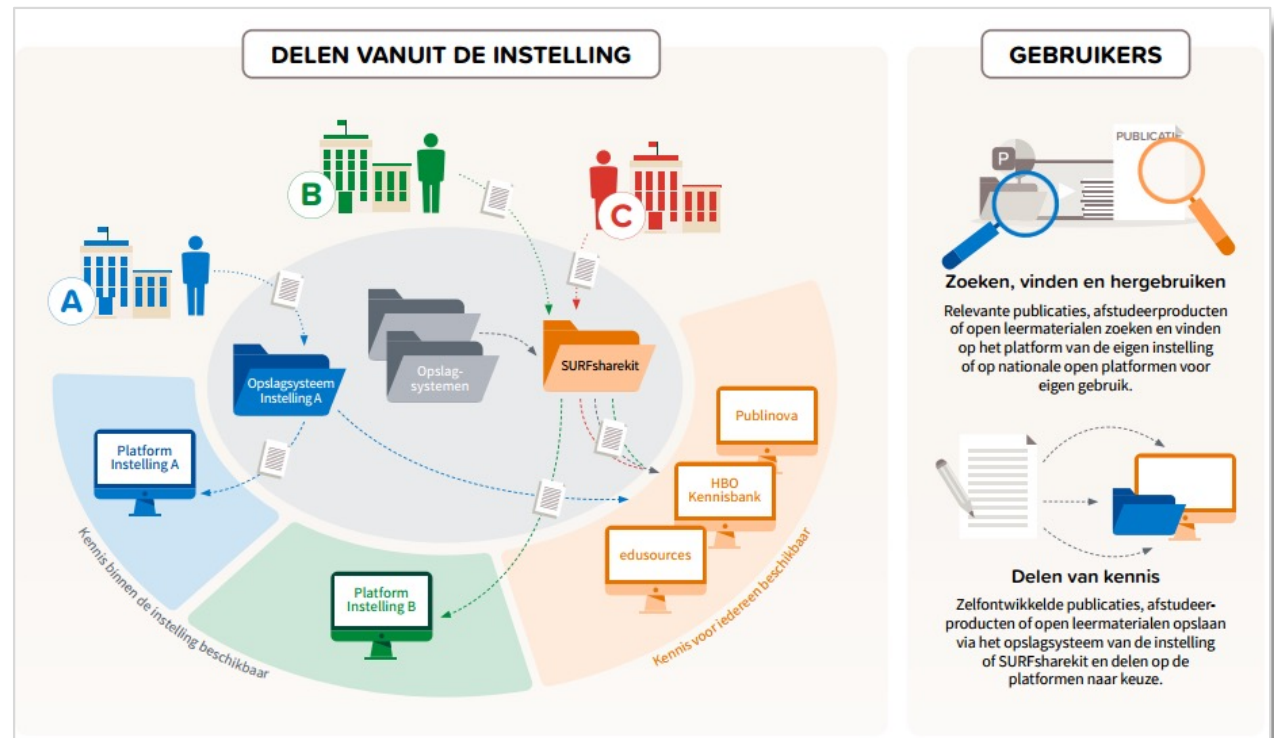
Users search





Publishing

In collaboration with educational institutions, SURF promotes knowledge circulation by developing and managing solutions that facilitate sharing and reusing knowledge. In a network of diverse storage systems and platforms of institutions and other content providers, SURF connects everything logically. Institutions decide themselves how to share documents for their target groups, such as only within their own institution or more broadly at the national level.





Flexible education









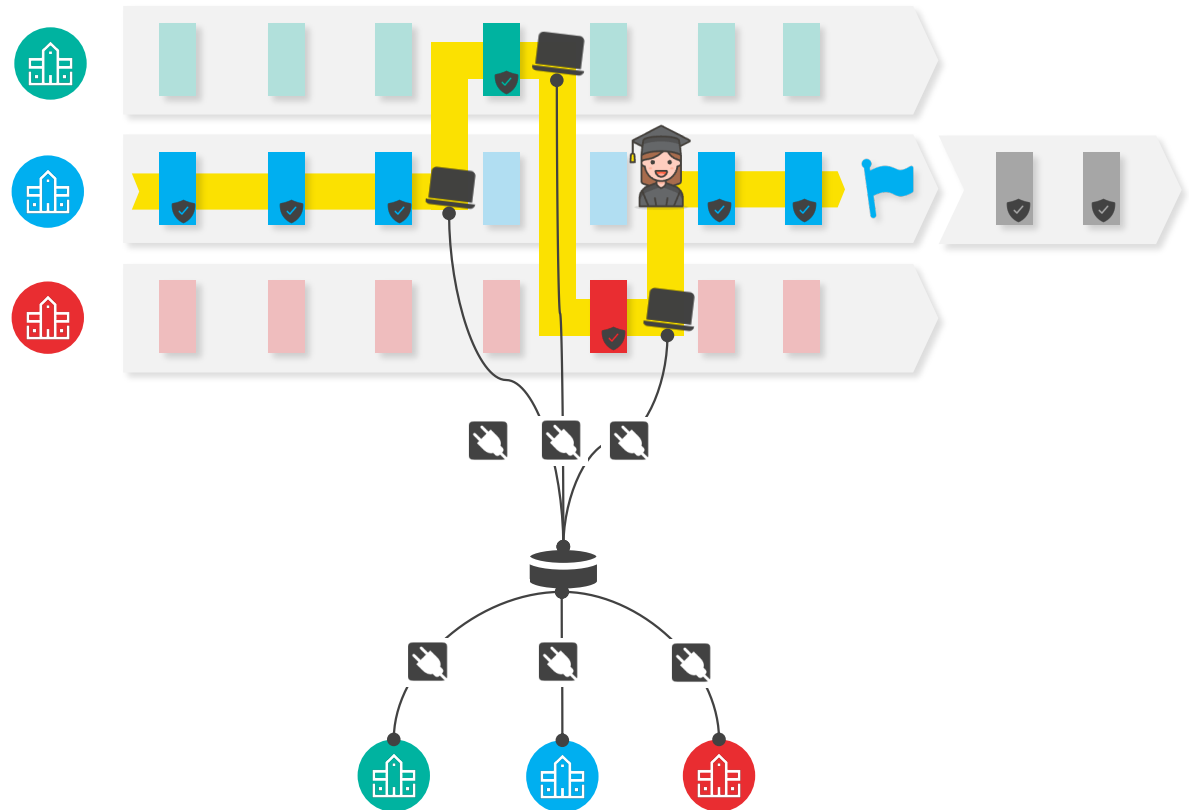
| Enhancing the flexibility of education

The demand for greater flexibility in personalised learning pathways – both within and beyond institutions – requires a transformation of the education system. This includes collaborative efforts and interoperability between systems and organisations to enable barrier-free collaboration and information sharing. SURF supports this transformation by working on an education ecosystem where interoperability is key to enhancing learner agility.

Institutions work together to build this more agile education ecosystem. To this end, SURF develops applications, platforms and universal (and international) standards such as APIs.

-  Kies op Maat eduXchange Solution for orientation on and enrolment in course offerings
-  edubadges Platform for digital certificates in Dutch education
-  eduhub Data hub for course offerings
-  OOAPI Open Education API for course offerings

SURF





Enhancing the flexibility of education

In the SURF cooperative, institutions collaborate on technical building blocks for this agile education ecosystem with the purpose of offering learners more flexibility when designing their personalised learning pathways. This includes developing solutions to:

1. Make data about course offerings accessible.
2. Enable learners to explore a wide range of course options (e.g., modules or minors) and enrol in them, and enable institutions to provide feedback on achieved results.
3. Help learners collect and share their results and experiences digitally.

Data sharing

SURF develops standards and platforms to facilitate data sharing between institutions and third parties, including commercial entities. This fosters cooperation and improves interoperability between systems and institutions.

- **OOAPI:** the Open Education API is an open standard for sharing education data. This API allows educational institutions to share information, such as data on course offerings, grades and timetables.
- **eduhub:** this is a data hub that enables institutions to make data about their educational offerings accessible to each other, such as information about courses or programmes.

Orientation and enrolment

Solutions that allow learners to explore a wide range of course offerings provided by their own institutions and other institutions and enrol in these courses.

- **Kies op Maat:** through the Kies op Maat platform, learners can explore and enrol in courses – mainly minors – offered by 29 participating universities of applied sciences and research universities. This makes studying outside one's own institution easier, is often free of charge and gives learners more agency over their studies.
- **EduXchange** is a service that is still in the pilot phase. EduXchange allows learners to explore and enrol in cross-institutional courses while ensuring that achieved results are reported back to their own institution. This platform uses OOAPI, eduhub, and eduID.

Making results visible

SURF provides solutions for learners to collect and share their results and experiences:

- **Edubadges** is SURF's platform for easily verifiable digital certificates, including microcredentials, tailored to Dutch education. An edubadge offers learners a secure and reliable way to demonstrate their acquired knowledge and skills. Edubadges can be easily shared with other educational institutions or employers.



Procurement and delivery





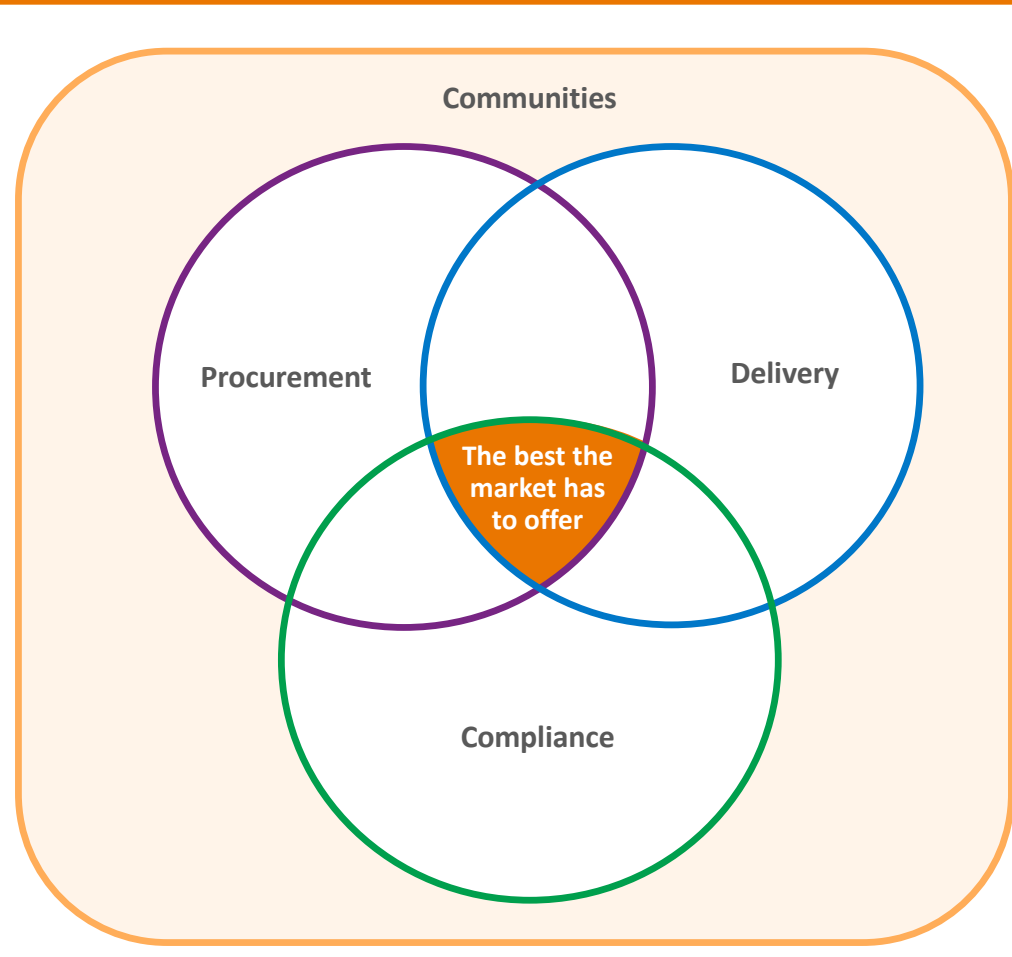
Getting the best the market has to offer

In the SURF cooperative, members work together to secure the best market terms and conditions for IT services and content to optimise their use in education and research.

The procurement and distribution service domain combines four key competencies to achieve the best outcomes for the sector: Together, these competencies create a strong and independent position in the market. Through SURF, members set up a joint market strategy and work together to:

1. Gain a stronger position and scale to negotiate favourable agreements with the market.
2. Ensure that purchased services are effectively implemented, used and delivered to the right users.
3. Perform overarching privacy and security risk assessments of suppliers and applications to ensure compliance with laws and regulations.
4. Share expertise with each other so that we strengthen each other's knowledge of procurement and application possibilities of IT services on the market.

SURF





Getting the best the market has to offer

Cooperation of members in IT procurement and distribution

In the SURF cooperative, members collaborate on IT services and innovations to enable high-quality, flexible education and research. Over two million students and staff benefit from these services daily.

Members want access to the best IT services and products and work together to achieve this by consolidating their needs, requirements and demands in SURF. Through SURF, they jointly engage with the market, procure services and collaborate on implementing these services.

By pooling resources through SURF, members have a stronger position to negotiate favourable terms with global IT providers, startups and innovative EdTech companies. This concerns agreements on functionality, price, interoperability, sustainability, privacy and security. Cost savings are achieved by negotiating favourable terms of use and price advantages. SURF members endorse public values in which the sector's sovereignty is safeguarded and, through SURF procurement processes, translate these into competitive contract terms.

Suppliers also benefit from this approach as they have a single point of contact to deliver tailored offerings to over two million users in education and research.

Procurement

SURF pools members' procurement needs and makes contractual agreements with suppliers on their behalf.

- **IT procurement**
Joint procurement of software, hardware and IT services.
- **Content procurement**
Joint procurement of journals and databases.

In addition, SURF handles contract and supplier management, provides transaction and journal data and performs analyses.

Delivery

SURF supports and advises members and suppliers in the procurement, delivery and application of the vendor portfolio. There are multiple delivery channels:

- **Mijn SURF**
The customer portal with the vendor portfolio and SURF services.
- **SURF Cumulus**
The delivery channel for cloud services to institutions, with tailored advice on best-use cases.
- **SURF Spot**
The delivery channel for students and staff.

Compliance

SURF performs overarching privacy and security risk assessments on vendors and their applications. SURF makes privacy and security contractual agreements with suppliers for the entire sector if necessary. This gives institutions the tools they need to make their own considerations for secure deployment of assessed applications in their institutions.

Community

SURF members share knowledge and experiences about the IT market, procurement and application possibilities – including through expert communities:

- **SURF Cloud Expertise Centre**
For proper application of cloud technology.
- **SURF Taskforce Beyond Privacy Shield**
For secure data sharing.