NORDUnet

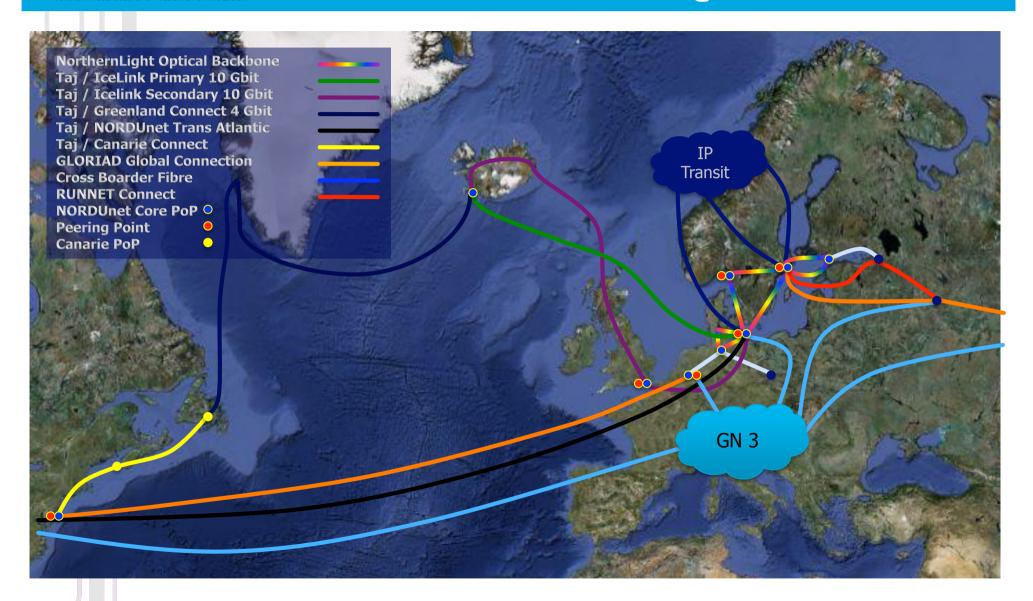**Nordic Infrastructure for Research & Education**

NORDUnet Green Initiatives

René Buch

CEO NORDUnet

NORDUnet

Nordic infrastructure for Research & Education

NORDUnet Q1 2010

NorthernLight Optical Backbone
Taj / IceLink Primary 10 Gbit
Taj / Icelink Secondary 10 Gbit
Taj / Greenland Connect 4 Gbit
Taj / NORDUnet Trans Atlantic
Taj / Canarie Connect
GLORIAD Global Connection
Cross Boarder Fibre
RUNNET Connect
NORDUnet Core PoP
Peering Point
Canarie PoP

IP Transit

GN 3

NORDUnet
Nordic infrastructure for Research & Education

- ## Network:
  - 4567 Km of Fibre network (+ Trans Atlantic Capacity)
  - 15 Primary backbone Sites
  - 49 ILA Sites

- ## Organization
  - 30 Employees (+16 from NDGF)
  - Main Offices in Copenhagen, Stockholm, Washington
  - 2 Remote Sites (+ 10 from NDGF)

- ## Significant part of Nordic Energy comes from CO2 Friendly sources
  - Hydro-, Wind-, Geothermal or Nuclear Power

NORDUnet
Nordic infrastructure for Research & Education

- # Network

  - New Procurement will focus on energy efficiency
    - There is a very long way here.
    - Coordinated demands to industry would be welcomed.
  - Optical equipment less energy demanding than traditionally switched IP Backbone.
  - Maximise Utilisation and Minimize transponder number by upgrading to 40+ GBit
  - Change Cooling methodology where possible – have resulted in 60% savings in Stockholm Main PoP.
  - Virtualization of Computing Resources

- # Community

  - Move computing resources close to renewable energy.
  - Encourage use of virtual meeting capabilities
    - Video Conferencing and Tele Presence
    - IM

NORDUnet
Nordic infrastructure for Research & Education

- # Organization
  - Offices close to Public transport
  - Remote working capability for all (Average 1 Day / Week)
  - Significant Usage of Virtual Presence Technology
    - Virtual Office
    - Tele presence between main sites in Copenhagen and Stockholm
    - Videoconferencing capability for Internal and External meetings:
      - Centralized MCU:
        - 48 Continuous Presence Video Participants in HD Quality 48
        - 72 Continuous Presence Video Participants in SD Quality 72
        - 48/96 Continuous Presence NORDUnet Desktop Participants in HD/SD
        - 300 Additional Streaming Users
        - 96 Audio
        - 3 Simultaneously Conference Room Recording
        - IM Integration
      - Decentralized Terminals
        - 4 Systems with Multiway Call Capability
        - 7 System for Point to Point call or Connection to Centralized MCU
    - European Coordination and Agreement on standards required in a al to all communication environment.

NORDUnet Green Focus Areas

Q & A