

e-Infrastructure service portfolios – a systematic approach

e-IRG Workshop, Bruxelles

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13/10-2010

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DANMARKS IT-CENTER FOR UDDANNELSE OG FORSKNING

The research network services – the mother of all e-infrastructures

- The research networks (NRENs) are the basic enablers for turning any infrastructure into an e-infrastructure
- Therefore, the services of an NRENs are the basic e-infrastructure services
- In a recent account of the Danish research network (forskningsnettet.dk), the service portfolio comprises 29 services, ranging from basic internet provision to media archives etc.
- Many services are quite similar among the NRENs
- However, most of the services in an NREN are developed, provisioned, operated and managed nationally
- What can we do to change this in order for achieve better services and more economy of scale?

NORDUnet CTO Meetings

Nordic Infrastructure for Research & Education

Added by [Jørgen Qvist](#), last edited by [Jørgen Qvist](#) on May 20, 2010 ([view change](#))

CTO Forum

The scope of the CTO meetings is at the strategic level to exchange experience and best practices, to inform about key challenges and initiatives, and to coordinate strategic efforts across the Nordic countries.

Nordic NREN CTO meetings are held twice a year - more when needed.

NREN CTO meetings are attended by technical management - NREN CTO's, NORDUnet CTO, IRI manager, and CNOO.

Upcoming meetings

- 3 November 2010, Copenhagen

Past meetings

- [20 May 2010, Stockholm](#)
- [14 October 2009, Copenhagen](#)
- [14 January 2009, Espoo](#)

Generic Meeting Structure

1. country / NORDUnet updates
 - Challenges
 - Strategy

The basic idea of the Nordunet CTO Forum...

We discuss all practical topics relevant to the Nordic NRENs, e.g.:

- Common projects
 - Cost sharing models for cross-border fibres
 - Compare service portfolios
 - Exchange of services when feasible
-
- The cloud and grid discussions are generally left to the NDGF (Nordic Data Grid Forum)



Home

- Home
- Announcements
- About NDGF
- Activities
- Documents and Presentations
- Management

NDGF LHC Grid Fest

A YouTube video player showing a map of Europe. A large play button is centered over the map. The video title is "NDGF LHC Grid Fest". The YouTube logo is visible in the bottom right corner of the video frame. The video player controls at the bottom show a progress bar at 0:00 / 2:11, a volume icon, and other standard video controls.

Presentation of NDGF for the Large Hadron Collider Grid Fest - October 3rd

Services in this context are mostly above basic connectivity



As a starting point, we maintain a map of all services

NREN Services map - NORDUnet Wiki - NORDUnet Portal - Mozilla Firefox

Filer Rediger Vis Historik Bogmærker Funktioner Hjælp

https://portal.nordu.net/display/NORDUwiki/NREN+Services+map

Mest besøgte Igang med Firefox Seneste nyheder

- ✓ = Federated Login in place
- ⊕ = Federated login planned
- ⊖ = Federated login not planned
- ✗ = Not applicable

Organisation \ Service/type	SUNET	NORDUnet	RHnet	FSKnet	UNINETT	Funet
Date updated	August 10, 2010	Jan 21, 2010	Aug 11, 2010	Apr 14, 2010	Apr 13, 2010	Aug 13, 2010
Network & connectivity services	-	-	-	-	-	-
Network Services and related documents	OptoSunet (IP and Light Path Services) LIR DNS	Network Services Description SDH Service Ethernet Service Service Order Workflow Service Order Form NOC Service	RHnet IP Services IPv6 DNS NTP LIR	IP Service ✗ Closed point-to-point connections ✗ Lightpath service ⊕ IPv6 ✗ DNS ✗ NTP ✗ Mail relay ✗	UNINETT IP network Lamba (LightPaths) IPv6 IP-multicast Campusnett(GigaCampus) UNINETT Hostmaster (IP & DNS Registration services) [UDS] (Uninett NOC) NTP DNS MP (Measuring Point) SIP infrastrucrture	Funet IP ne service Funet conn LightPaths Funet RIPE (hostmaste Funet NOC Funet PER Funet NTP Expert serv (various)
Security Services	-	-	-	-	-	-
	CERT IRT TCS ⊕ E-mailfilter ✓		CERT response	CERT Incident response ✗ CERT Newsletter ⊕ CERT Vulnerabilities database ⊕ http://forskningsnettet.dk/cert_uni-scan	UNINETT CERT UNINETT SCS (certificates) Dike (Anti SPAM) NAV (Network monitoring)	Funet CER (RFC2350) Abuse. Sec (RFC2142)

Færdig

NREN Services map - NORDUnet Wiki - NORDUnet Portal - Mozilla Firefox

Quite a lot of services...(2)

NREN Services map - NORDUnet Wiki - NORDUnet Portal

	FTP NEWS (feed) Listserv Akamai (Connect)  Server Hosting			FTP Usenet news Edumedia Anti-SPAM service	Trofast (Adm. services) ftp.uninett.no CloudStore Samson 3 (DNS Mail) UNINETT IP-TV Akamai servers Darwin (streaming server) Software agreements (employee and student)	nic.funet.fi (ftp, http file server) Funet Antenna (IPTV) USENET News (read & feed) CSC Stream (video streaming) Akamai instance		
Network communication tools & conferencing	-	-	-	-	-	-	-	-
Conferencing Services	Connect 	NORDUnet Conference Services 		Connect H.323 MCU and gatekeeper	Vconf catalog UNINETT MCU GK (gatekeeper) GDS node	FI-GK (national gatekeeper) VideoPark (open gatekeeper) EVO reflector instance Virtual Office for Funet		
Network computing resources	-	-	-	-	-	-	-	-
Virtualized Server Hosting	Virtualized Server Hosting (based on NORDUnet)	Virtualized Server Hosting				CSC supercomputing environment Virtualized Server Hosting		
E-Learning / Tele-teaching / e-research	-	-	-	-	-	-	-	-

https://portal.nordu.net/display/NORDU/wiki/NREN+Services+map (3 of 5)31-05-2010 09:30:53

NREN Services map - NORDUnet Wiki - NORDUnet Portal

	(Connect) 			Journal Learning and Media Teaching with Video E-learning and the law	eCampus		
User interaction - knowledge dissemination	-	-	-	-	-	-	-
	TREF TREFpunkt SUSEC Connect User Group www.sunet.se			General PR Website Det gyldne snit Newsletter National Forskningsnet conference	www.uninett.no drift.uninett.no UNINytt UNINETT user conference GN3Campus eCampus Foodle OpenWiki rnd.feide.no UFS (UNINETT Best Practice) Collective procurement	Funet Academy (courses etc) General technical user meeting Funet general assembly www.funet.fi Funet customer extranet Funet collaboration Wiki Funet Newsletter Funet user group VideoFunet SIG MobileFunet SIG AccessFunet SIG	

Adding a new organisation to the Service mapping table

1. Click on the EDIT button in the top right part of the screen
2. Choose the "Rick Text" editing option in the top left part of the screen
3. Place the cursor in the rightmost column of the table
4. Press the "insert column after" button in the edit menu at the top of the screen
5. Add the name of your organisation in the topmost cell of the new column and add appropriate information in the cells below
6. Save the page

Adding a new Service (type) to the Service mapping table

Look through the table to see if there is a existing Service or Service Type (Service Types are written in **bold**) that the Service fits in to. Then see the explanation about adding a new organisation above and instead of adding a column in step 3 you add a row below the appropriate Service Type. If there is no Service Type that fits, create a new one. Before adding a service or Service type

https://portal.nordu.net/display/NORDU/wiki/NREN+Services+map (4 of 5)31-05-2010 09:30:53

How we work with service comparison

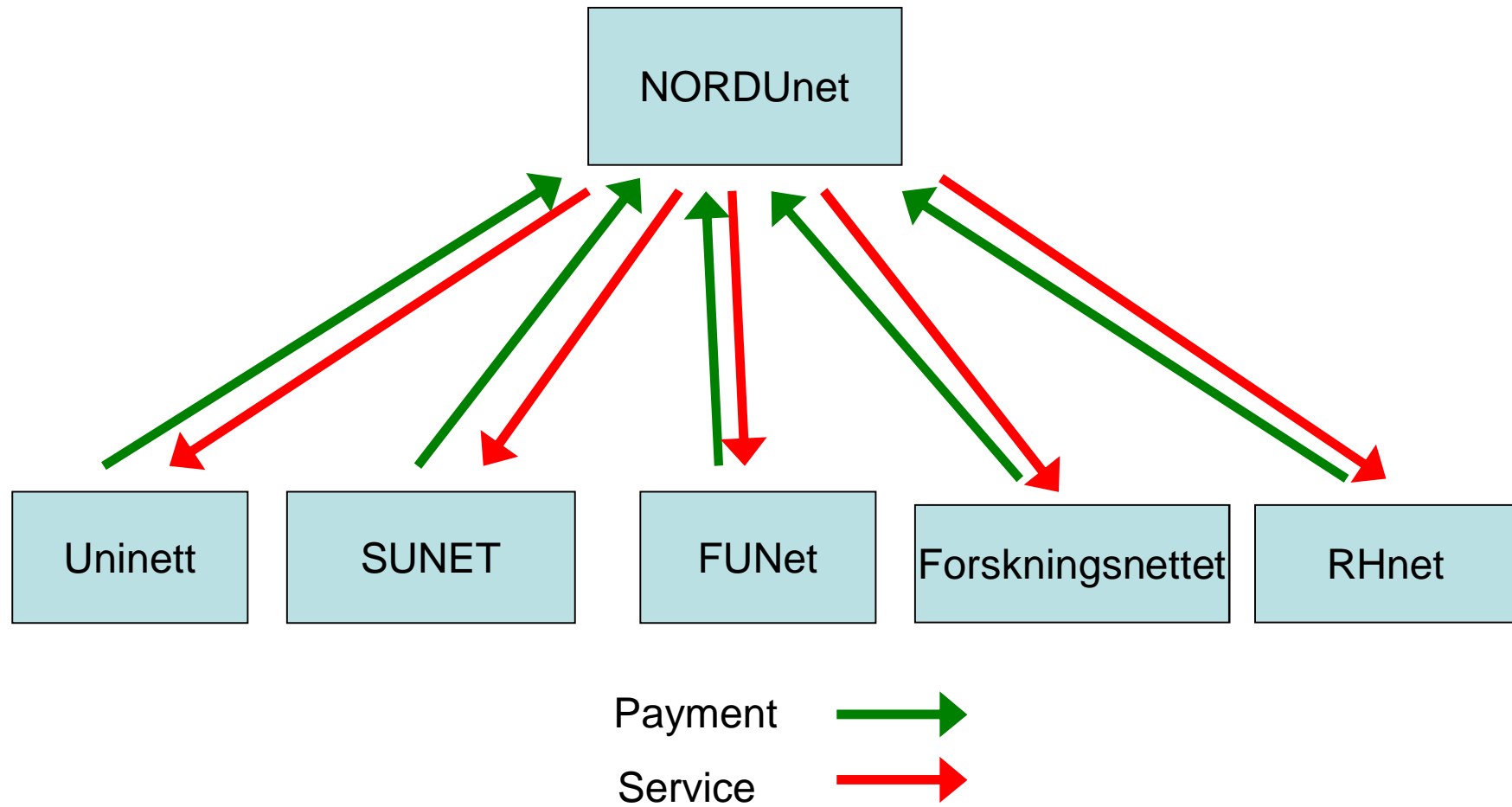
- Inspiration for what my NREN is missing
- Get good ideas for new services
- Gradually harmonize terminology
- Compare service offerings, category per category
- Finding best-of-breed among comparable services
- Exchanging services
- Operating services jointly

Obstacles

To move beyond mutual inspiration is easier if we remove some of the obstacles:

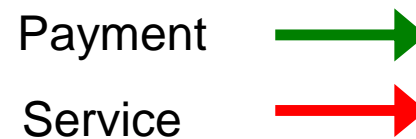
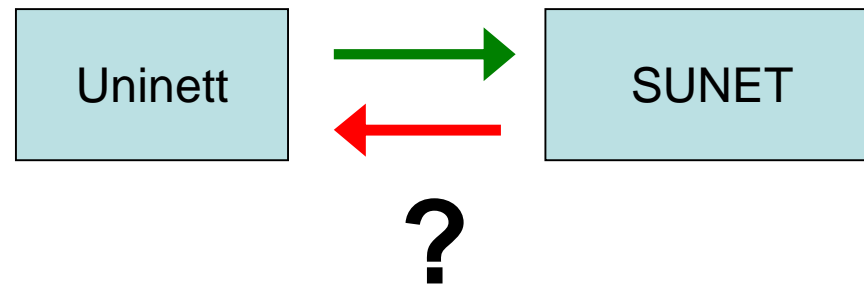
0. Knowledge of what is available
1. A model for payment/cost recovery/procurement
2. Inter-NREN service exchange must be foreseen in calls for tenders and contracts
3. Federated AAI
4. Translation enabling
5. IPR clearing

Removing obstacles (1): Nordunet as a common serviceprovider



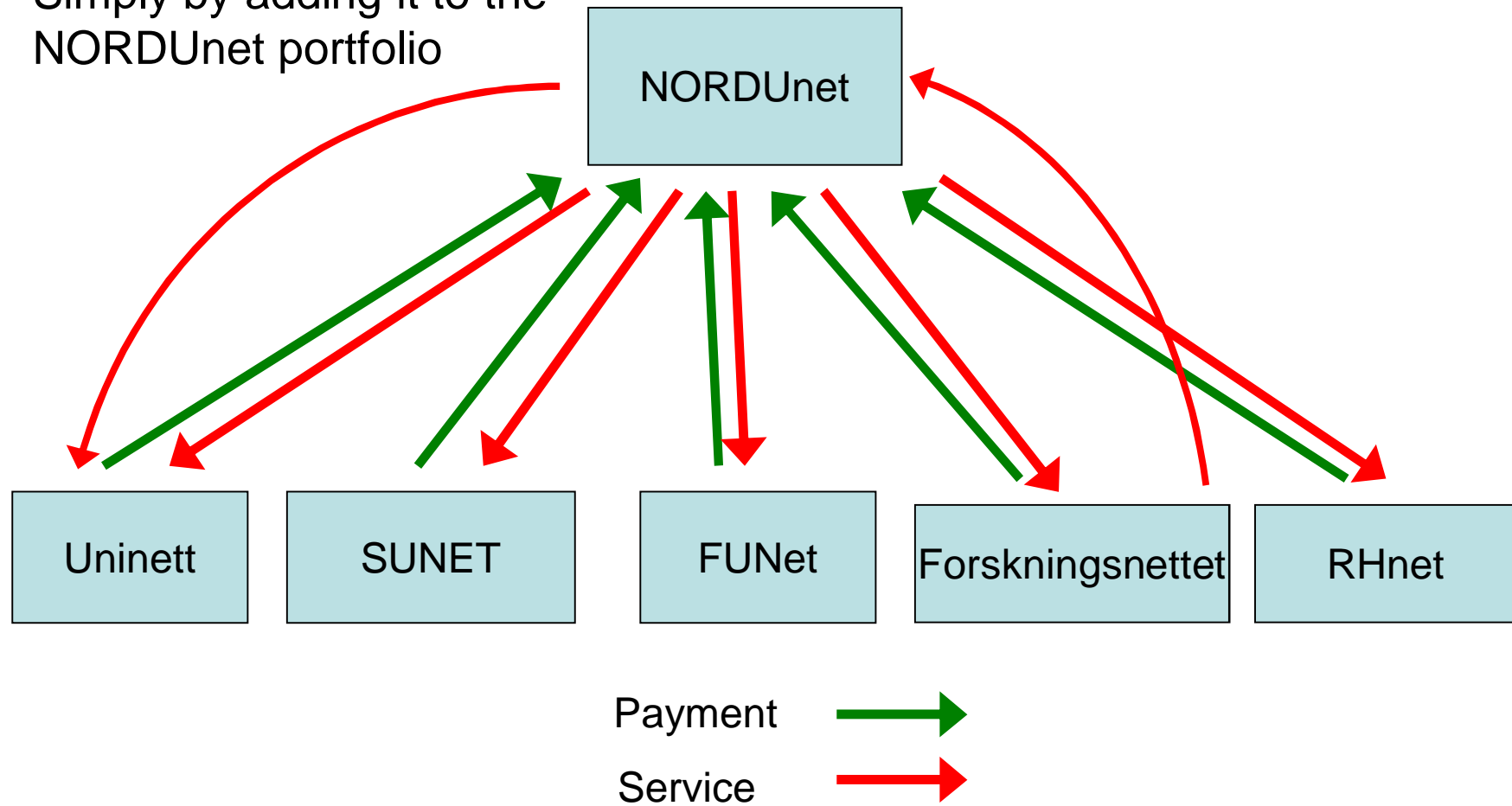
Obstacles(1): Direct exchange presents a procurement problem

- EU procurement rules demand a regular call for tender
- Difficult to create pilot trials
- Also a burden for the supplying NREN



Removing obstacles (1): How procurement is handled

- Simply by adding it to the NORDUnet portfolio



Removing obstacles (2): Foreseeing service exchange

- When a service is entirely home-made by one NREN, it is normally simple to supply it to another NREN. Think of web-site hosting as an example.
- When you do procurement using EU rules, you must tick the box "purchasing on behalf of other contracting authorities"
- The contracts must also allow for providing the service to others than your own NREN

Removing obstacles (2): Example of EU Call for Tenders

- NORDUnet made a contract with Juniper stating that the connected NRENs could also buy equipment under the contract
- However, in the original call for tender, they forgot to tick the box:

I.2) TYPE OF THE CONTRACTING AUTHORITY AND MAIN ACTIVITY OR ACTIVITIES

- Ministry or any other national or federal authority, including their regional or local sub-divisions
- National or federal agency/office
- Regional or local authority
- Regional or local agency/office
- Body governed by public law
- European institution/agency or international organisation
- Other

(please specify):

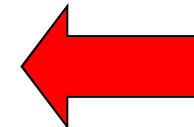
- General public services
- Defence
- Public order and safety
- Environment
- Economic and financial affairs
- Health
- Housing and community amenities
- Social protection
- Recreation, culture and religion
- Education
- Other

(please specify):

The contracting authority is purchasing on behalf of other contracting authorities

yes

no

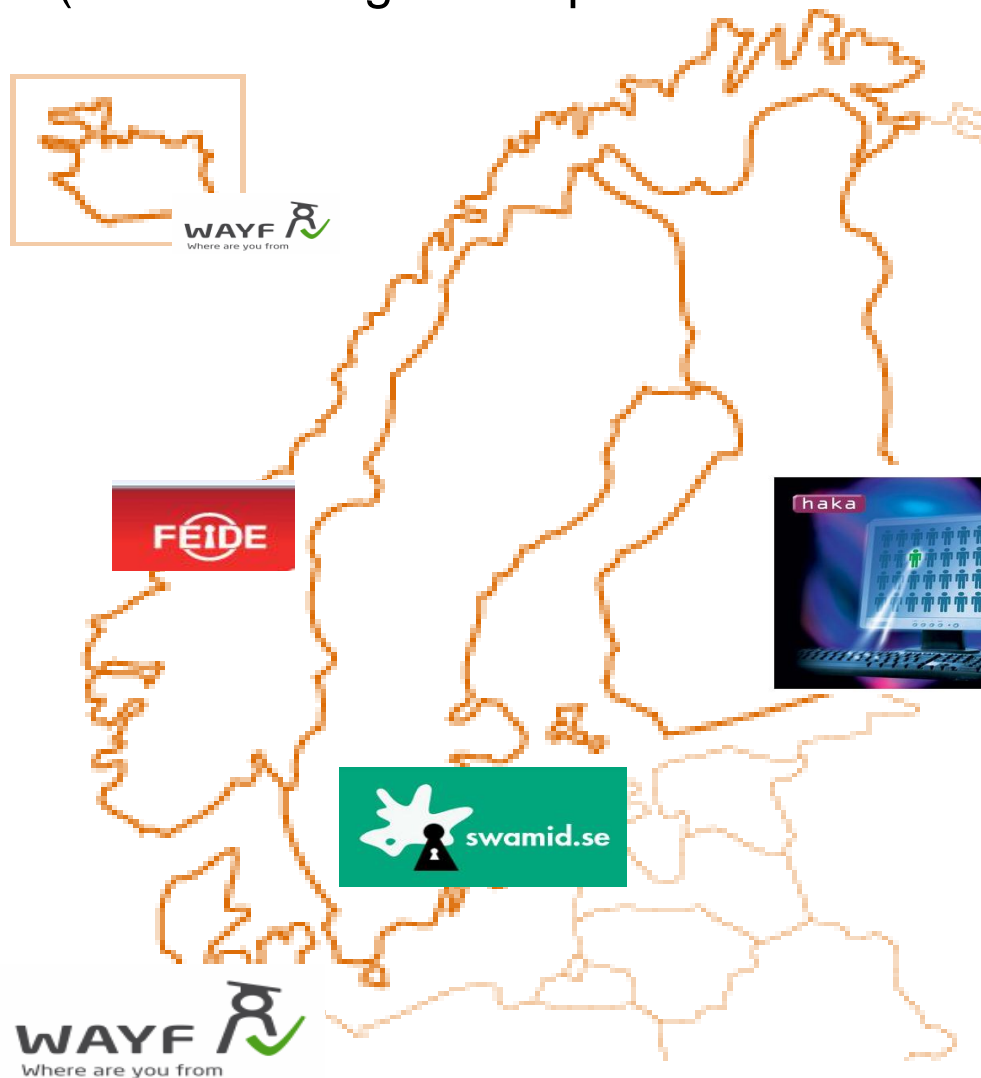


Obstacles (2): Foreseeing service exchange in contracts

- This is not always easy as can be seen from this example:
- Forskningsnettet in Denmark has an Adobe Connect service, based on a contract covering the national NREN
- SUNet in Sweden has an Adobe Connect service, based on a similar contract
- Now, Uninett in Norway wants an Adobe Connect service
- We call Adobe in order to negotiate a common procurement and hope for better prices, but their reaction was that now we are not academic, but a service provider and hence will have to pay more than double...

Removing obstacles (3): Federated AAI

- Not mandatory to have in place (i.e. Forskningsnettet provides iPass to SURFnet in a pilot trial)
- The Kalmar Union



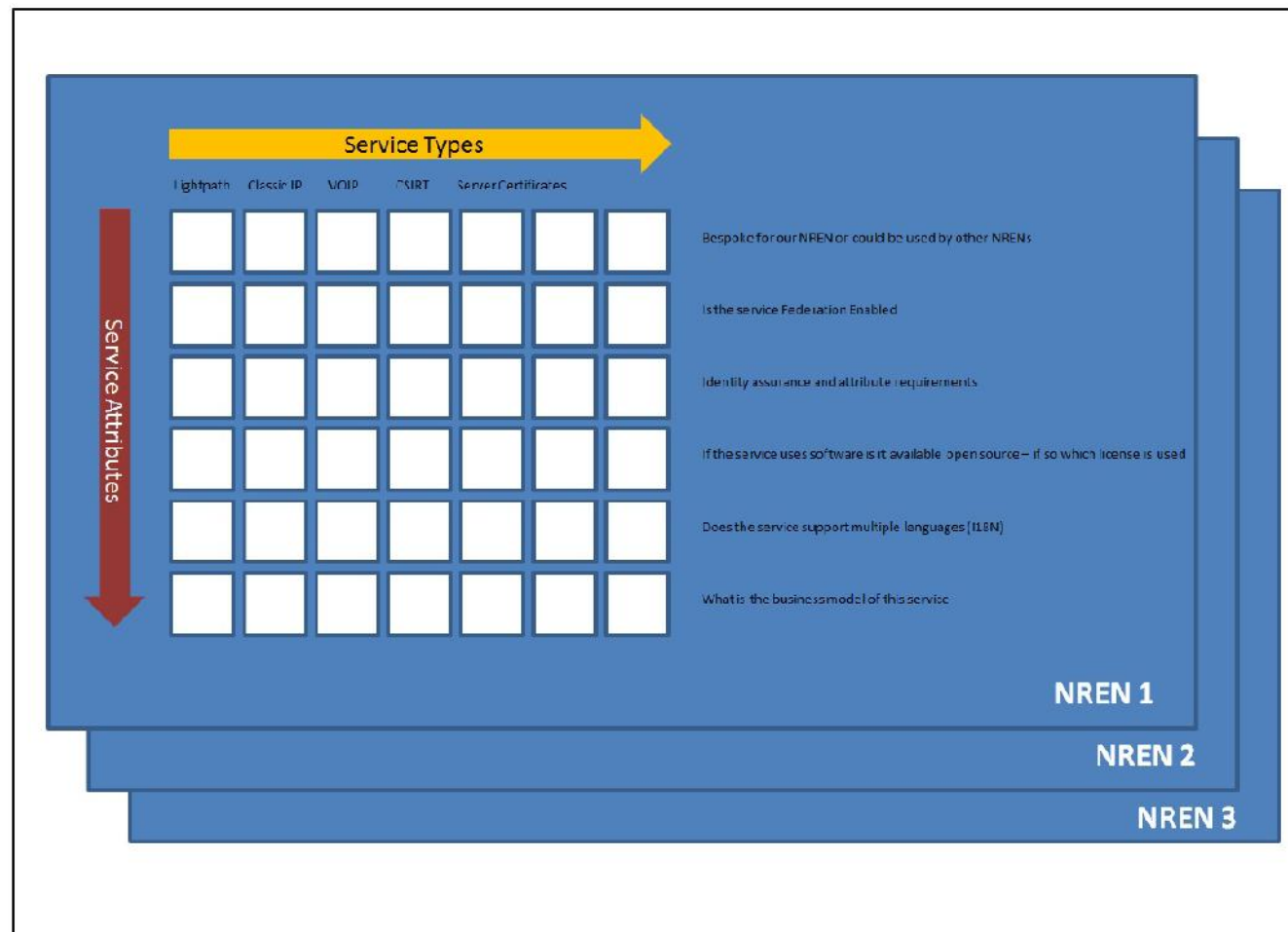
Service exchange – existing and proposed

- Sharing of housing and facilities
- Basic server operation
- iPass
- H.323 MCU and gatekeeper
- Edumedia
- Filesender/LOBBER
- Anti-SPAM service

Taking this idea to the next step: Europe

- A topic for recent activities in the TF-MSP taskforce in TERENA
- Starting with a service map for the European NRENs

Model for the Database



Further ideas for service exchange for European NRENs

- TERENA or Dante could act as a "clearing-house" for cost recovery etc.
- A set of "best practices" for creating "exchangeable" services has been proposed
- Pan-European federated access for NREN services are studied in GN3
- Examples of shared services already exist
- The stable high-capacity networks are the key enabler for this whole trend

Are we sharing e-Infrastructures today?

Indeed, we are:

- Grid and cloud computing is exactly about sharing
- Unique research equipment is accessible to users everywhere: accelerators, visual astronomy, radio astronomy, satellites, ...
- Central databases are accessible via the network (from genomes to the death sea scrolls)
- Examples of remote controlled lab equipment

Do we want to do more sharing?

- Naturally!
- and I hope this approach could help this trend in other areas.