

ENHANCING NATIONAL RESEARCH AND EDUCATION NETWORK (NREN) ENGAGEMENT ON CAMPUS

Presentation at the

LIBSENSE SYMPOSIUM

Thursday, 14th September, 2023

Ahmed Isah Chafe

Director, ICT

Usmanu Danfodiyo University, Sokoto

aichafe@udusok.edu.ng

08065910743

ABOUT THE PRESENTATION

- i. WHY DO INSTITUTIONS NEED NRENS?**
- ii. THE REN ECOSYSTEM**
- iii. ABOUT IDENTITY FEDERATIONS (IdFs)**
- iv. eduID.ng – THE NIGERIAN IdF**
- v. JOINING eduID.ng**
- vi. eduGAIN AS INTERFEDERATION BODY**
- vii. BonafID – LINKING eduID.ng TO eduGAIN**
- viii. SOME RECOMMENDATIONS**

NATIONAL RESEARCH AND EDUCATION NETWORKS (RENS)

Internet service provider dedicated to supporting the needs of the research and education Community.

- i. Support for network connectivity among member institutions.
 - Understand institutional connectivity needs
 - Quality advise on campus-wide connectivity, ICT policies (Building, access, repositories), Network Security.
 - Bandwidth – Commercial internet vs Research traffic.
 - Research traffic – based on trust and security.
 - Advanced computing services – AfricaConnect3
- ii. Promote collaborations among member institutions.
 - * Communities of practice (research, teaching, sharing of resources), organize workshops, etc.

NATIONAL RESEARCH AND EDUCATION NETWORKS (NRENS) - CONTD

iii. Sharing access to services and contents.

- * Your contents & services are mine (repositories, subscribed resources, instructional resources, science laboratories)
- * Access to too expensive infrastructure (grid computing, huge research databases, IP connectivity, videoconferencing, Identity Management Services, network security services, etc.)

iv. Support in the areas of capacity building to members.

- Focused capacities (Leadership, researchers, technical skills, students)
- Technical workshops
- Consulting

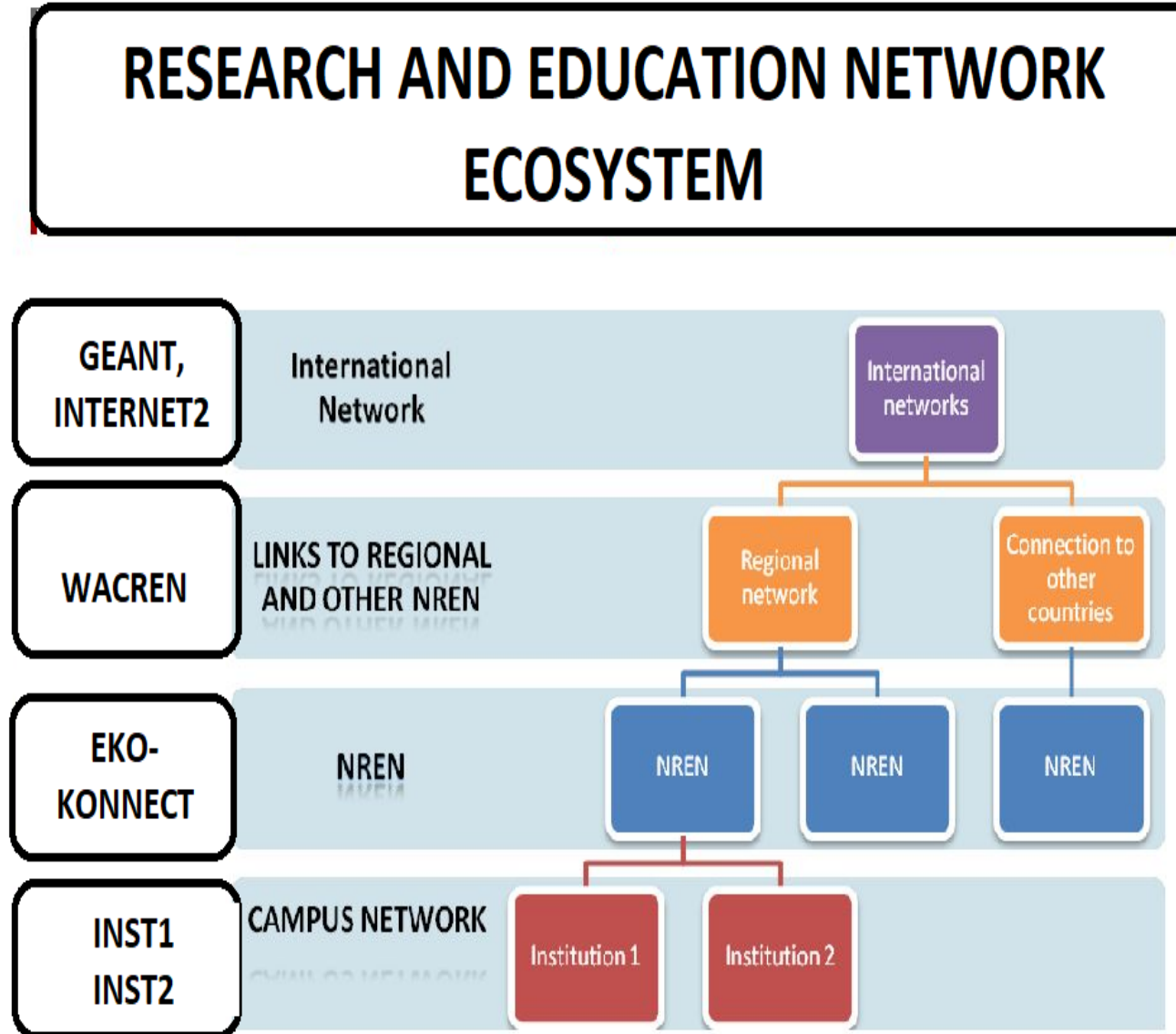
RENS ECOSYSTEM?

- **Main building blocks of RENS are campus networks.**

- Base for researchers/learners.
- Home for services & Contents
- Access should be from anywhere on campus.

- **Institutions then aggregate their campuses into a single institutional network.**

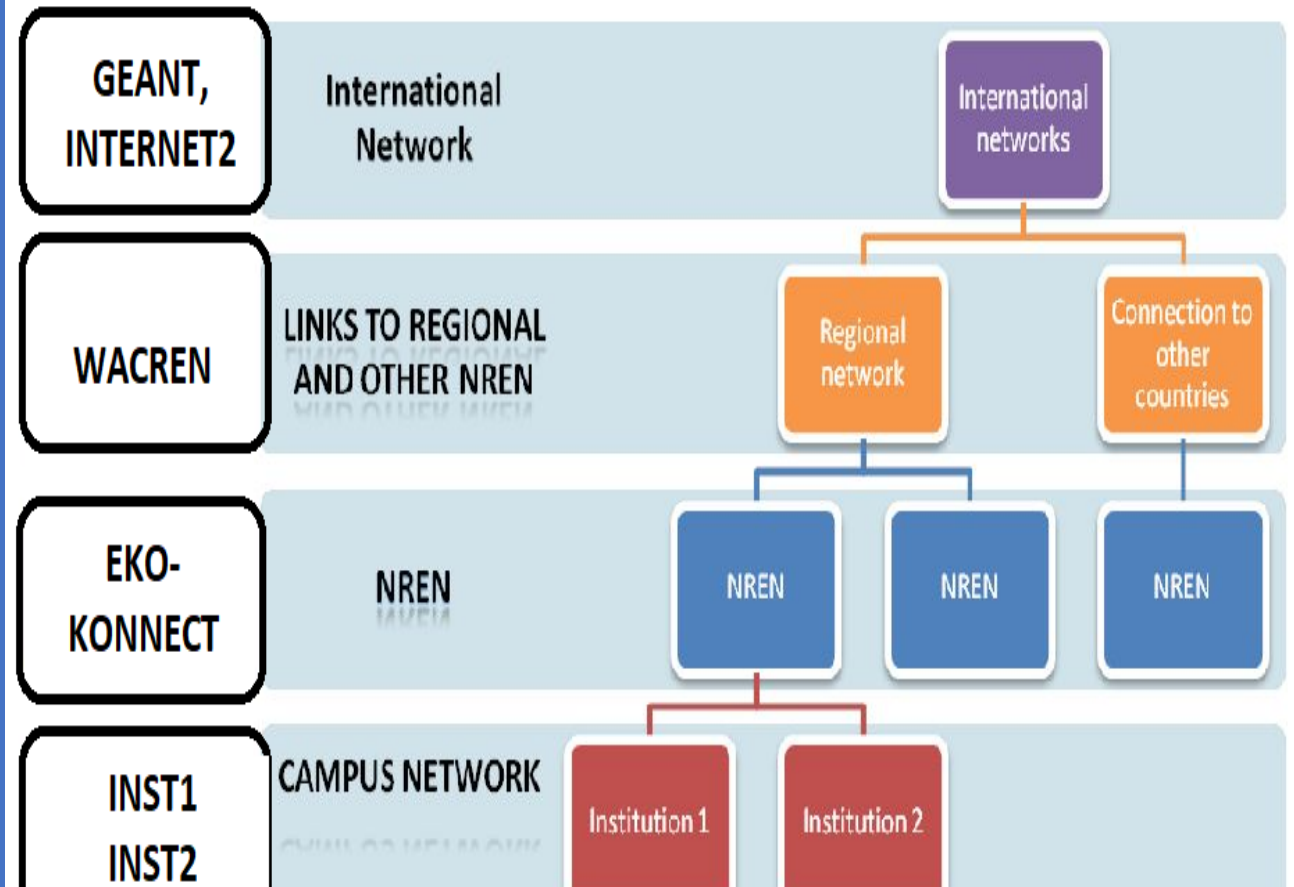
- Case for zonal clusters – Eko-Konnect, SOKREN, EKITINET, OSUNNET, etc
- Makes sense to collaborate locally first. - case for bandwidth, share local skills, train the trainer.
- Aggregate content and feed the NREN.



RENS ECOSYSTEM?

- Institutional Networks connect to a National Research and Education Network (NREN) like NgREN, Eko-Konnect.
- NRENs in turn link to each other through Regional Research and Education Network (RRENs) like WACREN, UbuntuNet Alliance.
 - More access to resources – e-infrastructure, LIBSENSE
- RRENs link to international networks like GÉANT, Internet2.
 - Again, more services
 - More institutions globally.
 - More services and contents at much lower cost (sometimes zero additional cost)

RESEARCH AND EDUCATION NETWORK ECOSYSTEM



RESOURCES AND SERVICES

IDENTITY FEDERATION (IdF)

- A collection of institutions and research organisations that agree to interoperate under a certain set of rules to:
 - Exchange information about their users and resources.
 - Enable collaborations and transactions.
 - Single login credentials – access global.
 - Trust is the key.
 - Single Sign-On (EduRoam, etc)
-

- Rule set typically consists of **legal frameworks, policies, profiles, standards, security and trust** to access services within the federation.
 - Providing services across campuses require high level collaboration, cooperation and trust.
-

IDENTITY FEDERATION (IdF) – CONTD

- **Consist of users** – the building blocks of IdFs
- **identity providers** – each institution for its users?
 - I trust you and you trust me.
 - Not through commercial internet
- **Service providers** – who has the services to offer?

- **Identity Provider (IdP):** Authenticates a user (e.g. with username and passwords) and issues identity assertions on behalf of the user who wants to access a service protected by a Service Provider.
- **Service Provider (SP):** Evaluates user's identity from an IdP and uses the information for controlling access to protected services.
- **User** – identity holder: Accesses a wider range of services than are available nationally or locally; holds one digital identity for all services connected.
- Most academic identity federations are operated within the borders of one single country.

PROVIDES SEAMLESS ACCESS TO:

- Research traffic (non commercial internet),
- Repositories, OERs, other digital library resources,
- High-speed networks and computing power, grids computing, science gateways, large scale databases.
- Knowledge-based resources such as journals and open access publication platforms, archives and scientific data.
- Current research information systems, open computational and data manipulation service infrastructures.

ABOUT eduID.ng

- The identity and access federation for the Nigerian research and education community.
- Comprises of users and producers of academic outputs from the academic community.
- Provides users with single sign-on (SSO) and seamless content access in and outside Nigeria.
- Services extended internationally by participation in [eduGAIN](#) which enables users to access international services with the same ease.

Benefits of joining eduID.ng

- Automatically become a member of eduGAIN.
- Use of single sign-on (SSO) to have seamless and secure access to services in and outside Nigeria
- Provision of more services for your users.
- Saves time and lower administration costs.
- One digital identity - all services.
- Access more and more services without extra effort.
- Grow your audience and increase visibility.

HOW TO JOIN eduID.ng

- Membership is open to all academic and research institutions.
 - Membership is free.
 - Can join as IdP, SP or both.
 - Organisations external to the Nigerian Research and education community can apply to participate in the federation as affiliate members or SPs.
 - Agree to policies and set of rules.
 - Access to resources federated through eduID.ng is governed by the Nigerian Federation Policy. Metadata registration is governed by eduID.ng Metadata Practice Statement.
- Participating and other relevant information is obtainable at <https://www.eduid.ng/>.
 - A list of IdPs in the eduID.ng federation can be found at <https://www.eduid.ng/page/identity-providers/index.html>

- i. Interfederation service that connects IdFs around the world.
- ii. Managed by the European NREN GEANT,
- iii. Comprises of over 70 participating federations connecting more than 8,000 Identity and Service Providers.
- iv. Interconnects RRENS & NRENS
- v. Scalably supports access to services globally.
- vi. One of such federations is eduID.ng, the Nigerian IdF.
- vii. eduID.ng is managed by Eko-Konnect.

ABOUT eduGAIN

- Identity and access management (IAM) platform for RENs
- Implements International Standards to provide a security layer between IdFs such as eduID.ng and eduGAIN.
- The ultimate goal of BonafID is to provide access to digital assets to certain identities (institutions, eduID.ng), under specific contexts.

ABOUT BonafID

IMPLEMENTING eduID.ng and BonafID – Some Recommendations

- Develop Policies
 - Open Science, Repositories, OERs
- Invest in Infrastructure and services.
- Build capacity
 - Leaders, Researchers, lecturers, technical staff, students – all need skills.
 - Clusters to build local capacities.
 - Train the trainers.
- Establish Institution-wide Open Science committees to drive the processes.
- Involve all stakeholders – Library, ICT, Researchers, etc.

IMPLEMENTING eduID.ng and BonafID – Some Recommendations

- Build content
 - Content is king.
 - Think about more contents – repositories, OER, teaching/learning resources, virtual science laboratories, subscribed resources, other library resources
- Join eduID.ng – it makes sense!
- Pilot BonafID institutionally
- Collaborate! Collaborate!! Collaborate!!!
 - Zonal, national, regional and global

A NATIONAL LEVEL ROADMAP

- Institutions to join eduID.ng – **How many by 2024?**
- Reconstitute the eduID Steering Committee – Involve all Stakeholders (Librarians, DICTs, etc) – **Eko-Konnect?**
- Establish communities of practice – VCs, Librarians, DICTs, etc. – **Institutions?**
- Pilot BonafID nationally – **Any support from WACREN, Eko-Konnect?**
- Culminate to provide updates at the Eko-Konnect User Conference and WACREN 2024.

THANK YOU