



A European Digital Educational Infrastructure

Gyöngyi Horváth
Project Manager Trust & Identity

SUNETDAGARNA
2024



To support collaboration and development amongst researchers, the dissemination of information & knowledge, and provide access to a portfolio of services and infrastructure resources:



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



GEANT Membership



Research & Education Networks

- NREN stands for National **R**esearch & **E**ducation Network
- Globally the REN connectivity is very complex and hard to understand
- Network
 - 10/40/100/400G Backbones
 - Uncongested Networks
 - Low latency terrestrial fiber
 - Open, no filtering
- Trust Layer
 - Trust & Identity
 - Security
- Other services
 - Real Time Conferencing
 - Cloud Services
 - Procurement
 - Professional services
 - Development work

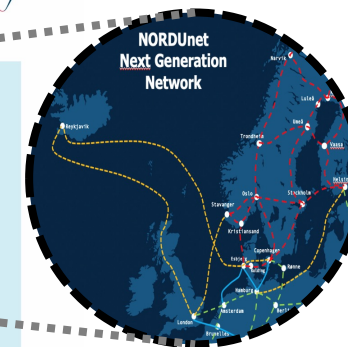
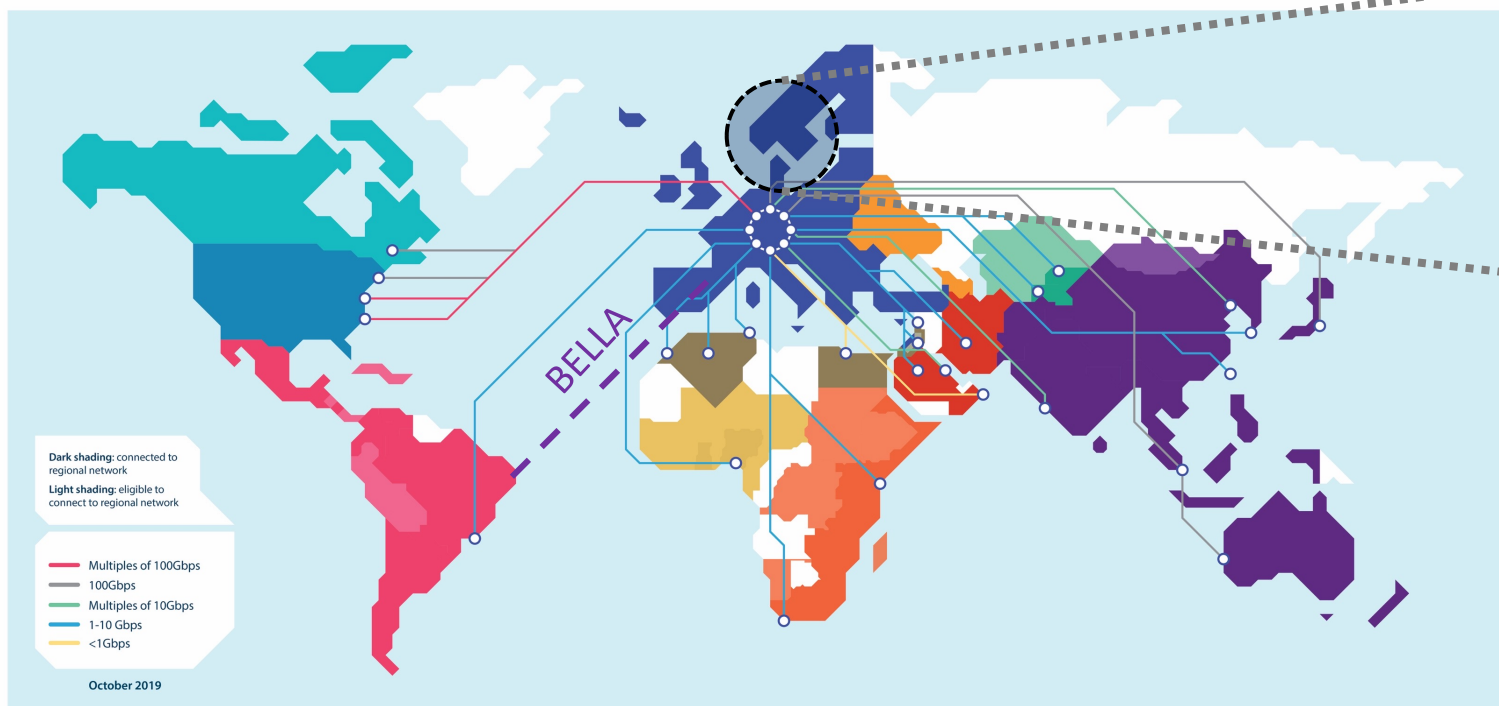


International Connectivity



This map is produced as part of the GÉANT Specific Grant Agreement GN4-3 (No. 856726), that has received funding from the European Union's 2020 research and innovation programme under the GÉANT2020 Framework Partnership Agreement (No. 653998). The content of this document is the sole responsibility of GÉANT and can under no circumstances be regarded as reflecting the position of the European Union.

AT THE HEART OF GLOBAL RESEARCH AND EDUCATION NETWORKING



Canada & USA Latin America Europe North Africa & Eastern Mediterranean West & Central Africa Eastern & Southern Africa Central Asia Asia-Pacific Other R&E Networks



This map is produced as part of the GÉANT Specific Grant Agreement GN4-3 (No. 856726), that has received funding from the European Union's 2020 research and innovation programme under the GÉANT2020 Framework Partnership Agreement (No. 653998). The content of this document is the sole responsibility of GÉANT and can under no circumstances be regarded as reflecting the position of the European Union.

geant.org





Projects and activities

GEANT is a trusted European Commission (EC) partner in many global collaboration activities and initiatives through our special relationship with the European Union.



European
e-infrastructure
activities



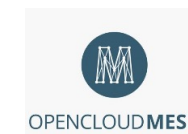
Trust & identity
activities



Network
activities



Collaborative
activities



GÉANT

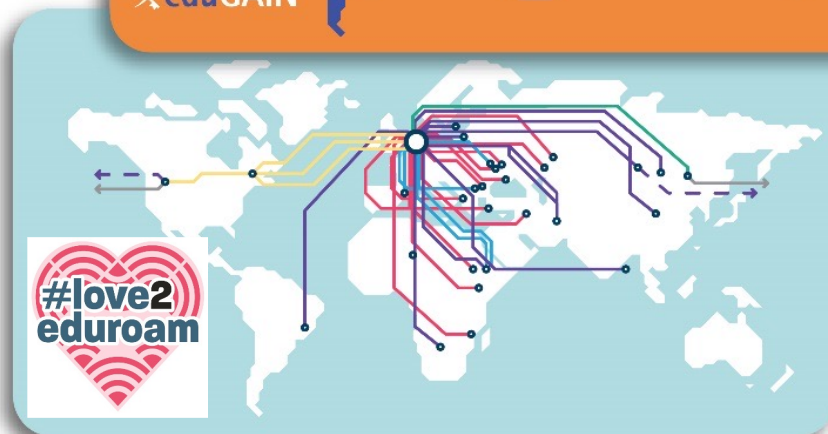
Collaborate



Identify

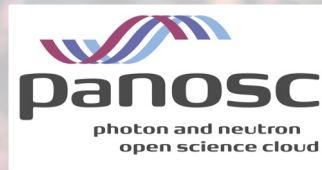


Connect



Main Strategic Areas

European Research Infrastructures



DestinationE



EUROPEAN OPEN SCIENCE CLOUD

High Performance Computing



LUMI



Student (Mobility)



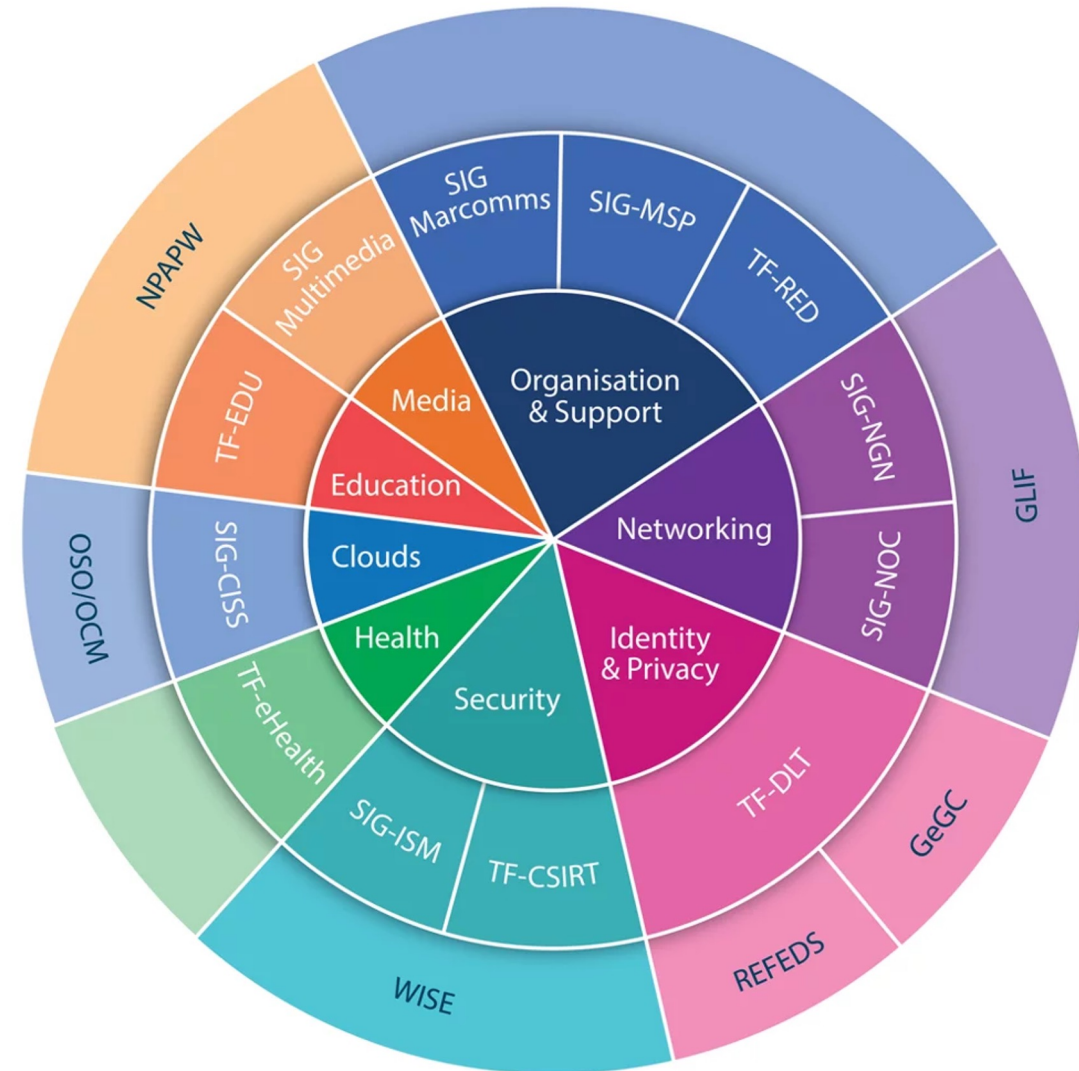
Erasmus+



Community Collaboration

- Community Programme:
 - Task Forces and Special Interest Groups
 - Workshops & trainings
 - Collaborative projects and services

- Innovation Programme



*tnc*24

Rennes, France | **10-14 JUNE 2024**

TNC, the largest and most prestigious research and education networking conference, attracts a diverse audience of over 800 participants from more than 70 countries and offers a unique collaborative experience.



Co-funded by
the European Union

Task Force – Education (TF-EDU)

Objective

The task force aims to support the NRENs and the GÉANT community with special focus on digitalization of education on a strategic level.

Stakeholders

Members of the Task Force include NREN representatives responsible for the educational services and activities, educational institution representatives from all levels of education, commercial partners, government representatives.



TF-EDU Key focus areas

High level strategic areas

- Developing new, long-term strategies for education

Technical focus areas:

- Federated services
- Data handling
- Educational resources (OER), tools and methodologies

Community engagement

TF EDU surveys 2019-2023

Edu services =

- services for teaching and learning
- services for administration of education institutions



Digital Learning Environment

Student Management Systems

Online, blended and remote delivery of education

Providing e-Content

Video Conferencing

Trust&Identity

Open badges, digital credentials

Inhouse built tools by your NREN for digital learning

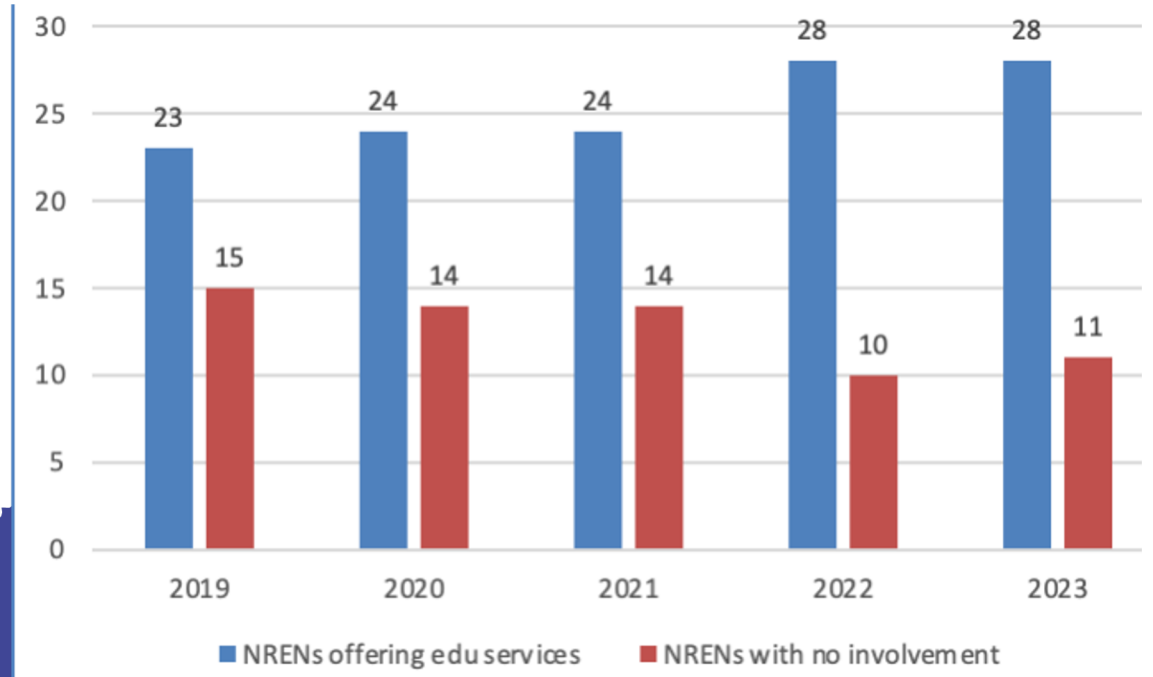
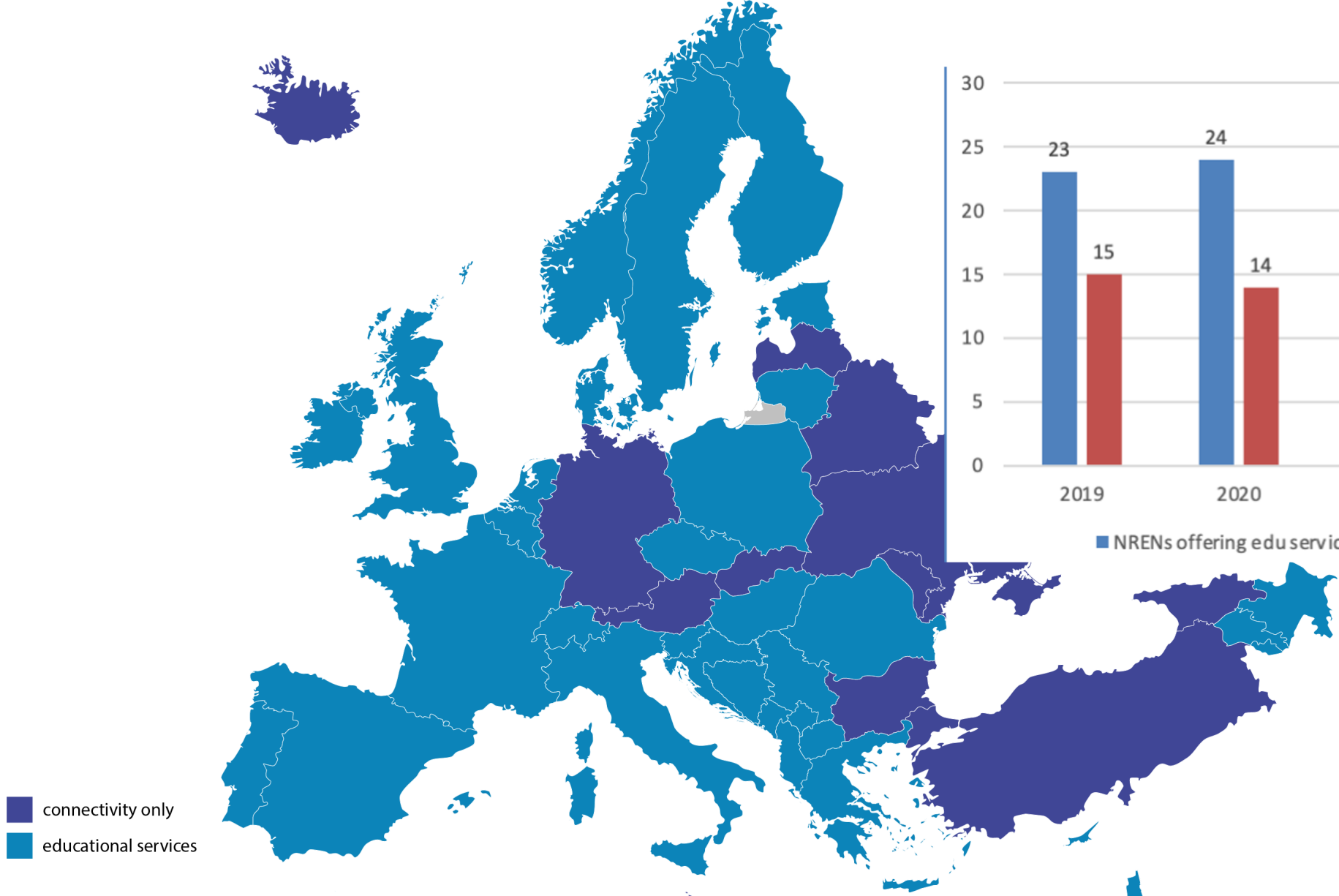
Educational Data mining and Analytics

Learning Analytics

Digital assessment and testing

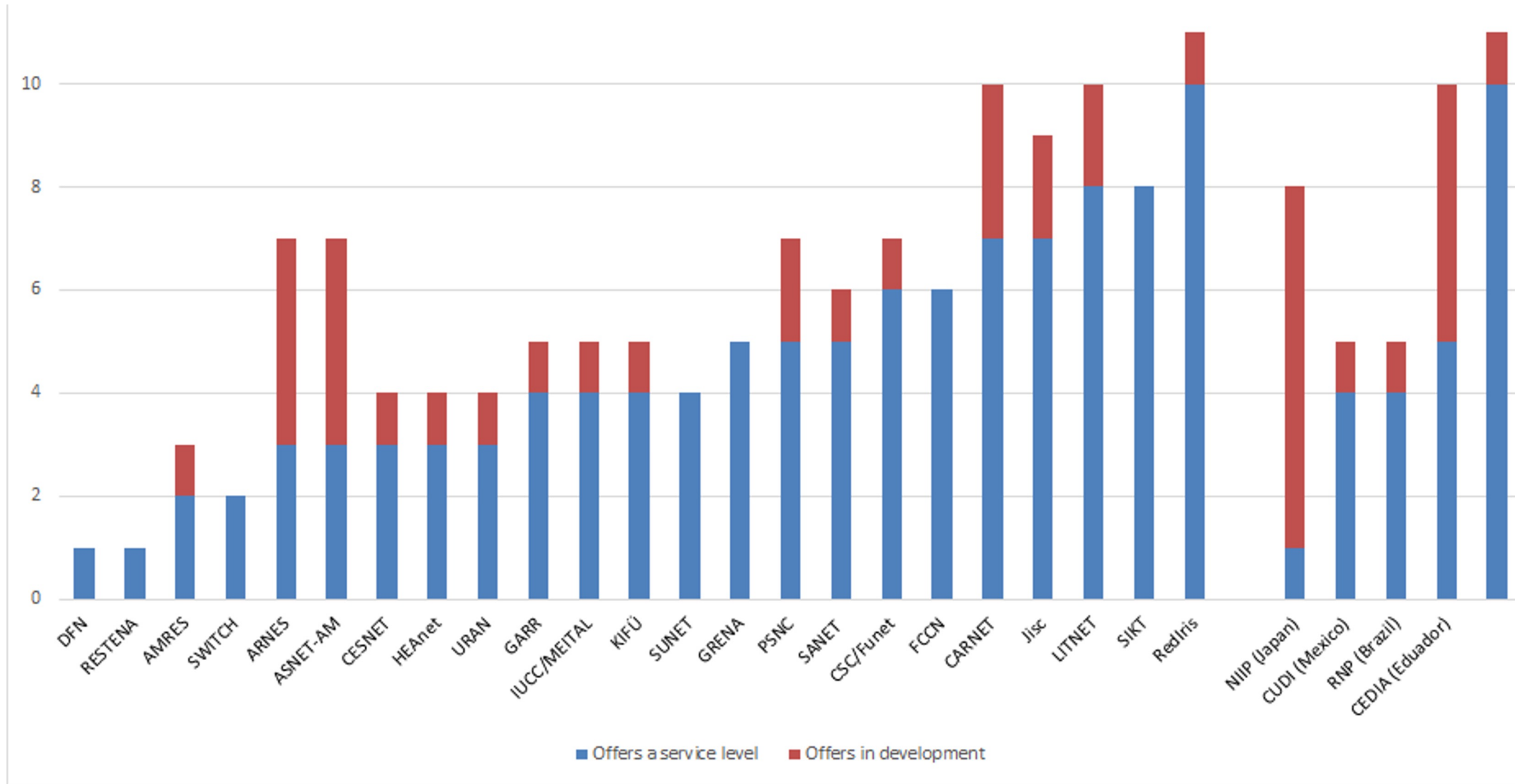
Support for offshore students

European NREN educational services

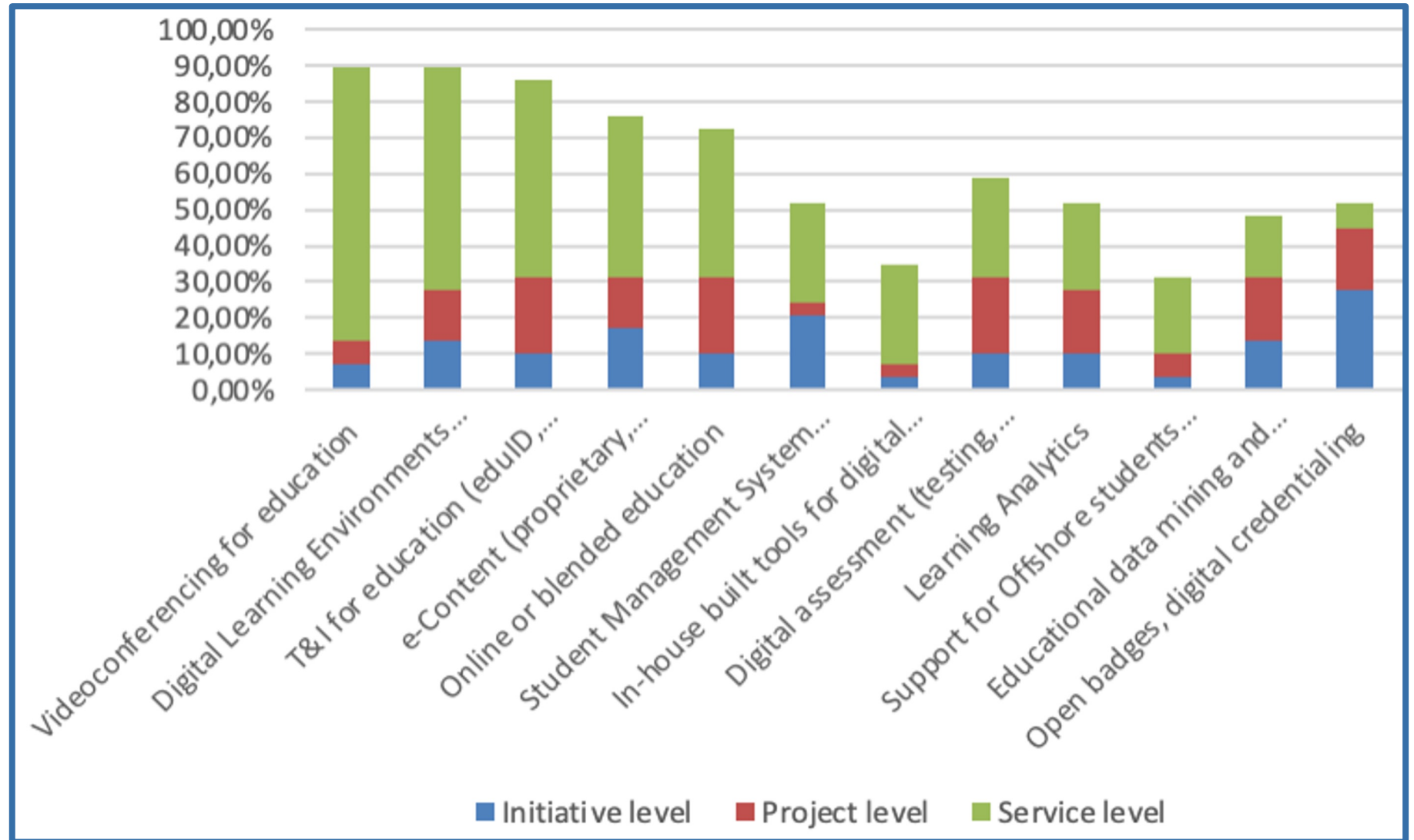


■ connectivity only
■ educational services

Number of edu services provided / development / NREN



Edu services maturity level



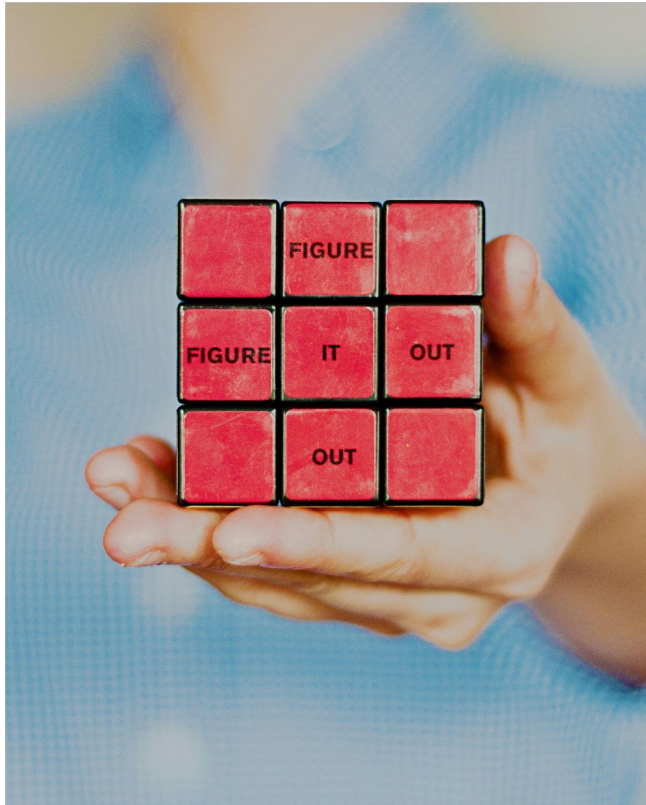
Data source: TF-EDU survey 2023.
Graph: Jasna Tingle

Trends

- High demand:
 - LMS
 - Video services
- Increased importance:
 - Authentication and authorisation services for education
 - Interoperability and standardization
- Service offerings:
 - Procurement
 - in-house developed services
 - development in project partnership

Ambitions & Challenges

- Knowledge sharing:
 - Procurement
 - Overview of tools and services



- Country situation
 - NRENs' mandate varies
 - Business models
 - Legal situation
 - Resources
- Interoperability
 - Individual / national developments – interoperability, standardization
- Procurement
- Transferability

Stepping up collaboration

- NRENs and universities have a strong tradition of collaboration.
- Europe has shown its strength in collaboration and joint agreements.
- The European educational sector proved to be able to set a common agenda.
- Now it's time!



Student mobility

eduID / lifelong learning

T&I services (InAcademia / MyAcademicID)

Federated educational resources

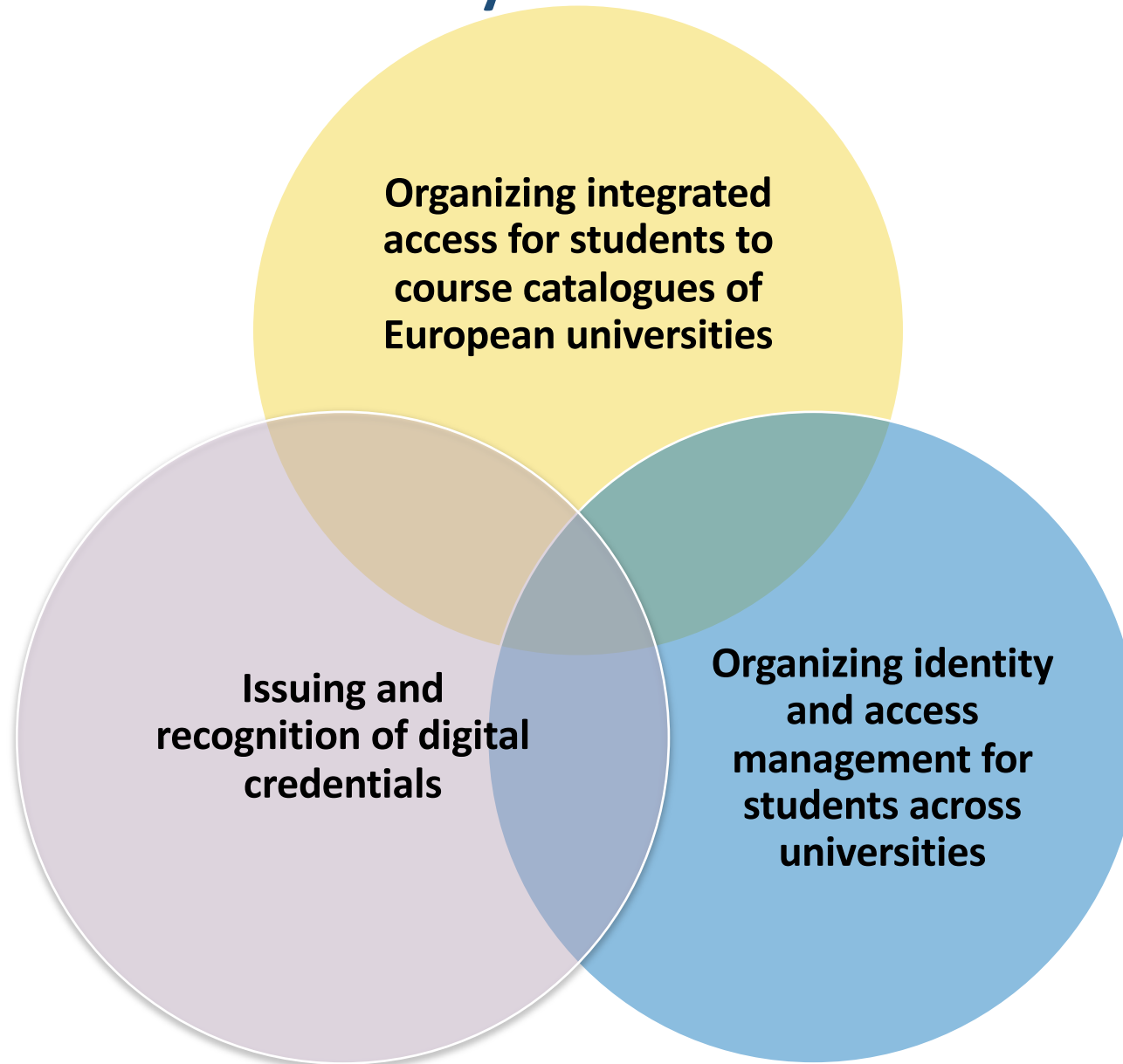
Interoperability for European Student card

Microcredentials

eduroam & eduGAIN



Top 3 challenges student mobility







Trust & Identity and Security

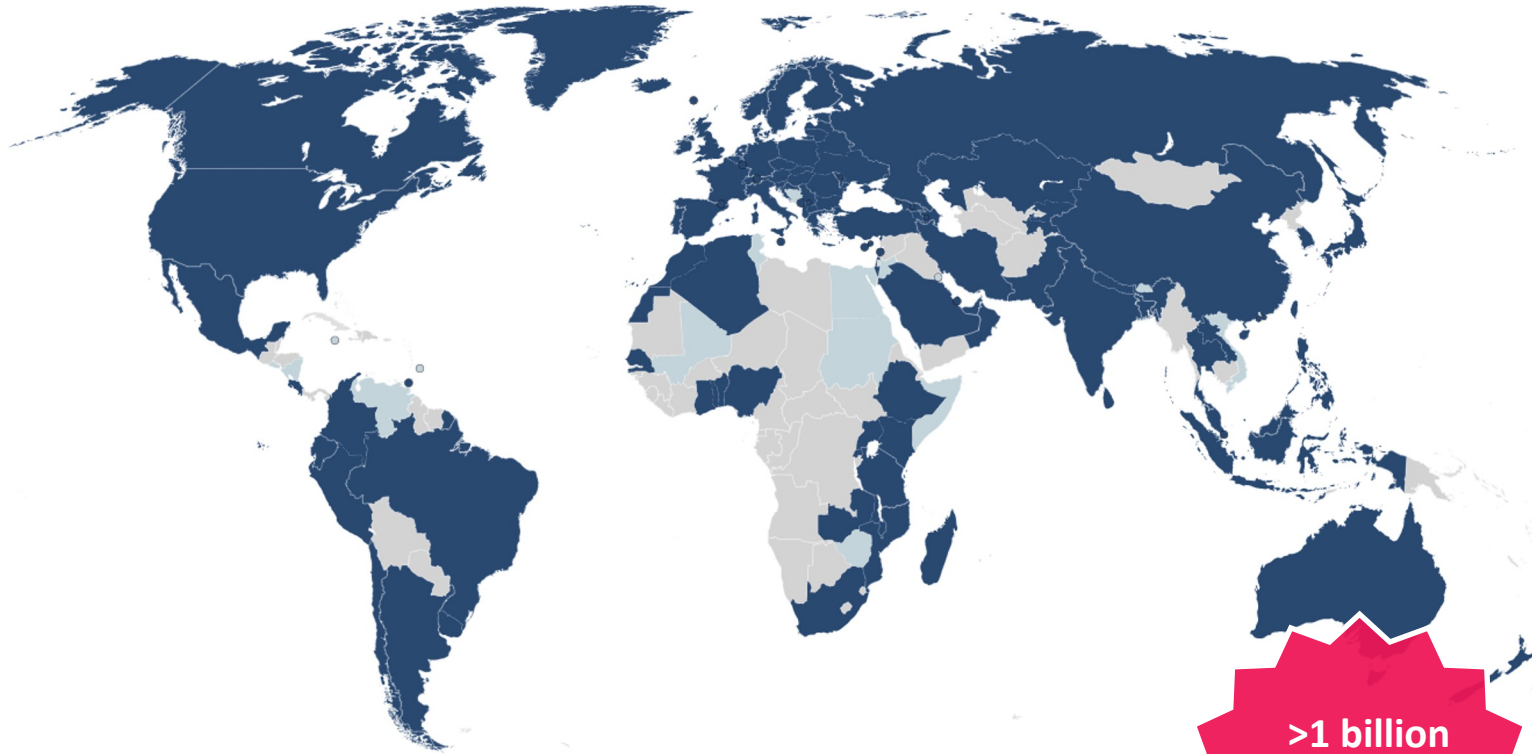


6 Territories
eduroam

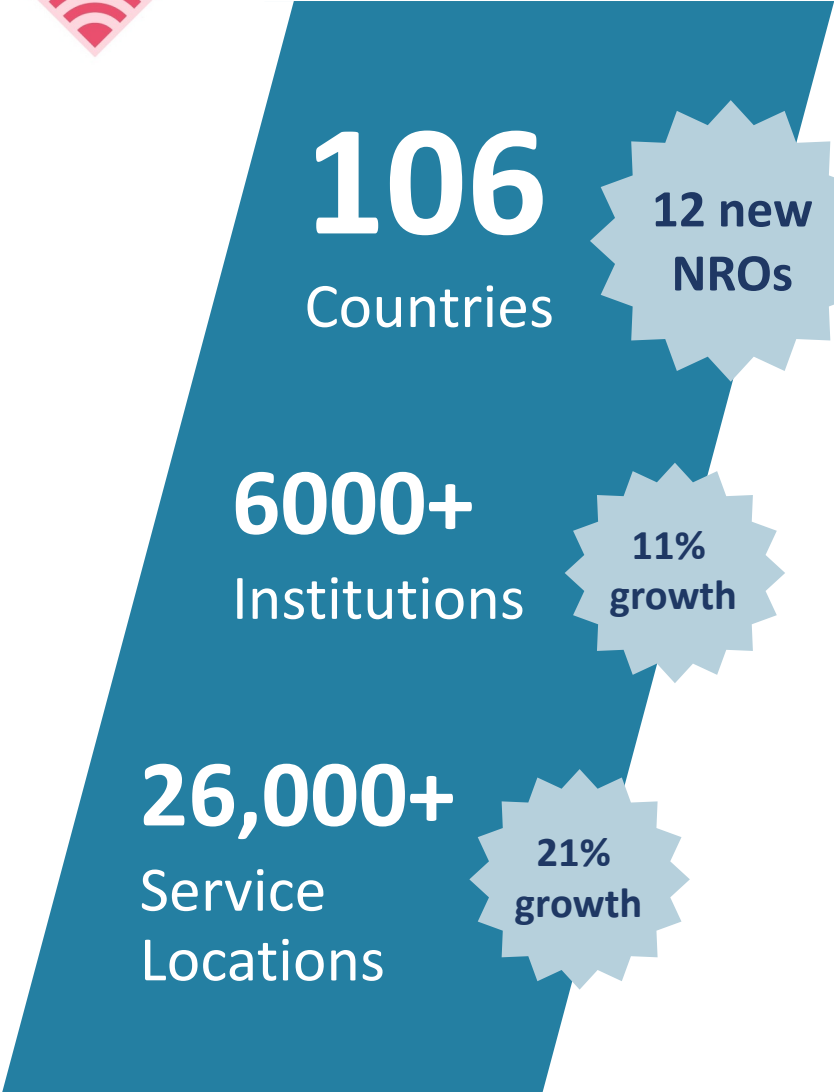


eduroam

Linking students to the global community



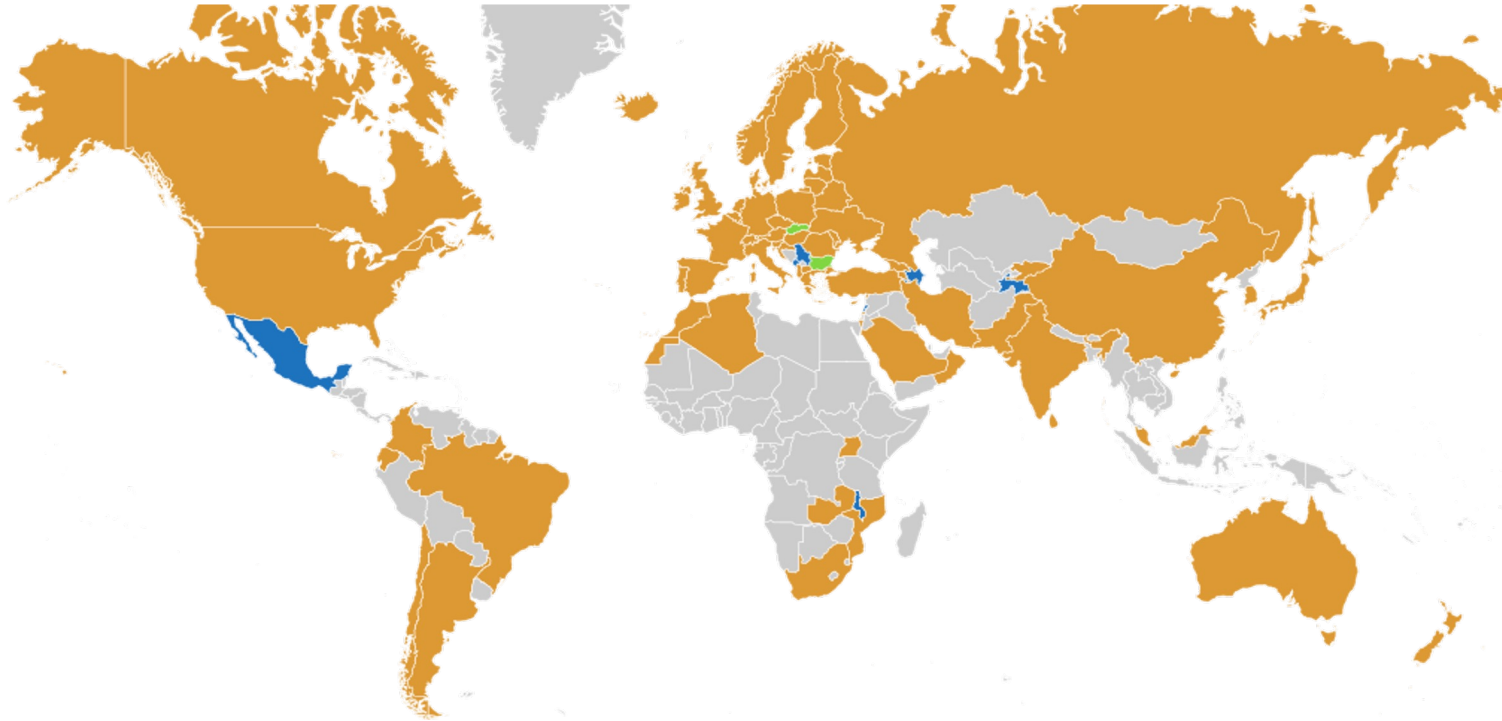
>1 billion
international
authN





eduGAIN

Enabling secure Single Sign On services to global research and educational resources



Federated identities enable users to access a wide range of services using their account managed by their 'home' institution

- Improves access
- Improves security
- Reduces management overhead and costs.

71

Identity Federations

3 new members

4069

Identity Providers

3119

Service Providers

24% increase



AAlaaS



GÉANT

Implements AARC Blueprint Architecture and expands eduGAIN to support virtual teams' sharing of resources

Research collaborations or NRENs

Manages groups



Connects services



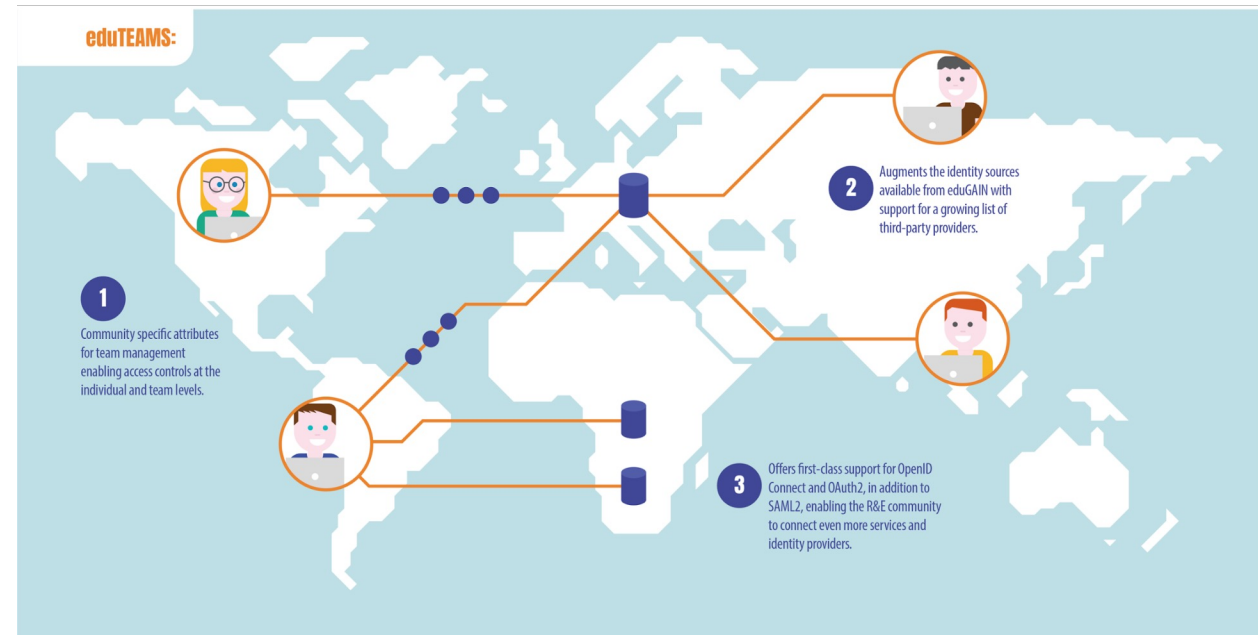
Manages access



Users



Federated access to research resources





SaaS to validate
“studentess”



Community
Governed



GÉANT

OIDC Auth
Infrastructure



Student tailored
offerings



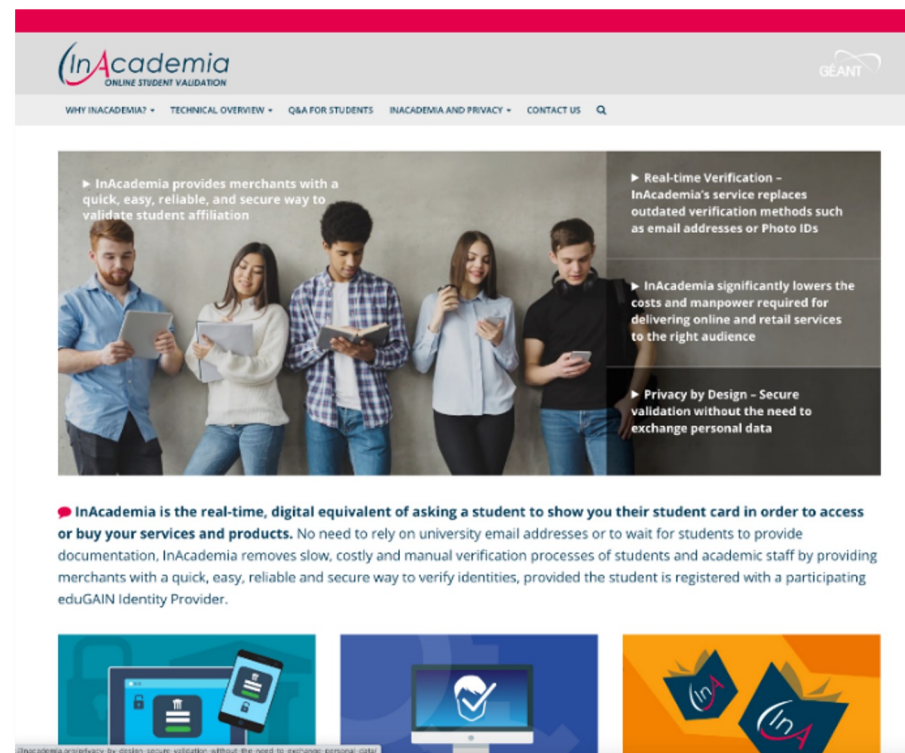
Merchants



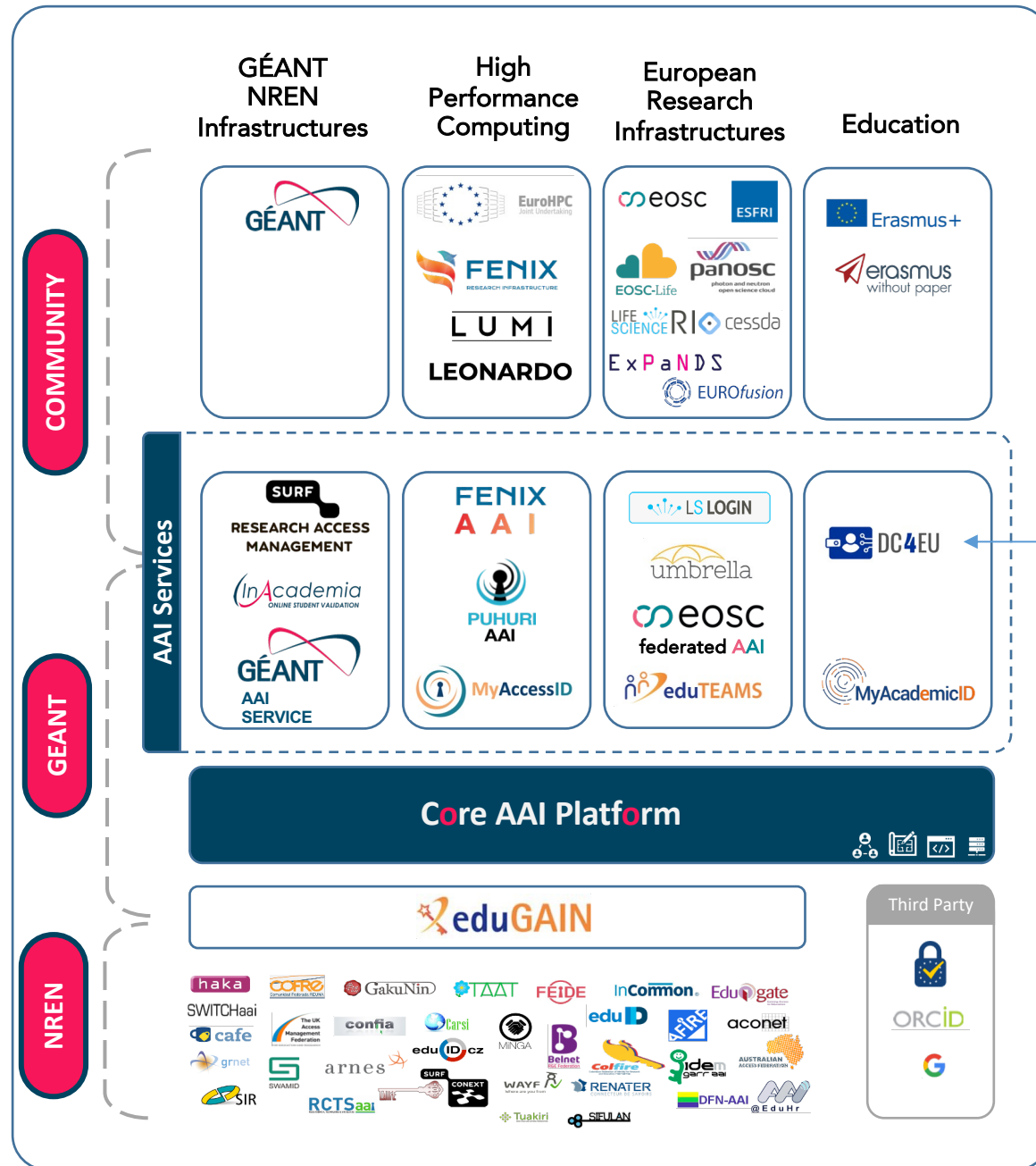
Can make use of student
tailored offerings,
without disclosing any
additional privacy details

Students

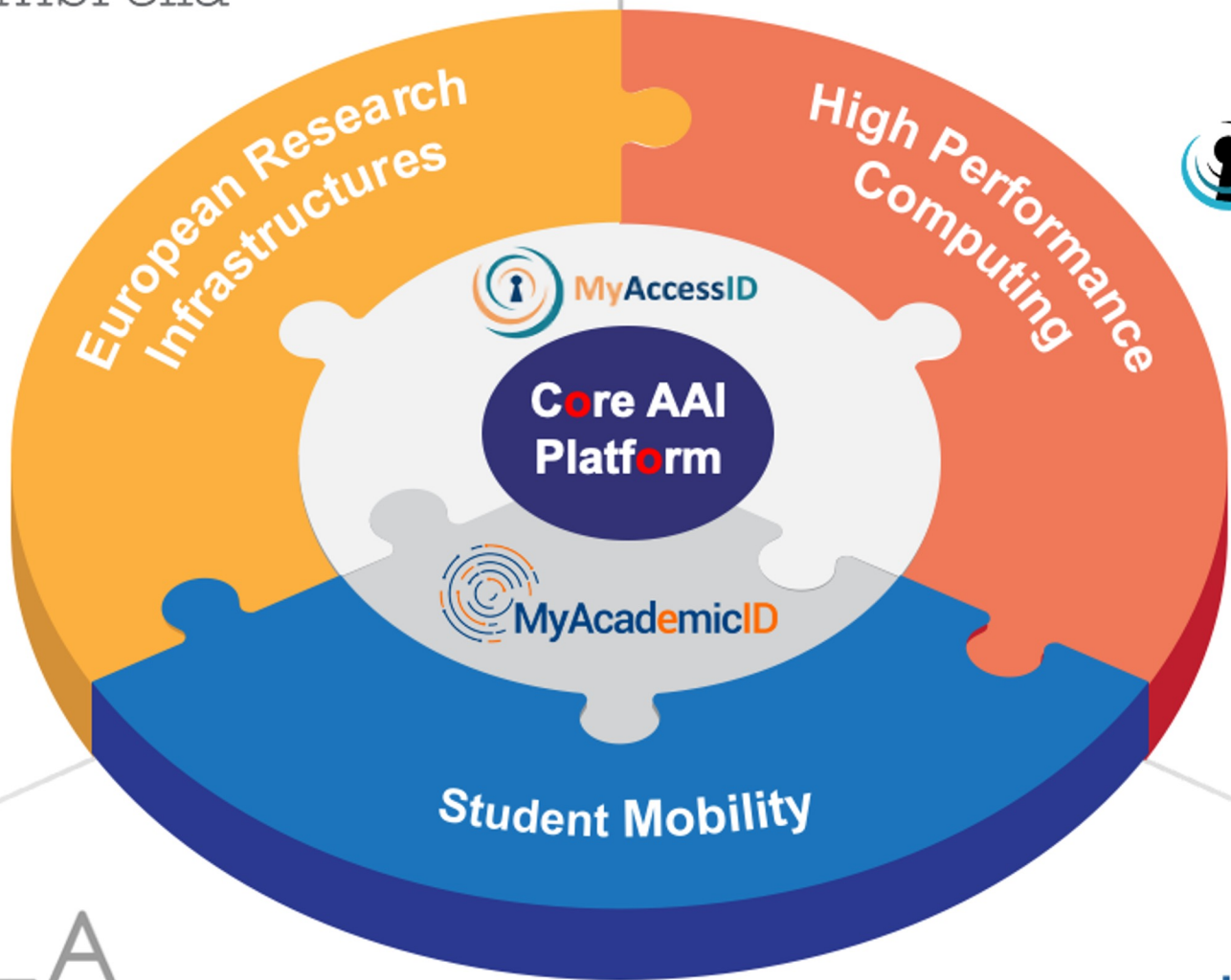
The real-time, digital equivalent of asking a student to show their student card to access or buy discounted or specialist services and products



2024



EUDI Wallet



European Universities Alliances





The Identity and Access Management Platform for Erasmus+ & University Alliances



Enable NRENs to support a very important and large education use-case



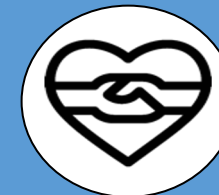
MyAID IAM launched in Nov 2020



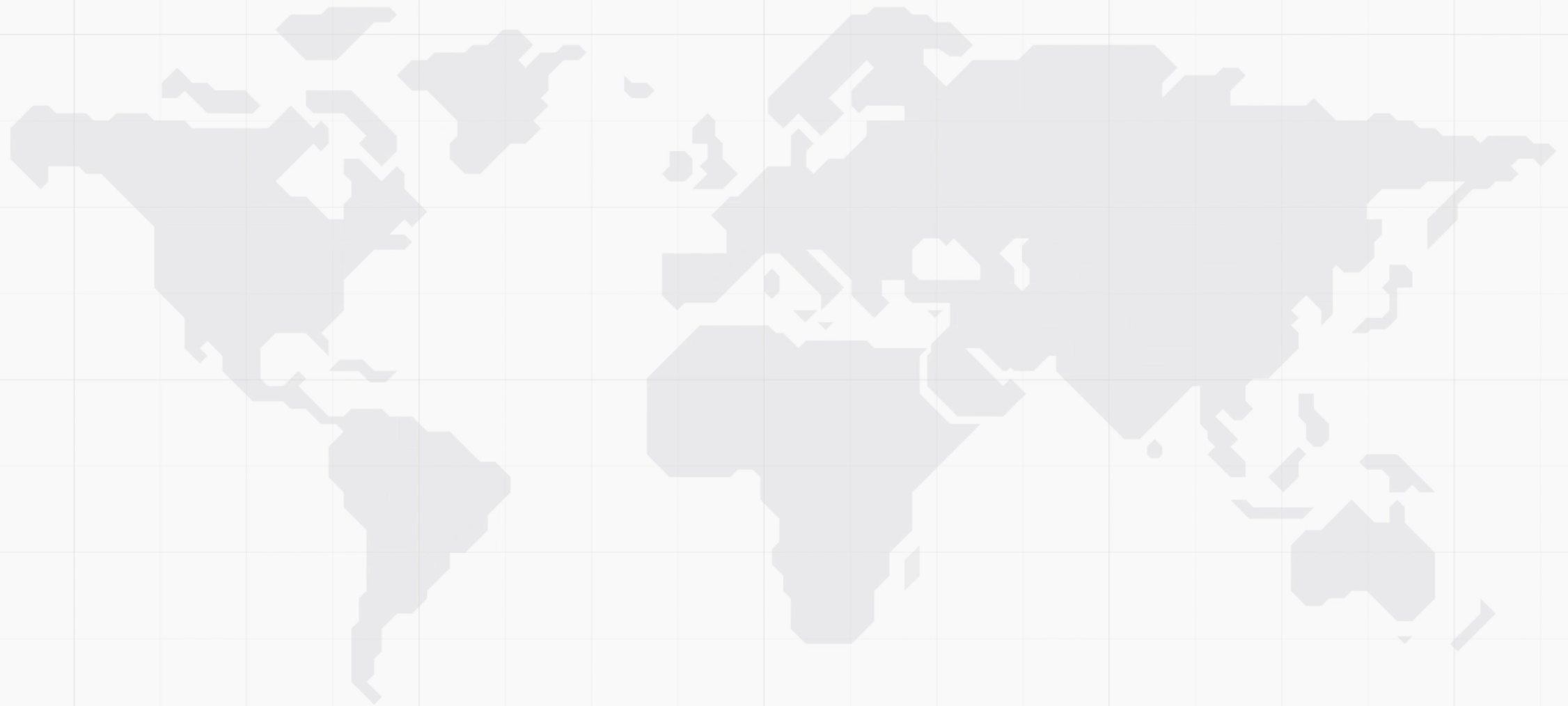
MyAID IAM operated by GÉANT



MyAID IAM based on the GÉANT Core AAI Platform



Leverages eduGAIN and eIDAS



European Student Identifier - ESI - What it is NOT

A general purpose identifier to be used in any interactions of the student with electronic services. Only eligible services will be receiving the ESI

An identifier for a service to determine the HEI a student is studying at

A lifelong identifier that will follow the student across their studies in their lifetime



ESI Use Cases

- Student Mobility Services directly enabling mobility, for example, the Erasmus+ programme.
- Services that transfer student records or transcripts of records between educational institutions and which need to identify the students to which the records belong to.
- University Alliances where students' records are shared across (some of) the universities of the Alliance.
- Formal learning and teaching activities and/or the administrative activities related to those within an institution, for example, Learning Management Systems and remote e-assessment tools.

T&I Building blocks for education and research



Authentication
for research



Expands
eduGAIN to
support virtual
teams' sharing
of resources



Online student
validation

One connection
point for
commercial SPs



Authentication
for Erasmus+ &
University
Alliances

Core AAI Platform



Enabling secure Single Sign On services to **global**
research and educational resources

Erasmus Without Paper and University Alliances

Both Erasmus+ and University Alliances connected via MyAcademicID service



Digital Credentials 4 Europe (DC4EU)



New way (alternate way) to interact with all services from a citizen's perspective.

Digital wallet



Conclusion

- Digital mobility is changing the world as we know it.
- Reduce complexity to support innovation
- Trust is key
- Focus on interoperability and standardization of services, systems and data

Authentication and Authorization (AAI) have become an important Infrastructure.



Thank you!

May tanong?

Questions?

Вопросы?

¿Preguntas?

سوالات

კითხვები?

प्रश्न

Ebibuuzo?

Vragen?

Questões?

Maswali?

Frågor?

Kysymyksiä

有問題嗎？

Domande?

Ερωτήσεις?

Fragen?

gyongyi.horvath@geant.org

www.geant.org



© GÉANT Association
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).