

Accessible Arab Region

ICT For ALL

Amman, Jordan
29-30 April 2025

itu.int/go/AccessibleARB25



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Co-organized by:



Shared Prosperity Dignified Life



Research and Education Networks to Support Accessibility and ICT for All

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Amman, 30 April 2025

The Question



Accessible Arab?

ICT for All?

What are Research & Education Networks?



- *Research & Education networks are **non-commercial dedicated** networks that connect universities, schools, research centers, hospitals, museums, and other institutions engaged in research and educational activities.*
- *National Research and Education Networks (**NRENs**) are established to provide connectivity and communications services for the research and education communities at the **national level**.*
- *Regional Research and Education Networks (**RRENs**) are connecting NRENs to provide access and services to researchers and educators across borders.*
- *Altogether form the Global Research and Education Network (**GREEN**)*

Main Drivers for Research Networks



- **Technological:** Satisfy high demand eScience initiatives, **Multimedia Collaboration**, *Distributed High Performance Computing (HPC, GRIDs, Clouds)* for Earth Sciences, High Energy Physics (**CERN, LHC...**), **Bioinformatics**, **Computational Chemistry**, **Radio-astronomy**, **Engineering Planning** (computations, emulations & simulations), **Cultural** (archiving, collaborative digital access & processing)...
- **Social:** Common culture of R&E community, Virtual Organizations VOs, collaborative research, tele-education, Smoothing the Digital Divides, affordable high bandwidth linkage to the Global R&E community
- **Economic:** Demand aggregators: University & school staff, students, researchers. Consolidation & control of diverse public expenditures. Promotion of Information Society (e-Government, e-Business, e-Health). Stimulation of technological & telecom markets → Competitiveness

Main Objectives for Research Networks



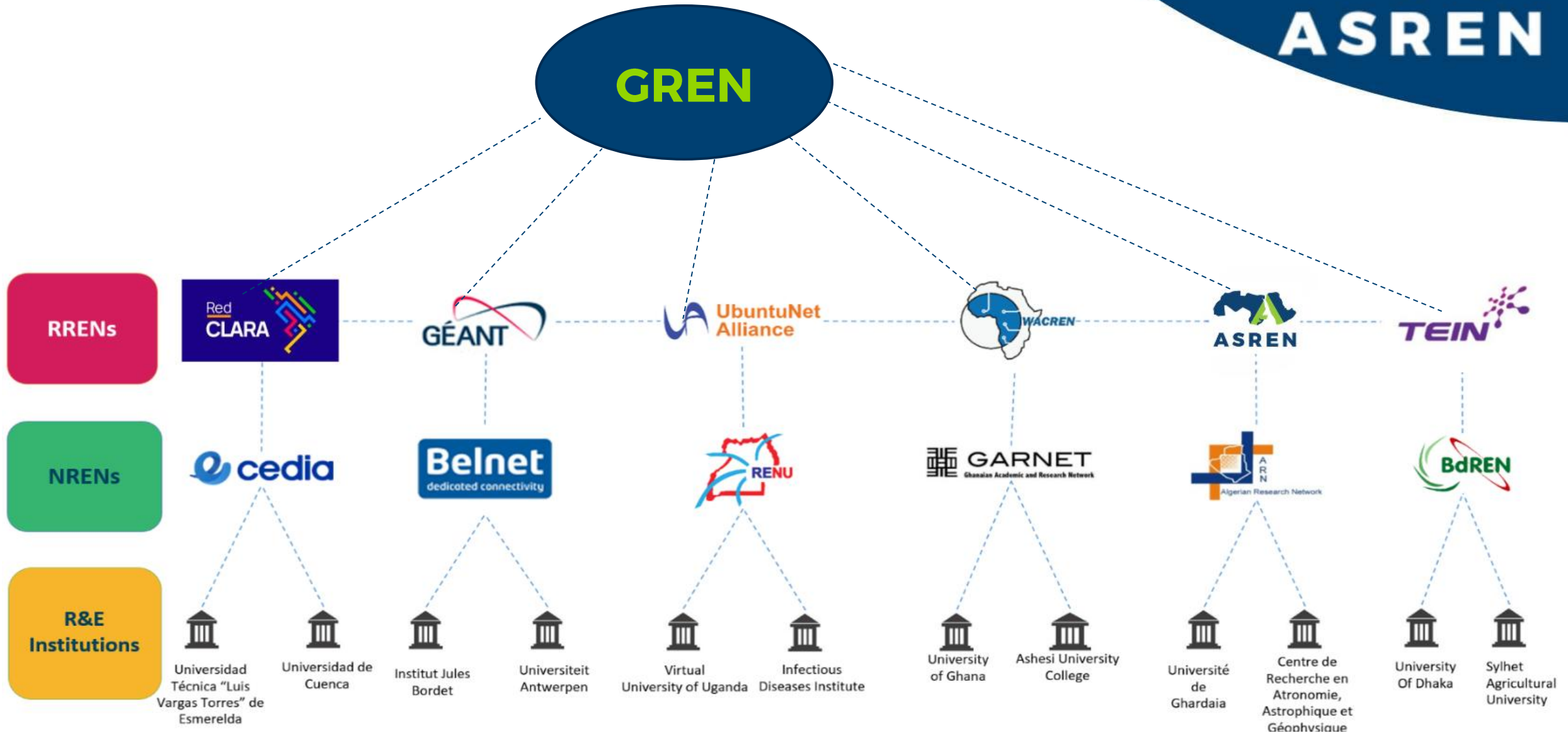
- *Provide scientific research and education institutions with **reliable means of communication** in order to facilitate ease of cooperation and coordination*
- *Strengthen the notion of **partnership** and encourage joint scientific research among communities.*
- ***Minimize cost of research** by using diversified academic and technical resources to be made available for use on the network with no need for duplicating investment.*
- *The fact that students, teaching staff, and researchers use such dedicated networks would eventually **uplift efficiency and productivity** and would boost the concept of creativity and innovation.*

Main Services of Research Networks



- **Unified connectivity:** Ensures standardized communication across all institutions, enhancing resource sharing and collaboration.
- **Consolidated Internet services:** NREN acts as ISP for universities, streamlining internet access.
- **Regional research network connectivity:** Facilitates joint research and online education initiatives.
- **Unified content access:** Provides all universities with unified access to journals and library resources.
- **Multimedia services:** Includes video conferencing, media streaming, IP telephony, and wireless roaming.
- **Software licensing agreements:** NREN negotiates cost-saving software licenses for universities and institutions.
- **Security services:** Centralized protection against spam, viruses, and other threats.
- **Additional services:** Manages national Internet Exchanges, offers domain name registry and networking consultancy

NRENs, RRENs and GREN





CANARIE

Internet2

C@ribNET

RedCLARA

GEANT

ASREN

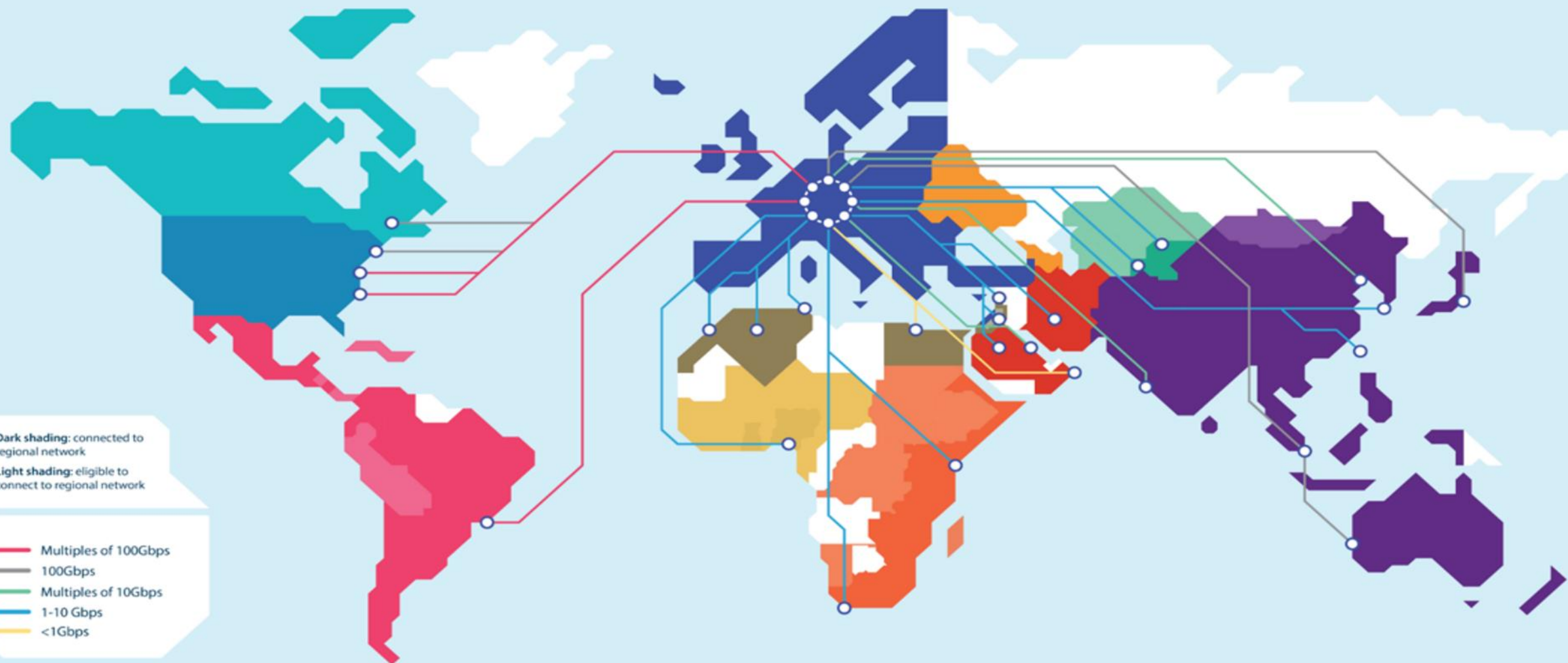
WACREN

**Ubuntunet
Alliance**

CAREN

APAN

- NRENs in operation
- NRENs in advanced planning
- Early or no planning for NREN



Canada & USA

Latin America

Europe

North Africa & Eastern Mediterranean

West & Central Africa

Eastern & Southern Africa

Central Asia

Asia-Pacific

Other R&E Networks



INTERNET

The Arab States Research and Education Network, ASREN, is the official and legal organization responsible for promoting and establishing the Pan-Arab e-Infrastructures and e-Services for the Arab research and education communities to enable science cooperation, boost scientific research and develop education and learning

- *Launched at the League of Arab States under the Patronage of its Secretary General.*
- *Endorsed by European Commission, AArU, FASRC,*
- *Honorary Chaired by HE Secretary general of AS*
- *Registered in Germany as non-for-profit GmbH*

Vision: Pan-Arab collaborative research and education projects and activities, contribute to boost the scientific research, innovation and education levels in the Arab countries by uplifting efficiency and productivity of research and education communities.



Mission: To implement, manage and extend sustainable Pan-Arab e-Infrastructures dedicated for the Research and Education communities and to boost scientific research and cooperation in member countries through the provision of world-class e-Infrastructures and e-services.

ASREN Objectives



1. Build, maintain and consolidate regional e-Infrastructures dedicated to e-Science and education across the Arab countries:

- *Develop, manage and operate a regional network that interconnects the Arab NRENs.*
- *Promote harmonization of policies and standards in relevant areas at a regional level.*
- *Advocate/lobby at the regional level amongst decision makers and stakeholders*

2. Contribute to creating and sustaining NRENS:

- *Support NRENs to implement leading-edge technological solutions while pursuing cost-effectiveness*
- *Favoring exchange of expertise and best practices amongst NRENs in the region*

3. Facilitate collaboration and cooperation among researchers and academics:

- *Increase availability and accessibility to knowledge resources*
- *Promote development of scientific and cultural content in Arabic*
- *Facilitate knowledge exchange and transfer processes across the region and worldwide*
- *Promote the adoption and usage of the e-Infrastructures and services among the scientific community*
- *Strengthen regional partnerships and encouraging joint scientific research*

ASREN's Timeline

2008

2010

2012

2022

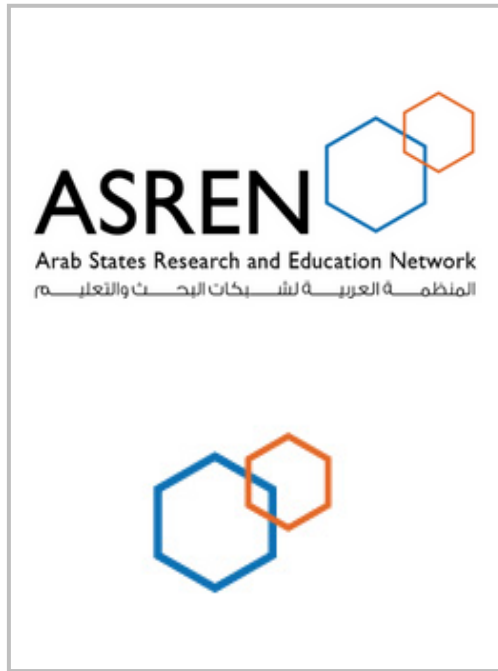
2023

2025

Taking the Region Beyond



New Identity, New Branding, New Slogan and New Logo



Arab
Asia
Africa
Advolution
Access

Uniting Minds, Shaping Futures
نوحّد الأفكار، نشكّل المستقبل

Membership Progress



ASREN Membership includes NRENs from Jordan, Morocco, Oman, Sudan, Tunisia, Djibouti, Egypt, Palestine, Libya, Somalia, Syria, Lebanon, Yemen and Mauritania

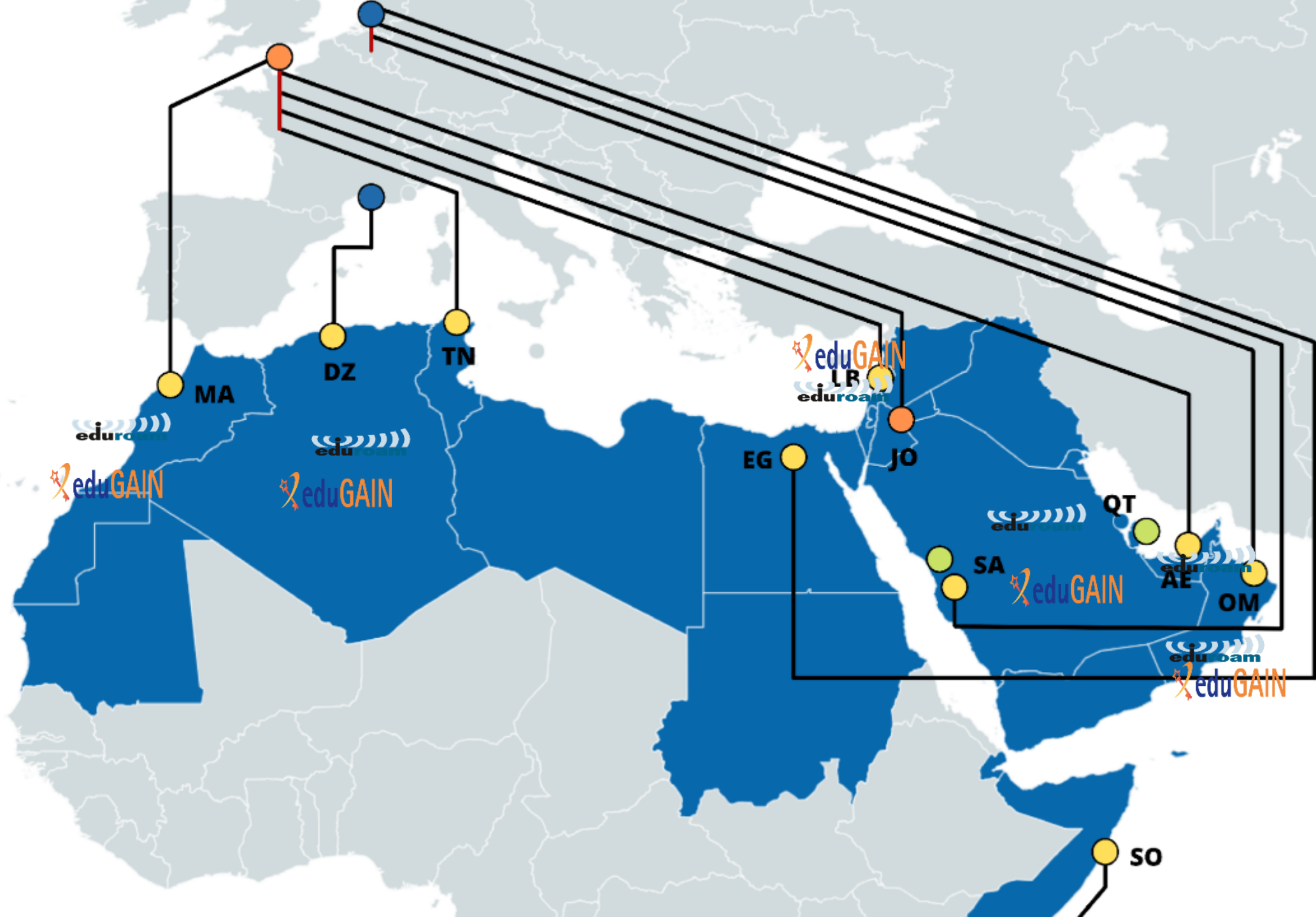
In Progress



Areas of Intervention



- *Dedicated R & E Networks at national, regional and global levels*
Network Management, Monitoring, Network Security, PerfSonar, MANRS...
- *Research and Education Services*
Educational roaming → eduroam, Federated Access through eduGAIN
- *Science Cooperation*
UN-SDGs through science, Open Science, Open Access, OER, Open Science Platforms, Science Diplomacy
- *Community Engagement*
Science Communities and Communities of Practice, R&E Communities, Technical Communities
- *Scientific Computing*
HPC, Clouds, Grids
- *Internet Access, Security and Governance*



Partnership / Membership With the World



اتحاد الجامعات العربية



Internet Society
Foundation



اتحاد مجالس البحث العلمي العربية
Federation of Arab scientific research councils



unesco

منظمة الأمم المتحدة
للتربية والعلم والثقافة



GEO GROUP ON
EARTH OBSERVATIONS



LA Referencia

Red de repositorios de acceso abierto a la ciencia



BIBLIOTHECA ALEXANDRINA

مكتبة الإسكندرية



مركز الوطني الجامعي للتوثيق العلمي والتقني



Centre National Universitaire de
Documentation Scientifique et Technique
www.cnudst.rntt.ma



Projects



New role/engagement of NRENs

How can NRENs support Accessibility?

- *UN SDGs → Science, Research, Education*
- *Science and Science Diplomacy*
- *Earth Observation, Healthcare*
- *Global Digital Compact*
- *Open Science, Open Access, Open Data....*
- *Science Communities, Communities of Practice*
- *Scientific Computing, Clouds,*
- *Science Collaboration Platforms*
- *Internet Access, Security and Governance*

What NRENs can do?

- **Host**
- **Convener**
- **Operator**
- **Infrastructure Provider**
- **Cloud/Service Provider**
- **Secretariat**
- **Intervenor**
- **Promoter**
- ..

ASREN Calls for Science Dialogue



- ***Science Cooperation to advance and progress societal development (e.g. achieving the UN SDGs)***
- ***Open Science including Open Access, Open Data, OER***
- ***Regional Open Science Cloud as effective means to enhance science collaboration
→ Arab States Open Science Cloud (ASOSC)***
- ***Regional and Global Science Communities to foster growth and conducting productive science***

Open Science – Partnerships



اتحاد الجامعات العربية

MoU Signed



منظمة الأمم المتحدة
للتربية والعلم والثقافة

MoU Signed



اتحاد مجالس البحث العلمي العربية
Arab League Scientific Research Council

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Contributor



Red de repositorios de acceso abierto a la ciencia

Partner



Observer and Contributor



SOMALI RESEARCH AND EDUCATION REPOSITORY

Collaborator



CONNECTING RESEARCH,
ADVANCING KNOWLEDGE

Agreement Signed



LIBSENSE
STRENGTHENING OPEN SCIENCE IN AFRICA

Partner



MoU Signed



Egyptian Knowledge Bank
بنك المعرفة المصري

Discussing Collaboration



Agreement Signed



Centre National Universitaire de
Documentation Scientifique et Technique
www.cnu-st.ma

MoU Approved



Institut Marocain de l'Information
Scientifique et Technique
المعهد المغربي للإعلام العلمي والتقني

MoU in Discussion



البنوابة الفلسطينية
للمكتبات

MoU in Discussion



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مكتبة الإسكندرية

MoU in Approved



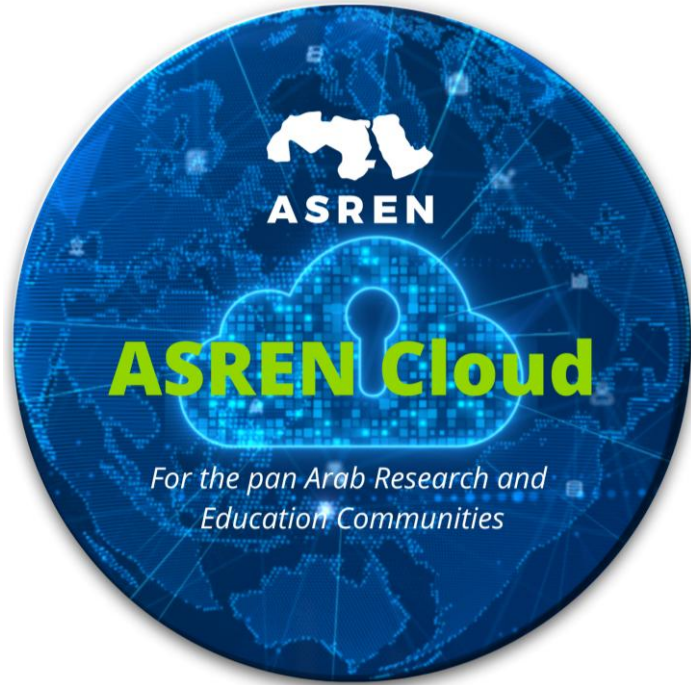
MoU Signed



MoU Signed

MORE
TO
COME

In Action - Open Science Cloud



In Action – Science & Communities

- Open Dialogue



EUMETSAT



Federation of Arab Scientific Research Councils



SESAME

GEO GROUP ON EARTH OBSERVATIONS

AfriGEO



LifeWatch
ERIC

Medusa Connectivity for ASREN NRENs



- Contract signed for provision of fibre connectivity for:
 - Morocco, Algeria, Tunisia & Egypt.
 - Connecting to Marseille & Cyprus.
- Total EU investment = 40 M€:
 - Initial deployment of 2x100Gbps per country.
 - Includes management of all parts of system for 25 years.
 - Operations and maintenance costs for first ten years.
- In operation:
 - France, Morocco & Tunisia – exp. start 2026
 - Algeria, Cyprus & Egypt – exp. 2nd half 2026



Co-funded by
the European Union

- Work on extending Medusa to East-Med countries is progressing too

Overall Objective: *Enhanced connectivity in the Southern Neighbourhood as a vector of human capacity development*

Specifically:

- *reinforce the role and capabilities of ASREN and NRENs through specific actions to increase their capacities, including promotion of gender equality*
- *increase access to high-speed digital technologies (including Medusa) by Research and Education institutions in the Neighbourhood South*

WP1: Capacity Development

WP1.1 ASREN sustainability

WP1.2 NREN capacity development

WP2: Connectivity Infrastructures

WP2.1 International connectivity

WP2.2 ASREN regional infrastructures

WP2.3 National capillarity support

WP3: Digital Data Infrastructures and Services

WP3.1 Enhancing service offering & access mechanisms

WP3.2 Regional open science cloud and services

WP4: Outreach, Advocacy and Dissemination

WP4.1 Project visibility and dissemination

WP4.2 Stakeholder engagement

- **Beneficiaries:** MR, DZ, TN, EG, LB, PL, JO
- **Four years project (foreseen to start September 2024)**
- **Total budget:** €13,334,000 with 90% EU funding.
- **Financed by Regional South Annual Action Programme under NDICI-Global Europe**
- **Main Contractor:** GEANT
- **Co-Applicants:** ASREN, CNRST, AUB, SESAME, CYNET, NORDUnet
- **Keywords:** Connectivity, Institutional and human Capacity Building, Cybersecurity, Open Science, Clouds, HPC, Science Cooperation, Community Engagement

The Answer



✓ Accessible Arab?
✓ ICT for All?

***Its Time to rely on NRENs
Its Time to Support NRENs***

e-AGE24

Tunis, Tunisia | 11 - 13 December 2024
Innovative NRENs: Adapting to Trends



230 Participants
55 Speakers
42 Countries
24 NRENs



e-AGE25

Amman, Jordan | 1 - 3 December 2025

Uniting Minds



ASREN

Main Events

- 15th ASREN's Annual Conference
- 17th EU-MED Event on e-Infrastructure
- 5th Arab Science Cooperation Forum
- 3rd Arab Event on Open Science
- EUMEDplus meeting
- 2nd Women in STEM Track
- 2nd Next-Gen Innovators Platform



**ASREN is
Committed
to Support
the Progress
to Achieve
the UN-SDGs**



Thank You!

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