



# MAGIC: A collaboration project to globally connect researchers and academics

TNC16 Conference, 12-16 June 2016, Prague, Czech Republic

María José López Pourailly | RedCLARA | June 14, 2016



# Background - ELCIRA



- ELCIRA: Europe-Latin America Collaborative e-Infrastructure for Research Activities.
- 2-year project led by RedCLARA (2012-2014), co-funded by the EC.
- Focused on fostering the deployment of eduroam & AAI, developing collaboration tools and reliable VC services, while promoting research communities between Europe and Latin America.



# General Objective



A collaboration project  
to globally connect  
researchers and academics

Africa - Arab States - Asia - Latin America - Europe - The Caribbean

Based on the ELCIRA  
success...

To establish a set of  
agreements for  
participating world regions  
to consolidate/complete  
middleware for a  
marketplace of services  
and real-time applications  
to benefit global science  
communities.



# Partners

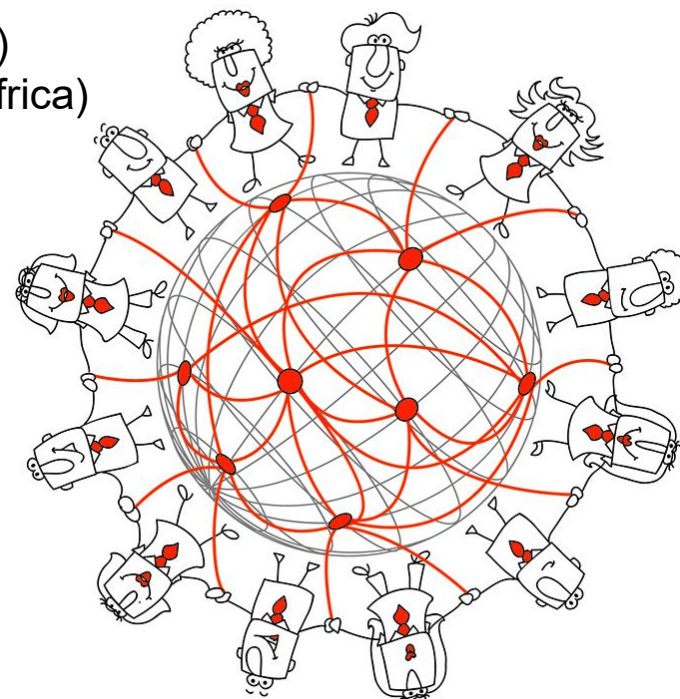


- Grant Partners

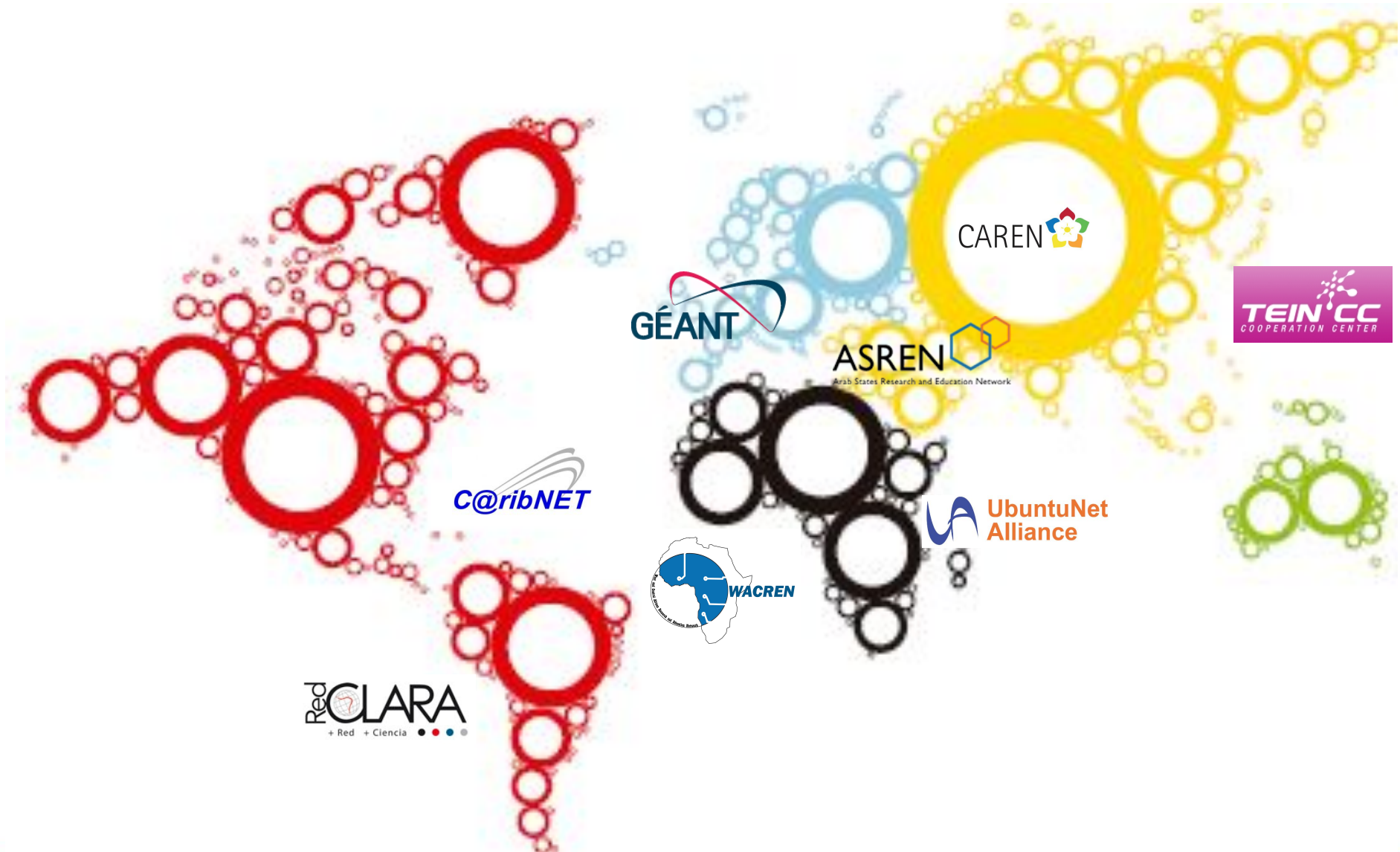
- **RedCLARA** (Latin America) - Coordinator
- **GÉANT** (Europe)
- RENATA (Colombia)
- RNP (Brazil)
- SURFnet (Netherlands)
- REUNA (Chile)
- CEDIA (Ecuador)
- CUDI (Mexico)
- RENATER (France)
- GRNET (Greece)
- CESNET (Czech Republic)
- **CKLN** (Caribbean)
- **UbuntuNet Alliance** (S&E Africa)
- **WACREN** (W&C Africa)
- **ASREN** (Arab States)
- **TEIN\*CC** (Asia-Pacific)
- **CAREN NOC – NITC** (Central Asia)
- NIIFI (Hungary)
- CSIR (South Africa)

- MoU Partners

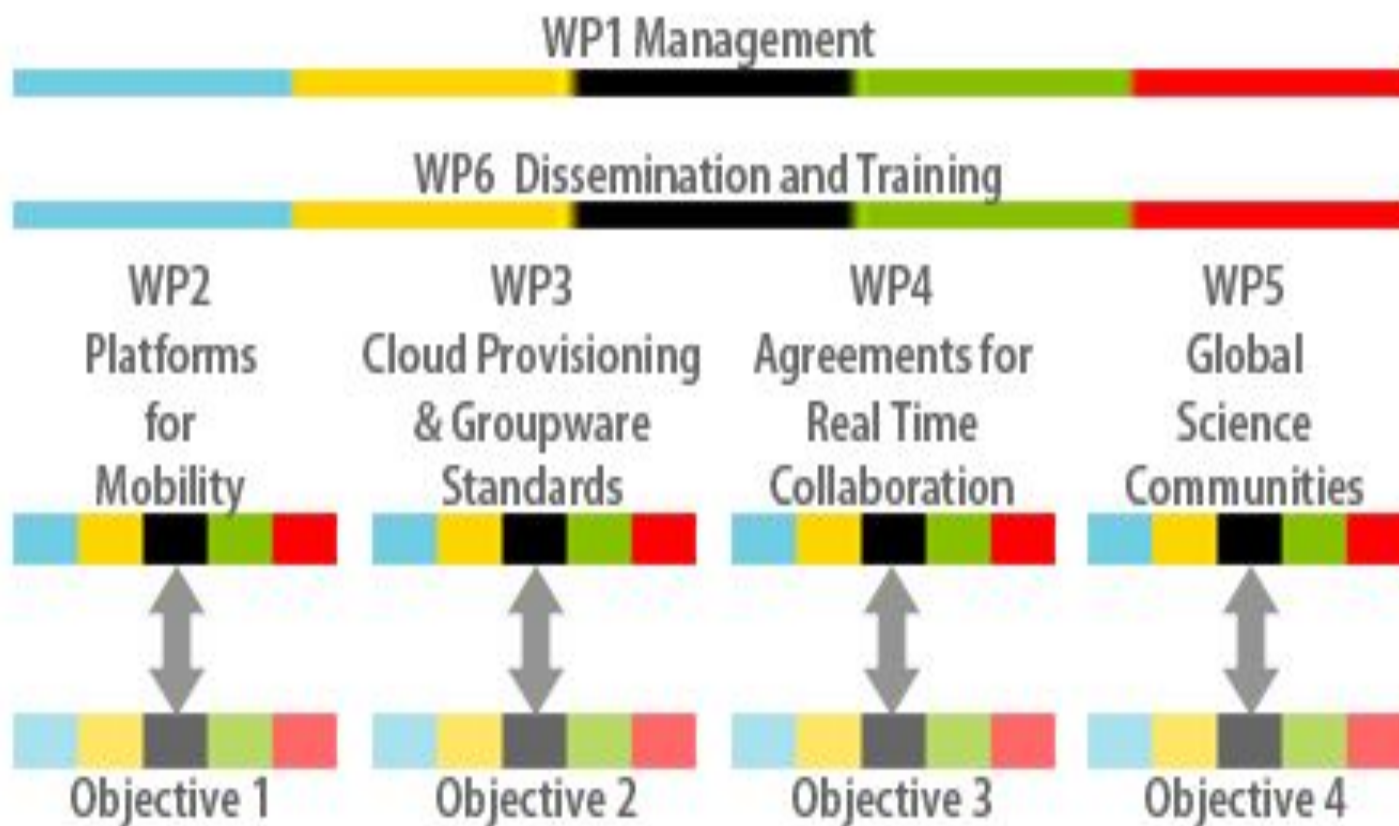
- InnovaRed (Argentina)
- **APAN** (Asia-Pacific)
- AARNet (Australia)
- EthERNet (Ethiopia)
- RENAM (Moldova)



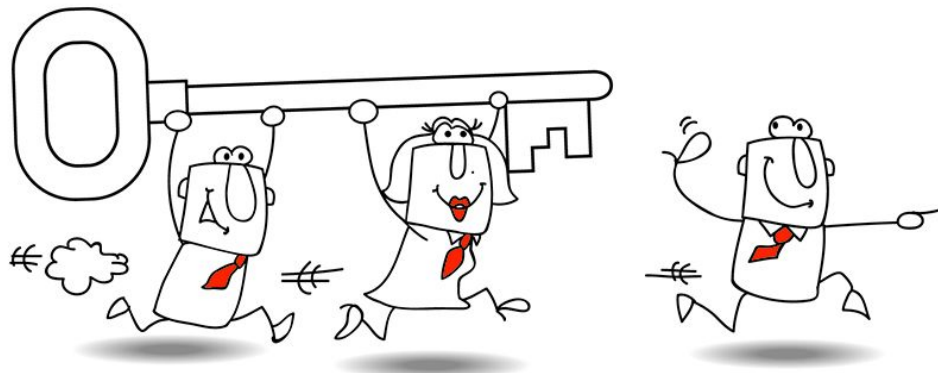
# World Wide Contact Points



# Project Structure



## WP2: Platforms for Mobility



## WP2: Platforms for Mobility



# Magic is mobility

It promotes the growing of **eduroam's** reach worldwide.



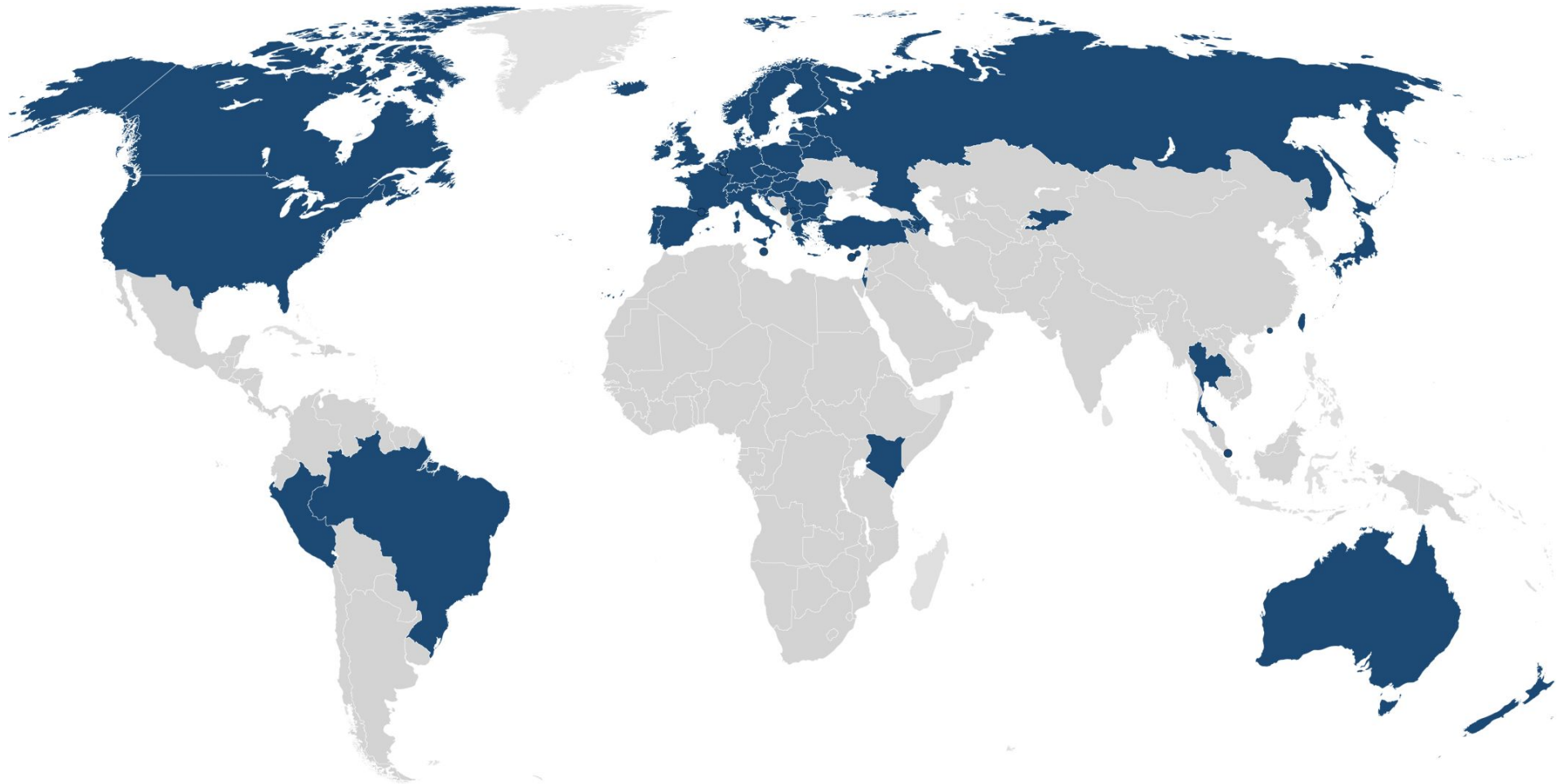
**eduroam** is roaming service for education

It allows students, researchers and staff from participating institutions to obtain Internet connectivity across campus and when visiting other participating institutions by simply opening their laptop.

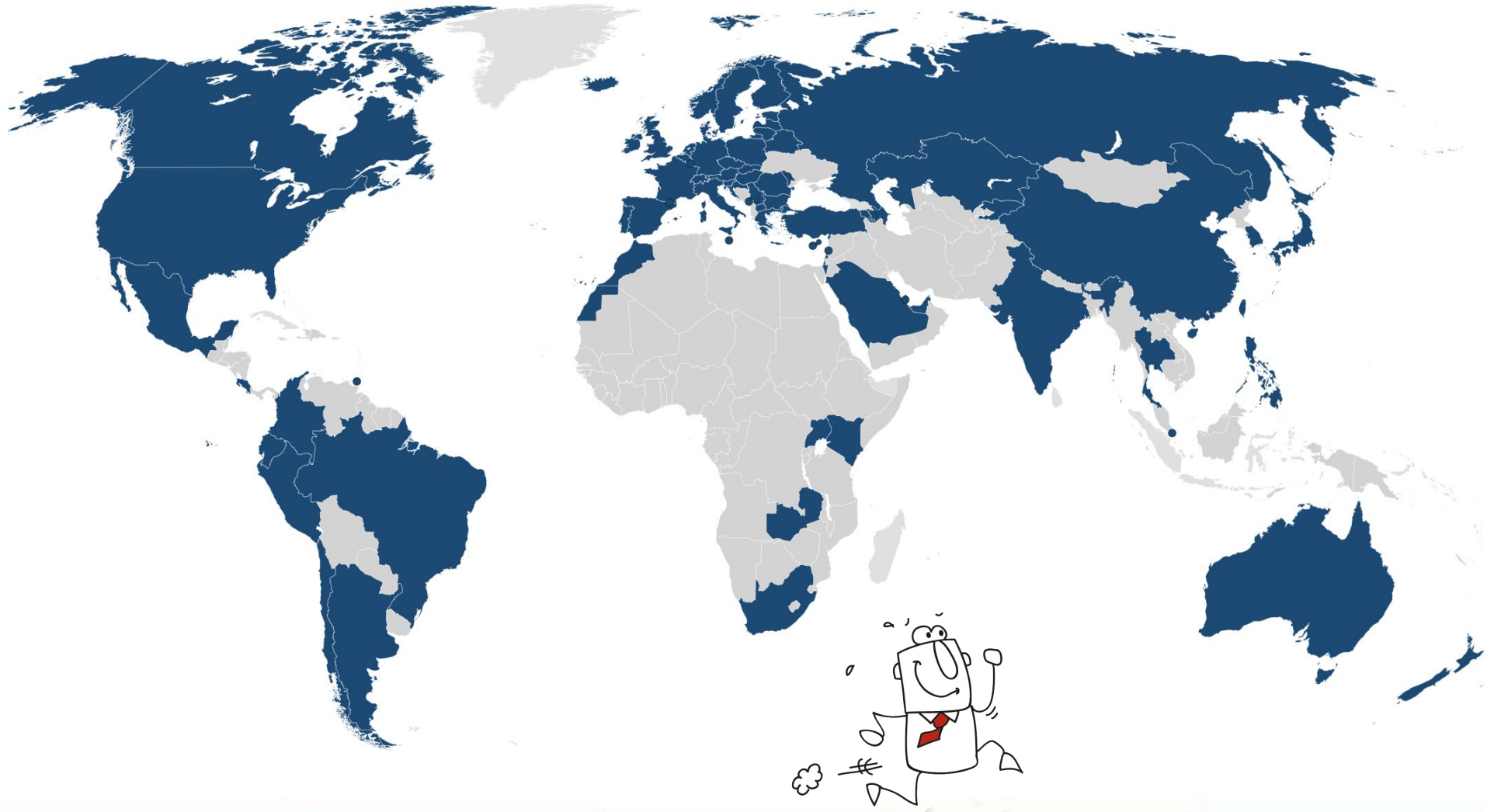




# Countries eduroaming before ELCIRA



# Countries eduroaming after ELCIRA (May 2016)



## WP2: Platforms for Mobility



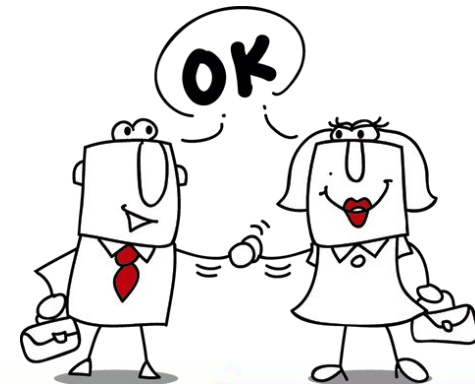
# Magic is interoperability

It promotes the establishment of identity federations and their connection to **eduGAIN**

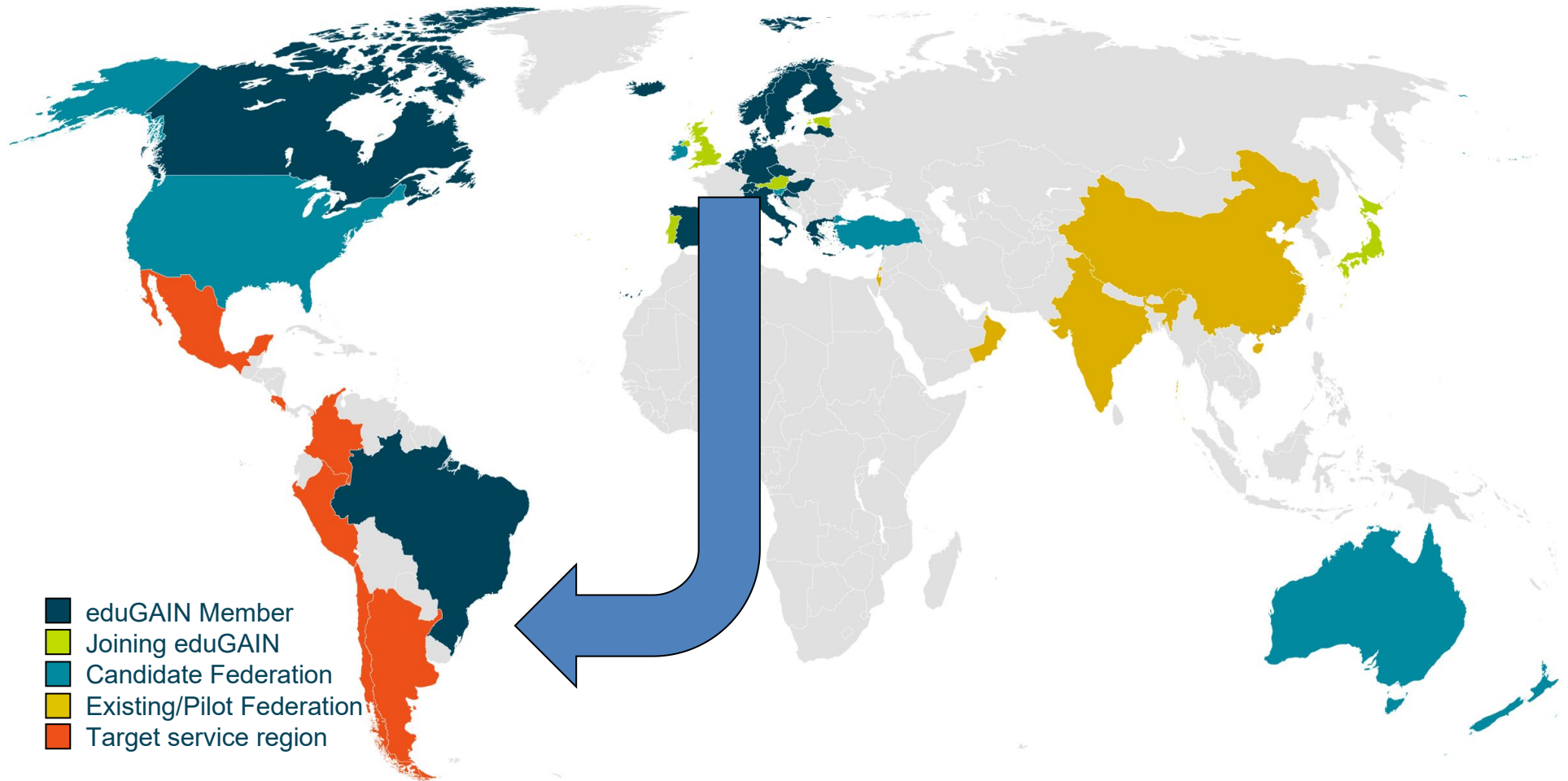


**eduGAIN** is seamless and secure access to services

It interconnects federations to link services and users worldwide.

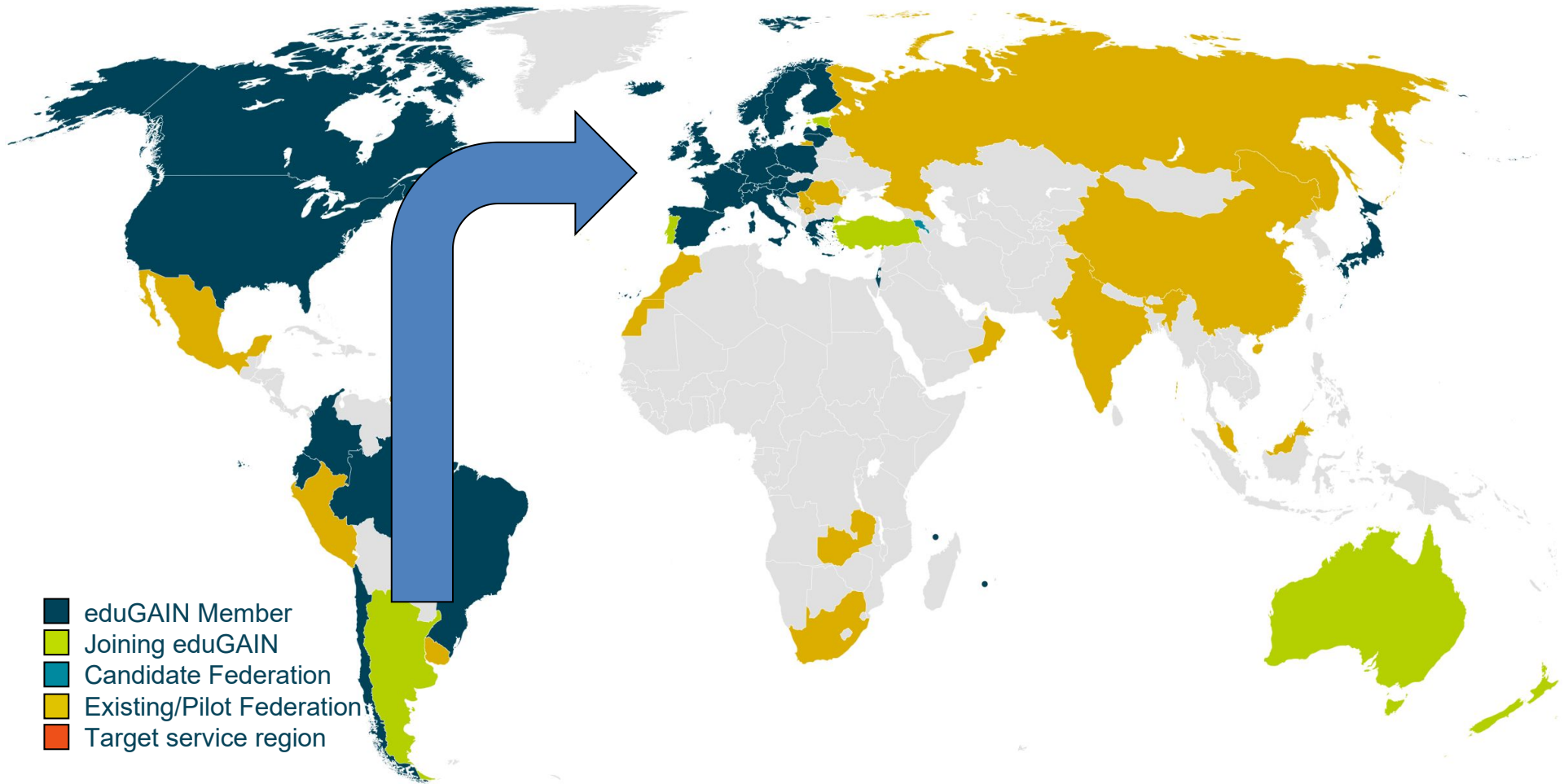


# At the start of the ELCIRA project June 2012



- eduGAIN Member
- Joining eduGAIN
- Candidate Federation
- Existing/Pilot Federation
- Target service region

# At the end of the ELCIRA project June 2012 → Oct 2014

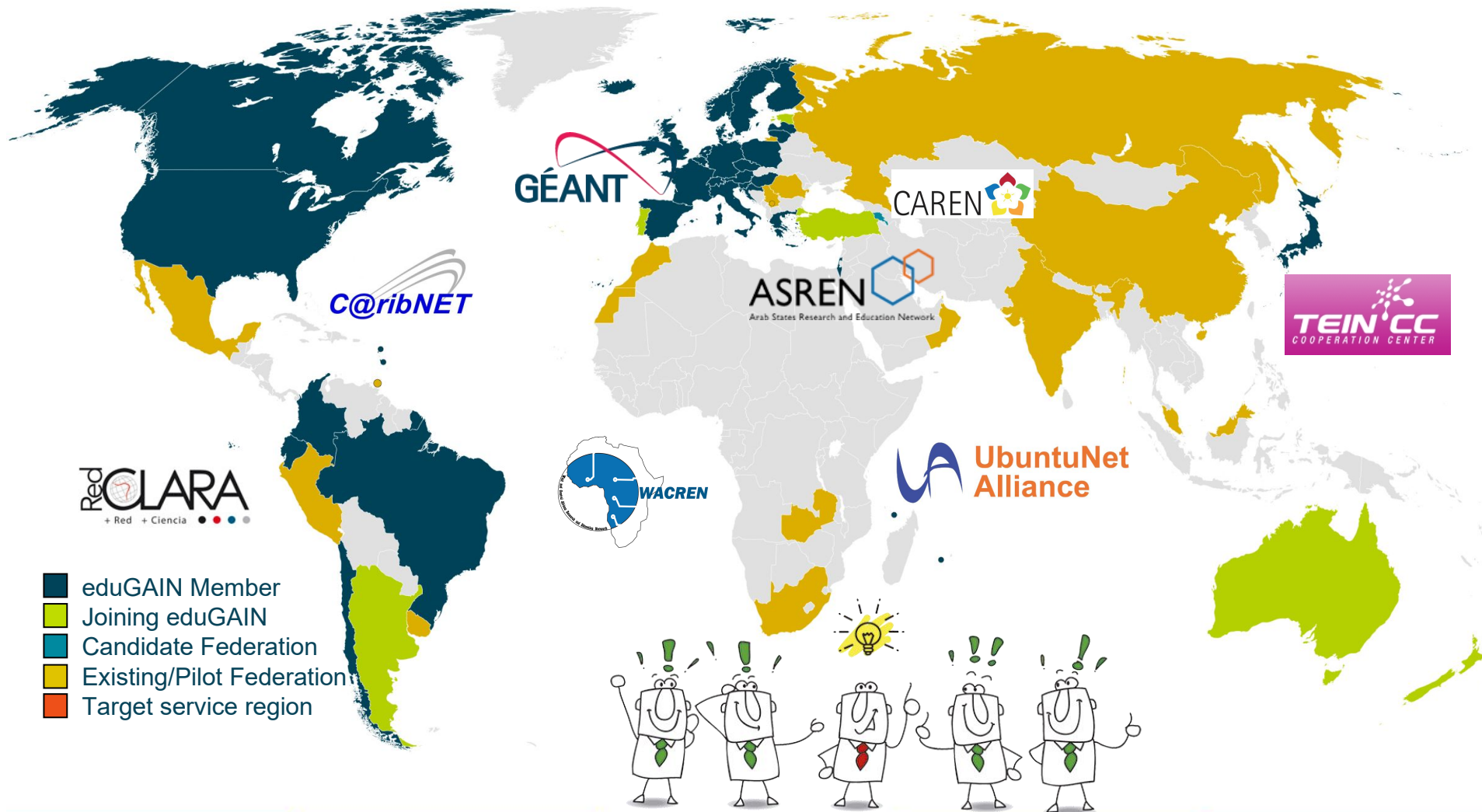


# Take our success world wide May 2015 → May 2017



**Magic**

Middleware for collaborative Applications  
and Global virtual Communities



**RedCLARA**  
+ Red + Ciencia

**C@ribNET**

**GEANT**

**CAREN**

**ASREN**  
Arab States Research and Education Network

**TEIN CC**  
COOPERATION CENTER

**UbuntuNet Alliance**

**WACREN**

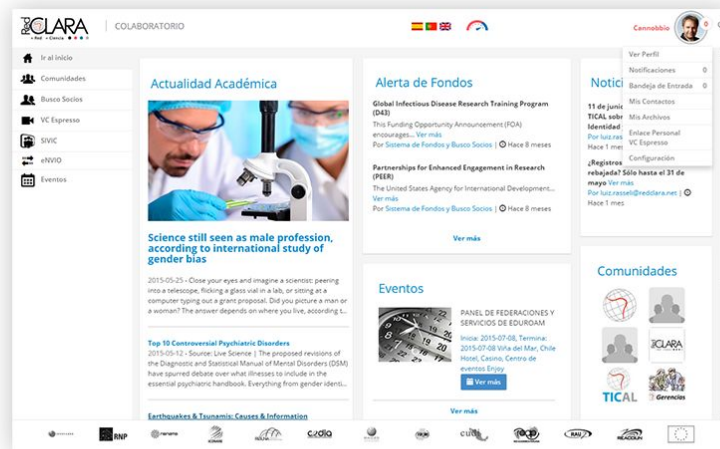
- eduGAIN Member
- Joining eduGAIN
- Candidate Federation
- Existing/Pilot Federation
- Target service region

# WP3: Cloud Provisioning and Groupware Standards



## Magic is applications

It expands international collaboration spaces through its interaction platform: **Colaboratorio**



### Colaboratorio

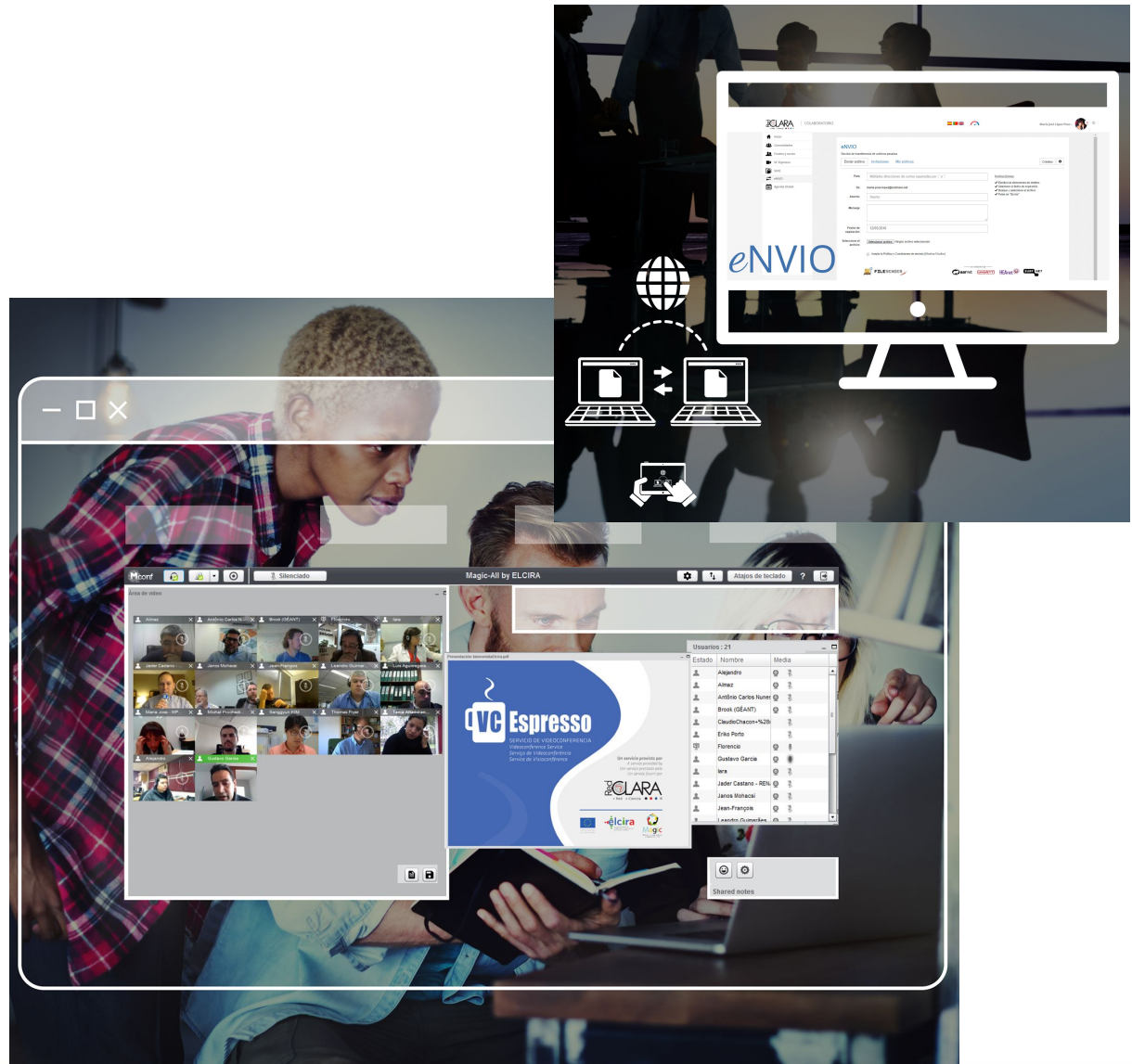
Tools and services tailored to the needs of researchers and academics.



# WP3: Cloud Provisioning and Groupware Standards

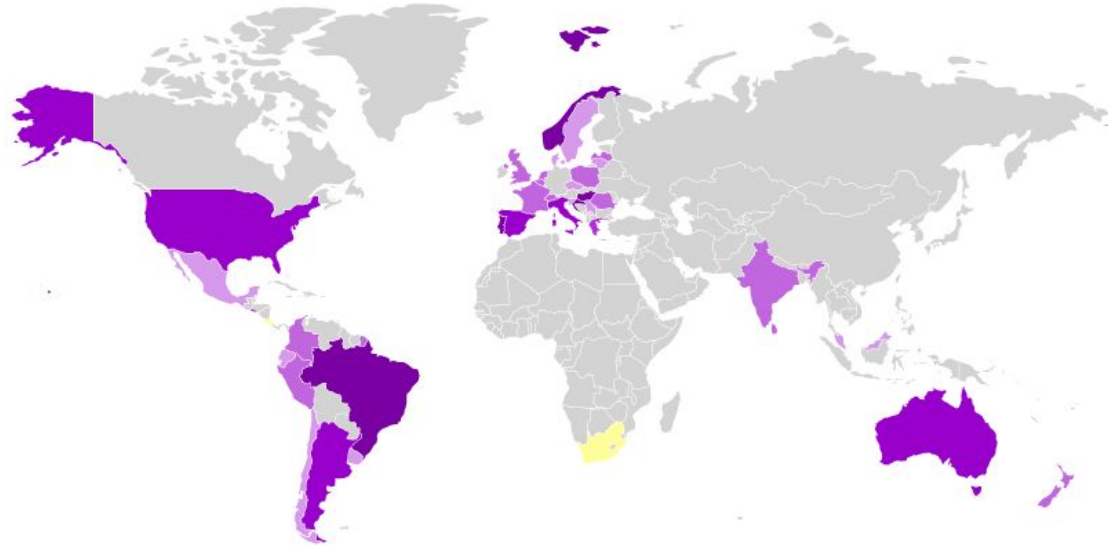
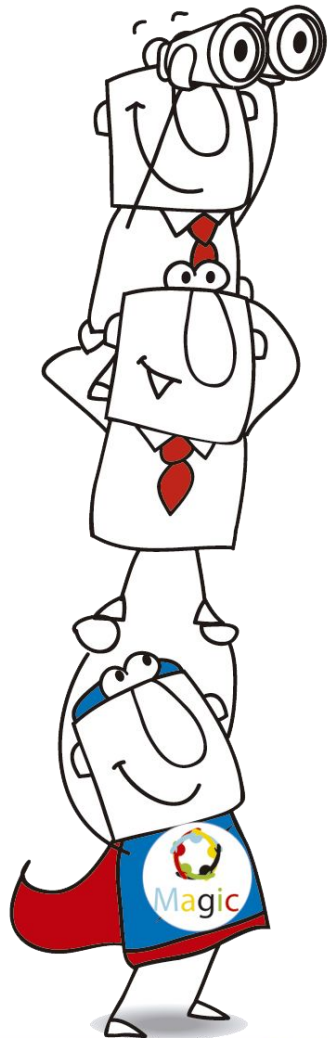


- Federated Group Management (FGM) Standard
- **Applications** that will adopt the FGM Standard
- **Pilot portals** for the participant regions
- **Deployment** of a pilot Federated Cloud Service Model for NRENs





# WP4: Real Time Collaboration



- To foster the adoption of the **NRENum.net**, for universal dialing using DNS: **El Salvador, Ecuador, Mexico, Uruguay, Chile and Sri Lanka, have been integrated to NRENum.net within MAGIC framework**
- To promote, and work with the **Global Real Time Collaboration (GRTC)** group
- Integrate **H.323** and MConf (**WebRTC**) for unified communications



# WP5: Global Science Communities



- Agreements on a set of **Worldwide User Communities** of common interest throughout the participating regions: e-Health, Environment, Biodiversity + Remote Instrumentation
- An Information System for Worldwide funding opportunities aimed at the end users and the user communities
- **Virtual Days** to foster collaboration at a worldwide scale and **International Funding Participation**
- Training on the use of Cloud applications for collaboration
- **Do you have a community and you think our tools and services could help you? Let's have a coffee after the session!**



# We are currently...



- **Training on AAI and eduroam**
- **NRENum Training in Latin America**
- **Spanish, English and French** online course for NRENum deployment  
In English: <http://cursos.redclara.net/course/view.php?id=48>  
In Spanish: <http://cursos.redclara.net/course/view.php?id=47>  
In French: <http://cursos.redclara.net/course/view.php?id=49>
- **Portuguese and Russian** languages supported
- **Groupware** standards analysis underway for **interoperability**
- **Portal** deployed for Latin America and West **Africa**

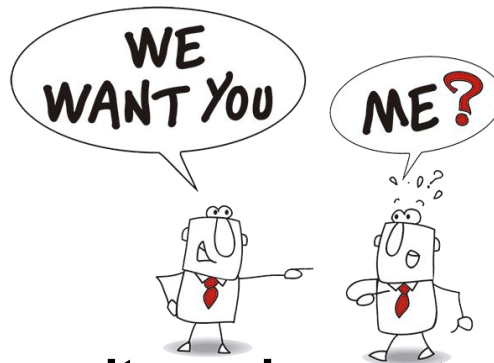




# Magic

Middleware for collaborative Applications  
and Global virtual Communities

<http://magic-project.eu>



**If you have a community and are interested in our tools and services we are here to help!**

maria-jose.lopez@redclara.net





# TANDEM

TNC16 Conference, 12-16 June 2016, Prague, Czech Republic

Omo Oaiya (WACREN)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 654206

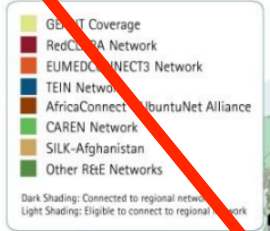




# FACTSHEET



<b>Acronym</b>	TANDEM
<b>Full title</b>	TransAfrican Network Development
<b>Grant Agreement</b>	654206
<b>Funding scheme</b>	Coordination and Support Action (CSA)
<b>Funding scheme</b>	H2020
<b>Start date</b>	01/05/2015
<b>End date</b>	30/04/2017
<b>Duration</b>	24 months
<b>Project funding</b>	€ 1,217,982.50 (grant amount)
<b>Call identify</b>	H2020-INFRA supp-2014-2
<b>Topic</b>	e-Infrastructure policy development and international cooperation



GEANT and partner networks enabling user collaboration across the globe

September 2014



TANDEM Project Coordinator – M. Damien ALLINE

The IRD (France) is a French research organisation that, together with its southern partners, addresses international development

issues.



GEANT Limited (UK) is the pan-European research and education network that interconnects Europe's National Research and Education Networks. Together they connect over 50 million users at 10,000 institutions across Europe.



WACREN (Ghana) is the West and Central African Research and Education Network, with the vision to make available world-class infrastructure and services for the West and Central African research and education community

Brunel University London (UK) is ranked among the top of UK's higher education and research institutions. Brunel hosts a very dynamic Department of Computer Sciences, which is the largest research group of its type in the country.



RENATER (France) is the French Research and Education Networks providing to its community a wide portfolio of network and applicative services. Since 2011 RENATER is involved in the development of NRENs in Central and West Africa.



UbuntuNet Alliance (Malawi) is the Eastern and Southern Africa Research and Education Network aiming at securing affordable broadband and efficient ICT access and usage for African NRENs and their associated communities of practice.

Sigma Orionis (France) is located in Antipolis and provides research and services connecting research to innovative markets. The company has developed expertise in ICT and international cooperation.



CIRAD (France) is an agricultural research international cooperation organization promoting the sustainable development of rural areas in Mediterranean regions. CIRAD maintains relationships with African scientific communities.



RedCLARA (Uruguay), Cooperación Latinoamericana de Redes Avanzadas (Latin American Cooperation of Advanced Networks) is a consortium of the National Research Networks of the Latin American countries.

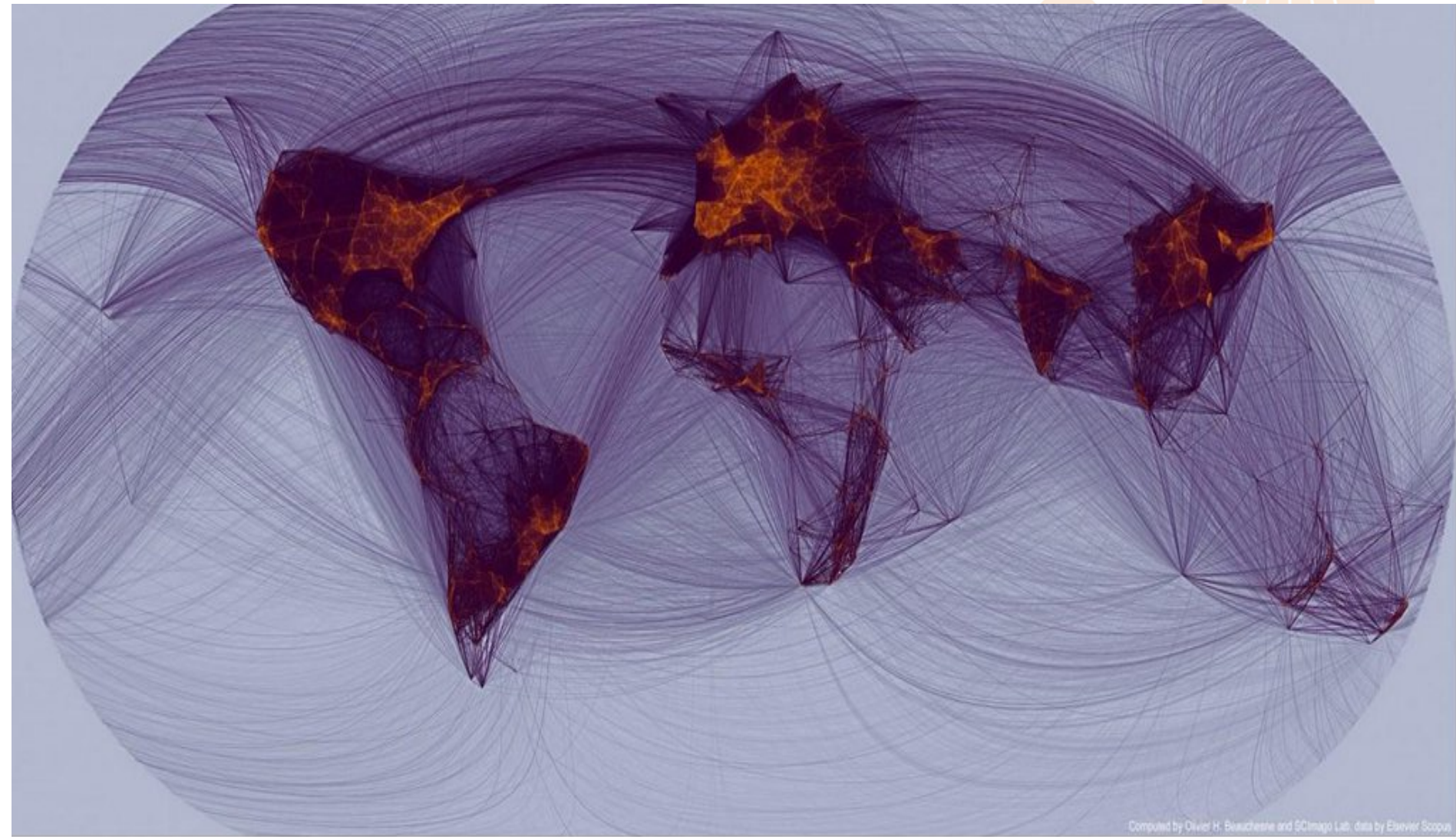




# WHAT IS **TANDEM**?

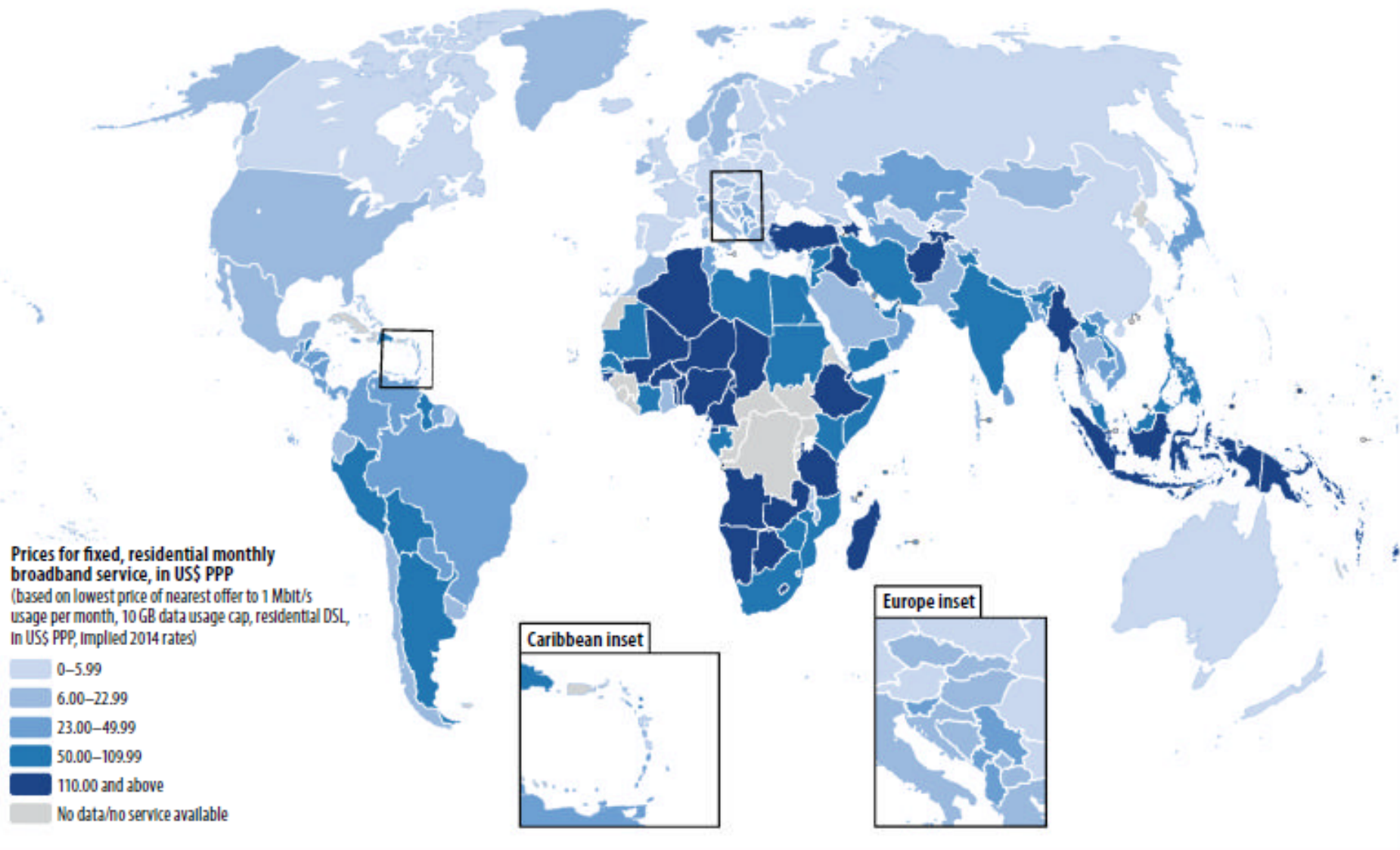
**TANDEM** aims at supporting the **dialogue** between the **EU** and **National Research and Educational Networks (NRENs)** from Africa with special attention to **Western and Central Africa.**





Computed by Olivier H. Beaucheste and SCImago Lab, data by Elsevier Scopus

*based on scopus database (papers published between 2008 and 2012)  
(refer <http://olihb.com/2014/08/11/map-of-scientific-collaboration-redux/>)*



IBRD 41653

Sources: WDR 2016 team, with additional data from Oxford Internet Institute, Google, <http://blogs.oii.ox.ac.uk/roughconsensus/2014/02/could-you-afford-facebook-messenger-in-cameroon-a-global-map-of-mobile-broadband-prices/> and Plot and Scatter. Data and an interactive map of mobile broadband prices, as well as affordability measures, at [http://bit.do/WDR2016-MapB4\\_1\\_1a](http://bit.do/WDR2016-MapB4_1_1a) and fixed broadband prices at [http://bit.do/WDR2016-MapB4\\_1\\_1b](http://bit.do/WDR2016-MapB4_1_1b).

Note: DSL = digital subscriber line; GB = gigabyte; Mbit/s = megabits per second; PPP = purchasing power parity.

# Pan-african Research programs

Demand is high in WACREN area for NREN connectivity and services  
 Key research subjects (environment, food security, health)

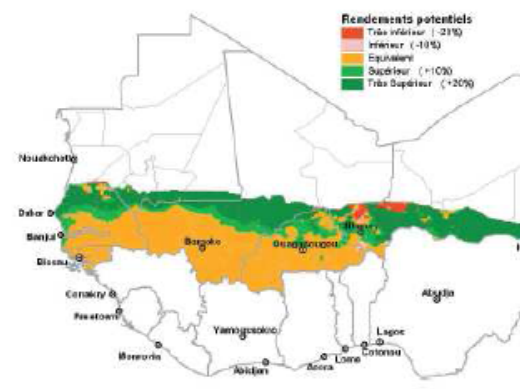
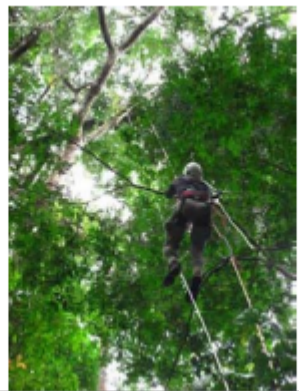
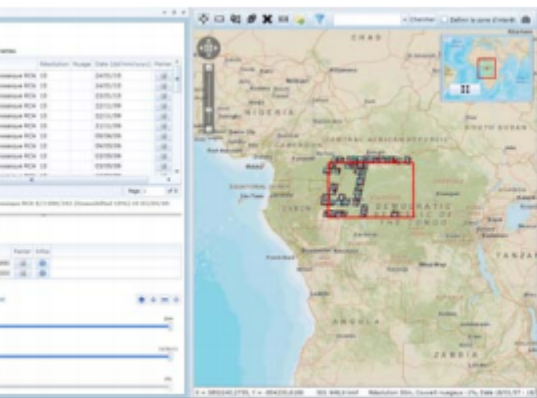
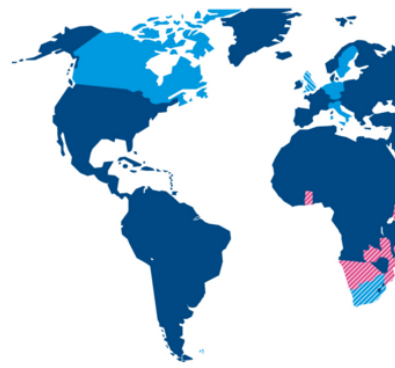
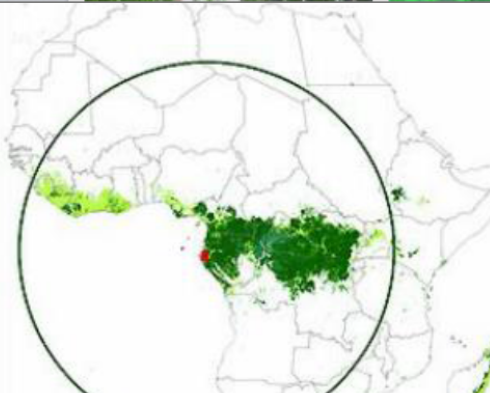
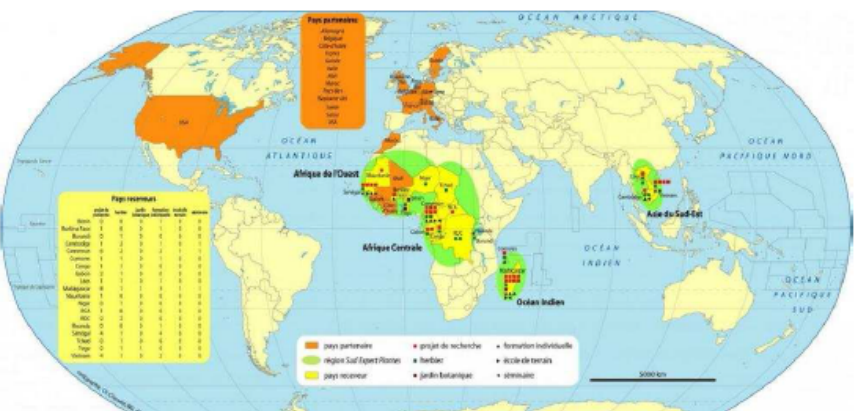


Fig3.4 : Rendements potentiels de mil dans les pays du CILSS pour la saison...



zone d'étude AMMA \* Ouaga: station AERON  
 sous-régionale AMMA-CATCH  
 méso-échelle AMMA-CATCH



- Full members
- SKA Headquarters host country
- SKA Phase 1 and Phase 2 host countries





# TANDEM PILLARS

## → ADVOCACY

Enhance the dialogue between WACREN, policy makers, international donors and regulating authorities: promote connectivity and obtain political and financial support

- 3 National awareness and dialogue workshops
- 1 Regional high-level workshop

## → SERVICES

Enhance the dialogue between WACREN, end users, NRENs and research and tertiary education institutes: identify the global e-Infrastructure services needed

- Elaborate a roadmap for the future implementation of key NREN services

## → COMMUNITY

Build a permanent stakeholder dialogue

- Set up a virtual collaboration platform to "incubate" communities
- Organise community workshops





# TANDEM PILLARS

## → ADVOCACY

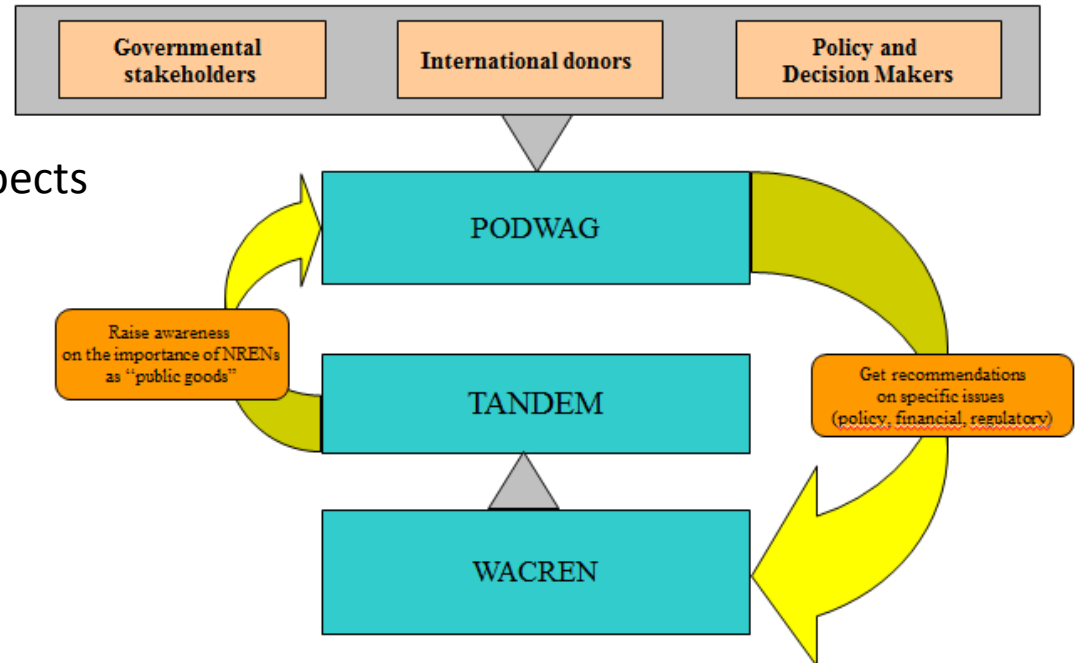
- **Policy support (PODWAG)**

- Recommendations on regulation, policy, financing aspects

- **Financing support (PODWAG)**

- 2,5 Meuros to raise for AFRICA CONNECT2

**PODWAG**  
Policy and Donors Working Group in West and Central Africa





# TANDEM PILLARS

## → SERVICES

- **Awareness**

- Workshops
- National Focal Points human network
- Materials
  - NREN benefits (<http://tandem-wacren.eu>)
  - <http://www.casefornrens.org/>
  - <http://www.inthefieldstories.net/>

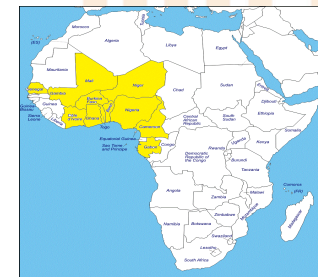
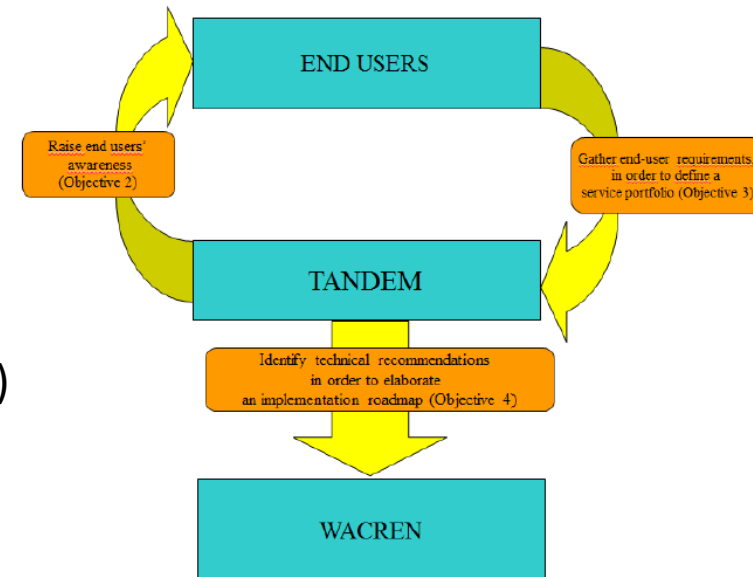
- **Needs**

- Survey Sep15-Jan16  
(answered by 1446 End Users)

- **Portfolio of Services**

- H2020 WACREN roadmap (based on the survey results)

## End User driven approach (students, researchers, teachers)

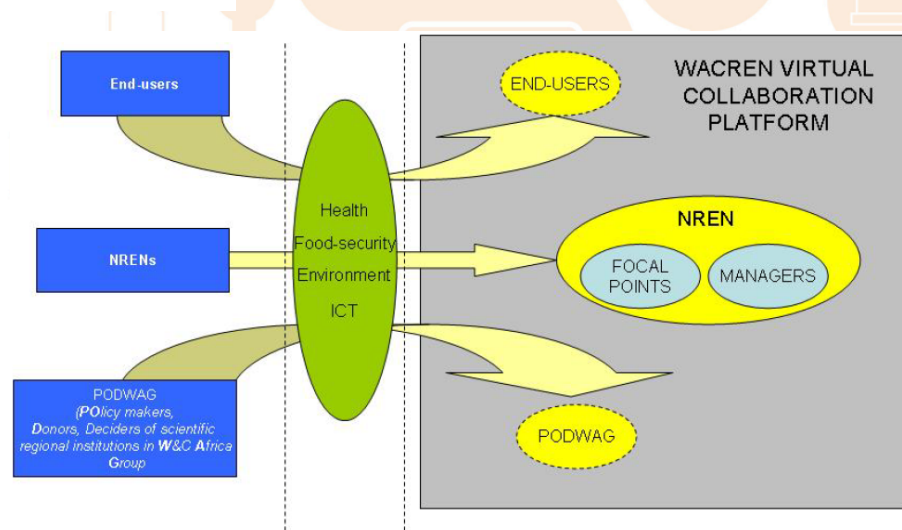




# TANDEM PILLARS

## → COMMUNITY

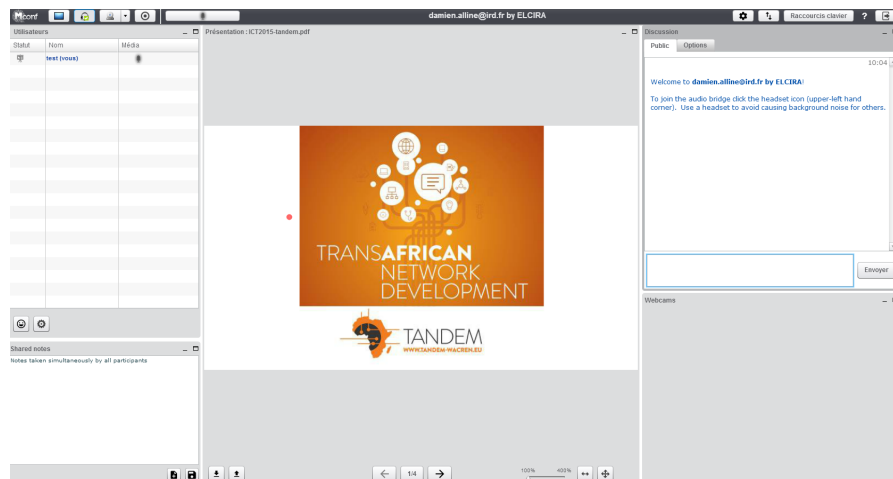
- **Strengthen** NREN community
  - NREN managers
  - NREN focal points community
- **Develop** End User communities
  - food security, health, environment
  - <https://community.wacren.net/>



Stakeholders

Focus on key subjects

TANDEM COMMUNITIES







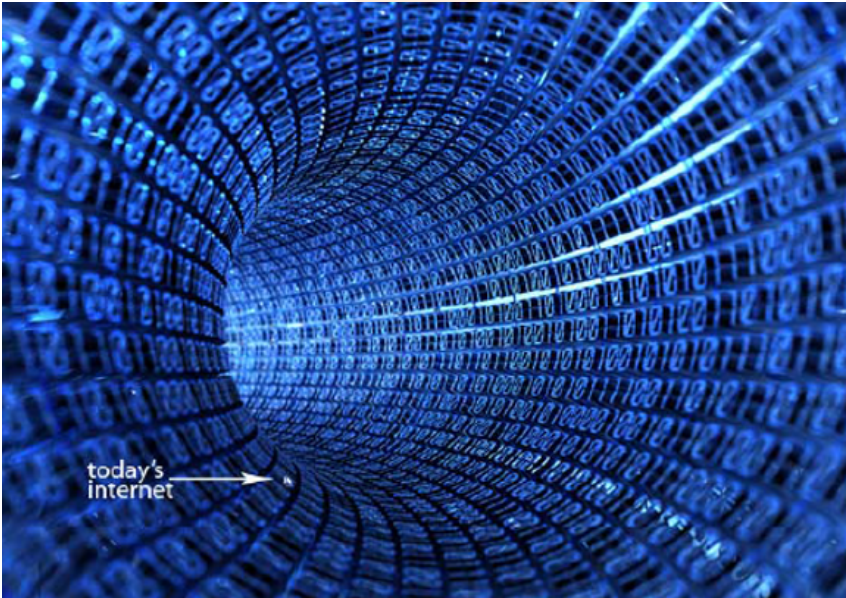
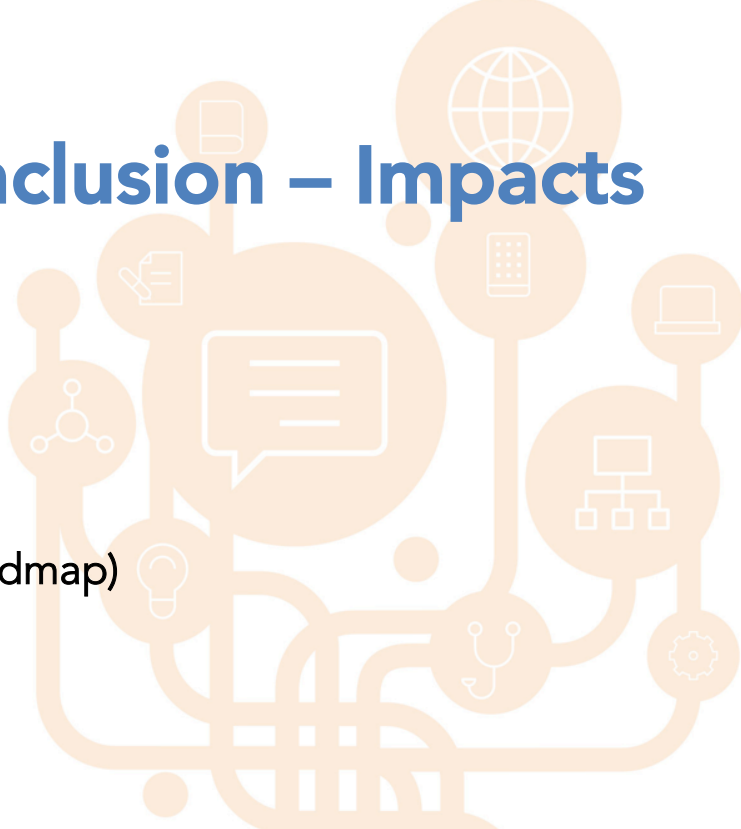
# TANDEM

## Conclusion – Impacts

Objectives of TANDEM project will be met if:

- A set of recommendations is produced (PODWAG)
- Funds have been raised (AF CONNECT2, H2020 roadmap)
- A WACREN H2020 roadmap is elaborated (survey)
- Communities are active on [community.wacren.net](http://community.wacren.net)

Domino effect on NRENs





[www.tandem-wacren.eu](http://www.tandem-wacren.eu)

[info@tandem-wacren.eu](mailto:info@tandem-wacren.eu)

STAY **TUNED!**



Please do not forget to sign (if you like):

<http://www.sci-gaia.eu/dakar-declaration/>

*“Opening Science in Africa to better open Africa to Science”*

Taking note of some of the already existing declarations on Open Access<sup>[1]</sup>, Open Education<sup>[2]</sup> and Open Science<sup>[3],[4]</sup>, the signatories **agree that**

*“Open science is a means and not an end in itself and it is much more than just open access to publications or data; it includes many aspects and stages of research processes thus enabling full reproducibility and re-usability of scientific results.”<sup>[5]</sup>*

# Energising Scientific Endeavour through Science Gateways and e-Infrastructures in Africa



**Sci-GaIA**  
www.sci-gaia.eu

Simon J E Taylor, Project Coordinator  
Modelling & Simulation Group, Brunel University London, UK



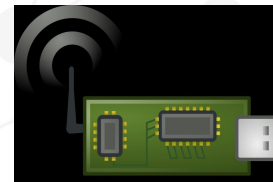
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 654237



# What are e-Infrastructures?

## ***Powerful integrated Information and Communication Technologies***

- High speed research communication networks
- Computational resources (grids, clouds, etc.)
- Software services
- Data services (data sources, scientific literature)
- Sensors
- Securely accessed via web-based portals or science gateways

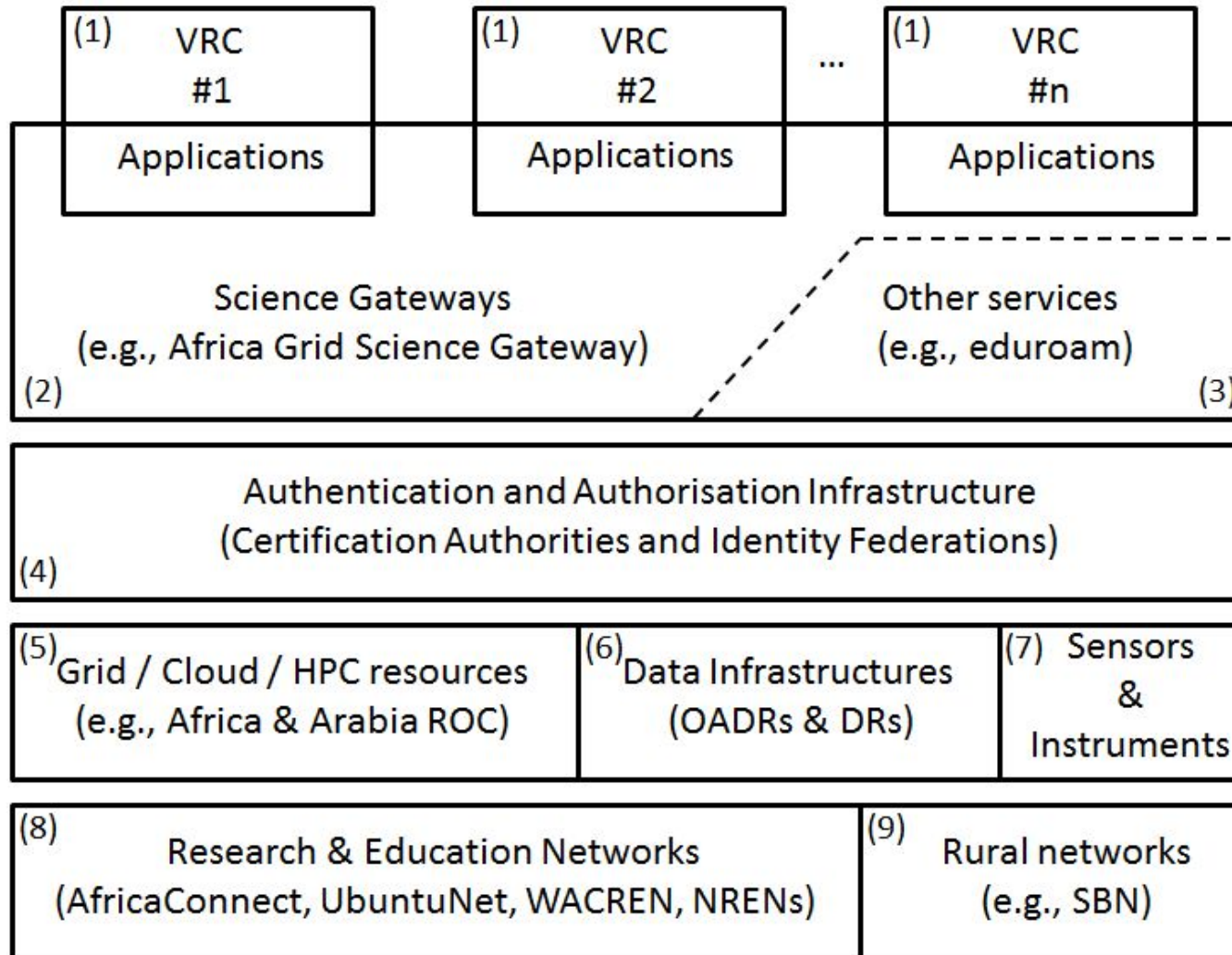


\*



**Sci-GaIA**  
www.sci-gaia.eu

# e-Infrastructures are Complex



\*



**Sci-GaIA**  
www.sci-gaia.eu

# But Can be Delivered Simply!

- Science Gateways can facilitate simple secure access to e-Infrastructures
- Science Gateways can be focal points for scientific collaborations
- Science Gateways can support communities of practice

The screenshot shows the Africa Grid Science Gateway website. At the top, there is a header with the title "Africa Grid Science Gateway" and logos for the African Union, the European Union, and the Africa e-Infrastructure for Africa (e4Africa). Below the header is a navigation menu with "Welcome" and "Applications" selected. The "Applications" menu is open, showing a list of tools and resources such as "Genomics & Bioinformatics", "Bioanalysis, Drug Analysis & Metabolism", "Pharmacokinetics & Pharmacometrics Resources", "Clinical Trial Sciences", "Digital Library", "Multimedia contacts & eLearning Tools", "BLAST", "ClustalW2", "Genetic Archives on Metabolism & Transporters", "G-HMMER", "GROMACS", "Haploview", "MitoTool", and "Useful links". The main content area is divided into sections: "Welcome" with introductory text about the gateway, "Contributors" with information on how to contribute, and a footer with contact information, social media links, and logos for partner organizations like GRIDP, eduGAIN, and SWAMID.

\*

# Science Gateways can enable CoPs

***e-Infrastructures accessed through Science Gateways can help Communities of Practice to***

- *Work intensively and collaboratively to boost research potential and impact*
- *Share and disseminate knowledge, experience and state-of-the-art research to speed up scientific progress*
- *Expand its scope across the world*
- *Promote easily access to software, computing, data and sensors*



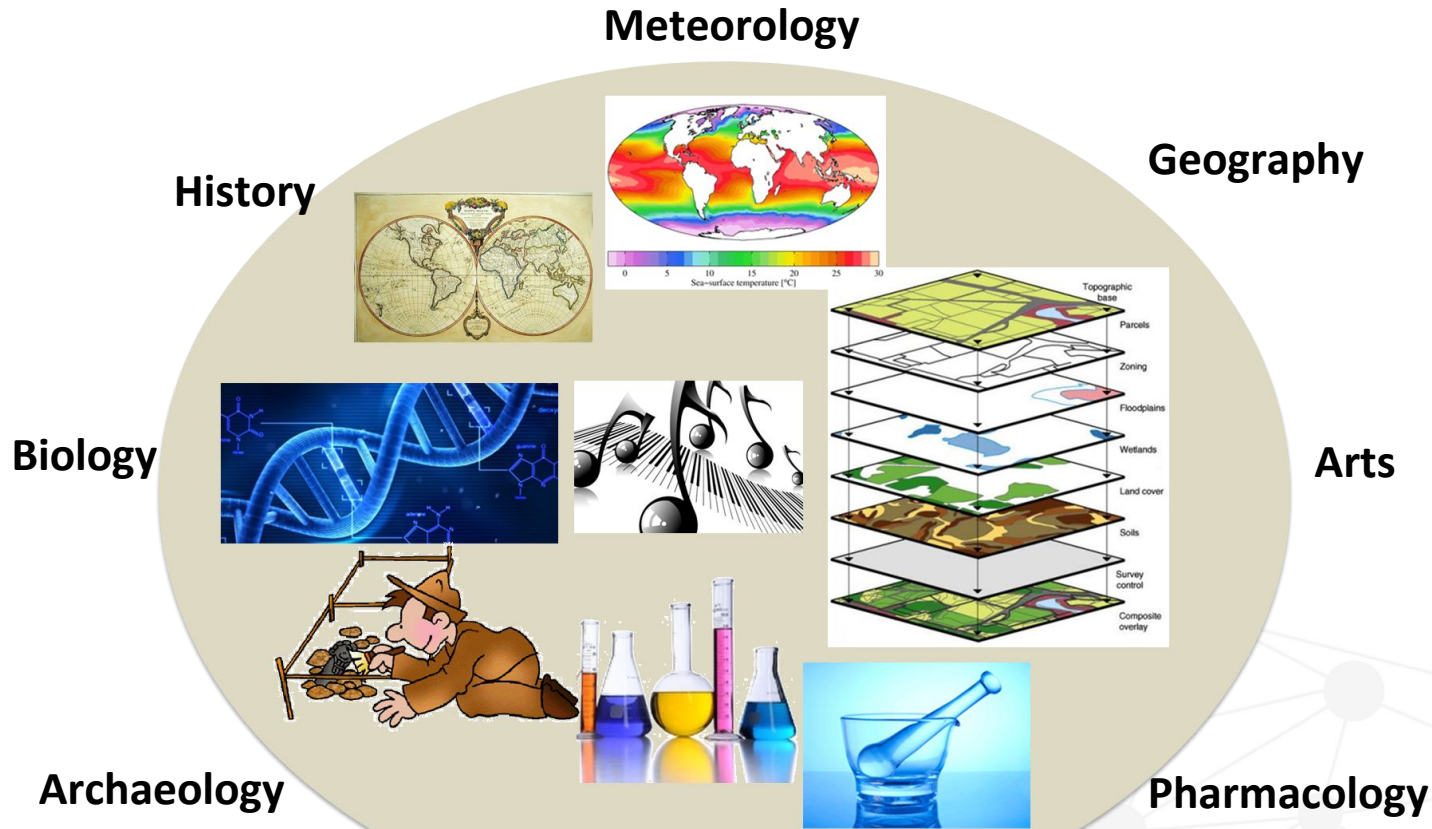
\*



**Sci-GaIA**  
www.sci-gaia.eu



# Used by many Communities of Practice

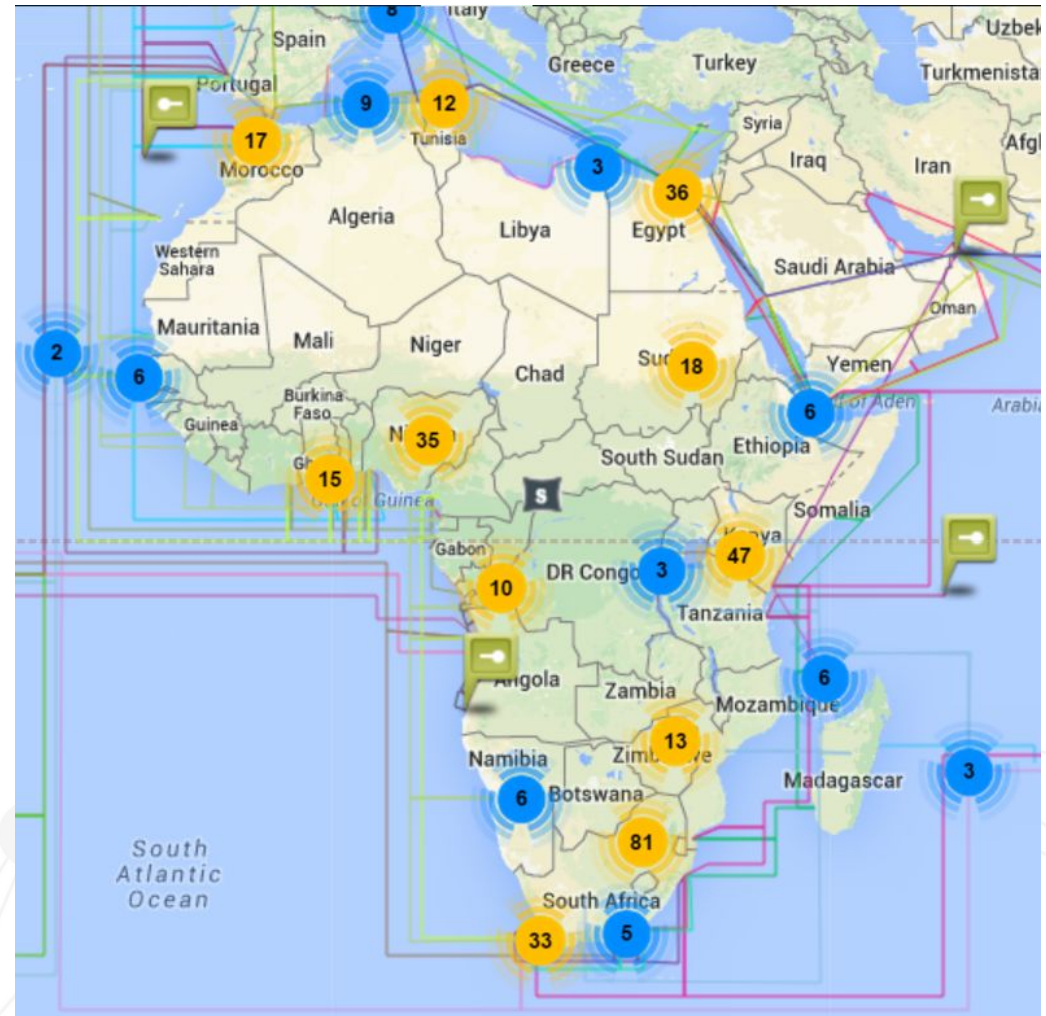


\*



**Sci-GaIA**  
www.sci-gaia.eu

*Science Gateways  
and E-  
Infrastructures Can  
Link Potential  
Resource  
Providers...*



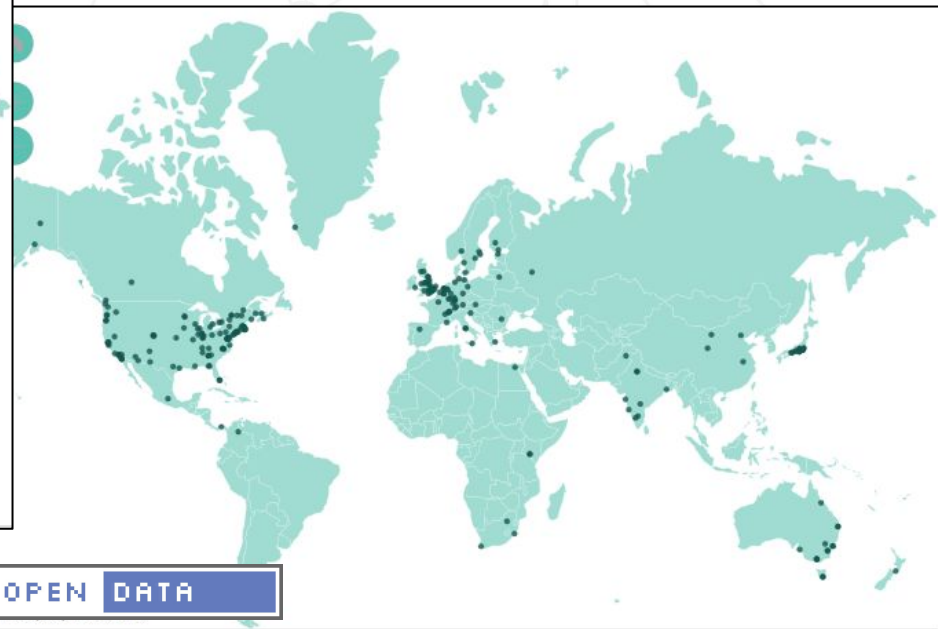
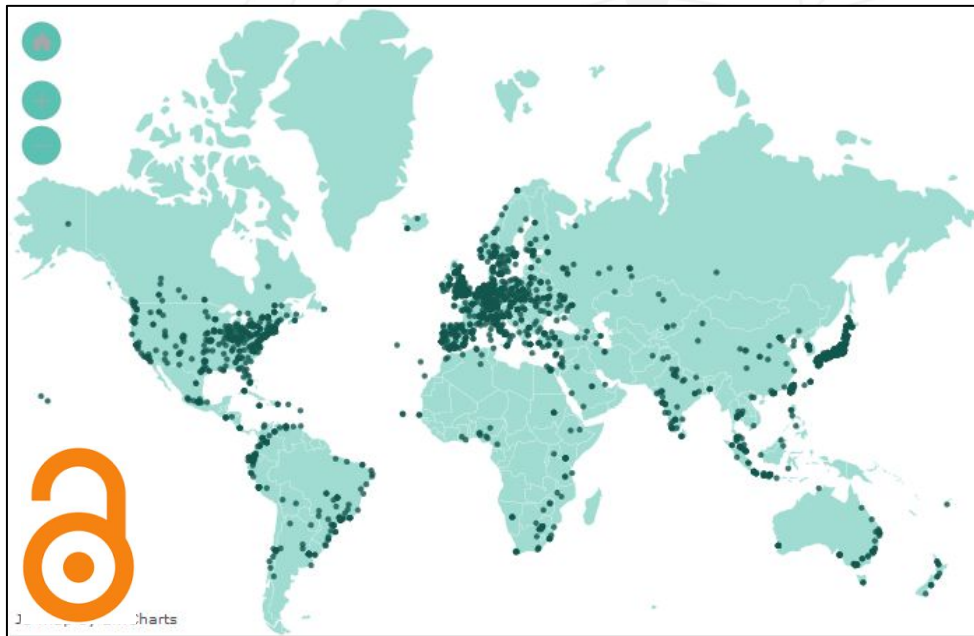
\*



**Sci-GaIA**  
www.sci-gaia.eu

# SGs can link e-Infrastructure Knowledge Base/Resources...

(Open Access Document Repositories, Data Repositories and Open Education Resources)



> 4,000 repositories  
> 30 million resource

*...Via National Research  
and Education  
networks (NRENs)...*

*Illustrative NRENs  
who have  
benefitted from  
our collaborations*

- KENET – Kenya
- MAREN – Malawi
- ngREN – Nigeria
- TENET – South Africa
- TERNET – Tanzania
- ZAMREN – Zambia

\*



**Sci-GaIA**  
[www.sci-gaia.eu](http://www.sci-gaia.eu)

*... To Communities of Practice...*

### *Example: AIBST*

- ❑ *What: African Institute of Biomedical Science & Technology (AiBST)*
- ❑ *Why: A network of researchers hosted by AiBST collaborating on biomedical and pharmacological sciences, clinical trials, and clinical drug studies*
- ❑ *Who: Zimbabwe (host), Tanzania, Uganda, Ethiopia, Kenya, Nigeria, South Africa*

\*



**Sci-GaIA**  
www.sci-gaia.eu

# Sci-GaIA:

Energising Scientific Endeavour through Science Gateways and e-Infrastructures in Africa

- **Concept**

- How can NRENs and Communities of Practice develop Science Gateways and e-Infrastructures?

- **Aim**

- To create a sustainable foundation of educational material and procedures for the development, management and editing of Science Gateways and e-Infrastructures in Africa and beyond to energise scientific endeavour

\*



**Sci-GaIA**  
www.sci-gaia.eu

# Objectives

- *To promote the uptake of Science Gateways and e-Infrastructures in Africa and Beyond (WP1)*
  - *To create Science Gateway and e-Infrastructure development guidelines and materials for NRENs, CoPs and Universities.*
  - *To monitor the successful implementation and uptake of standard-based Science Gateways and related e-Infrastructure services*
  - *To ensure interoperability and interoperation between African, EU and global e-Infrastructures.*
- *To support new and already emerging CoPs (WP2)*
  - *To identify, promote and support both web-based and in-person cooperation between application facilities, service providers, and associated end-user communities that can gain in their fields from using the e-Infrastructure tools fostered and promoted by the project.*
  - *This will also identify innovations and experiences made in the supported user-communities as well as the need for planning, development and coordination of policies, programmes and contents of Science Gateways and e-Infrastructures within these communities and in collaborations with important stakeholders such as NRENs.*

\*

# Objectives

- To strengthen and expand e-Infrastructure and Science Gateway related services (WP3)
  - To expand African e-Infrastructure services with an African Open (and Linked) Data Infrastructure, interoperable with and federated to (through the adoption of international standards and guidelines) those being consolidated in the EU and in other regions of the world.
  - To exploit Open Access repositories together with Science Gateways in order to deal with very important topics such as the discoverability, reproducibility and extensibility of science products, i.e. OPEN SCIENCE.
- To train, disseminate, communicate and outreach (WP4)
  - To run training and dissemination events for Science Gateway and e-Infrastructure development and to showcase how CoPs can develop their gateways and infrastructure services, in tight collaboration with NRENs and Universities for long sustainability purposes.
  - To disseminate project outcomes with the intense communication of its achievements and activities across Africa and beyond and with the publication on Open Access journals of the proceedings of User Fora and other important events.

\*



# *New Initiatives – Open Science*

- TBC

\*



# Key Events

## ■ Workshops

- Workshop 1 collocated with the UbuntuNet-Connect Conference, November, 2015 in Maputo, Mozambique;
- Workshop 2 collocated with WACREN Conference, March 2016 in Dakar, Senegal (Open Science);
- Workshop 3 collocated with the Technology Transfer Alliance, September 2016, Dar es Salaam, Tanzania. It will focus on the pedagogical aspects of the project, as well as international student-led Science Gateway projects.

## ■ Training events

- One web-based Winter School that will consist of online webinars and offline training materials for self-paced learning – April 2016;
- One 2-week long face-to-face Summer School in Europe – July 2016 / Catania, Italy.

\*



**Sci-GaIA**  
www.sci-gaia.eu

Get involved!  
See the forum at [www.sci-gaia.eu](http://www.sci-gaia.eu)

Thank you!



**Sci-GaIA**  
www.sci-gaia.eu

\*