

CONNECTING AFRICA TO UNLIMITED POSSIBILITIES



**2019 - 2025
IMPACT REPORT**

What is AfricaConnect3?

AfricaConnect3 (AC3) is the third phase of the European Union co-funded AfricaConnect project, which started in 2011 to enhance high-speed internet connectivity and e-infrastructure for Research and Education Networks (RENs) across Africa. The project was implemented by the three Regional Research and Education Networks (RRENs) in Africa: the [UbuntuNet Alliance](#) across Southern and Eastern Africa, [WACREN](#) for West and Central Africa, and [ASREN](#) for North Africa, in collaboration with their respective NRENs, local communities and the pan-European network, [GÉANT](#).

AC3 addressed the continent's significant challenges in leveraging digital education and research. Limited connectivity, high costs, and market monopolies have left African tertiary institutions among the least connected globally, hindering researchers and students from accessing global knowledge networks and contributing much less to the global research output. By strengthening the RENs, AC3 is driving digital inclusion, fostering collaboration, and catalyzing the continent's contribution to the global digital economy, while addressing youth unemployment through enhanced education and innovation.

What is an NRENs?

An NREN is a dedicated internet infrastructure and service provider to the research and educational communities within a country. NRENs provide connectivity and services to higher education establishments, i.e. universities, and research institutes, but can also support schools, libraries, museums, and teaching hospitals. The real value of NRENs goes beyond reduced bandwidth prices, in that they offer more than just network services – providing a diversified ICT services portfolio that enables resource access and global science collaboration, while also advocating for optimized ICT tools tailored to the needs of research and education.

Established NRENs

38

What did the project set out to achieve?

AC3 main outcome was to **increase the use of digital technologies by African education and research institutions.**

Despite operating through challenging periods such as the COVID-19 pandemic, the AC3 project has made significant impact in the African NREN community. The COVID-19 pandemic exposed deep inequalities in internet access and infrastructure across sub-Saharan Africa, preventing many institutions from transitioning to online education and causing widespread academic disruption. The pandemic also strained the financial stability of NRENs, highlighting the need for diversified services to ensure resilience amid declining revenues from reduced campus bandwidth usage.

Despite the challenges, African NRENs, RRENs, and the AC3 project have proven to be agile and innovative, actively working to develop next-generation ICT services and address students and researchers needs. These efforts led to a key outcome achieved through four main outputs.



The access to tertiary education and research institutions is enhanced by establishing secure, adequate and affordable network infrastructures

In order to ensure that the users continue to benefit from secure, adequate and affordable network infrastructures, and that they can connect with their global peers, the project partners work to maintain, expand and upgrade connectivity for NRENs. Regional procurement strategies were developed for all clusters, addressing market conditions, NREN readiness, and cost-effectiveness.

While the AC3 project has played a vital role in expanding connectivity, its success relies on the dedication of local and regional stakeholders. By supporting NRENs, AC3 helps connect more people—whether first-time users gaining access to research and education networks or existing users benefiting from better bandwidth and quality. This has led to more countries, institutions, students, and researchers being connected, amplifying the impact of digital infrastructure.

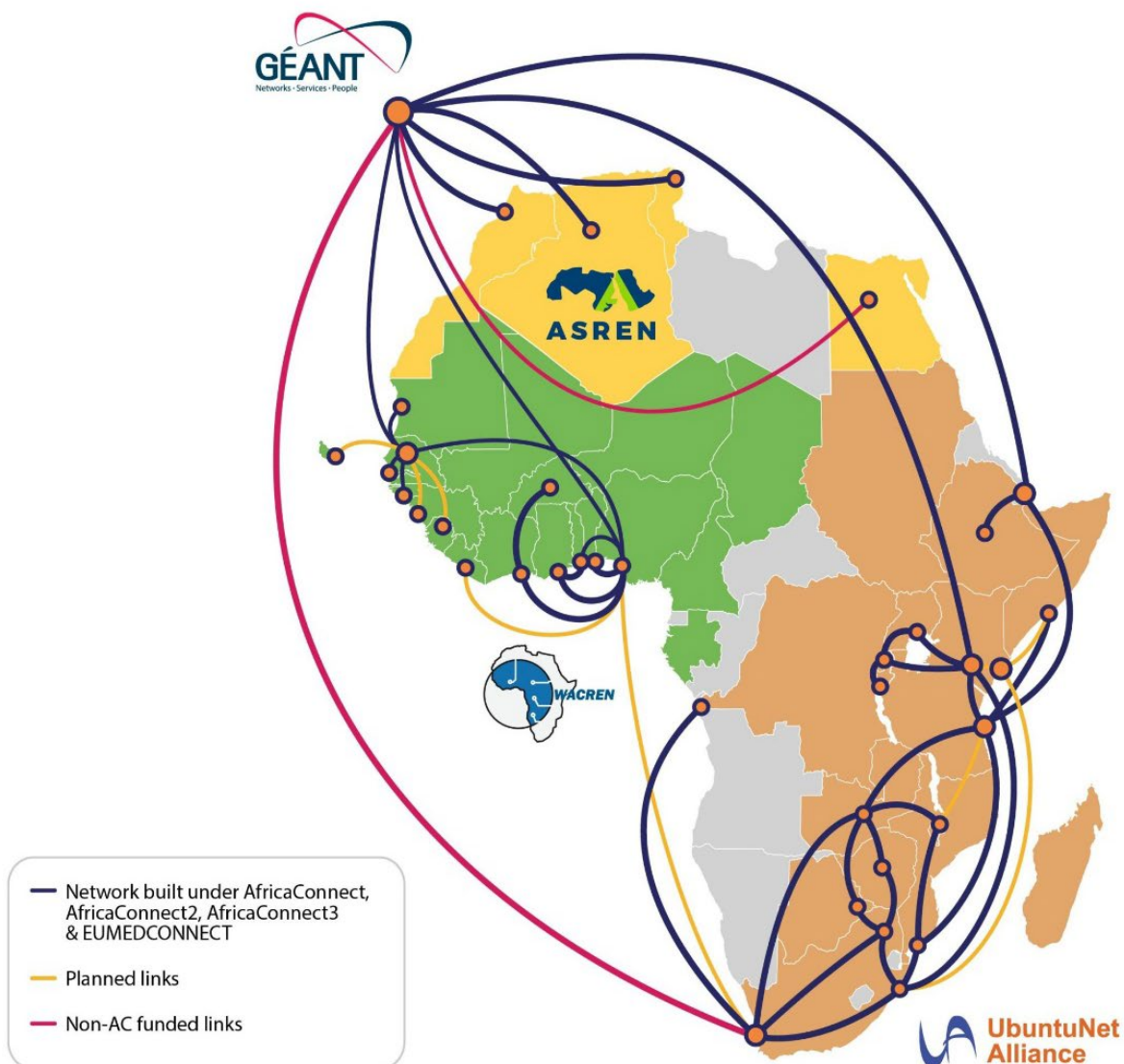
Moreover, AC3 acts as a catalyst, attracting additional investments from governments, development partners, and institutions that help bridge connectivity gaps. However, the true impact comes from the hard work of NRENs and research institutions at the national level, ensuring that regional efforts translate into meaningful local progress.

This resulted in:

**24 out of 38 countries connected
to the regional and international network**

Over 3,000 institutions connected to the NRENs

Over 9 million users



NRENs are the primary enablers of digital educational transformation on the continent. Together with their staff, they ensure that institutions and communities can unlock their full potential through seamless and affordable connectivity. They have a multiplier effect and a greater impact on society: by connecting institutions, they help researchers and students access digital infrastructures and technologies and solve some of world's greatest challenges.



"MARWAN will continue to support its member institutions to deploy further services and to deploy eduroam and eduGAIN at all universities."

Redouane Merrouch, Director of MARWAN

"Connecting to the UbuntuNet Alliance network has been a transformative step for BotsREN, significantly enhancing our ability to support research and education institutions in Botswana. This connection provides our members with access to high-speed, dedicated research networks, fostering collaboration with regional and global partners."



Our motivation was clear, we needed a robust and scalable infrastructure to drive innovation, support data-intensive research, and bridge the digital divide in academia. With this connectivity, we are unlocking new opportunities for researchers, educators, and students, ensuring that Botswana remains at the forefront of digital transformation in education and research."

Tshepo Tsheko, Managing Director of BotsREN



The development of Research and Education through above-the-net services, applications and dedicated user support is fostered

As they become more digitally-driven, academic and research institutions need specific services to support their collaboration activities and to access resources worldwide. During its iteration, AC3 has supported the uptake and local deployment of several services:

UbuntuNet Alliance:

Cloud: Cloud Infrastructure as a service, Cloud Storage as a Service, [FileSender](#), Nextcloud

Community Engagement: BigBlueButton, eduMEET, Switchboard

Open Access and Open Science: [AfricArXiv](#), [Utafiti Africa](#), [TOME](#)

Trust & Identity: [eduGAIN](#), [eduID.africa](#), [eduroam](#), Managed IdP, Research4Life, Sectigo SCM

WACREN:

Cloud: WACREN Drive and Video Portal

Community Engagement: WACREN portable video kit and WACREN Teams

Open Access and Open Science: [BAOBAB](#), EUMETCAST Terrestrial, National Multitenanted Repository, [PLSLink](#), [PublishNow](#)

Trust & Identity: [eduGAIN](#), [eduID.africa](#), [eduroam](#), [TrustBroker Africa](#), WACREN Campus IAM

ASREN:

Cloud: Cloud Infrastructure as a Service, Cloud Storage as a Service SaaS, GPU as a Service, [FileSender](#), Virtual Machines of certain capacity;

Trust & Identity: [eduGAIN](#), [eduID.africa](#), [eduroam](#)

eduroam

[eduroam](#) (education roaming) is the secure, worldwide roaming access service developed for the international research and education community. Its main target groups consist of students, researchers, and staff who can benefit from the flexibility of obtaining Internet connectivity across campus and abroad, as well as municipalities who want to respond to the evolving needs of mobile students.



Launched in 2003 in Europe, eduroam is now available in over 100 territories worldwide, of which 21 are in Africa.

10

in Eastern and
Southern Africa

In Ethiopia, Kenya, Madagascar, Malawi,
Mozambique, Rwanda, South Africa,
Tanzania, Uganda, Zambia

9

in West and Central
Africa

In Benin, Burkina Faso, Gambia, Ghana,
Mauritania, Nigeria, Senegal, Sierra Leon,
and Togo

2

in North Africa

In Algeria and Morocco

African countries have been leading the way with eduroam innovations, expanding the services outside of university campuses.



In 2020, the [Ugandan NREN RNU](#) launched [metro eduroam](#) for students to access free and secure wireless Internet connectivity off-campus in over 400 locations countrywide. In 2022, RNU also launched [eduroam on the Go](#), a pocket-size routing device for full-time access to eduroam and the Internet.



In 2022, the [Kenyan NREN KENET](#) deployed the first ever cloud based OpenWifi architecture in Africa by extending the reach of eduroam to student learning spaces, lecturer halls, and hostels in Nairobi.

Several NRENs, such as [TENET](#) in South Africa, [ZAMREN](#) in Zambia and RENU in Uganda have already deployed eduroam in public airports for travelling students.

Identity federation

Identity federations are robust systems that facilitate access to digital educational services by securely managing user identities. These federations aggregate the necessary information to identify students and staff, authenticate their status, and enable seamless access to services, acting as a gateway for research and education institutions.



In 2022, the UbuntuNet Alliance and WACREN launched [eduID.africa](#), an identity federation designed for NRENs and institutions that have yet to establish their own. By accelerating the deployment of national identity federations across Africa, eduID.africa supports secure and trustworthy digital identities for the continent's research and education communities.



Through its connection to [eduGAIN](#), a global interfederation linking over 70 national federations and more than 8,000 Identity and Service Providers, eduID.africa enables students, researchers, and educators from participating African institutions to securely access a wide range of international online resources using their home institution credentials. To date, WACREN has facilitated the enrollment of 22,000 users on eduID.africa.

NRENs that have joined eduGAIN

8 in **Eastern and Southern Africa**: Ethiopia, Kenya, Malawi, Somalia, South Africa, Tanzania, Uganda and Zambia.

4 in **West and Central Africa**: Burkina Faso, Ghana, Nigeria and Togo.

2 in **North Africa**: Algeria and Morocco.

Research4Life



In 2025, [Research4Life](#), in collaboration with UbuntuNet Alliance and GÉANT, has launched a Federated Single Sign-On (SSO) pilot for academic institutions across Eastern and Southern Africa, with support from the European Union and AC3. This initiative enhances secure access to academic resources by allowing users to log in with their institutional credentials, eliminating the need for shared passwords and improving cybersecurity. By partnering with regional NRENs, the pilot has successfully onboarded institutions in Kenya, Malawi, Zambia, and Uganda, providing seamless, remote access to Research4Life's content portal. Federated SSO addresses long-standing access challenges—such as reliance on shared credentials, access disruptions, and limited remote access—while offering a simplified user experience, enhanced security, and improved data insights. This successful implementation sets the stage for future expansion, further strengthening digital research ecosystems and bridging the global knowledge gap.

Utafiti Africa



UbuntuNet Alliance developed [Utafiti Africa](#) to support researchers in securing funding and accessing research resources. "Utafiti" is a Swahili word that translates to "research" in English. The platform serves as a continuously updated database of research funding opportunities, allowing users to filter results by discipline and country to find relevant grants more easily. To enhance accessibility, Utafiti Africa offers email notifications tailored to users' interests, ensuring they never miss an opportunity.

Additionally, on-demand video courses provide guidance on securing grant funding. Since its launch in March 2022, Utafiti Africa has seen rapid growth, with active users increasing from over 900 by the end of 2022 to more than 1,200 by the end of 2024.

TrustBroker Africa



[TrustBroker Africa \(TBA\)](#) is a cooperation framework that connects African NREN Computer Security Incident Response Teams (CSIRTs) and other security teams across the continent. Established in 2020, TBA acts as a central hub, listing and accrediting teams that manage information security incidents, such as CSIRTs, Security Operations Centers (SOCs), Product Security Incident Response Teams (PSIRTs), and Information Sharing and Analysis Centers (ISACs).

This initiative provides a registry for African teams and a platform for cybersecurity training, technical support, threat intelligence sharing, and the development of cybersecurity maturity. By providing a trusted infrastructure, TBA enables these teams to collaborate more effectively, share vital information, and coordinate responses to security threats. Accredited teams gain access to exclusive services that enhance their ability to handle incidents and protect their networks.

TBA has listed and accredited teams from national and NREN CSIRTs from Benin, Togo, The Gambia, South Africa, Uganda, Mozambique, Kenya and Botswana.

Open Access and Open Science



[LIBSENSE](#) is a WACREN-led initiative that fosters collaboration among libraries, librarians, researchers and National RENs to strengthen open science in African research and education institutions. LIBSENSE focuses on policy development and governance, open science advocacy, open access infrastructure, scholarly publishing and visibility, research ethics and data management practices and research collaboration. LIBSENSE directly trained over 1000 researchers, librarians, NREN managers, publishers and journal editors across Africa in the past four years.



LIBSENSE-Connect gathers stakeholders in Nigeria to discuss national data repository

It has established:

- the **Diamond Open Access Community of Practice** in Africa with over 200 editors and publishers of African-based journals.
- the **Early Career Research (ECR) teams** in Ghana and Nigeria.
- the **Coalition for Open Publishing for Public Health in Africa (COPPHA)** which focuses on training public health researchers in open science practices and utilizing open access publishing services developed by WACREN for scholarly visibility.
- the **LIBSENSE-Connect** which builds collaboration and capacity between infrastructure and software developers to develop relevant infrastructure for open science.
- **LIBSENSE Network of Experts** which supports institutions, groups and countries to build capacity, strengthen and advance open science matters in Africa.

LIBSENSE has documented its [impact on the African scholarly community](#).



Another Open Access initiative under the AC3 project is [AfricArXiv](#), a digital repository hosted on the UbuntuNet Alliance Open Science Cloud. Built on DSpace, it stays up to date with the latest DSpace developments. The platform aims to enhance the visibility and accessibility of African research both within the continent and globally.

AfricArXiv offers repository hosting, harvesting, and mirroring services tailored to the needs of African institutions. By leveraging cloud and repository resources provided through AfricaConnect via UbuntuNet Alliance, institutions can increase research discoverability at a lower cost. The platform assigns DOIs to all uploaded items and supports ORCID sign-in and searchability, free of charge, helping researchers access resources that might otherwise be costly while expanding the reach of their work.

As of December 2024, AfricArXiv hosts 5 communities, 64 collections, and 1,446 research items.



Adequate human resource capacities and expertise is built within NRENs and education and research communities

AC3 comprises a capacity-building element for NRENs, designed to enhance the competencies of their personnel. The initiative seeks to deliver specialized training to enhance technical proficiency and managerial abilities, enhance the capabilities of staff members and support women empowerment within the research and education networks of the continent for their advancement.

Across Africa, this included:

146

Training sessions
in total

3,489

Hours of training
in total

5,383

Participants, of
whom **1,849** women



Participants of the Federation Operators (FedOps) Training hosted by EthERNet in Ethiopia in early 2024. The training was delivered by GÉANT and the GÉANT community as part of the GN5-1 project. It was an intensive five-day program in Identity Federation management and eduGAIN integration.

Exchanges

Exchanges included workshops for NREN CEOs, Managers, and staff exchanges among African NRENs and mentorship from established NRENs to emerging ones, and participation to the GÉANT Emerging NREN Programme (ENP).

The ENP runs alongside TNC, GÉANT's annual conference, and aims to integrate individuals from emerging NRENs worldwide into the TNC community. It fosters synergies and connections at various organizational levels between European and international NRENs. Under AC3, three ENP editions have taken place, bringing together 23 participants from 15 African countries.

Staff exchange programmes also played a crucial role, enabling hands-on learning and knowledge sharing. These exchanges facilitated visits between KENET and BERNET; ZAMREN, KENET, and RENU; and [TERNET](#) and RENU. Engineers and CEOs gained valuable insights into server infrastructure, community engagement, eduroam, cybersecurity, data center management, and cloud computing.

In the WACREN region, The Gambia's NREN (GAMREN) visited Ghana's GARNET to study NREN governance, structure, and operations. As a result, GAMREN has now established its governance structure and is preparing to connect to WACREN in the next phase of the AfricaConnect project.

Governance improvement

Towards the end of the project, the UbuntuNet Alliance and WACREN underwent system reviews and started implementing management plans to strengthen their governance. This included:

- **NREN Leadership Indabas:** held by the UbuntuNet Alliance, these sessions saw the participation of NREN CEOs who met to deliberate over various successes and challenges, such as sustainability, affecting their respective organizations. Over the course of AC3, a total of 12 CEOs met every year.
 - **NREN Academy:** WACREN held four leadership training sessions with 15 NREN CEOs participating. A key outcome of the Academy was the creation of business models and value proposition by some NRENs (Mauritania and Mali NRENs) and enhanced managerial capacity within the NRENs.
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Women Empowerment

In order to contribute to bridging the gender gap in tech solution development, the UbuntuNet Alliance has conducted two **Women Hackathons** in 2023 and 2024, as part of AC3. Each year, the hackathon brought together seven teams, each consisting of three young women from universities across Africa. Guided by experts from Makerere University, the teams developed innovative solutions in research and education. To showcase their work, the Women Hackathons were held alongside the annual UbuntuNet-Connect conferences, where participants had the opportunity to present their innovations to audiences of up to 200 attendees.



Team Zimbabwe won the 2nd Women Hackathon taking place alongside the UbuntuNet Connect conference 2024.



The Women-In-WACREN workshop in Ivory Coast in November 2024 focused on practically using the Python programme for weather and climate data analysis.

AC3 has also supported WACREN in building women's capacity to contribute to climate research. A total of 85 Anglophone and Francophone women participated in two workshops - the [Women-in-WACREN programme](#) - where they learned to use Python for climate data analysis and decision-making. They also explored Internet of Things (IoT) tools to enhance their research capabilities. Some participants shared their experiences and the impact of the workshops in these videos.

To further celebrate and amplify the contributions of women in Science, Technology, Engineering, and Mathematics (STEM) within Africa's research and education community, the AC3 communications team has launched a [dedicated webpage](#). This one-stop platform features interviews, success stories, and resources, showcasing the achievements of women making a difference in STEM.



Awareness of the role of digital transformation for education and research is raised

In order to emphasize the role of digital tools in the transformation of education and research and their multiplier effect for skills development, employability and economic growth, the AC3 project partners have carried out advocacy campaigns targeted at decision makers as well as at international donors and other stakeholders to influence policy change and mobilize funding.

Contribution to African Union's Digital Education Strategy



In 2022, the project achieved a policy breakthrough through contributions to the African Union Taskforce, which led to the adoption of the Digital Education

Strategy by African ministers. This strategy aims for the establishment and sustainability of 54 NRENs by 2027, with, UbuntuNet Alliance, WACREN and ASREN as strategic partners, marking a significant step toward a more robust and digitally inclusive education landscape across the continent. AC3's outreach has effectively positioned NRENs as strategic pillars for digital education, reinforcing the importance of robust, continent-wide networks to support the AU's digital transformation goals for education systems. The fact sheet can be downloaded in [English](#) and [French](#).

World Bank contributions to AC3



Engagements with the World Bank have focused on securing co-funding for NRENs through their respective national governments, leading to significant network infrastructure improvements across Eastern and Southern Africa. Notably, BotsREN and EthERNET have successfully connected to the UbuntuNet Alliance's backbone at 10Gbps each. Ongoing collaborations include supporting the Government of Angola in conducting a baseline study for establishing its NREN, assisting [SomaliREN](#) in upgrading its capacity to 2.5Gbps, helping ZAMREN expand to 20Gbps, and facilitating [iRENALA](#)'s connection to the regional backbone.

For EthERNet, the UbuntuNet Alliance team played a key role in securing advance payments from the World Bank for connectivity services over the next five years. Similarly, the team supported SomaliREN in obtaining co-funding for its 2.5Gbps network upgrade, with the funds set to be available under AfricaConnect4.

In Zambia, connections were established between the World Bank and ZAMREN to explore funding opportunities through various digital initiatives. Meanwhile, efforts to support the formation of an NREN in Angola are progressing, with the Alliance collaborating with Portuguese consultancy LBC on a feasibility study, expected to conclude in 2025, setting the stage for the formal establishment of the country's NREN.

Policy papers

Policy papers are crucial for advocacy and donor engagement efforts because they provide a structured and evidence-based approach to addressing key issues. They can influence the direction of policy changes and resource allocation, as well as build credibility and trust, through thorough analysis and solid research.

During AC3, the project published four policy papers:

- *"AfricaConnect3: Connecting Africa to unlimited possibilities"* (2021) presented at the IST Africa conference online.
 - *"eduroam in Africa"* (2023) presented at the IST Africa conference in South Africa.
 - *"Making the world a better place to live: African RENs' contributions to the UN SDGs"* (2023), presented at TNC23 in Tirana, Albania.
 - *"Research and Education Networks: Overcoming Barriers to Education on the African Continent"* (2024) published on the African Union ECHO Magazine 2024
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African RENs – UN SDGs initiative

In 2022, the AC3 team launched an initiative called “How are African RENs contributing to the United Nations Sustainable Development Goals (UN SDGs)?”. This initiative aimed to highlight the impactful contributions of the RENs across Africa, enhancing their visibility and positioning them as key international players in the quest for a more sustainable and equitable future for all.

SDG 4 - Quality Education

For more than a decade, NRENs have been providing affordable and high-speed internet connectivity and advanced services in 38 African countries. From offering connection to eduroam in hostels, libraries, airports, and hospitals to providing access to video conferencing tools and platforms for Learning Management Systems, NRENs have become a lifeline for learners.



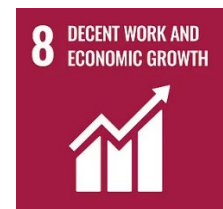
SDG 5 - Gender Equality

RENs are making strides to create equal opportunities, particularly for women in STEM. The regional women hackathons are such initiatives that supports women’s ambition in STEM fields.



SDG8 – Decent work and Economic Growth

RENs actively support education by providing online training and workshops that boost the technical skills of staff and students, paving the way for better employment opportunities. A notable example is the Ugandan NREN, RENU, which runs a hands-on Industrial Training Program that immerses undergraduate students in REN operations and activities.



SDG 9 - Industry, Innovation, and Infrastructure

RENs provide advanced digital infrastructure and reliable and secure connectivity to their local beneficiaries in the African research and education environment. In addition, at the national level, NRENs foster the spirit of innovation through various cutting-edge initiatives in higher education institutions and research centers.



SDG 13 - Climate Action

RENs contribute to climate action by supporting research institutes working on sustainability and climate change. Furthermore, many NRENs are adopting greener ICT practices, including reducing energy consumption through the use of solar panels, aiming to reduce the carbon footprint of their networks.



SDG 17 - Partnerships for the Goals

RENs are vital to fostering partnerships that ensure the sustainability of African e-infrastructures. Through cross-continental and cross-sector collaborations, RENs support initiatives like the Africa Union's Continental Educational Strategy, which aims for 54 NRENs by 2027 to accelerate Africa's digital transformation.



By leveraging the economies of scale made possible through the AC project and its global partnerships, RENs provide advanced digital infrastructure and reliable connectivity to research and education communities across



Africa. These efforts not only support the local academic environment but act as a multiplier effect by also contributing to other critical SDGs. RENs connect hospitals combating health diseases (SDG 3), research institutes addressing food insecurity (SDG 2), water management (SDG 6), and soil mapping (SDG 15), demonstrating their broad impact on global sustainability.

Engagement with national and international policy makers

In order to promote the importance of RENs and to seek policy assistance towards sustainable and affordable connectivity in Africa, the AC3 project partners have attended high-level meetings and conferences, organized ad-hoc meetings with national authorities and decision makers, and engaged with international and European stakeholders. Key events include:

- “NEXUS: Highlighting the infrastructure for the Research and Education Community” panel discussion organized together with The Guild and Nordunet in Brussels, in February 2024 to highlight ongoing initiatives between Nordic and African universities and the role of NRENs.

- The United Nations General Assembly in 2023, where the SDG weekend and SDG Digital Conference took place in New York, USA. The event provided valuable insights and highlighted the need to raise awareness about NRENs, still largely unrecognized globally, and the vital role of policy engagement, despite being resource-intensive and often yielding limited short-term outcomes.
- The Global Conference on Cyber Capacity Building conference in Accra, Ghana in November 2023, where the project partners managed an AC3 booth with the aim of showcasing the project's commitment to cybersecurity and capacity building across African NRENs, amplifying its visibility within a diverse community invested in the continent's digital transformation.
- The United Nations General Assembly (UNGA77) in 2022, where the CEOs of the three African RRENs joined two sessions, including a panel discussion on Digital Infrastructure for Science and Cooperation in Africa. They shed light on the challenges that NRENs in their region face and the potential solutions that can be implemented to address them. AfriGEO and GMES Africa also attended the sessions.
- e-Learning Africa conference in Kigali, Rwanda in May 2022, where the UbuntuNet Alliance and GÉANT managed a project's booth and also joined panel discussions to highlight the agility of African NRENs to provide higher education and research institutions with the e-learning solutions to switch to online education.
- The World Telecommunication Development Conference (WTDC-22) in Kigali, Rwanda in 2022. At this landmark event - aimed at bringing affordable, meaningful connectivity to the estimated 2.9 billion people worldwide who do not have an Internet connection - a pledge was made that, in summary, states, 'to assist NRENs in identifying innovative solutions to ensure that no students, faculty, or beneficiaries of NRENs are disadvantaged.'

Engagement with the Earth Observation community

AC3 supports engagement with Earth Observation communities in Africa, such as the [Global Monitoring for Environment and Security \(GMES in Africa\)](#) - *an initiative of the European Union and the European Space Agency (ESA)* - and the

[African Group on Earth Observation \(AfriGEO\)](#) with the aim of providing them with high-speed networks.

Achievements include, but are not limited to:

- ASREN conducted two surveys to identify the connectivity, access, and service needs of AfriGEO and GMES communities.
- Following ASREN, both the UbuntuNet Alliance and WACREN officially joined the Group on Earth Observation (GEO) enhancing their contribution to global initiatives on climate change and sustainable development.
- In 2019, the UbuntuNet Alliance established the first multicast stream of EUMETCAST terrestrial data to the [Regional Centre For Mapping Of Resources For Development \(RCMRD\)](#) in Kenya, which was followed by another one in South Africa by [SanREN](#) in 2021.
- Facilitated discussions, such as the Katowice Declaration, between African, Latin American and European working groups to enhance collaboration on global challenges, such as climate change.

Regional conferences

To enhance engagement with stakeholders, the project supported the regional partners to hold their annual conferences: the WACREN conferences, UbuntuNet-Connect (October), and e-AGE (December). Project activities and achievements were showcased at these important events. These conferences strengthened advocacy and visibility for NRENs and catalyzed research collaboration and advanced services uptake.



13
conferences in total

2,100+
participants, of
whom **761 women**



africaconnect3.net

 [@AC3_News](https://twitter.com/AC3_News)



ubuntunet.net



wacren.net



asren.net



geant.org