

# eScience - In the Nordics

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# National eScience Initiatives – Nordic countries



## **Sweden** - Strategic Research Area Initiatives

- 2010 – 2015 → and forever (after evaluation)
- eSSSENCE, SERC

## **Norway** – The eVITA Program (also eInfrastructure)

- 2006 – 2015
- On-going discussion – coordination with ICT program

## **Finland** – The LASTU (Computational Science) Program

- 2010 – 2016

## **Denmark** – Support to individual groups

- eScience group within DeIC

## **Iceland** - Support to individual groups

- National eInfrastructure established through the NHPC project



# National eScience Initiatives – Europe and Globally



- Revival of eScience in the UK ([www.stfc.ac.uk/e-science](http://www.stfc.ac.uk/e-science))
- National Centers in NL ([www.esciencecenter.nl](http://www.esciencecenter.nl))
- Centers of Excellence on scientific software in H2020
- Roles and relations to eInfrastructures debated
  - e-IRG White Paper 2013
- Big Fuzz on Big Data
- Focus turning towards competence (people, education)
- Method development for complex problems and decision support
- USA: New NSF program "Computational and Data-Enabled Science and Engineering"
- Countries like China and Brazil: Major interest in eScience



# Nordic eScience



NordForsk

Activities in the Nordic countries

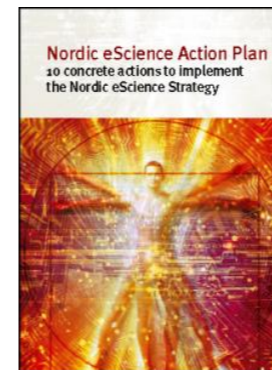
- e-Science research
- e-Science education
- e-Infrastructure

Collaborative efforts, and joint/coordinated participation in e.g. EU initiatives

Way back

The eNORIA group (a NORIA-net)

2008



Nordic eScience  
Action Plan 1.0

**Nordic e-Science Globalisation Initiative - NeGI**

**(Nordic e-Infrastructure Collaboration – NeIC)**

Now

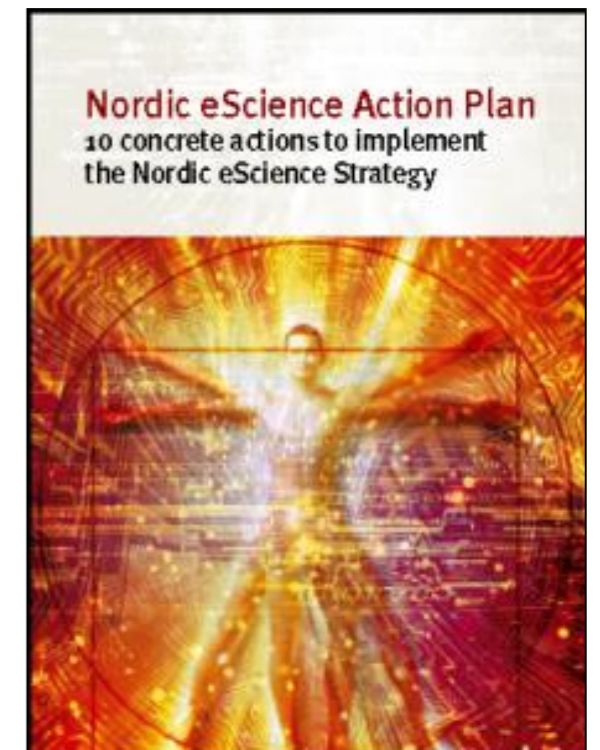
Nordic eScience Action  
Plan 2.0

Future

# eNORIA Action Plan 1.0



- Training Researchers in e-Science Tools and Methods
- A Nordic e-Science Masters Education
- Sharing and Specialising Nordic e-Science Educational Modules
- Fostering Nordic e-Science Collaboration through Mobility
- A Nordic e-Science Program for Research into Grand Challenges
- Strengthening National e-Science Initiatives
- Open Access to National Data Repositories
- Facilitating Sustainable Grid Infrastructure Collaboration
- Implementing Cross-Border Sharing of Resources
- Environmentally-Friendly Nordic High Performance Computing



## - **Nordic e-Science Globalisation Initiative – NeGI (research, graduate education) – within NordForsk**

- Initial funding 12,5 MEUR for five years
  - National agencies in FI, NO, SE, NordForsk, Nordic Council of Ministers
  - Governed by a Steering Committee with repr. of the funders + observers from DK and IS

## - **Nordic e-Infrastructure Collaboration - NeIC (e-Infrastructure for computing and storage) – within NordForsk**

- Initial funding 1,68 MEUR per year
  - National agencies in DK, FI, IS, NO, SE (+ NordForsk for NeGI support)
  - Governed by a Board with repr. of the funding agencies and national computing/storage initiatives
  - Inherits the operations of Nordic LHC Tier-1 from NDGF

- Grand Challenge **Research Programs** on eScience in
  - Climate and Environmental Research
  - Health and Social Preconditions for Health
  - Implemented: Three Nordic Centers of Excellence, Jan 1, 2014
- **Research Projects** on eScience Tools and Techniques
  - Proposals are being evaluated
- **Graduate Education** on eScience Tools and Techniques
  - Effort is being initiated
- Outreach and international collaboration

- True common pot funding, 9 MEUR.
- Research fields selected by funding stakeholders
- Input by research communities at pre-call workshops
- The calls: *Developing advanced models, simulation tools and tools for data analysis for [topic]*
- "eClimate/eEnvironment": 6 consortia applied
  - Two NCoE supported (total 4,5 MEUR). Groups from DK, FI, FR, GL, IS, NO, SE
- "eHealth": 5 consortia applied
  - One Nordic Centre of Excellence funded (total 4,5 MEUR). Groups from DK, FI, EE, IS, NO, PL, SE



NeGI is initiating an effort **on eScience Tools and Techniques**

- Aim: Providing core eScience competence for researchers in a wide span of fields
- Builds on earlier national efforts (e.g. NGSSC, initiated 1997)
- Appointing **Expert Group** that will
  - Define **Nordic Curriculum**
  - Set up a **list of existing courses** of high quality – NeGI funding for participation of Nordic PhD students
  - Potentially propose **new courses** focussing on NeGI NCoE topics (“eClimate/eEnvironment”, “eHealth”)

Also, organisation of annual **Nordic Young Investigators Symposium** in eScience

# Ongoing update of the Nordic eScience Action Plan



- Background: Evaluation of Nordic research collaboration (“Vilja till forskning?”)
  - mentions the progress in eScience/eInfrastructure as success story
- Mandate from Nordic Council of Ministers to produce a new version of the eScience Action Plan
- Action Plan 2.0 is about to be submitted to the Council of Ministers
- Project leader at NordForsk (SH) + Reference Group.

# Nordic eScience Action Plan 2.0



- Introduction
- Objective and Mission
- **Rephrasing and Summary of Strategy**
- Organisational framework for Nordic Collaboration on eScience and eInfrastructure – including international outlook
- Action Line A. Creating a Higher Education Arena for eScience
  - 2 actions (was 4)
- Action Line B. Enabling eScience as a Ubiquitous Tool in Research
  - 3 actions (was 2)
- Action Line C. Knowledge Creation through Cross-Border Sharing of eInfrastructure
  - 5 actions (was 4)

# Nordic eScience Action Plan 2.0



NordForsk

1. Training Researchers in eScience Tools and Methods
2. Fostering Nordic eScience Collaboration through mobility
3. Strengthening eScience Aspects of Nordic Research
4. Nordic research on eScience Methods and Software
5. Nordic Pilot Projects within Open Science
6. Nordic sharing and exchange of eInfrastructure resources
7. A Nordic Federated Cloud
8. Nordic High Performance Computing Collaboration
9. Nordic eInfrastructure for sensitive data
10. Nordic eInfrastructure for scientific software