2021 SEE USER FORUM

3-4 November 2021

GÉANT and NRENs

Key to enabling digital excellence

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Partner Relations Officer

As part of the GÉANT 2020 Framework Partnership Agreement (FPA), the project receives funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 856726 (GN4-3).

GÉANT & NRENs
Key to enabling digital excellence

WHY **WHAT** **HOW**

WHO: NREN, National Research and Education Network

GÉANT & NRENs: Key to enabling digital excellence

….WHAT is an “NREN”?

The organisation that operates the Research and Education (R&E) network nationally (*’’the R&E internet*’’) - and provides services unique to R&E communities.

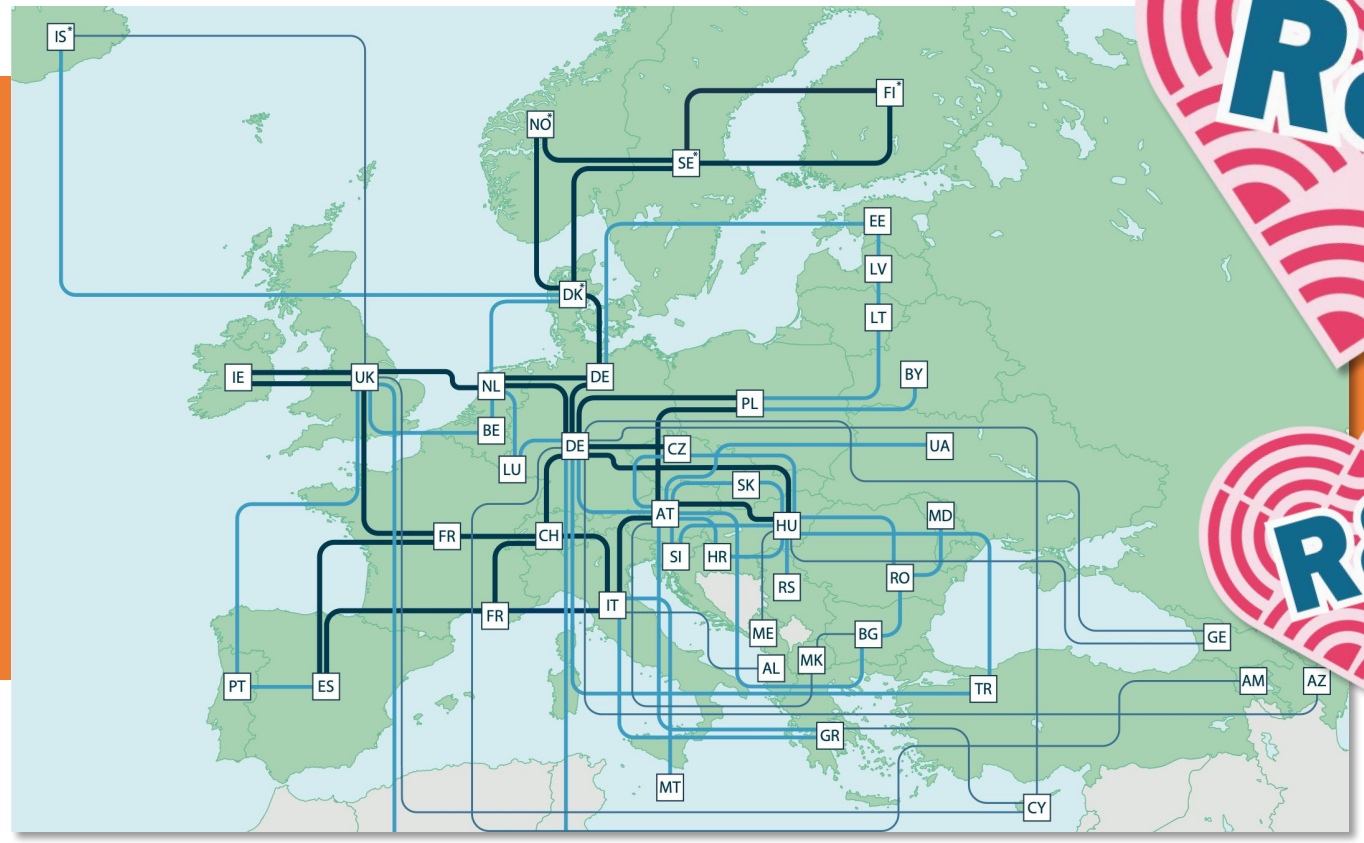
R&E Network: A high performance communications infrastructure with a set of bespoke services - owned and operated for, and by, the education and research community of a country

Format/set-up : a consortium of members, a dedicated agency, a company, an NGO, or other legal entity. Generally not-for-profit

www.geant.org/About/Membership/Pages/MAandGAreps.aspx

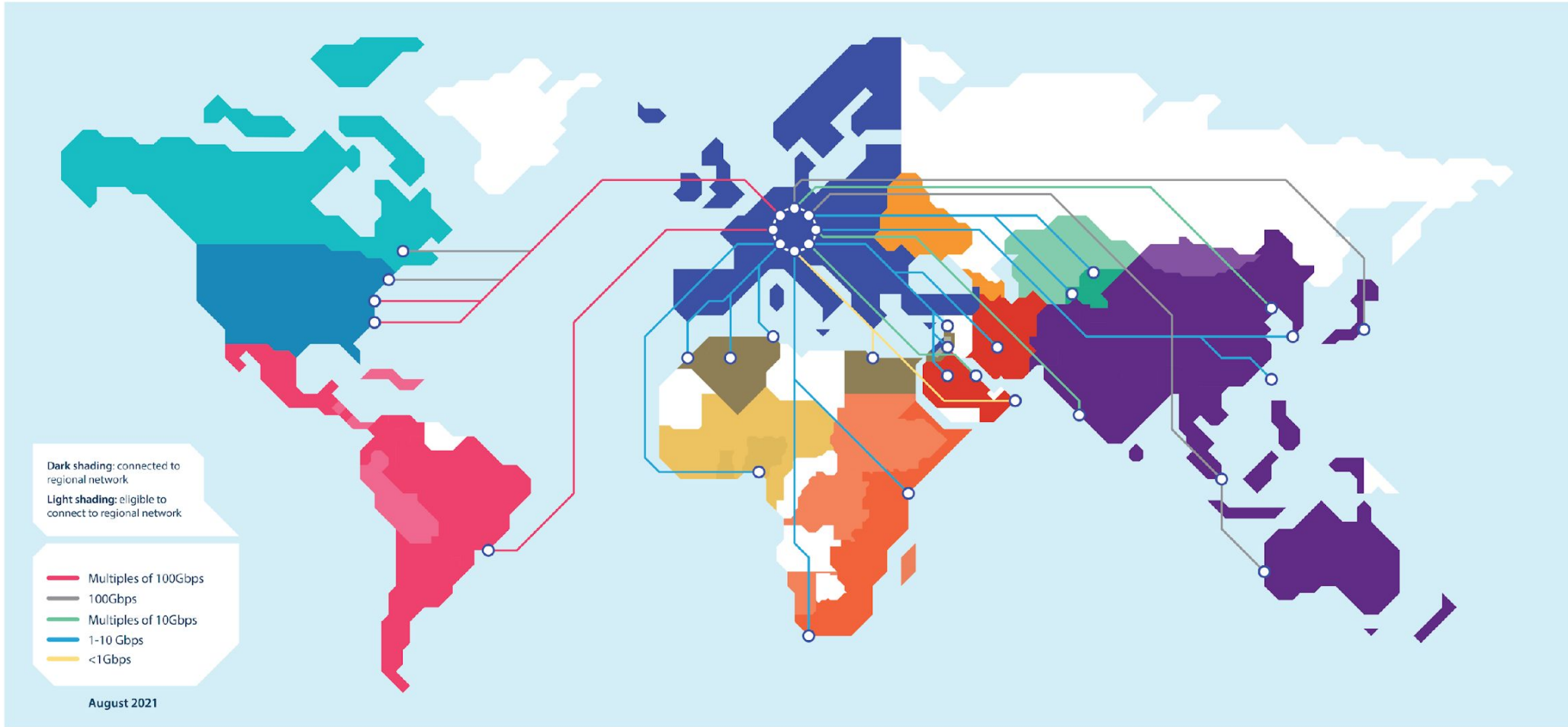
….WHY GÉANT does it

It is the only pan-EU + worldwide dedicated R&E infrastructure



AT THE HEART OF GLOBAL RESEARCH AND EDUCATION NETWORKING

GÉANT



Canada & USA

canarie ESnet INTERNET2

Latin America

RedCLARA

Europe

GÉANT EU4Digital EaPConnect

North Africa & Eastern Mediterranean

ASREN

West & Central Africa

Eastern & Southern Africa

UbuntuNet Alliance

Central Asia

CAREN

Asia-Pacific

TEIN

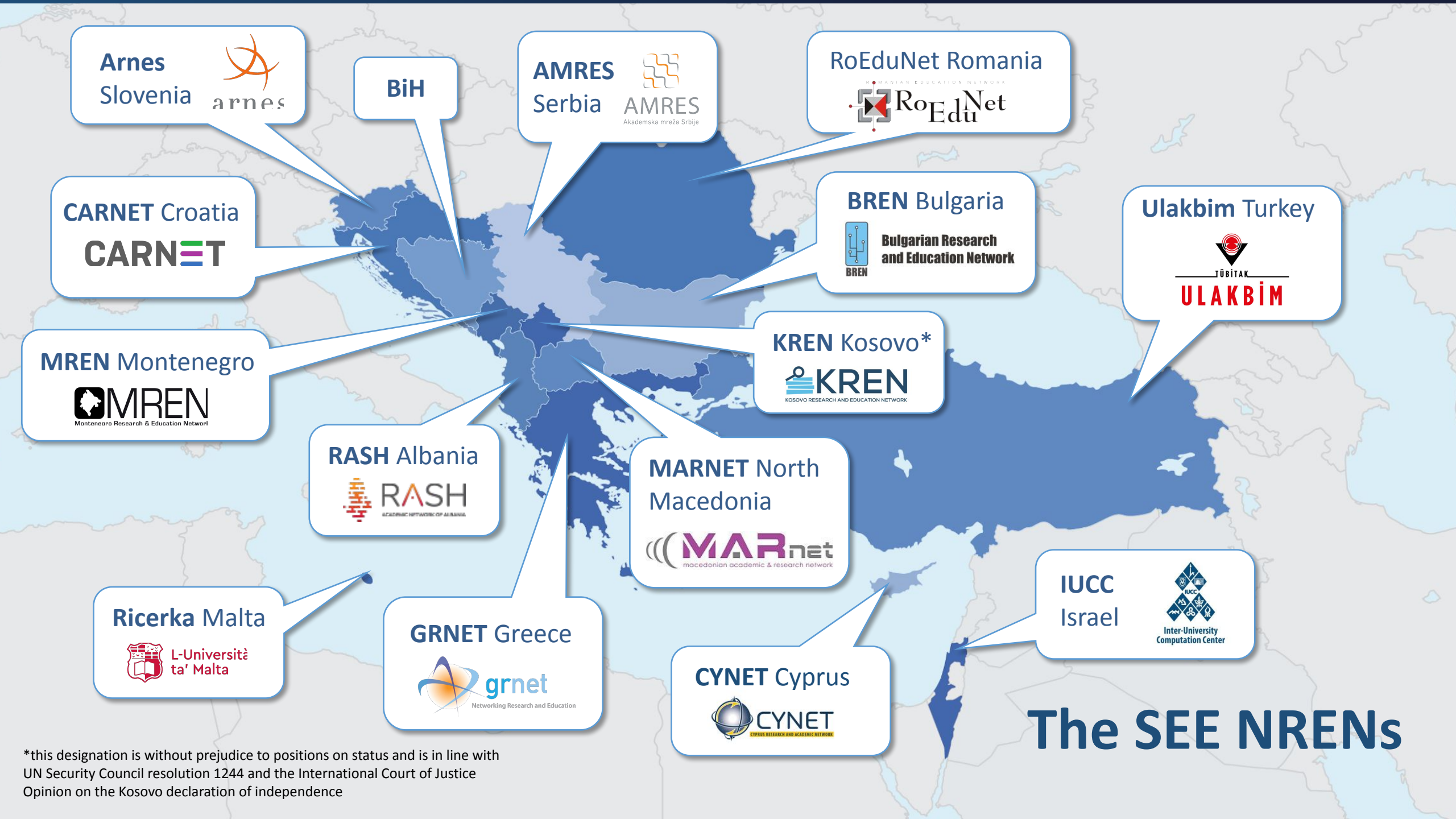
Other R&E Networks

Membership Association

GÉANT Association supports and represents over 40 NRENs across Europe

Together they support over 10,000 institutions and 50 million academic users.

NREN: National Research Education Network



*this designation is without prejudice to positions on status and is in line with UN Security Council resolution 1244 and the International Court of Justice Opinion on the Kosovo declaration of independence

Contact details for SEE NRENs

CARNET

RoEduNet

MREN
Montenegro Research & Education Network

BREN
Bulgarian Research and Education Network

RASH

TÜBİTAK ULAKBİM

MARnet
macedonian academic & research network

KREN
KOSOVO RESEARCH AND EDUCATION NETWORK

grnet
Networking Research and Education

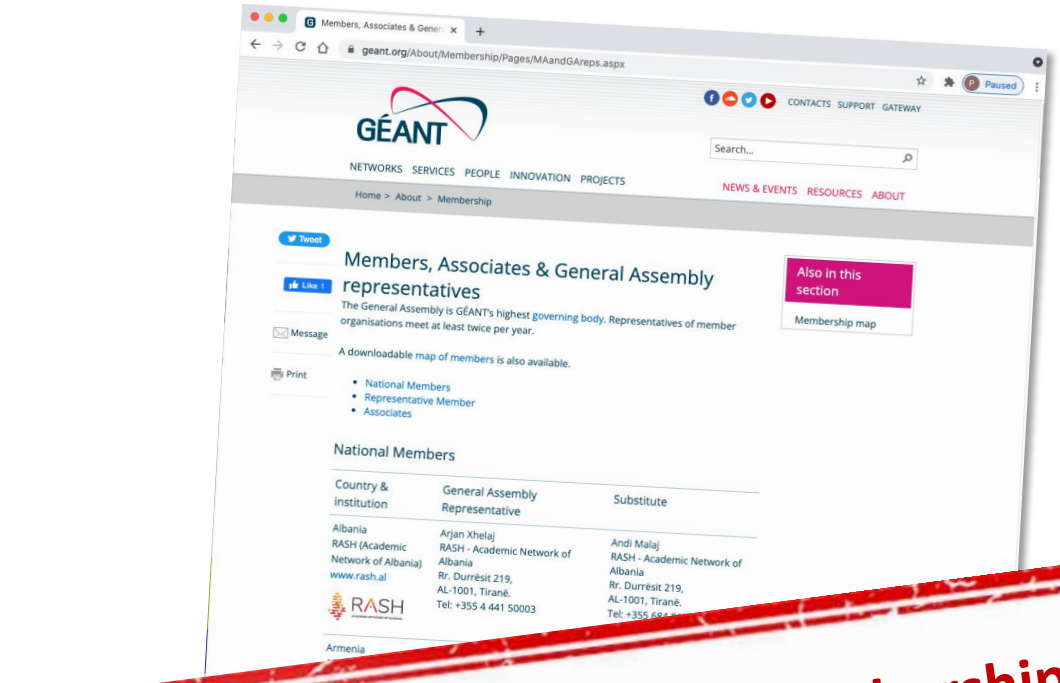
arnes

Inter-University Computation Center

L-Università ta' Malta

AMRES
Akademska mreža Srbije

CYNET
CYPRUS RESEARCH AND ACADEMIC NETWORK



www.geant.org/About/Membership/Pages/MAandGAreps.aspx

….HOW does GÉANT support R&E

Runs a membership association for Europe's National Research & Education Networks (NRENs)
GÉANT Association

Coordinates and participates in EC-funded projects
Under Horizon 2020 the financial instrument for implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness

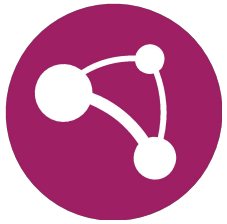
Operates a pan-European e-infrastructure
GÉANT network

Manages a portfolio of services for research & education
EduX

Organises and runs community events & working groups
TNC, task forces & special interest groups

….HOW does GÉANT support R&E

GÉANT develops the specialist services members need to support researchers, educators and innovators – at national, European and international levels.



Network centric services

Trust identity and security

Storage and clouds

Real-time communications

Professional services

….HOWs: Coordinates and participates in EC-funded projects

GÉANT

EUROPEAN OPEN SCIENCE CLOUD

eInfra Central

CAREN

UP2U

….HOW does GÉANT support R&E

Coordinates and participates in EC-funded projects (…GN4-3 project)

WP1 Project Management	WP2 Marcomms	WP3 Stakeholder engagement	WP4 Service development	WP5 T&I services evo & dev	WP6 Network tec & service dev	WP7 Net Core Infr & Core Service Evo & Ops	WP8 Security	WP9 Operations support
RoEduNet	CARNET	CARNET	CARNET	CARNET	CARNET	grnet	CARNET	CARNET
TÜBİTAK ULAKBİM	RASH	CYNET	CYNET	grnet	CYNET	MARnet	RASH	CYNET
Bulgarian Research and Education Network	Inter-University Computation Center	Inter-University Computation Center	grnet	MARnet	grnet	AMRES	MARnet	Inter-University Computation Center
CYNET	CYNET	MARnet	Inter-University Computation Center		RASH		arnes	MARnet
CARNET			MARnet		MARnet		AMRES	MREN
MREN			AMRES		AMRES			RASH
RASH								
MARnet								
grnet								
arnes								
L-Università ta' Malta								
AMRES								
Inter-University Computation Center								

….HOW does GÉANT support R&E

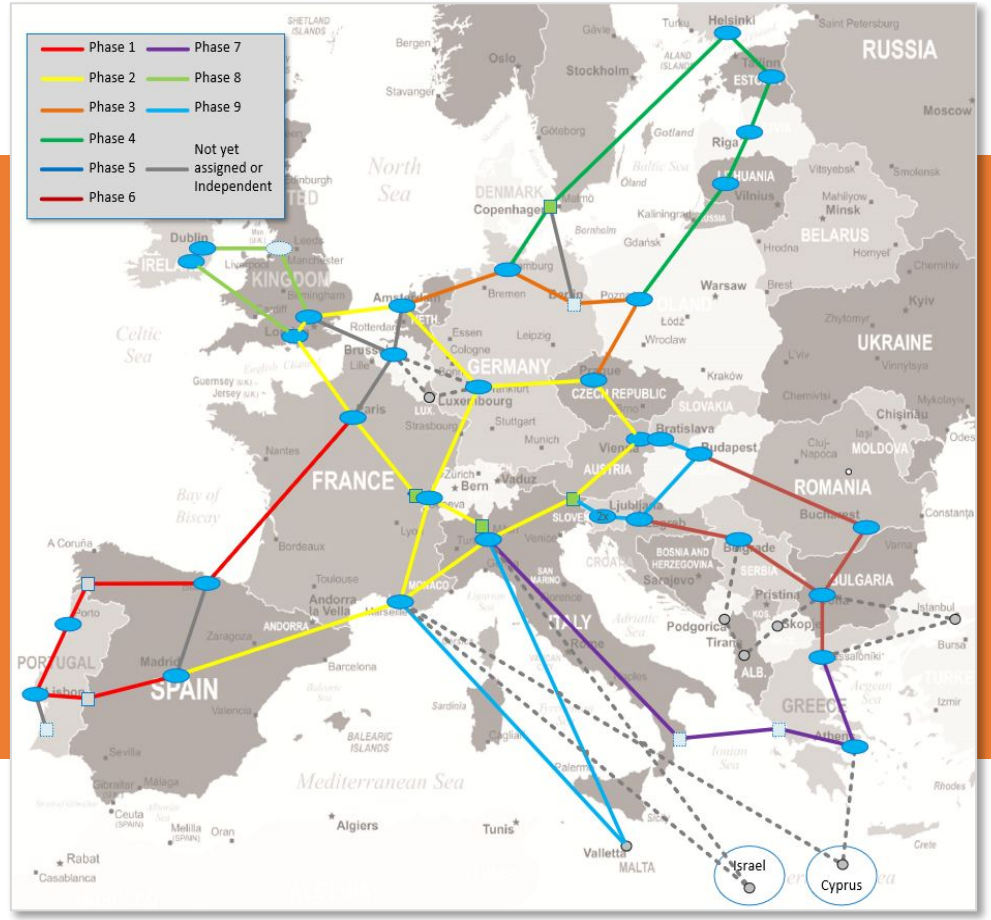
GÉANT network

Operates a pan-European e-infrastructure GÉANT network

EXASCALE NETWORKING

2 Exabytes* a year is already carried at high speed and low latency

* (That's 2 BILLION Gigabytes!)



….HOW does GÉANT support R&E
Scientific user groups liaison

Physical Sciences
Exploring the universe, e.g. SKA, JIVE, NEXPReS, LIGO-VIRGO and CERN, Neutrino observation (KM3NET)

e-Infrastructures
e.g. PRACE, EGI, EUDAT, EOSC-hub, HelixNebula)

Health and Food
Pharmaceutical research, e.g. EMBL-EBI, Human Brain Project

Earth and Environmental Sciences
Earth observation, climate monitoring, sustainable development, e.g. EUMETSAT, Copernicus, ESA, Group on Earth Observation, WMO

Social Sciences
Music, art, language, e.g. CLARIN, ASTRA, LoLa

Energy
Nuclear power, fusion energy research, e.g. ITER

….HOW does GÉANT support R&E

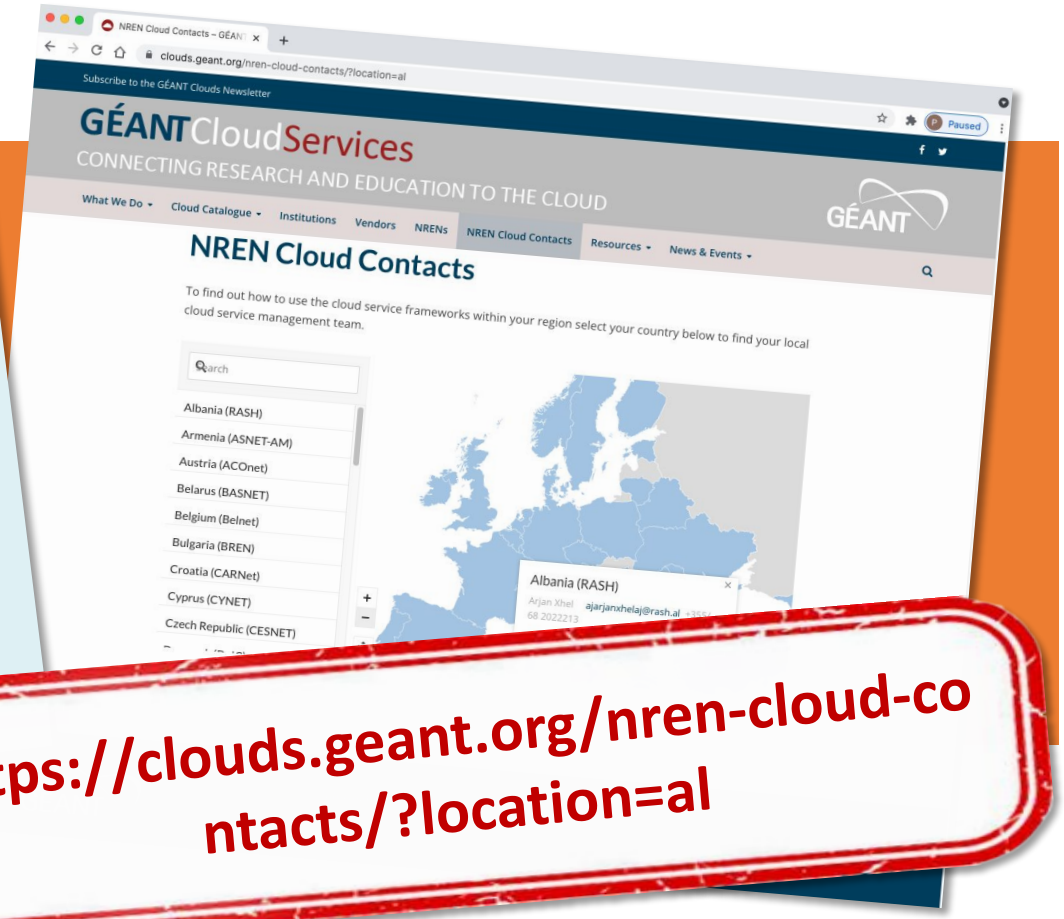
REALTIME COMMUNICATION

FILE STORAGE AND SYNC

E-LEARNING AND EDUCATION

CLOUD SERVICES

Europe-wide procurement frameworks for tailored, market leading cloud offerings



https://clouds.geant.org/nren-cloud-contacts/?location=al

eduMEET: one of the many GÉANT edu services

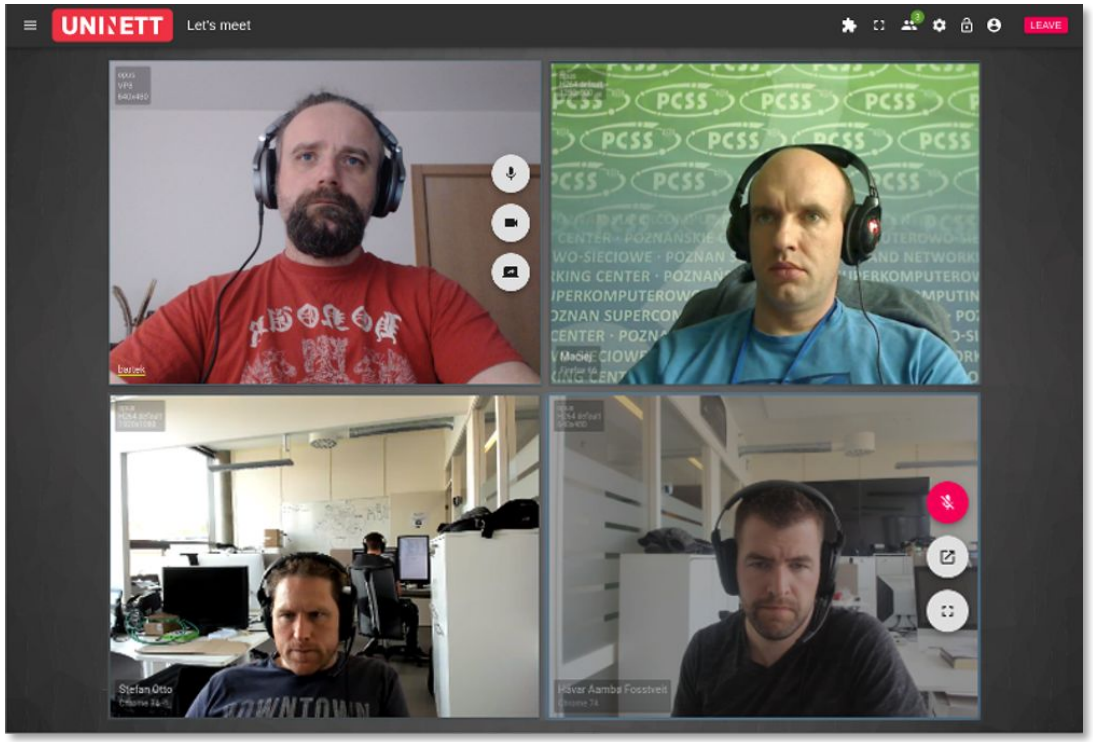
eduMEET entered the Pilot in October 2019.

Production Transition Gate Review in Autumn 2020

eduMEET **significant development and installations during COVID-19 pandemic.**

Interest all over the world (including Moodle)

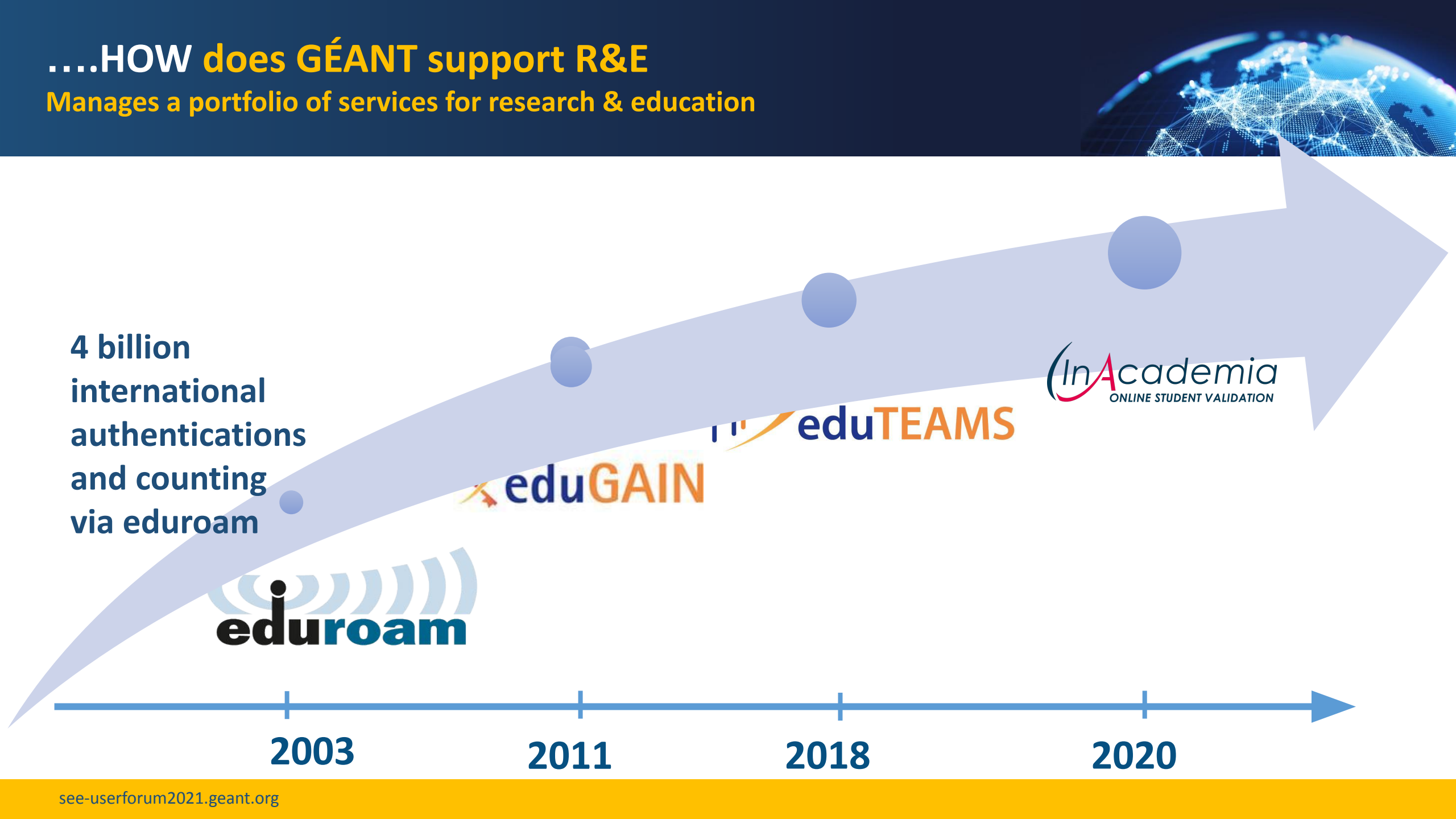
Community of developers established



eduMEET

….HOW does GÉANT support R&E

Manages a portfolio of services for research & education



eduX Main Areas

European Research Infrastructures

EOSC-Life

panosc
photon and neutron open science cloud

SSHOC
social sciences & humanities open cloud

EUROfusion

DestinationE

EUROPEAN OPEN SCIENCE CLOUD

High Performance Computing

FENIX
RESEARCH INFRASTRUCTURE

LUMI

PRACE

EuroHPC
Joint Undertaking

Student Mobility

erasmus without paper

OLA
online learning agreement

Erasmus+

Examples of NREN services for end-users

- Security: spam screening, anti-spoofing measures, anti DDOS
- e-mail service for all members, faculty, and students
- Videoconferencing, recording, streaming
- Hosting higher education management information systems
- Managing learning management systems e.g. Moodle
- Access to Digital Library sources and electronic journals
- Web hosting and data storage and archives
- Multimedia content repository
- Connect e-science resources such as telescopes, sensor networks, accelerators, supercomputers
- Cloud services
- And many more….

….HOW does GÉANT support R&E

Organises and runs community events & working groups
TNC, task forces & special interest groups

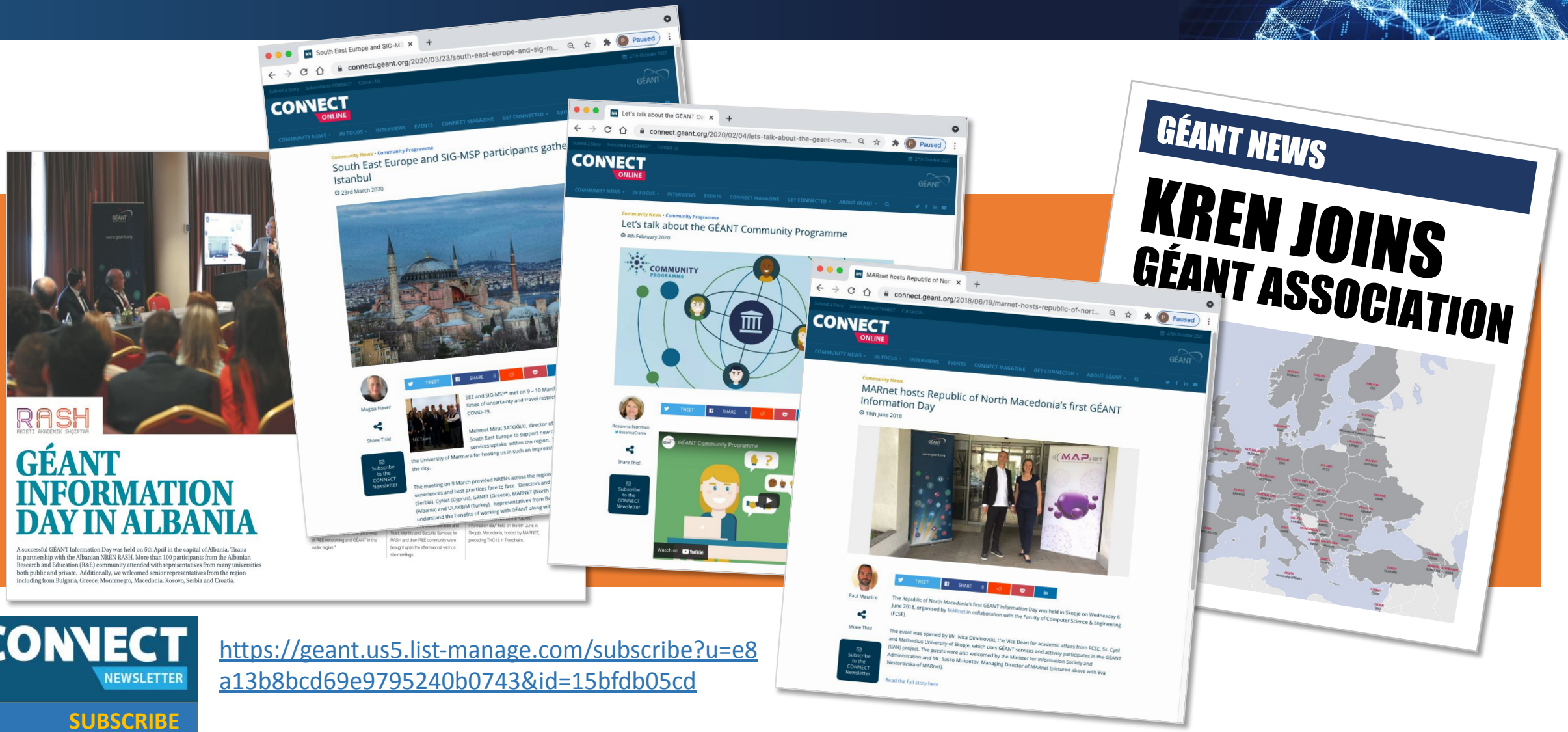
Community collaboration: groups & events

Community Programme

Community Conference

https://events.geant.org

GÉANT SEE NEWS



CONNECT NEWSLETTER

SUBSCRIBE

https://geant.us5.list-manage.com/subscribe?u=e8a13b8bcd69e9795240b0743&id=15bfdb05cd

An on-going collaboration : SEE Directors Forum

1. Overcome network gap
2. Harmonize regional infrastructure
3. Bridge the digital divide

ongoing collaboration – ongoing value

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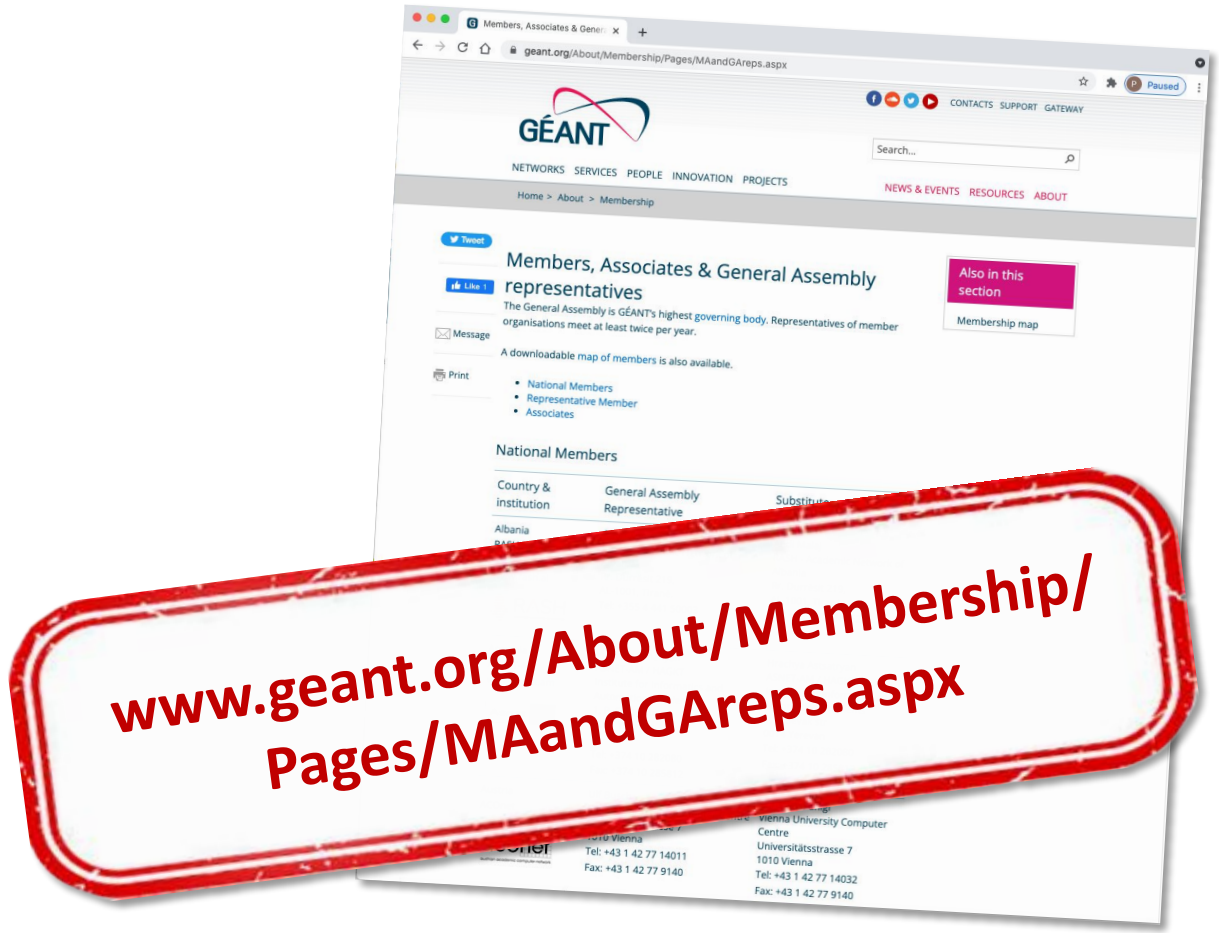

Thank you

Any questions?

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