

e-Infrastructures Sustainability & business models

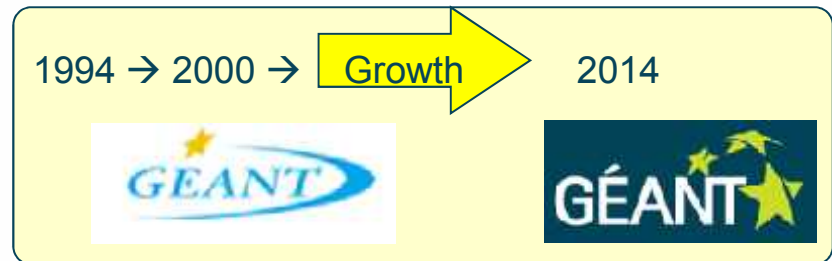
Niels Hersoug
Chief Programme Officer; GÉANT
General Manager DANTE Ltd.
United Kingdom



Key Statements 1 - 3

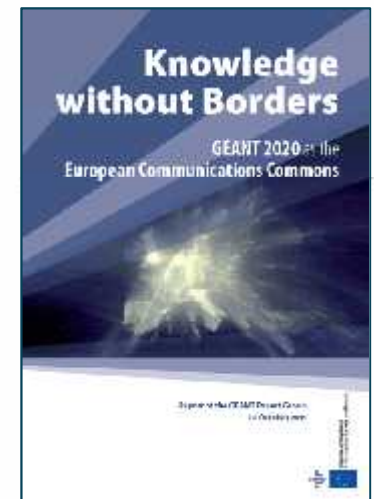


- GÉANT has been, and will continue to be, a stable and fundamental feature of the e-Infrastructures landscape for many years



- European NRENs are developing an e-Infrastructure commons to deliver the vision of the GÉANT Expert Group

- Networking requires long-term financial commitments to invest in infrastructure



GÉANT; Stable and fundamental

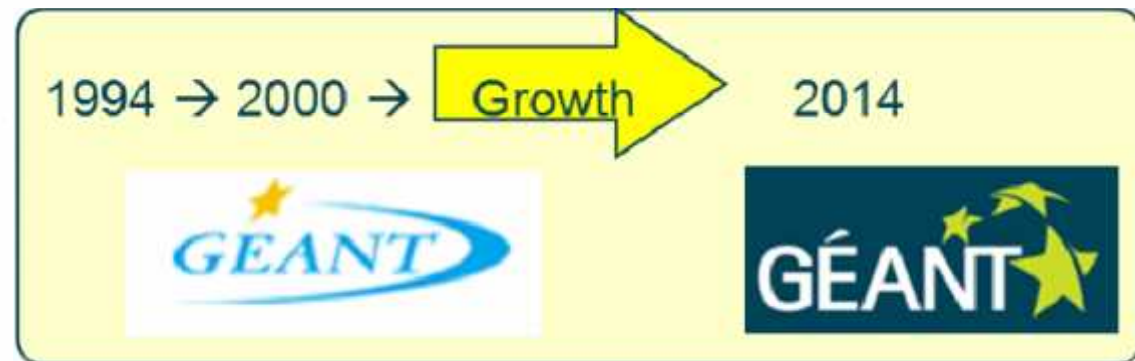
GEG Group

Network: Long term Commitments

Key Statement 1



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GÉANT; Stable and fundamental

GEG Group

Networks and Computer Systems

European and Global GÉANT



- Consortium

- 70 partners
- 37 NREN Networks
- NORDunet (5 Nordic countries)
- TERENA
- DANTE (coordinator)



of the countries in the World!

25 European
POPs

24.000 km of
dark fibre on 18
routes

50,000km network
infrastructure on
44 routes

Diversified footprint

- Serves 40 million users
- 8,000 institutions
- Across 40 European countries

Trust and Identity Services in GÉANT

Federated Delivery Model



Key strategic
services in GÉANT



Supply chain covers
campus, national
and GÉANT central
components

- Distributed costs
- High scalability
- Light central control/costs
- Community as asset

Challenges and
opportunities

- Value added services layered on top of the core service delivery
- Delivering service between e-Infrastructures – what is the business implication?

Key Statement 1



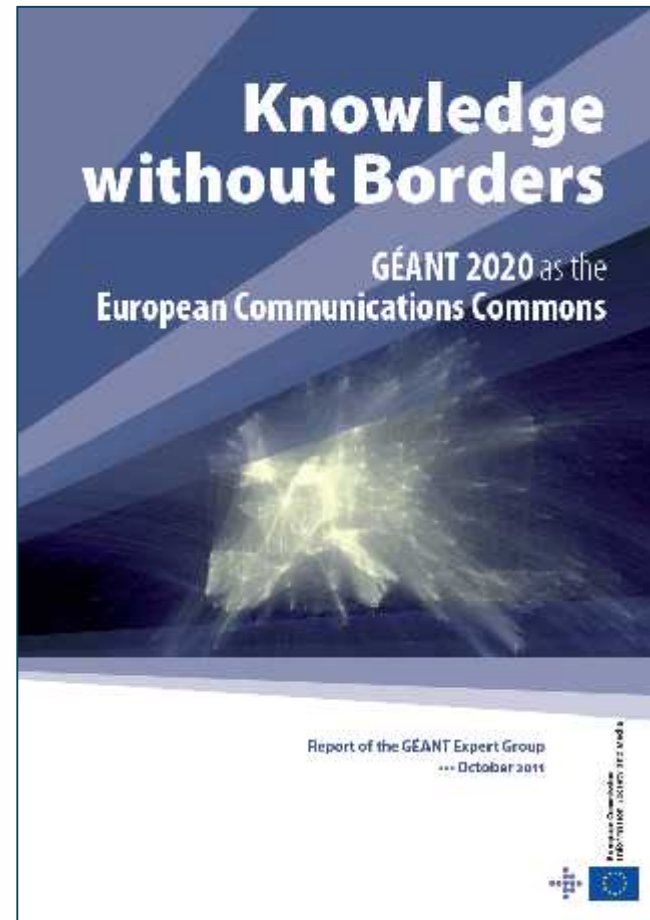
- The GÉANT organisational model has been highly successful (and scalable) within Europe and indeed also Globally.
- The federated model for GÉANT services is flexible and (globally) scalable
- The NREN cost-sharing model has delivered inclusivity and accessibility and will continue to evolve to keep pace with requirements
- Value for money is demonstrated over a decade by users' continued commitment to the REN system and GÉANT collaboration with and support to other e-Infrastructures
- EC pays a lot, the NRENS 10x more and the Campus 100x more. But the EC supports fit it all together.



Key Statement 2



- European NRENs are developing an e-Infrastructure commons to deliver the vision of the GÉANT Expert Group
 - Restructuring their collaboration to better address the challenges of a more data-driven, computation-intensive, research environment
 - Providing integrated, interoperable, multi-disciplinary e-Infrastructure support for European and global Research Infrastructures
 - GÉANT is an expert partner for large pan-European or global projects with significant data requirements



GÉANT; Stable and fundamental

GEG Group

Network: Long term Commitments



“NewOrg”

● Why?

- GÉANT Expert Group, ASPIRE study, e-JRC White Papers.
 - *need to integrate European-level infrastructure services*
 - *need to develop existing governance to enable this*
- NRENs' collective contribution: restructure DANTE & TERENA
 - *single organisation – more inclusive – wider remit*



... for & by members
(GÉANT etc ...)

... of major projects
(Horizon 2020 ...)

... amongst members
(building European skills)

... consensus building
(responsive to policy)

- Inclusive membership structure:

Voting members	national and representative e-infrastructure providers in public research or education
Associate members	any other organisation delivering or supporting public research or education

- compliant with EU regulations (e.g. procurement directives)
 - *controlled by those taking and/or providing e-infrastructure services to research and education*
- Involvement by European-level user organisations
 - build on national structures amongst membership
 - Governance with wider inclusion of international users.
- Capability of including e-infrastructure providers across disciplines
 - into the strategy ↔ innovation ↔ coordination ↔ services pipeline

Key Statement 3



- Networking requires long-term financial commitments to invest in infrastructure
 - The EC recognises that.
 - EC knows the benefits EC investment brings to R&E networking in Europe
 - GÉANT and the EC will enter into an FPA
 - *Framework Partnership Agreement*
 - *a long-term stable partnership (until March 2022)*
 - *between the EC and the GÉANT partners,*
 - *signalling the EC's commitment to GÉANT and its confidence in the partners to continue to deliver for Europe*



GÉANT; Stable and fundamental

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Network: Long term Commitments

e-Infrastructures Sustainability & business models

End

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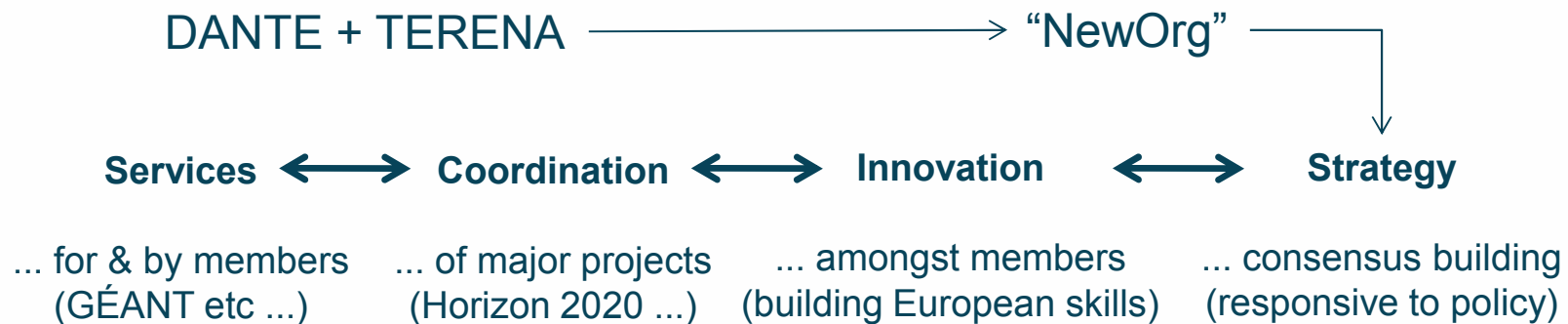


**Towards an e-infrastructure commons:
a new structure for European collaboration amongst NRENs**

April 2014

- Why?

- GÉANT Expert Group, ASPIRE study, e-IRG White Papers ...
 - *need to integrate European-level e-infrastructure services*
 - *need to develop existing governances to enable this*
- NRENs' collective contribution: restructure DANTE & TERENA
 - *single organisation – more inclusive – wider remit*



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- **Objectives**

- **ICRI 2014** offers a high level international forum where key stakeholders can meet, discuss and contribute to bringing forward global issues related to Research Infrastructures. Co-organised by the European Commission and the Greek EU Presidency of the European Union, it will take forward the recommendations of ICRI 2012, which took place in Denmark and the 3rd EU-Australia Research Infrastructure workshop that took place in Canberra in November 2013.
- The conference is expected to attract 600 international participants during three days and will include an exhibition of demonstrations and videos of international research infrastructure projects.

- **ICRI 2014** will:

- Highlight the essential role of global research infrastructures in addressing grand challenges at all scales: national, regional, continental and global;
- Reflect on the needs and challenges that arise during the development and operation of global research infrastructures at national, regional, continental and global level;
- Present the main characteristics of global research infrastructures and identify the challenges and drivers for collaboration at an international level.
- Take forward the recommendations of ICRI 2012.

- **e-Infrastructures Sustainability & business models (Banquet Hall)**
 - **Chair: Vasilis MAGLARIS,**
 - *Professor, National Technical University of Athens (NTUA), Greece*
 - **Rapporteur : Sandra COLLINS,**
 - *Director, Digital Repository of Ireland (DRI), Ireland*
- **Speakers**
 - **Dany VANDROMME,**
 - *Professor, National Institute of Applied Sciences (INSA) f Rouen, France*
 - **Niels HERSOUG,**
 - *General Manager/Chief Programme Ocer, Delivery of Advanced Network Technology to Europe (DANTE), United Kingdom*
 - **Satoshi MATSUOKA,**
 - *Professor of Computer Science, Tokyo Institute of Technology, Japan*
 - **Thierry VAN DER PYL,**
 - *Director "Excellence in Science", European Commission*
 - **Maryline LENGERT,**
 - *Senior Advisor, European Space Agency (ESA), Italy*
 - **Nick JONES,**
 - *Director, NZ eScience Infrastructure (NeSI), New Zealand*
 - **Catherine RIVIERE,**
 - *Chair of the PRACE Council and CEO of GENCI, France*

- GÉANT: Who Pays? GÉANT serves the research and education community which, for the foreseeable future, will continue to be funded, ultimately, by national public funds
 - GÉANT is only a fraction of the total R&E networking effort in Europe (100 campus, 10 national, 1 European)
 - Investment in GÉANT is shared with member states, and the EC funds half of the 1% of total European REN costs which GÉANT represents
 - Value for money is demonstrated by users' commitment to the REN system and GÉANT collaboration with and support to other e-Infrastructures (Ann Harding's point about AAI)
- How are GÉANT costs shared? The NREN Cost Sharing Model was established 20 years ago but has evolved considerably over this time and must continue to do so to remain sustainable
 - It manages to balance a number of elements
 - *The geographical difference in underlying connectivity costs*
 - *The services and capacity accessible*
 - *The NRENs ability to pay*
 - *Difference in users requirements and their location (eg Big data users)*
 - *The successful collaborative model helps overcome the digital divide and underpins the European Research Area*
 - *GÉANT is a true pan-European collaboration - a microcosm of the EU itself*
- Addressing the weakness of short-term grant funding: GÉANT and the EC will enter into an FPA (Framework Partnership Agreement), a long-term stable partnership
 - Networking requires long-term financial commitments to invest in infrastructure - incompatible with short-term grant funding
 - The EC recognises this shortcoming, and the benefits EC investment brings to R&E networking in Europe, and proposes the FPA as a solution
 - The FPA will be a long-term (until approx. March 2022), stable partnership between the EC and the GÉANT partners, signalling the EC's commitment to GÉANT and its confidence in the partners to continue to deliver for Europe

Panel subject and blurb: Sustainability of e-Infrastructures and Business Models



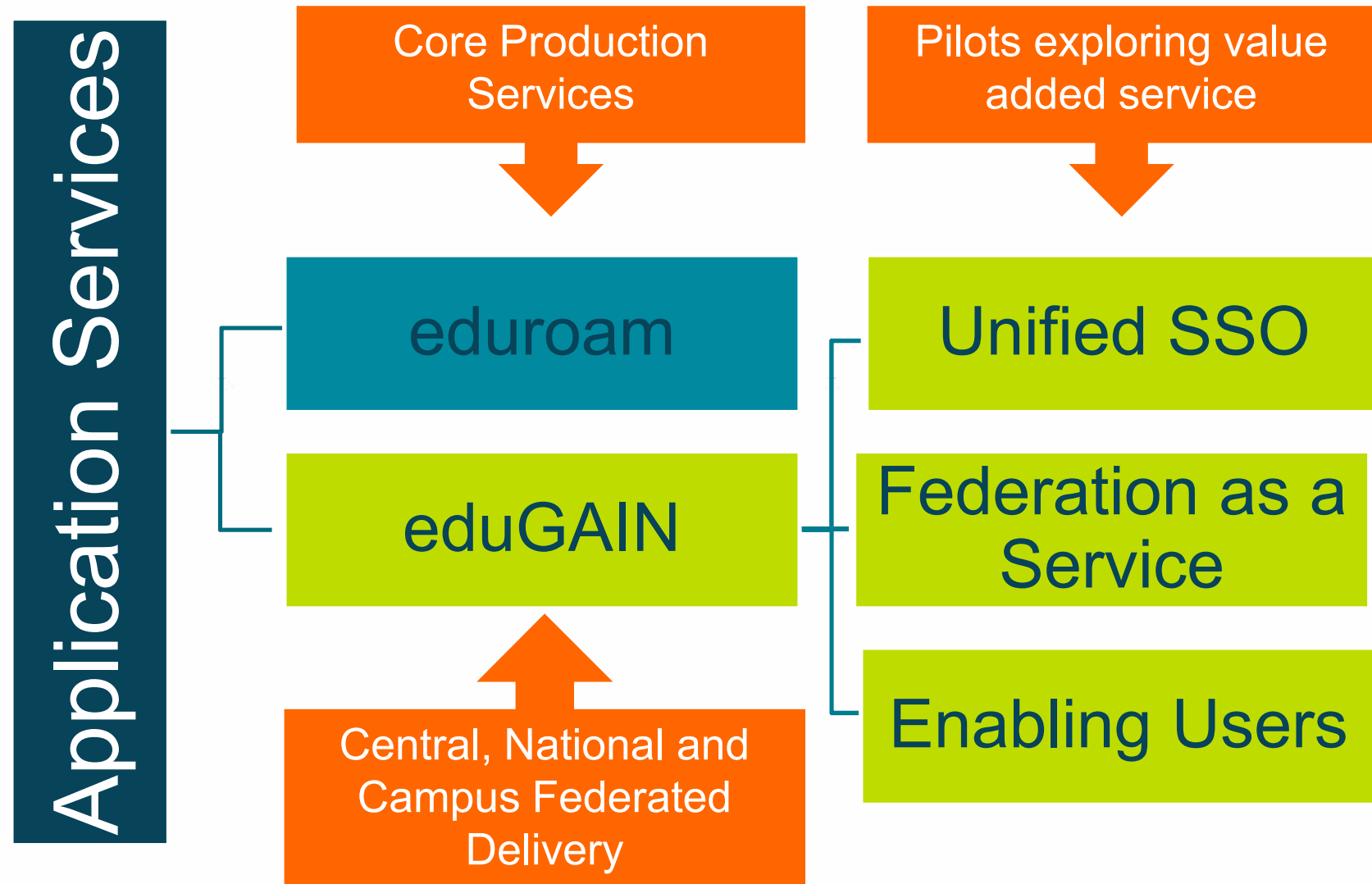
- Sustainability of e-Infrastructures and Business Models. You should read the full 2 paragraphs of blurb here: <http://www.icri2014.eu/sessions/parallel-session-e-infrastructures> for proper guidance.

- 1/
 - GÉANT is only a fraction of the total REN effort in Europe (100 campus, 10 national, 1 European)
- 2/
 - this investment is shared with MS and EC fund half of this 1%
- 3/
 - value for money is demonstrated by users commitment to the REN system
- 4/
 - EC investments have great benefits:
 - *Allow aggregation of demand and better price by procuring at European level (including cross-border connection and international connection)*
 - *Allows integration of national infrastructure towards common standards, architectures, priorities allowing better interoperability and continuity of the REN system*
 - *Cross-border infrastructures cannot be efficiently done at national level (principle of subsidiarity)*
 - *Overall it is a key ingredient for enabling the European Research Area policy*
- 5/
 - these benefits are acknowledged by the EC through its proposal to establish a FPA

- **Part 1: Sustainability and business models**
- · Gudmund HOST (NO)
- · Niels HERSOUG (DK)
- · Satoshi MATSUOKA (JP)
- · Thierry VAN DER PYL (EU)
- · Maryline LENGERT (ESA) (EU)
- · Nick JONES (NZ)

Federated Service Delivery

Delivering Identity and Trust



eduroam

Open your laptop and be online



GÉANT maintains and operates the eduroam European infrastructure

NRENs maintain and operate national infrastructure

Campus maintain and operate local access

GÉANT provides tools to reduce the overheads of operations

Highly scalable – 67 territories worldwide



eduGAIN – Interfederation

Connecting users and services safely



Continued operation
100+ % growth of the
eduGAIN service in
last 12 months

Global Engagement
(CEO Forum, ELCIRA)

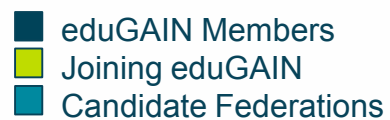


Federated delivery
model



Builds on existing
national and campus
infrastructure

GÉANT



Federation as a Service

Moving up the value chain



Market Analysis of NRENs who do not have identity (ID) federations and of other e-Infrastructures/Virtual Organisations

Develop needed policy and technical infrastructure for offering a “Federation as a Service” pilot from Q2 2014

Flexible, sustainable funding is a CSF

Support both NRENs and Research Communities, building on R&D results



Enabling Users for eduGAIN

Investing in our users to increase value

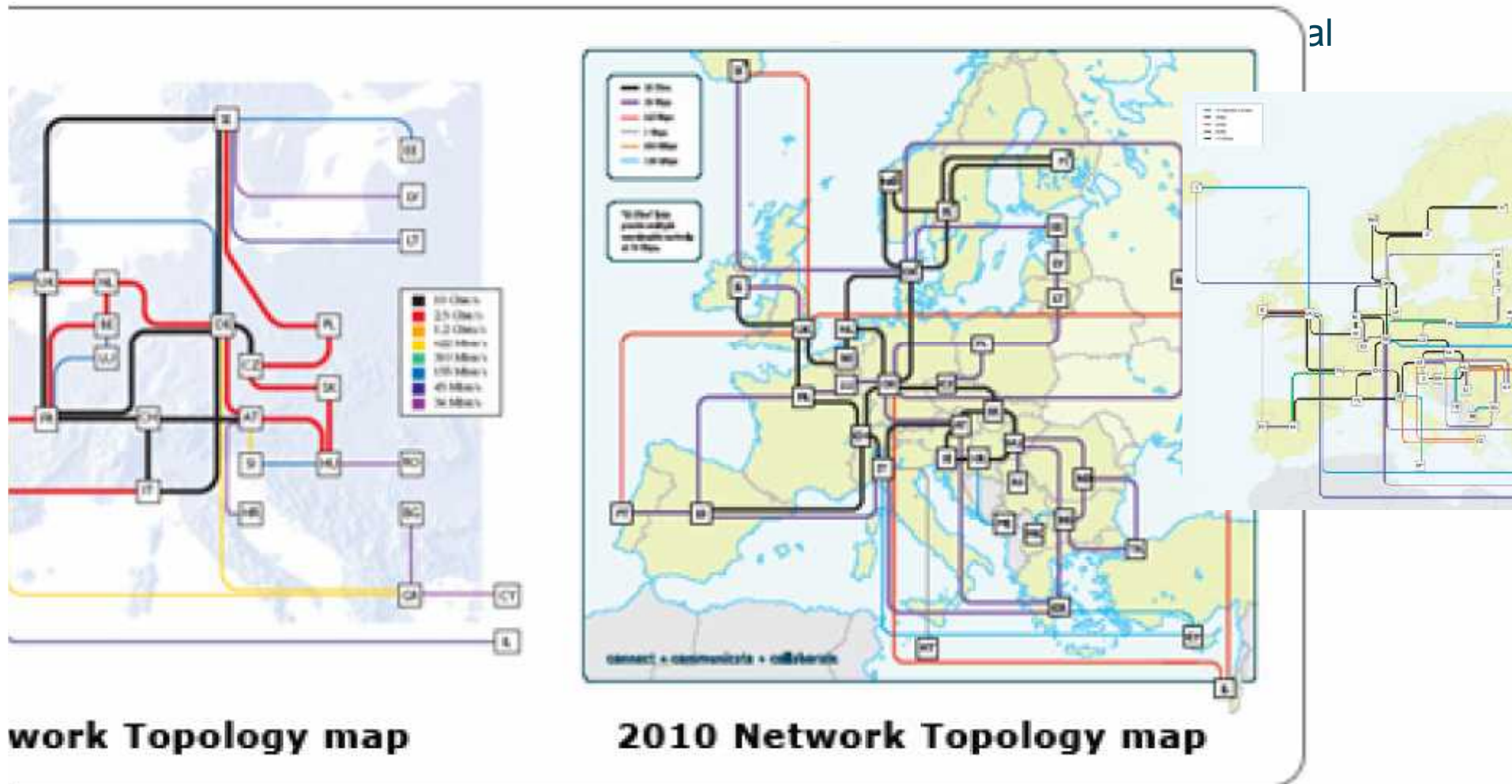


Collaborate with international user communities to increase usage of AAI infrastructure.

Act as an expert partner for large pan-European or global projects with AAI requirements.

Coordinate a set of two or three projects between GÉANT and user communities addressing their federated-identity concerns.

Key Statements



GÉANT; Stable and fundamental

GEG Group

Network: Long term Commitments



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 - The hierarchical GÉANT organisational model has been highly successful (and scalable) within Europe and indeed also Globally.
 - The federated model for GÉANT services is flexible and (globally) scalable
 - The NREN cost-sharing model has delivered inclusivity and accessibility and will continue to evolve to keep pace with requirements
 - Value for money is demonstrated over a decade by users' continued commitment to the REN system and GÉANT collaboration with and support to other e-Infrastructures
 - EC pays a lot, the NRENS 10x more and the Campus 100x more. But the EC supports fit it all together.
- European NRENS are developing an e-Infrastructure commons to deliver the vision of the GÉANT Expert Group
 - Restructuring their collaboration to better address the challenges of a more data-driven, computation-intense, research environment
 - Providing integrated, interoperable, multi-disciplinary e-Infrastructure support for European and global Research Infrastructures
 - GÉANT is an expert partner for large pan-European or global projects with significant data requirements
- Networking requires long-term financial commitments to invest in infrastructure
 - The EC recognises this shortcoming, and the benefits EC investment brings to R&E networking in Europe
 - GÉANT and the EC will enter into an FPA (Framework Partnership Agreement), a long-term (until approx. March 2022), stable partnership between the EC and the GÉANT partners, signalling the EC's commitment to GÉANT and its confidence in the partners to continue to deliver for Europe

Setting the Scene: The GEG report



- GÉANT shall support knowledge communities by providing world-class connectivity and services.
- GÉANT shall support the growth of these communities, in both breadth and depth within Europe, and open up to talent beyond Europe's borders.
- GÉANT shall push the state-of-the-art of the communications commons by constant innovation and by translating this innovation into a competitive European ICT sector.
- The GÉANT community shall reorganise to cope with the constantly changing environment.
- X

Satisfaction Survey

Scene / Goals

Plenary

Coffee

Over the Horizon pillars

Break out sessions

Plenary
presentations

Ordinary All Hands