

# NORDUnet

Nordic Infrastructure for Research & Education

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## Program

**1830 Welcome by René Buch**

**1835 NORDUnet Vision and Strategy**

**René Buch, CEO NORDUnet**

**1850 NORDUnet NorthernLight Network Presentation**

**Fabio Tassara, Alcatel-Lucent**

**Kristian Andersson, Alcatel-Lucent**

**1900 NORDUnet – From a user perspective**

**Michael Grønager – Nordic Data Grid Facility**

**1910 Official Launch of NORDUnet NorthernLight**

**NORDUnet Board**

**1915 Buffet hosted by NORDUnet**

**Guests have access to the exhibition area.**

**2100 Bus transfer to Copenhagen Center**

# Welcome

## René Buch

CEO NORDUnet

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# NORDUnet Vision

## Concurrent Synergies

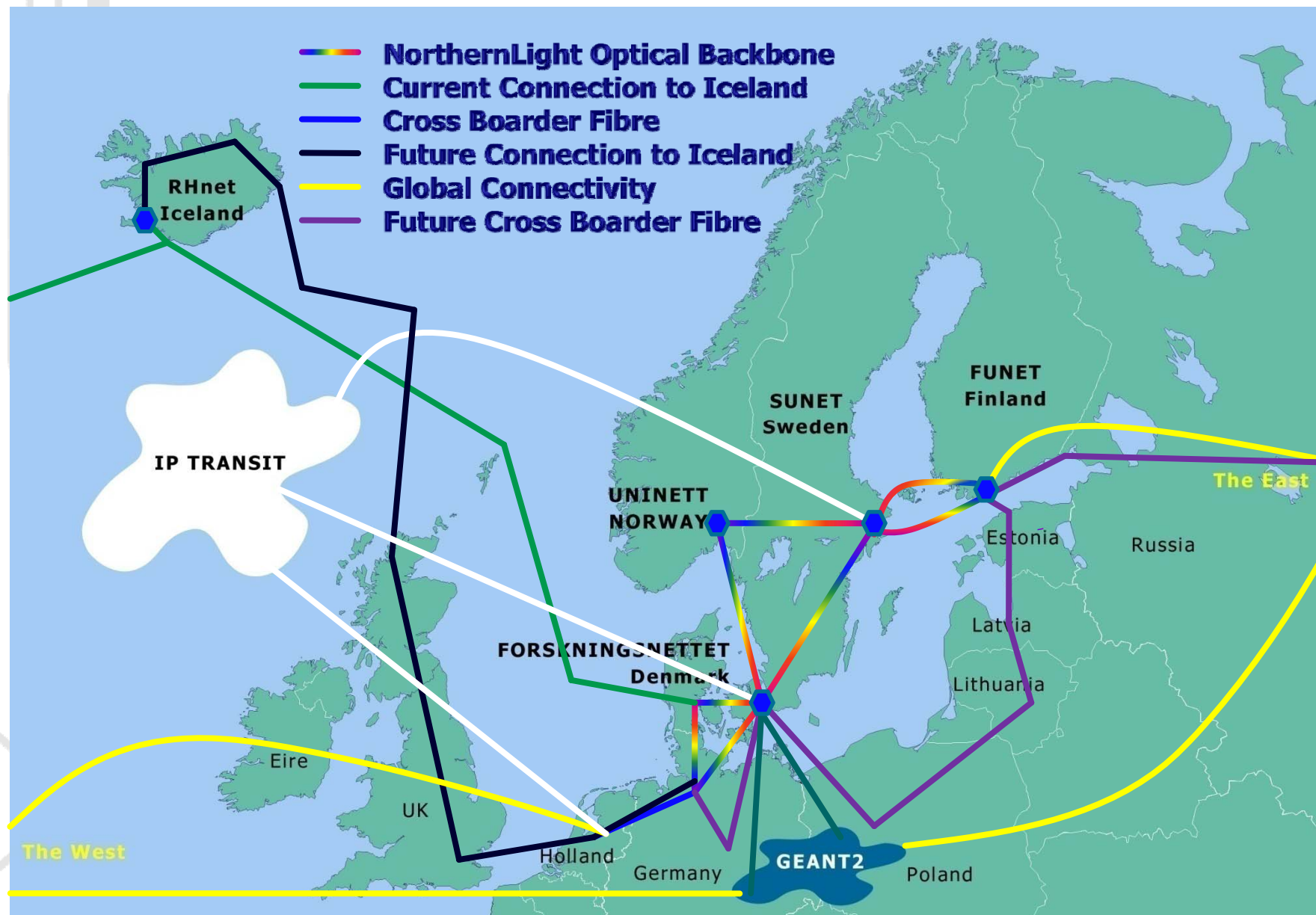
**Concurrent**, the simultaneous execution of multiple interacting tasks

**Synergy** (from the Greek *synergos*, meaning working together) refers to the phenomenon in which two or more discrete influences or agents acting together create an effect greater than that predicted by knowing only the separate effects of the individual agents.



NORDUnet's mission is to enable Nordic synergy through cooperation within Research and Education based on five main pillars:

- Providing a leading edge Network infrastructure that secures sufficient bandwidth for our users to explore the boundaries of technology.
- Actively engaging in Network development activities with academic and commercial partners.
- Facilitate information exchange and cooperation.
- Actively coordinate Nordic and Global initiatives where it add values for our users.
- Facilitate the propagation and implementation of best practices from across the Nordic area.
- Continuously ensuring efficient utilization of resources and funding.







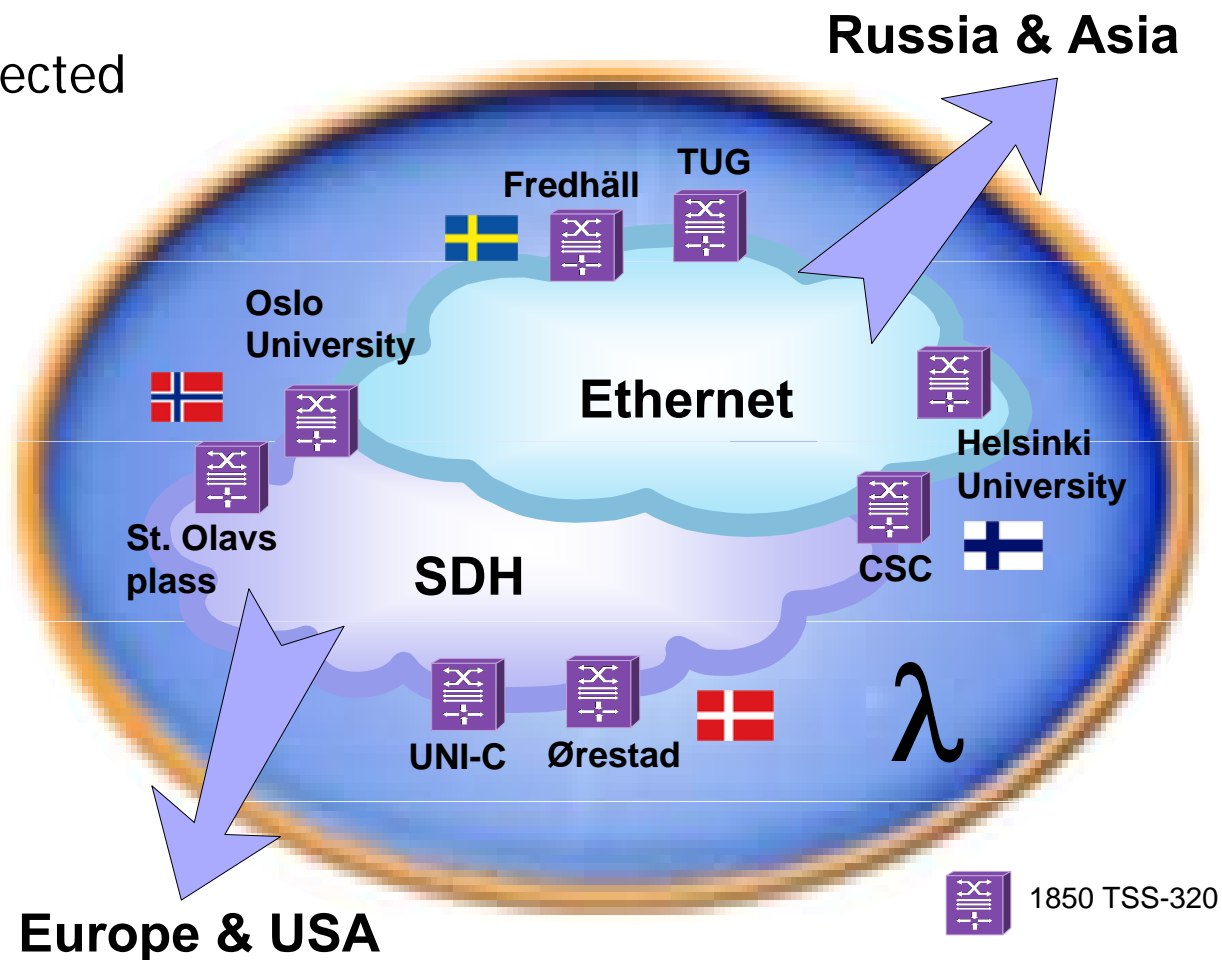
- **NORDUnet NorthernLight**
  - Pan Nordic Redundant Fibre Optical Infrastructure
- **NORDUnet IP**
  - Pan Nordic Redundant IP Infrastructure
- **NORDUnet NOX (NorthernLight Optical X-Change)**
  - Distributed Open Optical Exchange
- **NORDUnet NUNOC**
  - 24x7 eInfrastructure operation centre.
- **NORDUnet PORTAL**
  - WIKI and WWW services for Research projects
- **NORDUnet Meeting**
  - Meeting & AV Conferencing host facilities in Copenhagen & Stockholm
- **NORDUnet Training**
  - Workshops and Training on Optical and Routed Network Technologies.
- **Nordunet3** ([www.nordunet3.org](http://www.nordunet3.org))
  - Four year Internet Research Program

## Services

- Protected & Unprotected
- Over subscribed
- VLAN
- P2P
- P2M

## Application

- NorthernLight
- NGDF
- GLORIAD
- SDH Concatenation



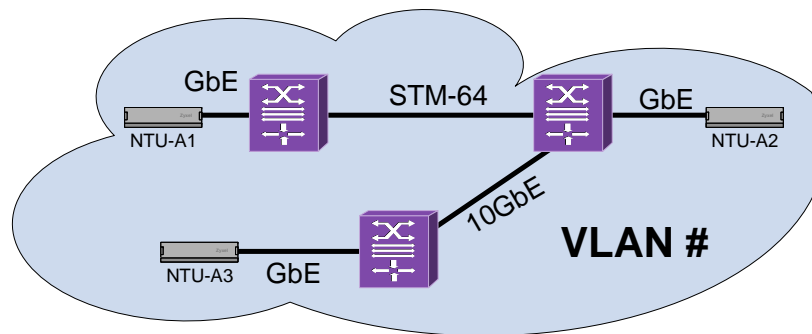
## A Distributed Open Optical Exchange

- Ethernet

- 10Mbps – 10 Gbps
- Complete Scope of Ethernet Features

- MSPP

- CLI, SNMP and TL1
- 2007 GMPLS feature set

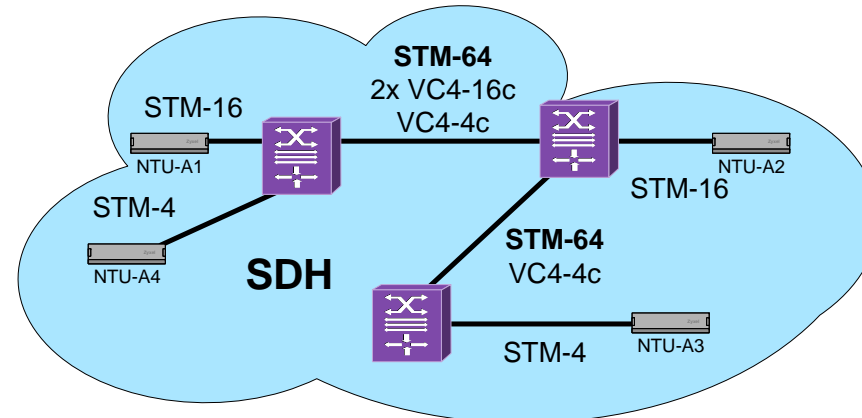


- SDH/SONET

- STM-1, 4, 16 and 64
- Complete Scope of SDH/Sonet Features
- ETH Mapping over SDH

- DWDM

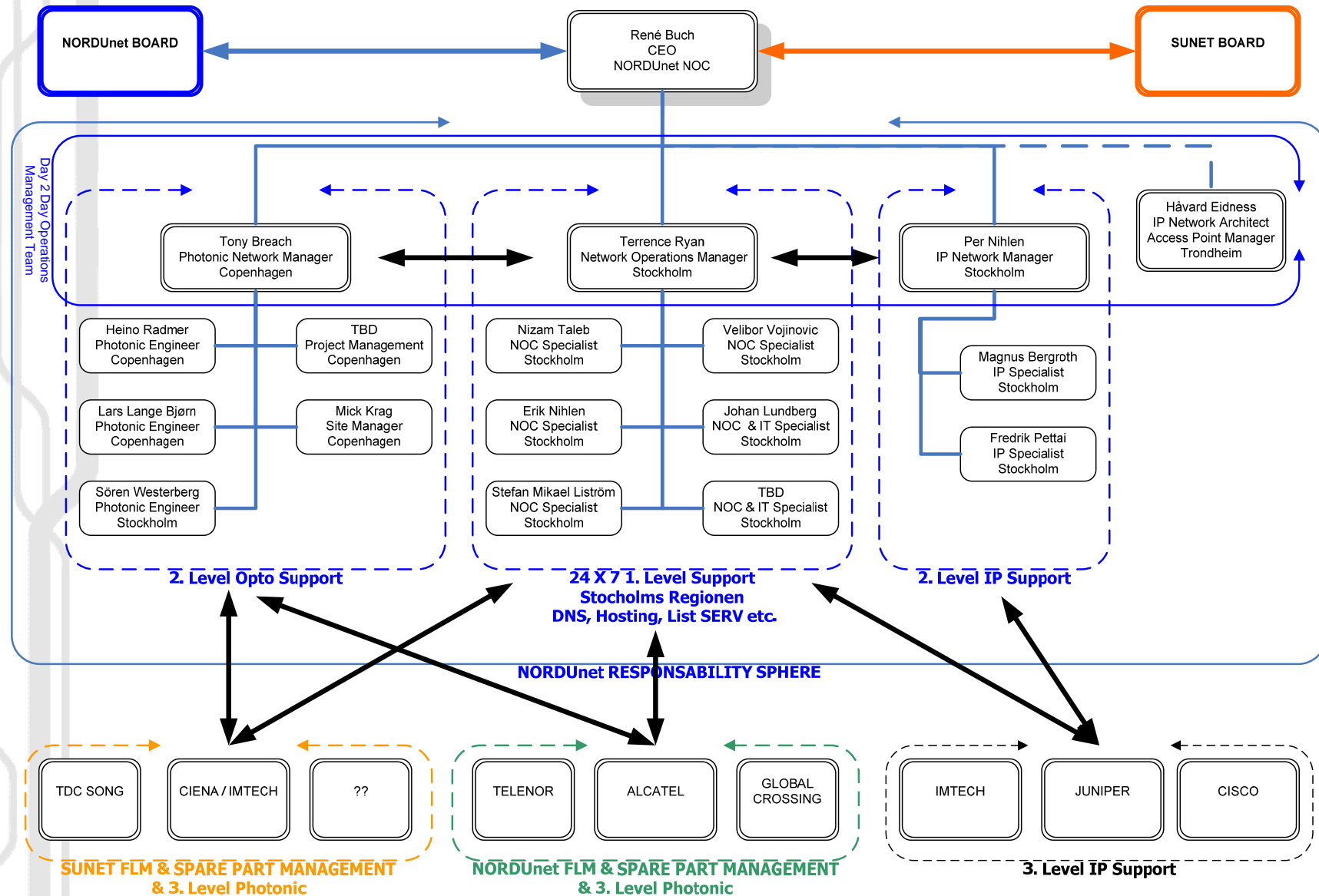
- OADM



## NORDUnet NOX

- NOX - NorthernLight Optical X-Change
- A Distributed Open Optical Exchange
  - Redundant nodes in Copenhagen, Helsinki, Oslo & Stockholm
  - Connect anywhere, switch connections anywhere
- A GLIF Open Lightpath Exchange
  - Part of GLIF network of GOLEs
- Open
  - To all collaborators, Nordic and international
  - To all types of services

- Designed for Research & Education
- Minimize Staff
- Maximizes efficient usage of NOC staff time with day to day operational tasks.
- Easy to manage / Clear responsibility matrix /short communication paths.
- Clear expectations and measurable KPI from Customers (SUNET, NORDUnet etc....)
- Open setup adaptable for:
  - Additional Nordic NRENS
  - Research Projects (NDGF)
  - Any NORDIC R&E customer with a 24x7 Operational requirement



- Fibre distances
  - NORDUnet 4200+ Km (Completed)
  - SUNET 7300+ Km (Operated by NORDUnet)
  - FUNET 4300+ KM (Tendering)
  - Forskningsnettet 1500+ KM (Tendering)
  - UNINETT 7000+ KM (In Progress)
  - Rhnet Planned 2,5 Gbit/s Lambda connection
- Sites:
  - NORDUnet 60+
  - SUNET 80+
  - FUNET 60+
  - Forskningsnettet 20+
  - UNINETT 80+
  - Rhnet Planned 2,5 Gbit/s Lambda connection

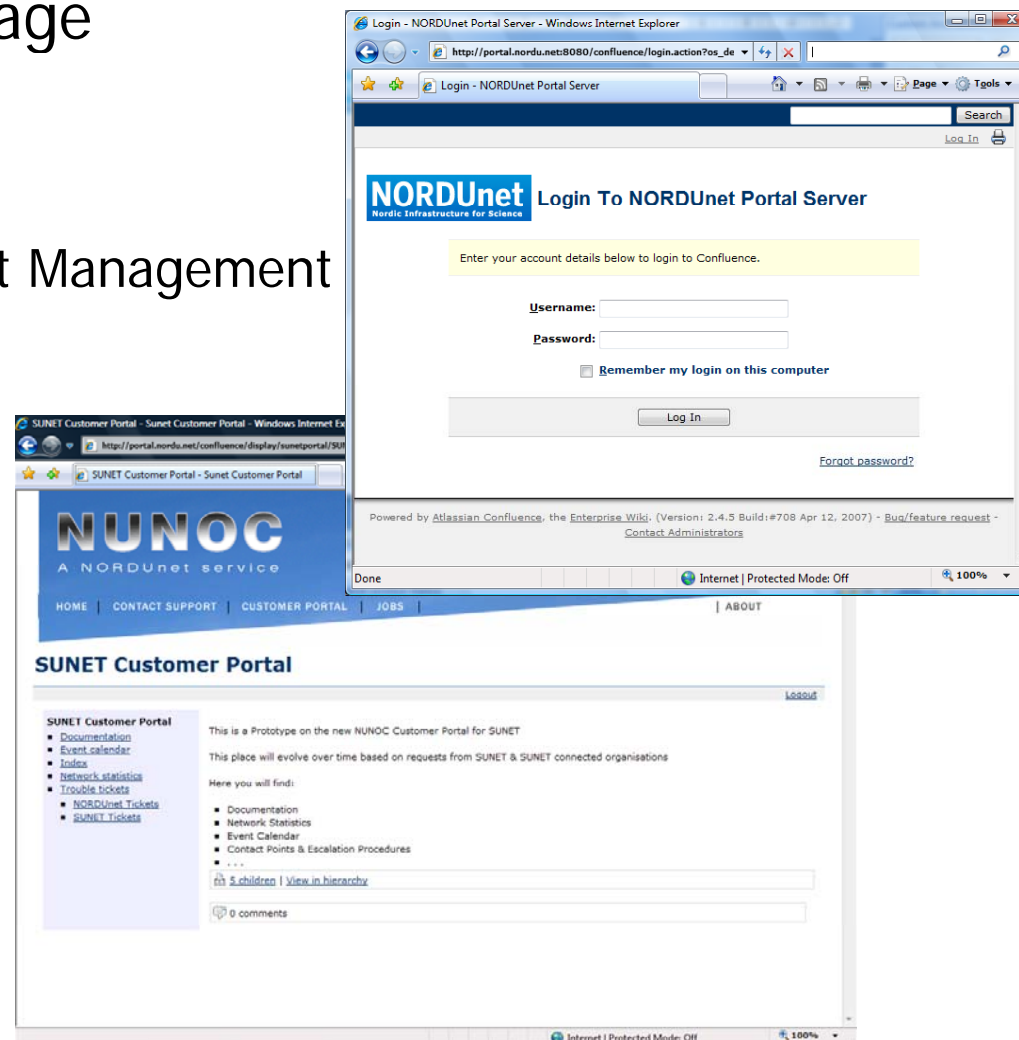


Designed for PAN NORDIC R&E Communities:

- Easy to setup and manage
- Offers:
  - WIKI
  - Home page with Content Management
  - Discussion Groups
  - News & RSS Feeds

Initial Users:

- SUNET
- NDGF
- NCM eScience Workgroup
- NORDUnet Board
- NDGF Board



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# NORDUnet

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# Official Launch



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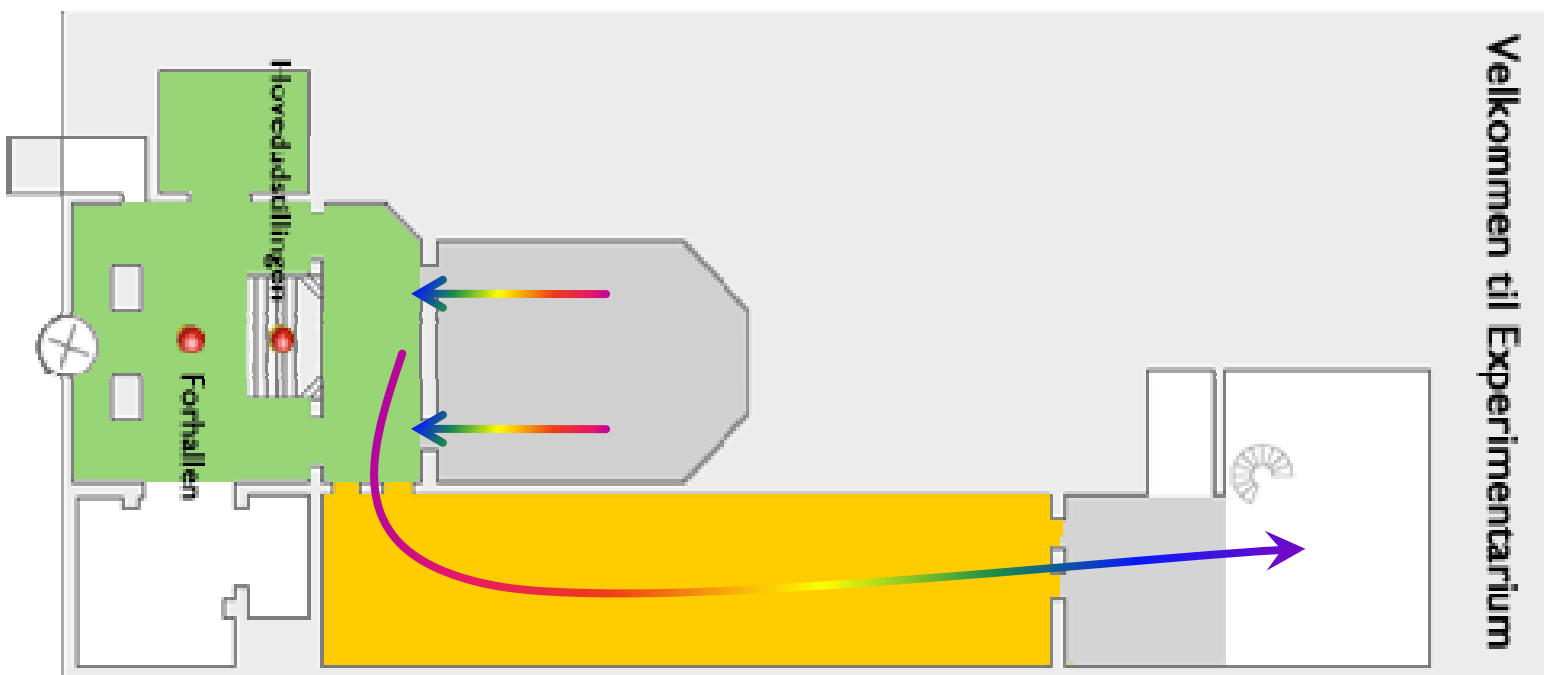
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# The Core Network

