AfricaConnect and NREN Infrastructure for Climate

Omo Oaiya - Chief Strategy Officer, WACREN

AfricaConnect High-Level Meeting, Trieste
24 October 2024

Co-funded by the European Union

ABOUT WACREN

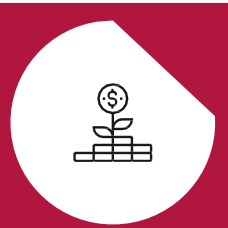
West and Central African Research and Education Network

VISION

To be a world-class infrastructure and services for the West and Central African Research and Education community, for development.

MISSION

To build and operate a world-class network infrastructure, develop state of the art services, promote collaboration among national, regional, international research and education communities and build the capacity of the REN community



MEMBERS

WACREN has 20 national members across the West and Central African region.

Membership categories: NREN Member, Associate and Premium Associate

WACREN Members

- NREN Members (14)

Country	NREN
Burkina Faso	FasoREN
Cameroon	RIC
Côte d'Ivoire	RITER
Ghana	GARNET
Guinea	GnREN
Liberia	LRREN
Mali	MaliREN
Niger	Niger-REN
Nigeria	NgREN
Sierra-Leone	SLREN
Tchad	TchadREN
Togo	TogoRER
Guinea-Bissau	**RNEP-GW**
Mauritania	**RIMER**

- Premium Associate Members (7)

Country	Institution
Côte d'Ivoire	Université Virtuelle de Côte d'Ivoire
Côte d'Ivoire	Centre National de Calcul de Côte d'Ivoire
France	RENATER
Nigeria	Eko-Konnect
West Africa	WASCAL
Guinea-Bissau	Universidade Amilcar cabral
The Gambia	University of The Gambia

- In formation:

  Benin – RBER (formalisation)

  The Gambia

RENs – MUCH MORE THAN JUST CONNECTIVITY

- Deployment of R&E services for open access to educational resources – **Open Science Infrastructure**
- Tailored **hosted services** to the education and research communities
- **Trust and Identity** services for a transparent and secure access to shared resources
- **Federated identity management** for libraries and other services
- Proactive **cybersecurity** for the members and their digital assets
- **Videoconferencing** services to support distance and blended learning

eduroam

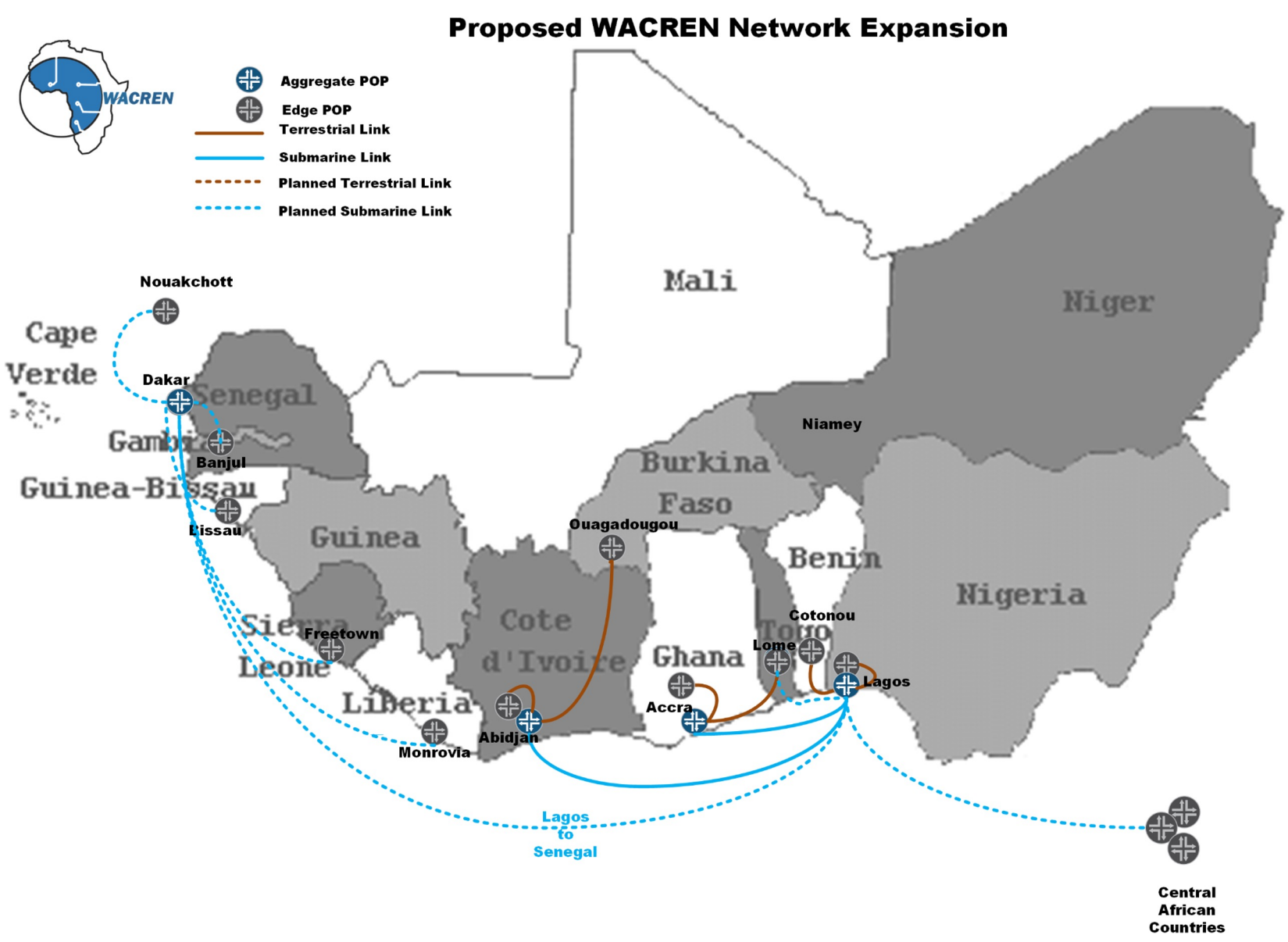
eduID.africa

LIBSENSE
STRENGTHENING OPEN SCIENCE IN AFRICA

eduGAIN

TBA TRUSTBROKER AFRICA

CURRENT NETWORK



AfricaConnect 3 Overview & Milestones

Co-funded by the European Union

Objectives and Outputs

AC3 seeks to unlock the **potential of education and research** through increased access of African R&E institutions to digital infrastructures and technologies.

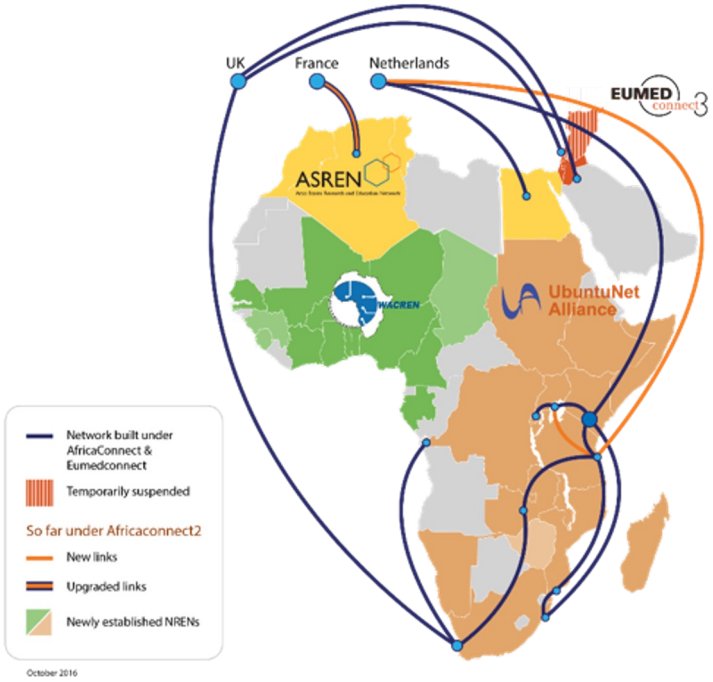
Output 1:
Access to affordable and adequate e-infrastructure is increased.

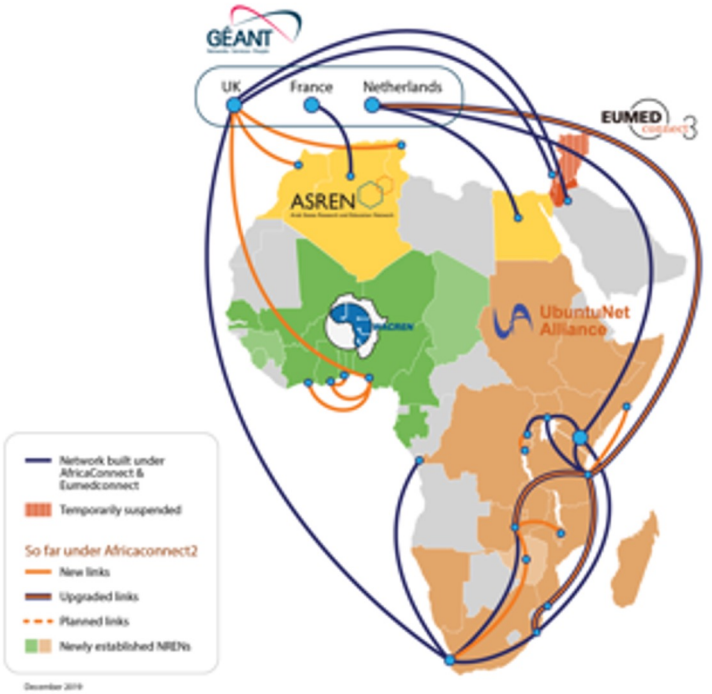
Output 2:
Dedicated R&E services and applications are developed.

Output 3:
Adequate human resource capacity and expertise is built.

Output 4:
Digital transformation in research and education is raised.

Connectivity of NRENs in Africa 2010-2019





Before AfricaConnect - 2010
5 Countries Connected

End of AfricaConnect1 -2015
9 Coutries connected

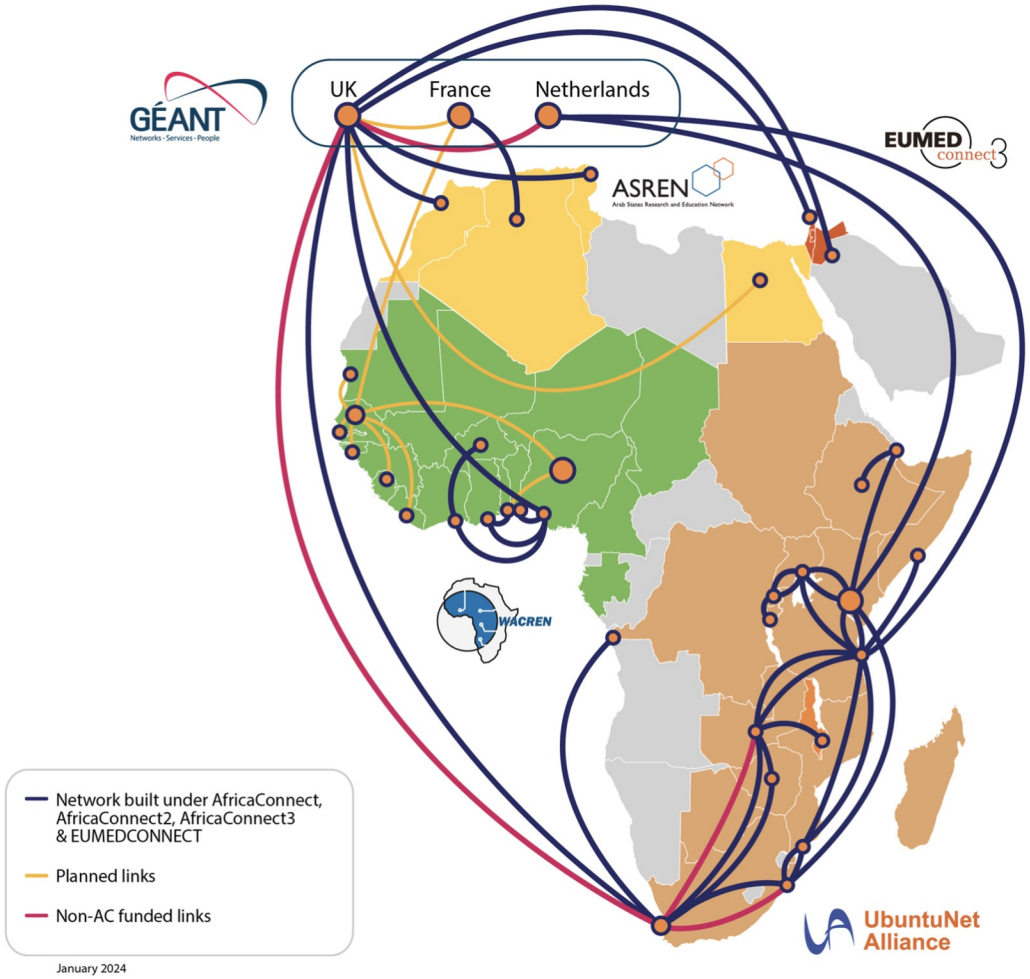
End of AfricaConnect2 -2019
19 countries connected

Connectivity of NRENs in Africa

Since AfricaConnect started in 2011, **23 out of 38 African** NRENs have been connected to their regional network:

- **UbuntuNet Alliance 13**: Botswana, Burundi, DRC, Kenya, Malawi, Mozambique, Rwanda, Somalia, South Africa, Tanzania, Uganda, Zambia and Zimbabwe.
- **WACREN 6**: Ghana, Nigeria and Togo, Benin, Burkina Faso and Côte d'Ivoire.
- **ASREN 4**: Algeria, Egypt, Morocco and Tunisia.

WACREN to connect Guinea-Bissau, Guinea, The Gambia, Liberia, Sierra-Leone, Mauritania and South Africa – Q4 2024 procurement.



Success stories from AC3

- Deployment of new e-services and applications.
    - Trust and Identity - eduroam, eduID
    - Collaboration - WACREN Zoom, WACREN Drive.
    - Cybersecurity - **TrustBrokerAfrica** – Threat Intelligence Pilot
    - Open Science - **LIBSENSE** - BAOBAB Shared Open Access Repository, PublishNow, PIDsLink)
    - Data Delivery - EUMETCAST Terrestrial
- Expansion of eduroam to 49 institutions.
- Enhanced collaboration through regional and national workshops.
- Deployment of standards training infrastructure and cloud services.

Together we connect **1900+ insitutions** in Africa and **5+ million** users

AfricaConnect (4)Coming Soon

2025 - 2029

Co-funded by the European Union

UbuntuNet Alliance

WACREN

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GÉANT

WACREN Climate Program

Current Activities

- WACREN is a GEO Participating Organisation
- Federation of HPCs in African Centers of Excellence in the region
  - Roadmap of activities established
- EUMETCAST Terrestrial service offered on WACREN backbone
- IoT and Weather Monitoring - Collaboration with International Centre for Theoretical Physics (ICTP)

Next steps

- Strengthening Regional and Global Climate Research Collaboration – Network of Climate Champions
- Interconnect HPCs in five countries to the WACREN backbone in a dedicated network - SCION-based Science DMZ
- NREN connectivity to regional climate and meteorological competence centers - EUMETCast Terrestrial Data Portal
- Deploy regional network of relatively inexpensive weather stations
  - Wireless sensor networks and IoT gateways into NREN networks and cloud infrastructure to provide data for research and support of local meteorological services
- Align with LIBSENSE open data initiatives
- Upgrade WACREN Cloud with new nodes and more GPUs – Upgrade models for water and energy resource management

Recent AC3 Capacity Building Workshops

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LIBSENSE
STRENGTHENING OPEN SCIENCE IN AFRICA

STRENGTHENING AFRICAN RESEARCH FOR DEVELOPMENT

A Leadership Engagement Meeting on Policy and Practice

13 AUGUST **2024**
07:00 UTC
CVCNU SECRETARIAT, ABUJA

ORGANIZED BY | LOCAL HOST | PARTNER | WITH SUPPORT FROM

LIBSENSE Connect

WORKSHOP ON ESTABLISHING A NATIONAL REPOSITORY SERVICE

9:00 AM | 14-16 August 2024 | NgREN Secretariat, Abuja

ORGANIZER | LOCAL HOSTS | WITH SUPPORT FROM

WACREN

Women in WACREN WORKSHOP

Python for Weather and Climate Data Analysis

27–30 Aug. 2024 | Accra

WITH SUPPORT FROM

WACREN

Trust, Identity & Access Management Roadshow

Sierra Leone

For university ICT directors, REN DevOps engineers,application developers, REN system engineers, university librarians, researchers and faculty staff

9:00 Am | 4 - 6 September, 2024 | Njaja University | Njala

LOCAL HOST | WITH SUPPORT FROM

WACREN

BGP WORKSHOP FOR NATIONAL RESEARCH AND EDUCATION NETWORKS

09:00 UTC | 2ND - 4TH OCT. 2024 | ACCRA

WITH SUPPORT FROM

Africa Connect 3

WACREN

eduroam Deployathon Nigeria

Implementing eduroam On A Campus Network

9:00 AM | 9TH-11TH OCT 2024 | UNIVERSITY OF LAGOS

LOCAL HOST | WITH SUPPORT FROM

Africa Connect 3

eduroam

TBA TRUSTBROKER AFRICA

SIM3 AUDITOR CERTIFICATION TRAINING

09:00 UTC | 14-17 October 2024 | Cotonou, Benin

Applicants need to have demonstrable knowledge, sufficient experience in CSIRT/SOC/ISAC work, and familiarity with the CSIRT community

ORGANIZED BY | HOST | FACILITATORS | WITH SUPPORT FROM

FG BENIN | Open CSIRT Foundation | SHADOWSERVER | Africa Connect 3

WACREN

Thank you

Any questions?

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