

# KENET GOVERNANCE AND SERVICES

By Prof Meoli Kashorda, PhD, MIEEE

Executive Director,  
Kenya Education Network (KENET)  
&  
Professor of Information Systems, USIU

# Agenda

- What is KENET?
  - NREN, operator, membership organization, grantee, promoter of research collaboration
- How does KENET promote research collaboration using ICT?
- What are the Emerging Research Services with support of EU research projects
  - KENET as an Identity Provider
  - Africa Science Gateway

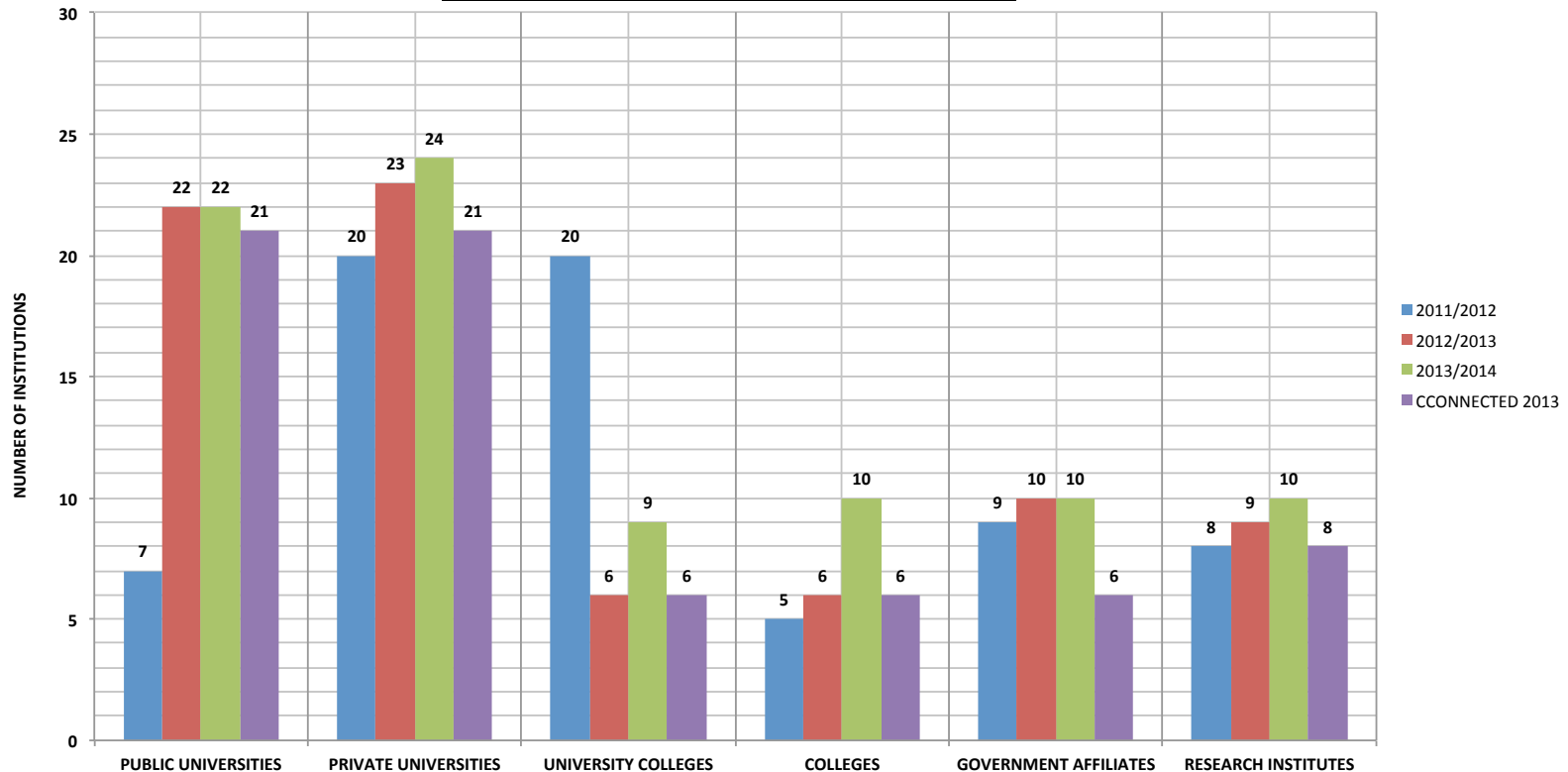
# KENET as an NREN, Trust and Membership Organization

# KENET Governance

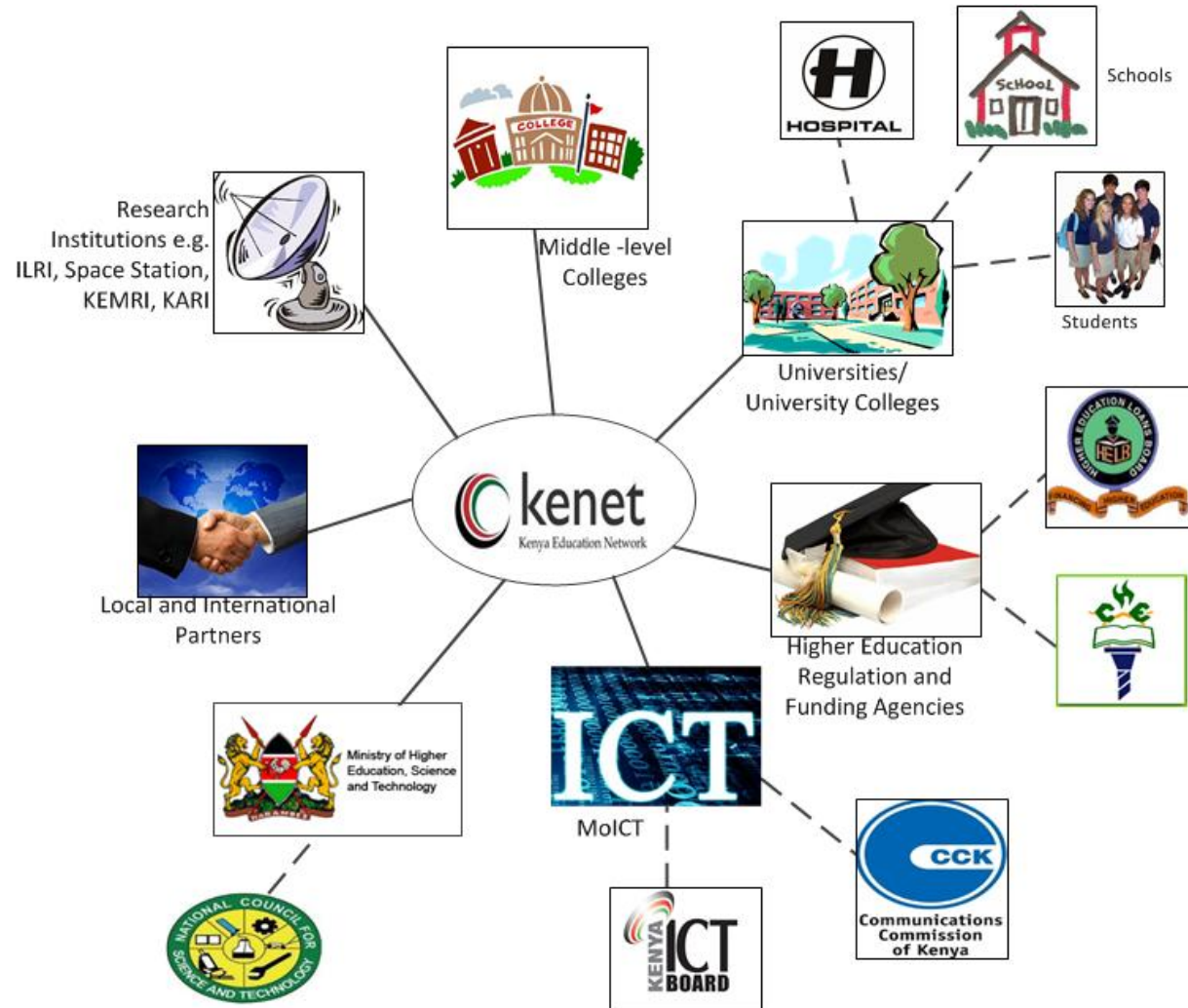
- KENET is constituted as a not-for-profit TRUST with Seven Registered Trustees
  - Five Vice Chancellors + PS Education + DG CCK, DG, ICIPE as Trustees
  - Governed by Board of Trustees, Assisted by Management Board
  - Member institutions and academic community are the beneficiaries
- KENET is a membership organization and only serves members
- KENET licensed as a Alternative Network Facilities Network Operator since 2002
  - See <https://www.kenet.or.ke>
- KENET is an implementation agent of the Government of Kenya and other donors (KTCIP, Google, Foundations etc)
  - Partnerships for research and infrastructure expansion
- KENET is the National Research and Education Network for Kenya
  - Largest NREN in Africa after TENET in South Africa
  - Exchanges R & E traffic with other NRENs in the world at NO cost

# 86 Members full members (30/11/2013)

**KENET MEMBERSHIP GROWTH 2013/2014**

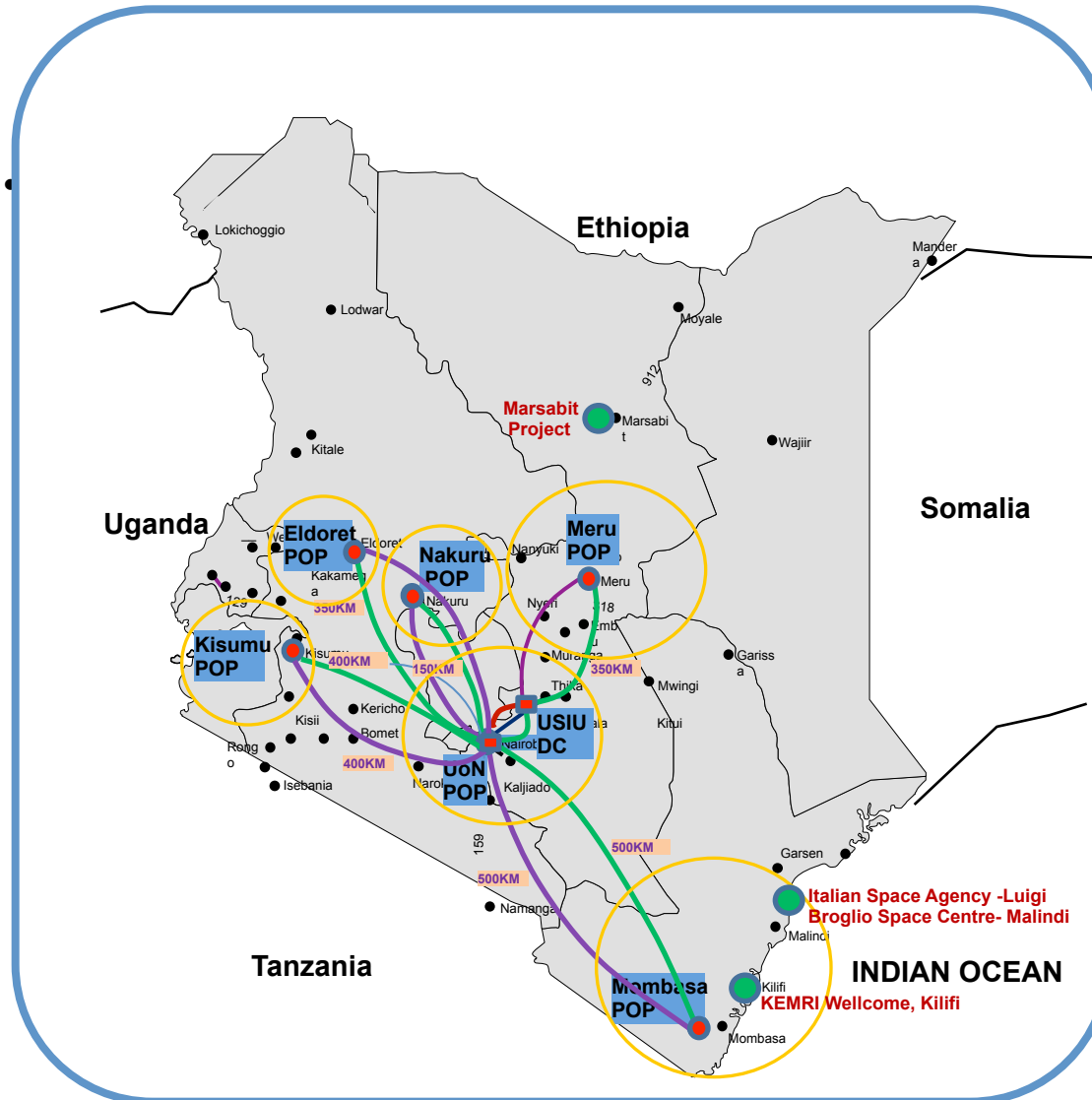


# KENET NREN Eco-System



KENET as an NREN

# KENET National Network Coverage – December 2013



- KDN fiber-underground (Primary)
- Jamii fiber -overhead(Backup)
- KENET POP

| POP                             | Number of Campuses Connected |
|---------------------------------|------------------------------|
| Nairobi POP                     | 72                           |
| Kisumu POP                      | 16                           |
| Mombasa POP                     | 12                           |
| Eldoret POP                     | 14                           |
| Nakuru POP                      | 11                           |
| Meru POP                        | 11                           |
| <b>Total Campuses connected</b> | <b>136</b>                   |

- NOFBI Distance- 724KM
- KENET Owned Last Mile Fiber – 188KM
- KENET Core Ring Fiber Network – 110KM
- Access Fiber Spurs – 30KM
- **Total KENET Owned fiber – 1052KM**

# KENET as an NREN

- **Aggregates Internet traffic from Higher Education and institutions**
  - KENET generates up to 4 Gb/s of traffic
  - Affordable broadband Internet for institutions (and students/faculty?)
  - Extension of campus networks
- **Develops High-end ICT talent** – technical + project management
  - Capacity building for KENET and member institutions
- **Builds advanced research infrastructures** and community in different areas
  - Hosts one of two Internet Measurement Lab nodes in Africa
  - Africa Science Gateway and federated services (KENET CA, iDP, EDUROAM)
- **Builds Research Community and Promotes research collaboration in Kenya**
  - KENET is a grantee for collaborative research projects or conferences
  - KENET provides mini-grants for research travel and pilot projects
  - Call for Mini-Grants proposals in STEM areas in February 2014



# Research Collaboration and Champions

- Promotes Collaboration in STEM research
  - Health, Agriculture, Education, ICT, Engineering
- ICT-based Research Collaboration opportunities
  - University < > Research institutes (doctoral research)
  - Research institutes < > research institutes
- Supports research and innovation champions – sponsorships to international conferences / workshops;
  - collaboration research mini- grants / grantee for large research projects

# The KENET idP

- KENET has a setup a Shibboleth Identity provider with support of the ei4Africa.eu research team
  - Shibboleth is a standard based, open source software package for web single sign-on across or within organizational boundaries.
- The Shibboleth Identity provider integrates with an LDAP
- The Identity Provider will be used for Access to the Africa Science gateway by users in KENET network
  - *KENET will be the Registration Authority (RA) for the research community in Kenya*

# “Official” CoMoDo Wildcard Certificate for KENET idP and Member Institution

## Domains

- KENET has benefited from the EU funded e4Africa project arrangement with CoMoDo, a provider of globally recognized certificates
  - The annual cost of one wild card CoMoDo certificate is about \$400
  - CoMoDo issued one certificate for FREE to KENET and KENET member institutions as part of the project
- KENET is using the FREE CoMoDo wildcard certificate for all its other applications
  - Websites, monitoring tools, and e-mail
- KENET will now promote the use of official certificates by connected member institutions not only for research but for their ERPs and Cloud-based applications !

# How it works



**1. The Africa Science Gateway detects the researcher/scientist attempting to access restricted content within the resource.**

2. The Science gateway generates an authentication request, then sends the request, and the user, to the KENET IdP.

3. KENET IdP authenticates the user, then sends the authentication response, and the user, back to the Science Gateway.

4. The Science Gateway verifies the IdP's response and sends the request through to the Grid Infrastructure which returns the originally requested content.

# Thank You

# Q&A