
SCANDINAVIAN MODEL ON E-INFRASTRUCTURE LONG-TERM SUSTAINABILITY

SWEDISH NATIONAL INFRASTRUCTURE FOR COMPUTING

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Swedish National Infrastructure for Computing SNIC

The *Swedish National Infrastructure for Computing* is a science enabling e-infrastructure for Swedish research.

SNIC makes available resources for large scale computing and storage, as well as provides advanced user support to make efficient use of the SNIC resources.

SNIC is currently being re-organized to be able to provide long term sustainability and to be flexible enough to meet changing needs of resources and services.

Swedish National Infrastructure for Computing SNIC

Outline

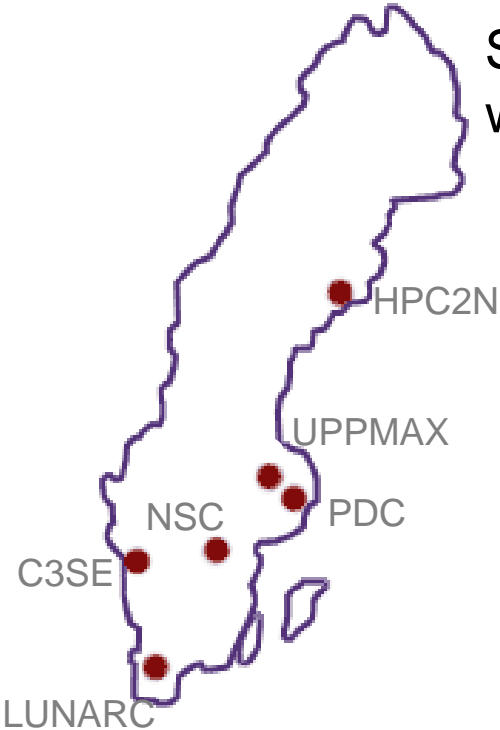
- SNIC 2003-2017
- SNIC from 2018

SNIC 2003-2017

- SNIC is funded by the Swedish Research Council (SRC) and six partner Universities
- It is the second largest national research infrastructure
- SRC funds with 120 MSEK/year
- Six partner universities co-funds (in-kind) with circa 50 MSEK/year
- Uppsala University is host for SNIC since 2012
- The activities are coordinated by a small SNIC-office
- Six SNIC centra at the partner universities provide resources and user support
- SNIC has been very successful in supporting Swedish research

SNIC 2003-2017

SNIC projects and activities are carried out in collaboration with the six SNIC centra



- HPC2N (Umeå University)
- UPPMAX (Uppsala University)
- PDC (KTH)
- NSC (Linköping University)
- C3SE (Chalmers)
- LUNARC (Lund University)

Common services

Backup,
User support,
Storage,
Security,
Resource allocation,
Licenses, ...

Collaboration with research infrastructures

Max IV, Scilifelab, Onsala

International collaborations

PRACE, EUDAT, EGI, WLCG, NeIC, ...

SNIC 2003-2017

Pros

- Efficient use of resources by high-level coordination of investments nationally
- SNIC has the Swedish mandate in the international collaborations
- Some amount of pooling of competences within SNIC
- A distributed infrastructure provides redundancy
- The six partner universities are involved in the activities and projects
- The user support is naturally close to the users at the partner universities

SNIC 2003-2017

Cons:

- Lack of long term funding decisions makes investments difficult
- Large scale investments depends strongly on in-kind co-funding by the partner Universities
- Some Universities with large use of SNIC resources are not part of and do not contribute to SNIC
- Strong SNIC-centra may sometimes promote local interests and local solutions which can make the organization less flexible
- The small SNIC office makes SNIC very dependent on the availability of competences at the centers

SNIC

Need for a change

The current funding period from the Swedish Research Council ends in 2017 giving a natural opportunity for renewal and change of governance, funding and collaboration within SNIC.

SNIC 2.0

New model for governance and funding

A new model for governance and funding is needed to

- provide a long term sustainable e-infrastructure for large scale computing and storage
- handle changing and increasing needs for the current users
- be flexible enough to cater for new user groups and workflows
- make advanced user support for an efficient use of the resources available to all users
- involve all ten main universities in SNIC, both with regards to local support and funding

Process for SNIC 2.0

In June 2016 the Swedish Research Council (SRC) tasked Uppsala University, as host for SNIC, to provide a strategic plan for SNIC 2018-2022, together with the main HEIs (URFI).

UU and URFI formed a working group to draft the strategic plan. A first draft was delivered at the end of 2016.

An international advisory panel commented on the draft and a final version was delivered at the end of April 2017.

The formal funding decision by SRC will be made in September 2017.

Process for SNIC 2.0

In the instructions from SRC it was stated that the new SNIC should be

- Governed by a consortium of (at least three) Universities providing 50% of the budget.
The remaining 50% of the budget will be provided by the Research Council.
- Provide generally available national services for large scale computing and storage, that can not be made available on a local scale
- Provide advanced user support for an efficient use of the resources

Main Background Material

Swedish Science Cases for e-Infrastructure

- publikationer.vr.se/en/product/swedish-science-cases-for-e-infrastructure-2

International evaluation of SNIC from 2010

- publikationer.vr.se/en/product/international-evaluation-of-snic/

Underlying material for the Norwegian model (SIGMA-2)

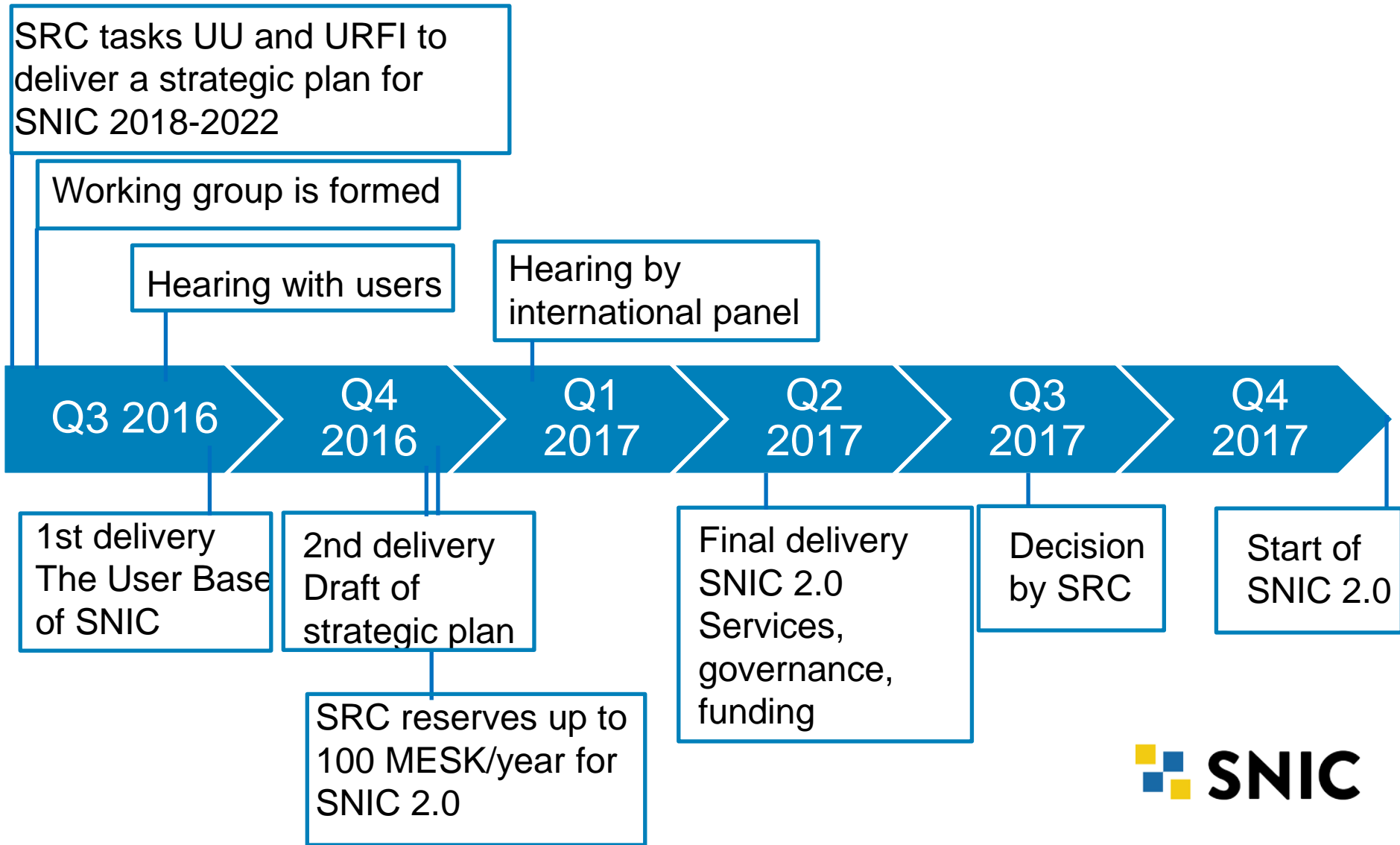
- provided by the Norwegian Research Council

Documents från e-IRG och ESFRI

- e-IRG White Paper 2013: e-Infrastructure Commons
- e-IRG Roadmap 2016: Implementation of the e-Infrastructure Commons

Recommendations by advisory panel from March 2017

Timeline for SNIC 2.0



Advisory panel recommendations

- A **clear vision** has to be developed to gain acceptance for SNIC 2.0.
- SNIC 2.0 should take on a **national leadership role** to support excellent science.
- A **broadened scope** is necessary, particularly to addressing different aspects of the **data life cycle**.
- A **risk analysis** needs to be developed to demonstrate an awareness of the risks in moving from SNIC to SNIC 2.0.
- The **governance structure** has to be developed to ensure a sustainable and stable organization that is able to take strategic decisions, make prioritizations and provide sufficient commitment in case of difficult economic conditions.

<https://publikationer.vr.se/produkt/international-advisory-review-of-the-swedish-national-infrastructure-for-computing-snic>.

SNIC 2.0 - A Service-Oriented Approach

Support to Swedish research of the highest quality in all areas of research

Mandate: SNIC 2.0 should provide

- *a balanced set of national services for large-scale computing and storage/management of active data sets,*
- *a coordinated effort within user support, facilitating the efficient use of the national and relevant international services by existing and new research communities.*

SNIC 2.0 - A Service-Oriented Approach

- National services and interfaces to international services are acquired by SNIC 2.0 under SLA-like agreements
- Complemented by an extended effort on support towards use of national/international services (not connected to physical computing/data resources)

The SNIC 2.0 Services

SNIC 2.0 services for computing and data storage/management can only be provided at a national level, or it provides the best and most cost-efficient support to Swedish research to provide them nationally

General services, aiming at supporting all areas of research

Specialised services, set up in collaborations with other research infrastructures or large-scale research collaborations

SNIC 2.0

New model for governance and funding

The SNIC 2.0 Consortium consists of the ten largest Universities in Sweden, forming the URFI group and being the SNIC 2.0 General Assembly

The SNIC 2.0 Board is responsible for developing and adopting the SNIC 2.0 strategy, policies and implementation plan

The SNIC 2.0 Office is responsible for coordinating and leading the implementation of the SNIC 2.0 activities as decided by the Board

The SNIC 2.0 Board and the SNIC 2.0 Office are hosted by Uppsala University

SNIC 2.0

New model for governance and funding

The initial budget will be 200 MSEK/year

- 100 MSEK/year from the Research Council
- 67 MSEK/year in-cash participation and usage fees from the members in the consortium. Usage fee is based on the historical use of the SNIC services.
- 33 MSEK/year in-kind contributions in the form of provisioning of user support for the general SNIC 2.0 national services.

In addition there can be contributions from national research infrastructures and large-scale research collaborations as specified in SLAs

SNIC 2.0

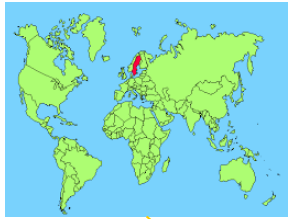
New model for governance and funding

- 2018-2019: Transition/deployment phase. A focus on the transition from current SNIC and the deployment of the SNIC 2.0 structures
- 2020-2022: First operational phase

Possibility to introduce adjustments/improvements by the end of the transition/deployment phase

SNIC 2.0 in One Slide

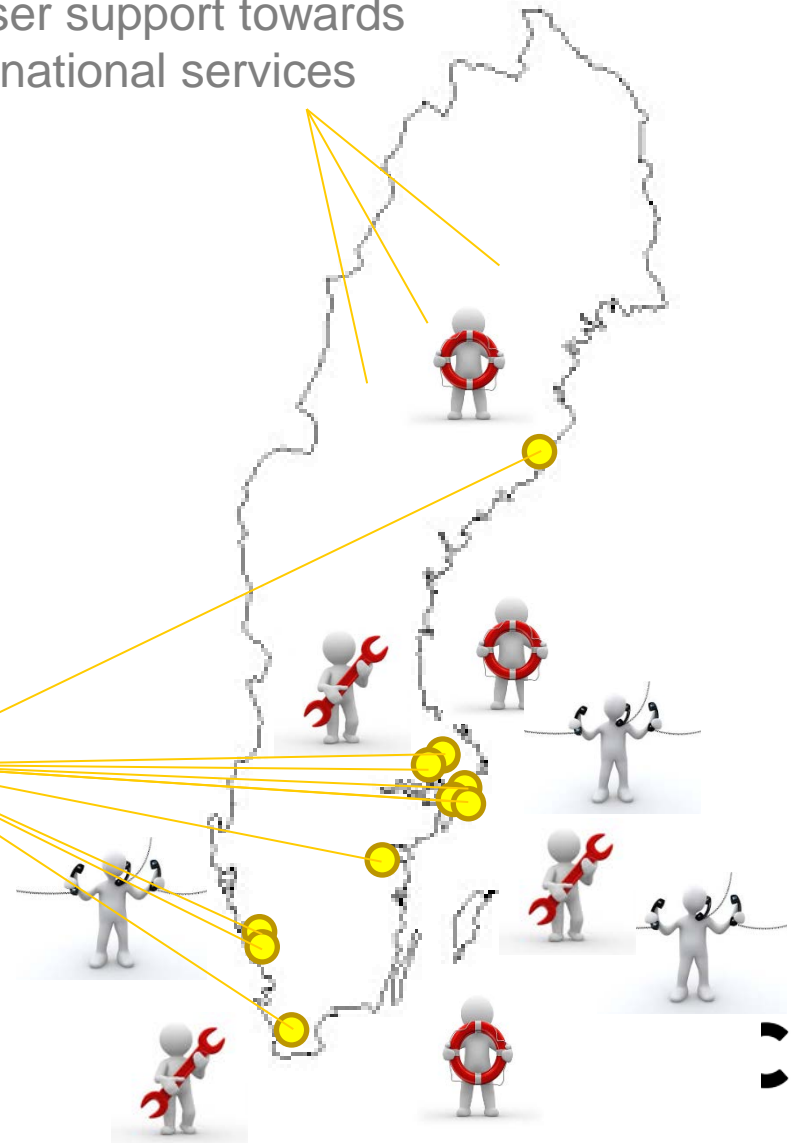
International collaboration



Other RIs



User support towards national services



High-Level Board Allocation of national services to users



Coordinating Office



Funds for acquiring national services

SNIC 2.0

Governance by the ten largest Swedish Universities will provide a long term sustainability for SNIC

The 50/50 funding model between the Consortium and the Research Council will give incentives for a cost efficient infrastructure catering for all users

The members of the Consortium are also responsible for the large data generating research infrastructures. This opens up for the possibility to form a coherent e-infrastructure for Swedish research