GÉANT
ASSOCIATION

Networking • Services • People

LHCONE meeting Welcome

Cambridge Meeting 9-10 Feb 2015

Matthew Scott; General Manager GEANT Ltd; GÉANT Programme Manager

TERENA and DANTE have joined forces!

The leading collaboration on network and related infrastructure and services for the benefit of research and education, contributing to Europe's economic growth and competitiveness

A first website with basic information is at www.geant.org

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What is the GÉANT Association?

- One organisation comprising TERENA and DANTE staff, activities and ethos:

Networking. Services. People.

- We are owned by our core membership of:
  - 36 National Members (European NRENs)
  - 1 Representative Member (NORDUnet - on behalf of 5 Nordic NRENs)

- Associates also welcome:
  - including commercial organisations and multi-national research infrastructures and projects

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Current members

GÉANT
ASSOCIATION

GÉANT Association Membership

NATIONAL MEMBERS
1 per country

REPRESENTATIVE MEMBER
NORDUnet*

ASSOCIATES
ADVA Optical Networking
Alcatel-Lucent
CERN
Ciena Corporation
Cisco Systems
Coriant GmbH
*CSC (FI)
*DeIC (DK)
ECI Telecom GmbH
EMBL
ESA
Google UK Ltd
Huawei Technologies
Level 3 Communications
*RHnet (IS)
*SUNET (SE)
Tata Communications
Telefónica
*UNINETT (NO)

ICELAND*
FINLAND*
NORWAY*   SWEDEN*
ESTONIA
EENet / HITSA
LATVIA
SigmaNet
DENMARK*
LITHUANIA
LITNET
BELARUS
UIIP NASB
IRELAND
HEAnet
UNITED KINGDOM   NETHERLANDS
Janet   SURFnet
POLAND
PCSS
GERMANY
DFN
BELGIUM
Belnet
LUXEMBOURG
RESTENA
CZECH REPUBLIC
CESNET
SLOVAKIA
SANET
AUSTRIA
ACOnet
MOLDOVA
RENAM
FRANCE
RENATER
SWITZERLAND
SWITCH
HUNGARY
HUNGARNET
SLOVENIA
ARNES
ROMANIA
RoEduNet
CROATIA   SERBIA
CARNet   University of Belgrade
MONTENEGRO
MREN
BULGARIA
BREN
ITALY
GARR
ALBANIA   MACEDONIA
ANA   MARNet
PORTUGAL   SPAIN
FCCN   RED.ES
ARMENIA   AZERBAIJAN
ASNET-AM   ANAS
GREECE
GRNET
TURKEY
ULAKBİM
MALTA
University of Malta
CYPRUS
Cynet
ISRAEL
IUCC

Locations

Cambridge office – 80 people

Information currently on www.dante.net

Legally established in the UK

Amsterdam office – 20 people

Information currently on www.terena.org

Legally established in the Netherlands

What does the GÉANT Association do?
Physical networks

- Manage research & education networking projects

- Procure, build and operate large-scale, advanced international high-speed networks

  - GÉANT (Europe)

  - EUMEDCONNECT (Mediterranean)

  - AFRICACONNECT (currently S and E Africa but soon W and N Africa)

  - CAREN (Central Asia)

- Support and assist other regional projects

  - ORIENTplus (Europe-China collaboration)

  - RedCLARA (Latin America)

  - CKLN (Caribbean)

  - TEIN*CC (Asia-Pacific)

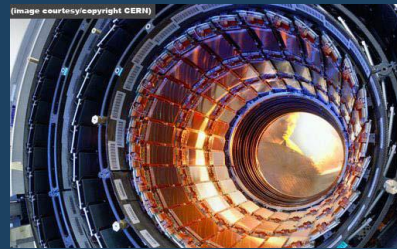# What does the GÉANT Association do?
Other Services

- Develop, operate and support innovative services relating to such areas as
  - Trust and identity,
  - Security and certification,
  - Mobility and access,
  - Flexible connectivity options and test bed facilities
  - Cloud Services and media and real-time communications
- Provide practical support for members, educators, researchers and other partners to collaborate, innovate, share knowledge and agree on policies and strategies

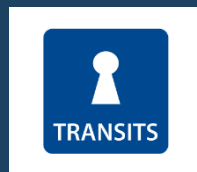# What does the GÉANT Association do?
Human networking

- Organise workshops, meetings and conferences, including TNC – Europe's largest networking conference for research and education

- Liaise with other e-infrastructure organisations, user communities, industry and the European Commission

What does GÉANT Association do?
People

- Provide expertise in <u>procurement</u>, <u>project management</u>, <u>community engagement</u>, <u>network operations</u>, and <u>outreach</u> including dissemination and training

- Mobilise and coordinate community expertise to achieve collaborative innovation and knowledge sharing

The EC Framework Partnership Agreement in Horizon 2020

- Framework Partnership programme; FPA
  - 7 year partnership programme between The European Commission and GÉANT
  - Consists of 3 x Special Grant Agreements (SGA)
    - Duration 1+3+3 years
  - EC Budget EUR 175mill; Total budget up to EUR 350 mill
  - Start May 2015

- FPA Actions
  - A: Drive the Evolution of the Network
  - B: Support the Knowledge Community
  - C: Provide Security, Trust and Identity
  - D: Deliver GÉANT's Collaborative Ecosystem
  - E: Develop the Human Capital of the GÉANT Partnership
  - F: Ensuring the Long-Term Future of the GÉANT Infrastructure

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- FPA Action A :
  - Continue to design, build and implement collaboratively-delivered, multi-domain services with appropriate Service Level Agreements (SLAs).
    - These services comprise any user-accessible, network capability that directly or indirectly supports digital data transport between users of the GÉANT network services and international collaborators.
  - Maintain its focus to develop and offer unique, very high-speed facilities in the network infrastructure to serve the intensive point-to-point data flows required by large international scientific endeavours.
  - Represent the common interests of the collective European NRENs internationally as coordinator and facilitator of inter-continental connectivity and inter-continental collaborations.
  - ¤

- FPA Action B :
  - The knowledge communities served by GÉANT are extremely diverse, including:
    - Big Science projects that involve a large amount of data generation and widespread scientific collaborations to process the data,
  - The long-term objective of the partnership is to offer all of these communities secure and trustworthy access from anywhere to the e-Infrastructure data sources and services relevant to their endeavours
    - including: publications, raw data, remote control of instruments, computing resources and databases, videoconferencing, etc. This objective of a digital continuum will be pursued in cooperation with the other European e-Infrastructure providers.
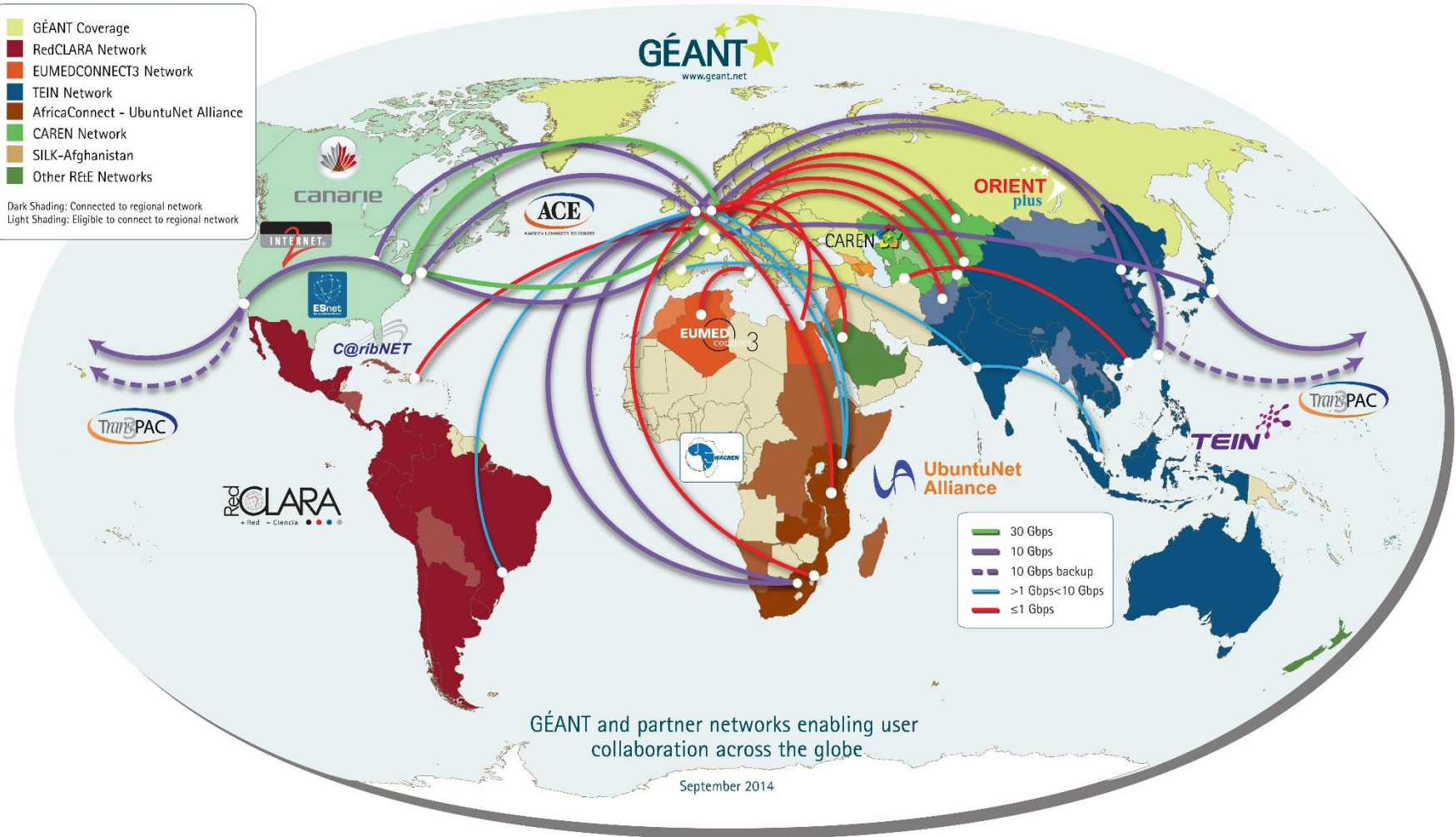   - ¤

- FPA Action D
  - Ongoing liaison with other e-Infrastructure suppliers for data repositories, computing services, important Research Infrastructure projects in Europe and beyond, in order to discuss and aim for:
    - A safe environment in which users have a wide choice of services, independent of geographical location.
  - Liaise and work with all relevant EC Directorates and large scientific projects using e-Infrastructures, in order to be aware of future requirements and adapt the development roadmap of the GÉANT infrastructure in good time.
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At the Heart of Global Research and Education Networking

GÉANT

GÉANT
www.geant.net

Legend:
- GÉANT Coverage
- RedCLARA Network
- EUMEDCONNECT3 Network
- TEIN Network
- AfricaConnect – UbuntuNet Alliance
- CAREN Network
- SILK–Afghanistan
- Other R&E Networks

Dark Shading: Connected to regional network
Light Shading: Eligible to connect to regional network

canarie

ACE
AMERICA CONNECTS TO EUROPE

INTERNET2

ESnet

C@ribNET

CAREN

ORIENT
plus

EUMEDconnect3

MAGREN

UbuntuNet
Alliance

TransPAC

RedCLARA
+ Red + Ciencia

TransPAC

TEIN

Legend (bandwidth):
- 30 Gbps
- 10 Gbps
- 10 Gbps backup
- >1 Gbps<10 Gbps
- ≤1 Gbps

GÉANT and partner networks enabling user
collaboration across the globe

September 2014

connect • communicate • collaborate

GÉANT is co-funded by the European Union within its 7th R&D Framework Programme.

GÉANT
www.geant.net

Co-funded by
the European Union

Global Connectivity Collaboration Partners

- In N America: Esnet, I2 and CANARIE
  - Shared focus on customer needs
  - Strong collaboration providing EEX European connectivity across GÉANT infrastructure
  - Well positioned to deliver seamless services across large geographical part of user base

- GÉANT has extensive relationships with other world regions
  - China
    - Just about to sign 10 year agreement with CERNET/CSNET
      - *Initially 10Gbps*
      - *First true joint procurement activity*
  - SE Asia (TEIN programme)
    - Working on implementation of LHCONE in Asia
  - Africa
    - EC co-funded AFRICACONNECT2 contract being prepared
    - Includes all Africa(Ubuntunet, WACREN and N African Nations
  - South America

Summary

- LHCONE is <u>very</u> important to GÉANT and its European NREN members
- Objectives:
  - Understanding AND Meeting LHC Research user needs across Europe and intercontinentally
  - Connecting to other world regions with an integrated and 'seamless' service
  - Highly burstable network capacity

- Supported by dedicated and experienced GÉANT and NREN staff

- Hope you enjoy the short visit to Cambridge - Have a productive and fruitful meeting!