Emerging Infrastructures for African NRENs

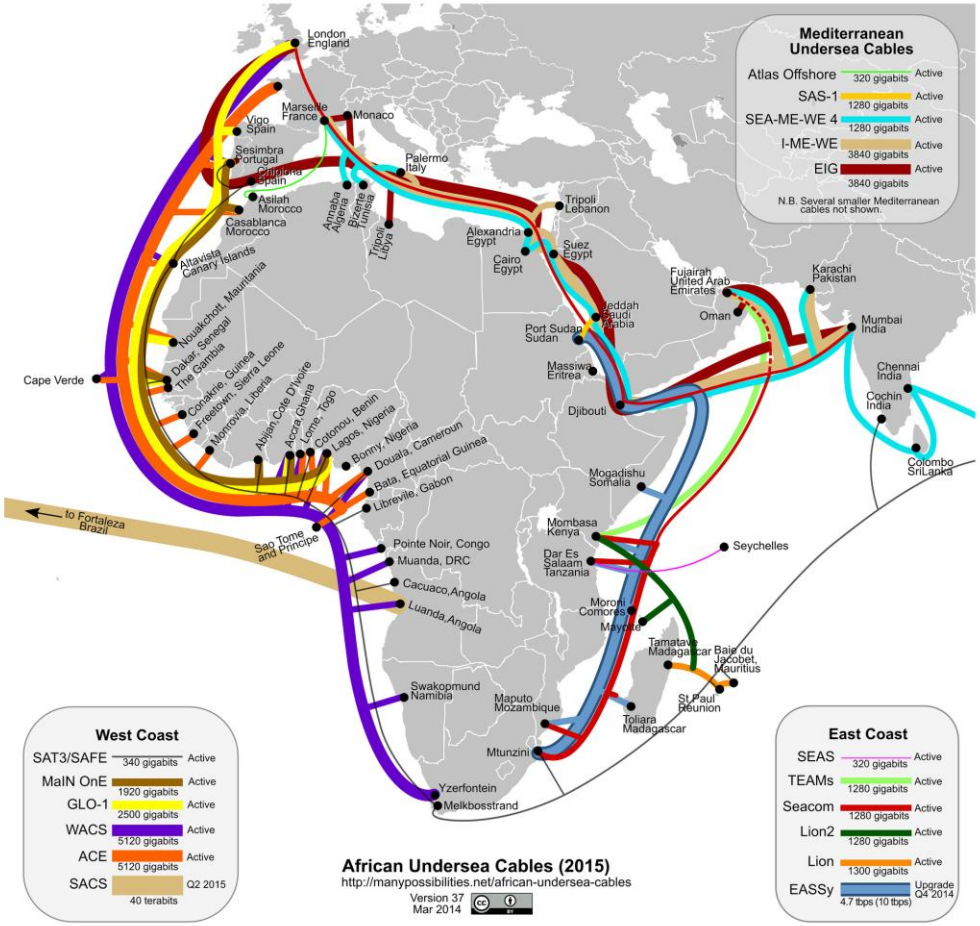
Future Internet Summit

Seoul, Korea 15 October 2014

Omo OAIYA

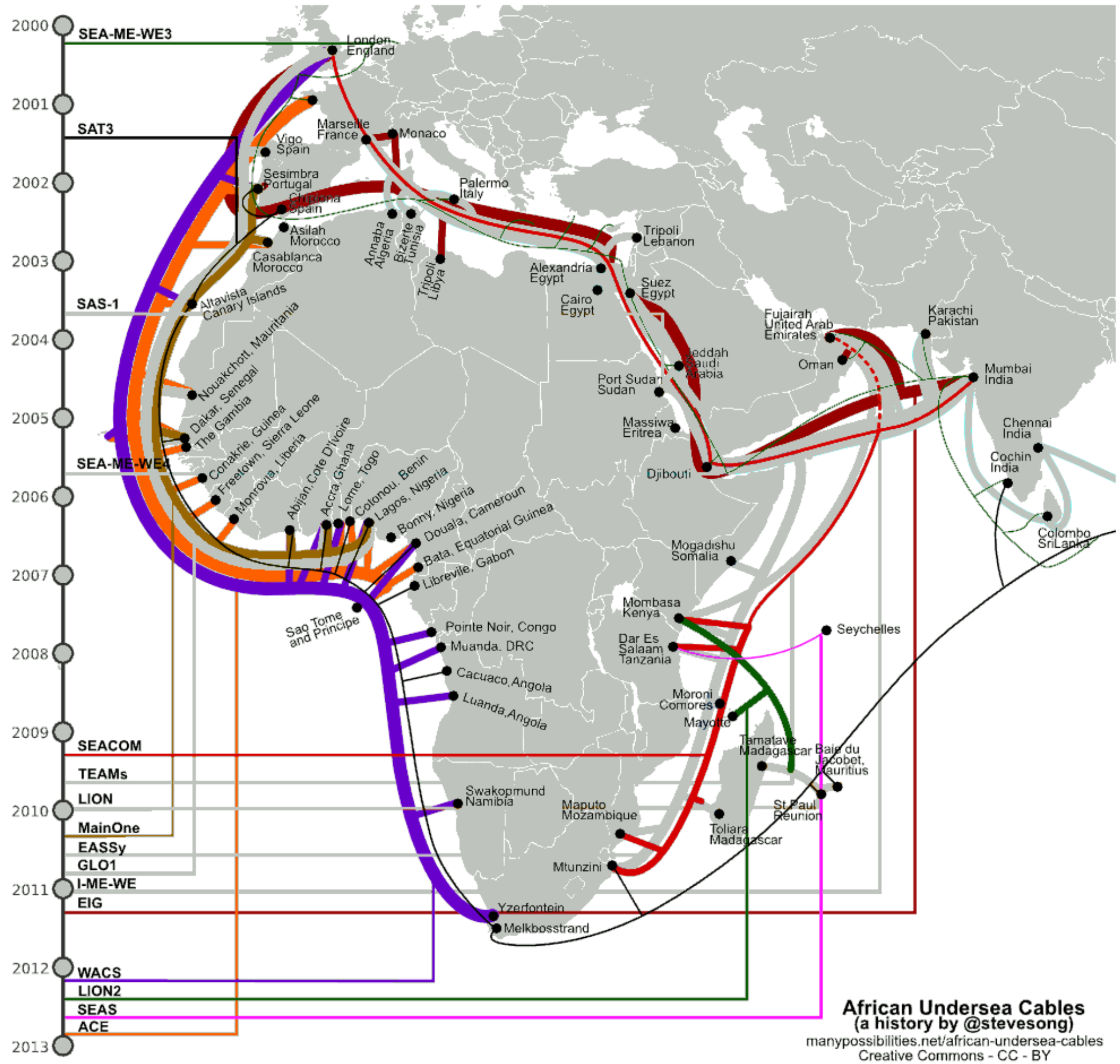
CTO

Undersea Cables

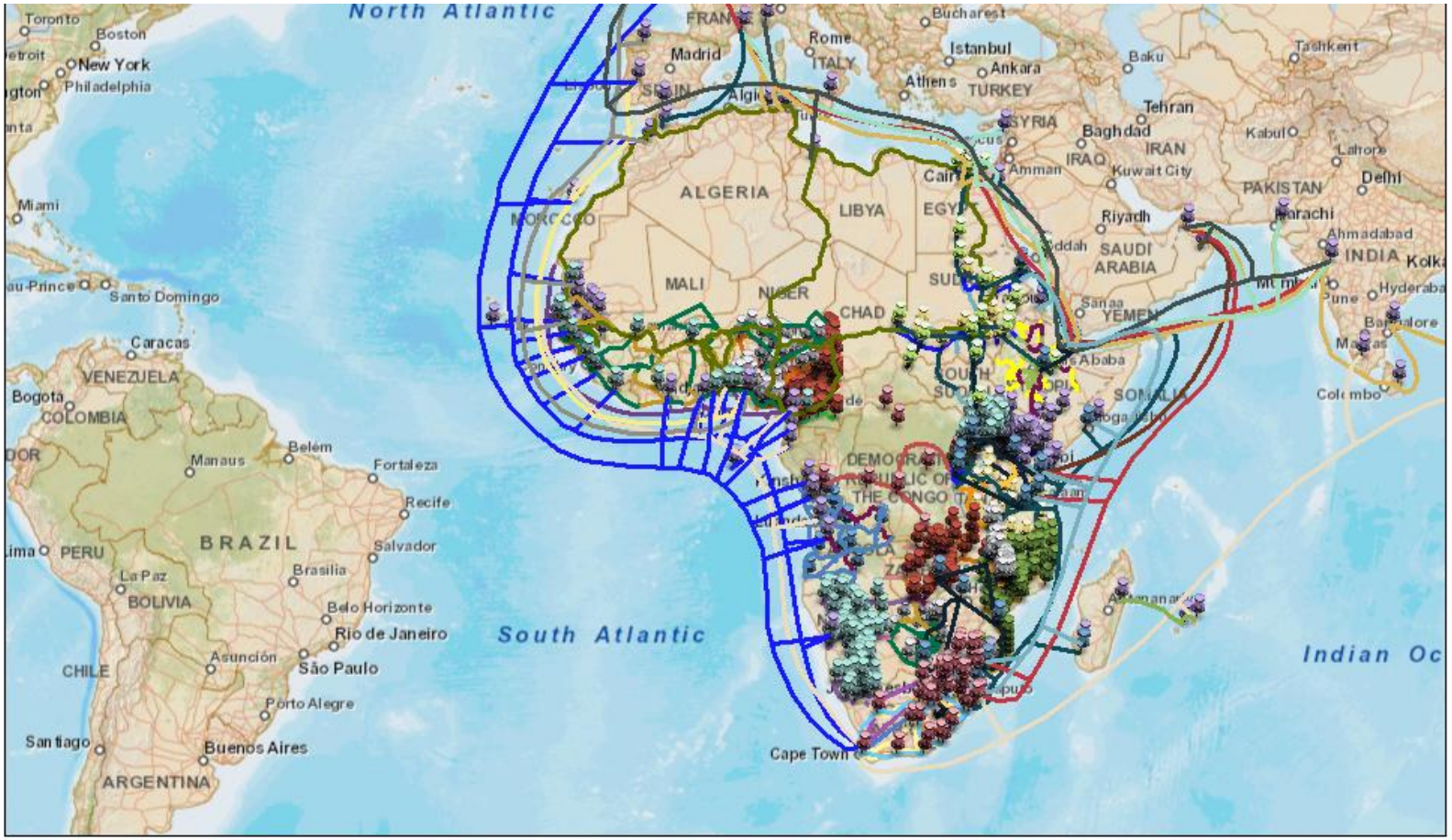


Cable History

- 34.74Tbs of capacity at the moment, 87.54 Tbs by end of 2014
- Mostly since 2009 and driving interconnectivity within Africa.



Intra-Africa Fiber



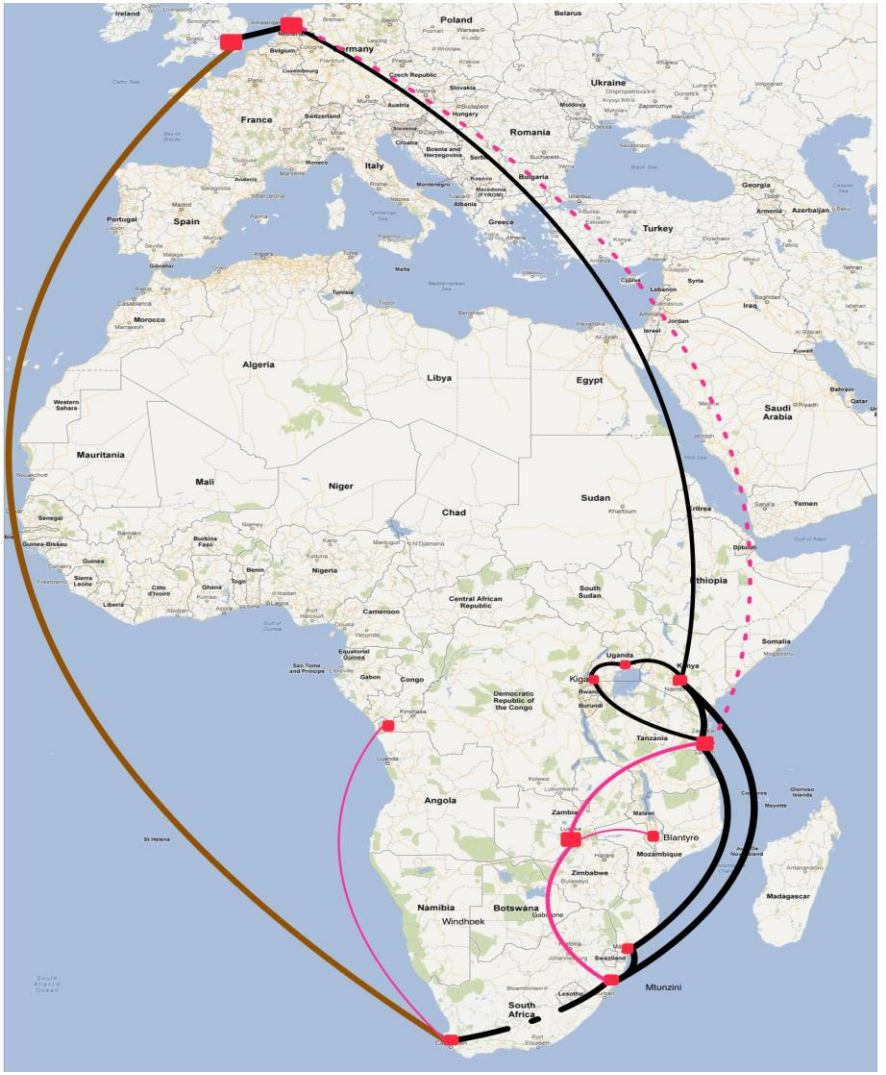
AfricaConnect

www.africaconnect.eu

- Collaboration between 20 African and European NREN partners
- Total budget is €14.75m for a period of four years, 80% from EU and 20% provided by African partners
- Ubuntunet Alliance and members– representing South and Eastern NRENs.
- WACREN – representing West and Central African NRENs
- AAU - The Association of African Universities
- 6 European NRENs – from Germany, Ireland, Italy, the Netherlands and Portugal
- Coordinated by DANTE (Delivery of Advanced Network Technology to Europe)

AfricaConnect - today

- Phase 1: 2011 – 2015
  - Ubuntunet - South and Eastern Africa
  - Mostly completed
- Phase 2: From June ’15
  - focus on WACREN - West and Central Africa
  - Interconnect with Ubuntunet
  - Interconnect ASREN



e-I4Africa

www.ei4africa.eu

- e-Infrastructures for Africa – FP7 project
- Raise awareness and build build cooperation between Euro-African NRENs & user communities
- Promote and strengthen Euro-African collaborative research on e- Infrastructures and their applications
- Produce a state-of-the-art study of e-Infrastructure application uptake in Africa
- Develop the first Africa Grid Science Gateway
- Flagship demonstrations of applications to illustrate relevance.

PKI - Certification Authorities

- Certification Authorities (CAs) compliant with the requirements of the International Grid Trust Federation deployed in five countries: Kenya, Malawi, Nigeria, South Africa and Tanzania by their respective NRENs;
- Kenya and South Africa CAs have completed the writing of their Certificate Policy and Certification Practice Statement (CP/CPS) documents and following procedure to be fully accredited by EUGridPMA and become members of the International Grid Trust Federation (IGTF);

Identity Federations

- The first Identity Federations (IdFs) based on the SAML 2.0 standard have been successfully deployed in five countries: Kenya, Nigeria, South Africa, Tanzania and Zambia by their respective NRENs. All Identity Providers (IdPs) have their own websites that include the service of user registration;
- More NRENs in process – Ghana, Senegal, etc

Communities of Practice

- 34 current or planned regional applications of e-Infrastructures and 15 CoPs have been identified in Africa
- A roadmap for supporting e-Infrastructure and virtual research community (VRC) development.
- 44 research priorities and recommendations have been identified, accompanied by two specific thematic areas.

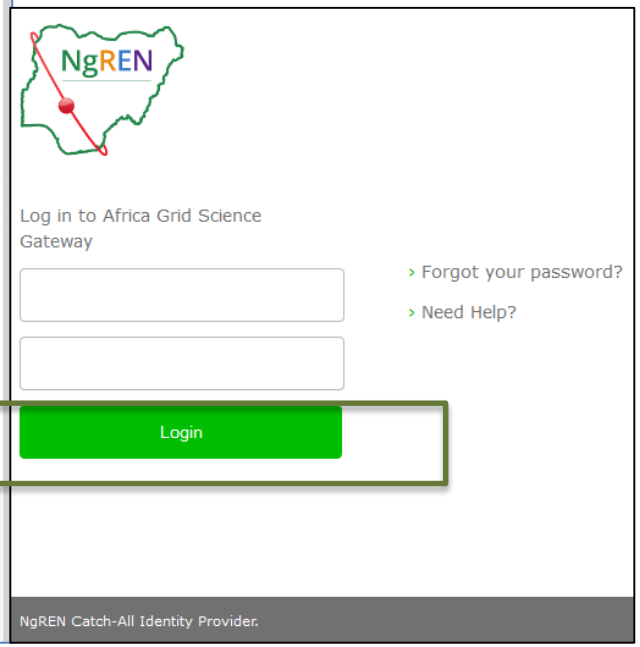
Africa Grid Science Gateway

- The Africa Grid Science Gateway
  - The African Pharmacology and Pharmaceutical Science Gateway (APSG)
  - The TRODAN Data Repository
  - The Community Health Portal.
- NRENs have integrated IdPs with the Africa Grid Science Gateway
- Hosted in Dar es Salaam (Tanzania);

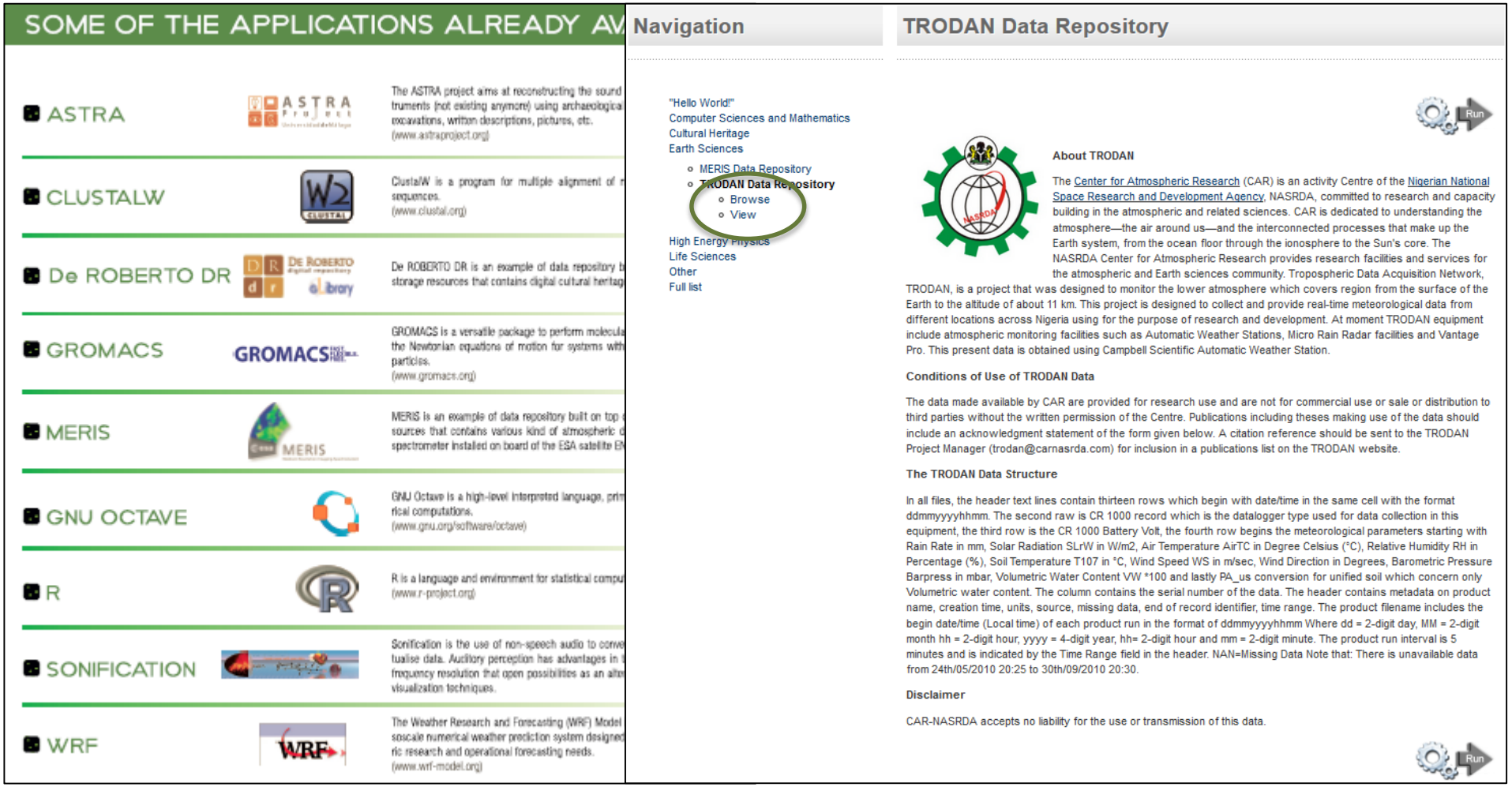
The Africa Grid Science Gateway

(sgw.africa-grid.org)

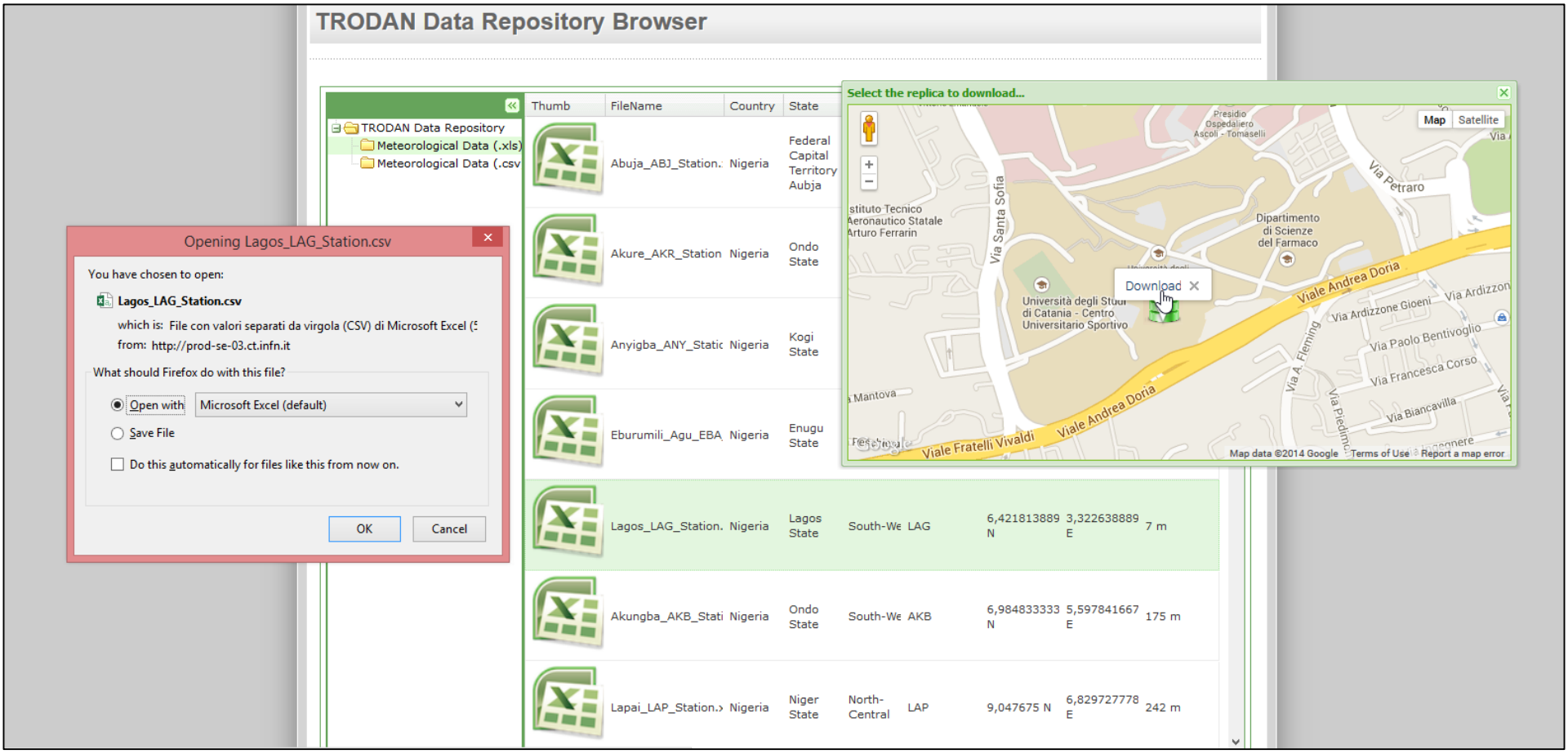
- 13 Applications, of which 3 for digital repositories
- 6 different Scientific Domains



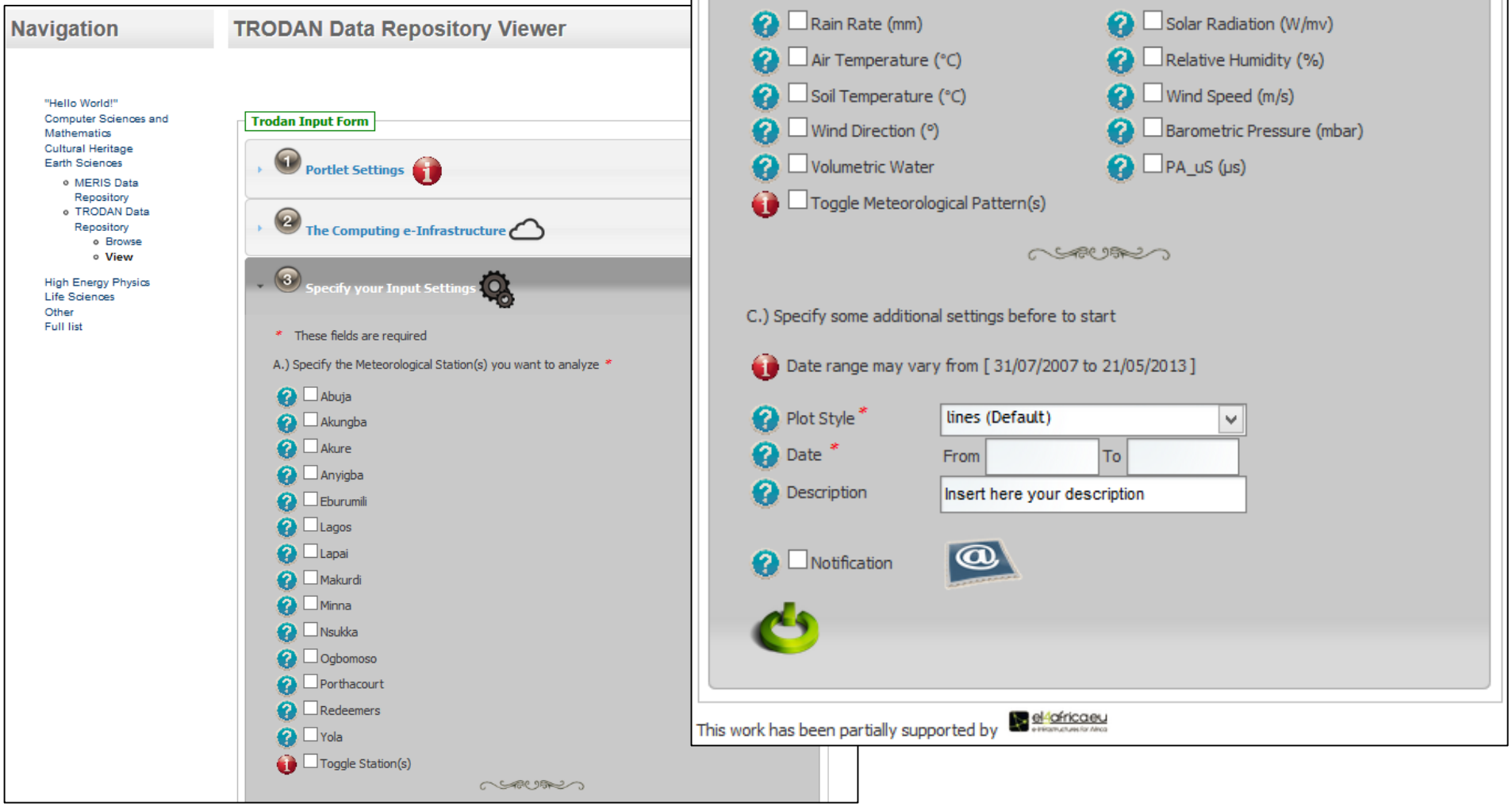
Africa Grid SG Applications



TRODAN DR “Browser”



TRODAN DR “Viewer”



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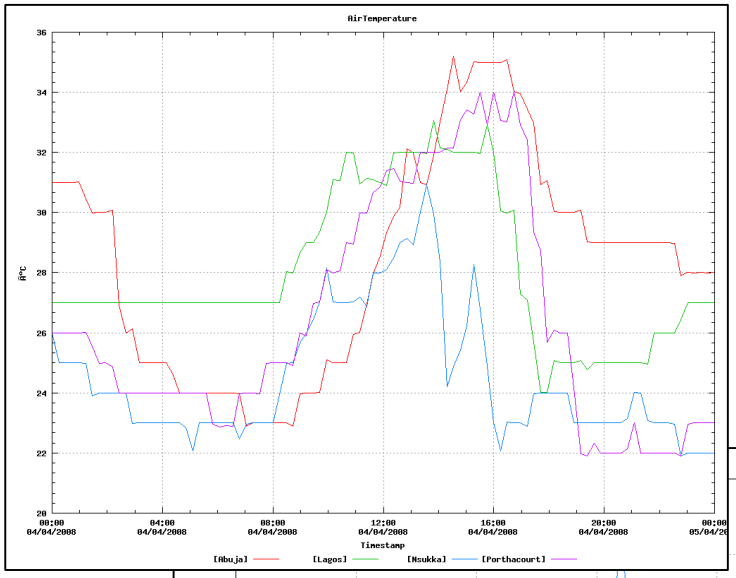

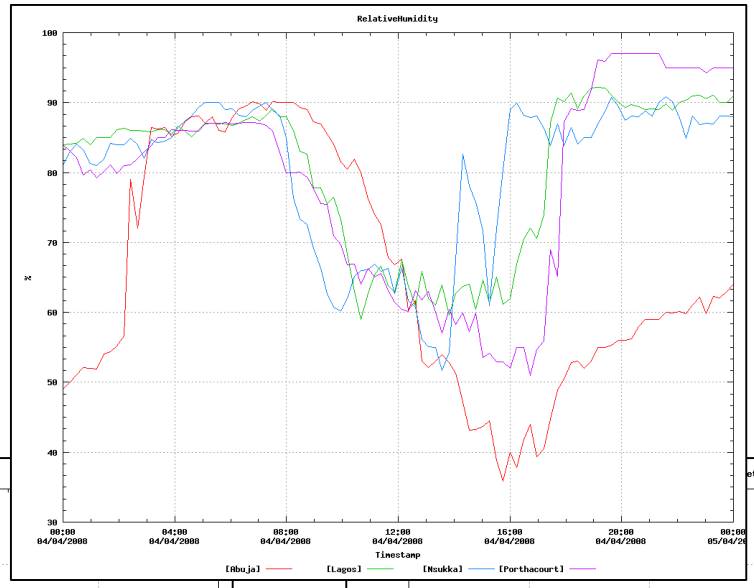

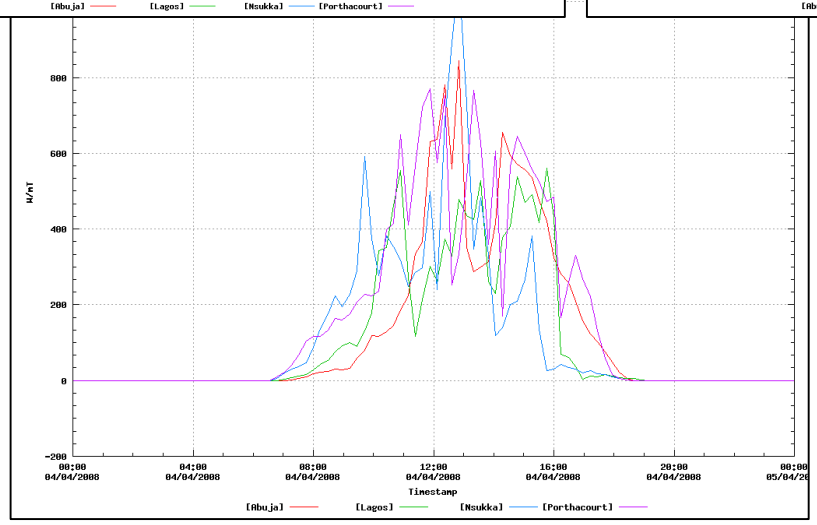

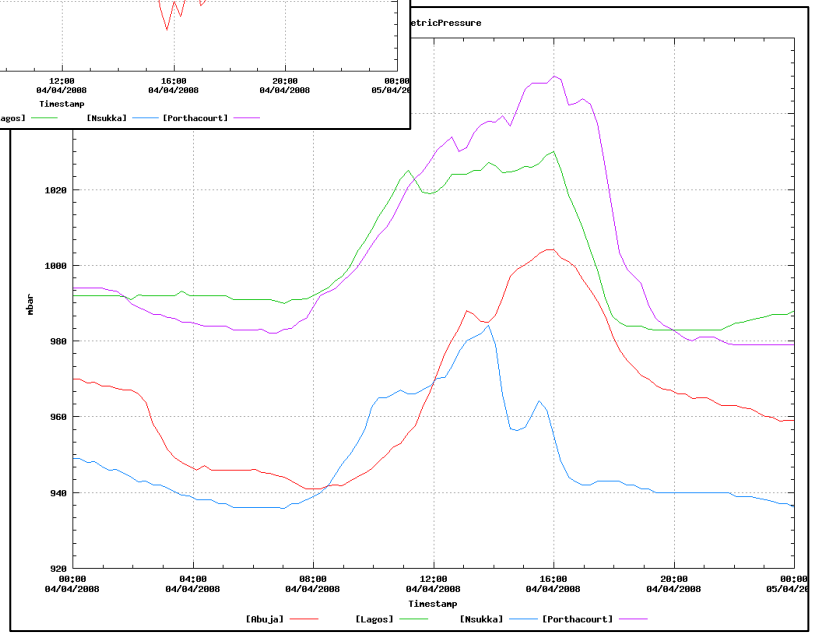

Infrastructure Guiding Principles

- Leverage lack of legacy infrastructure everywhere possible and leapfrog
- Increase focus on user-centric and easy to use e-Infrastructures that are accessible via web and mobile
- Emphasis on standards for sustainability and interoperability.
- Collaboration with other world regions – Exploit opportunities with KR – Africa

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omo@wacren.net