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**AMERICA CONNECTS TO EUROPE (ACE): OPPORTUNITIES FOR
AFRICAN CONNECTIVITY TO THE USA; IDEAS AND MODELS FOR
DEVELOPING SUSTAINABLE AND LONG-TERM U.S.-AFRICA
SCIENCE COLLABORATIONS**

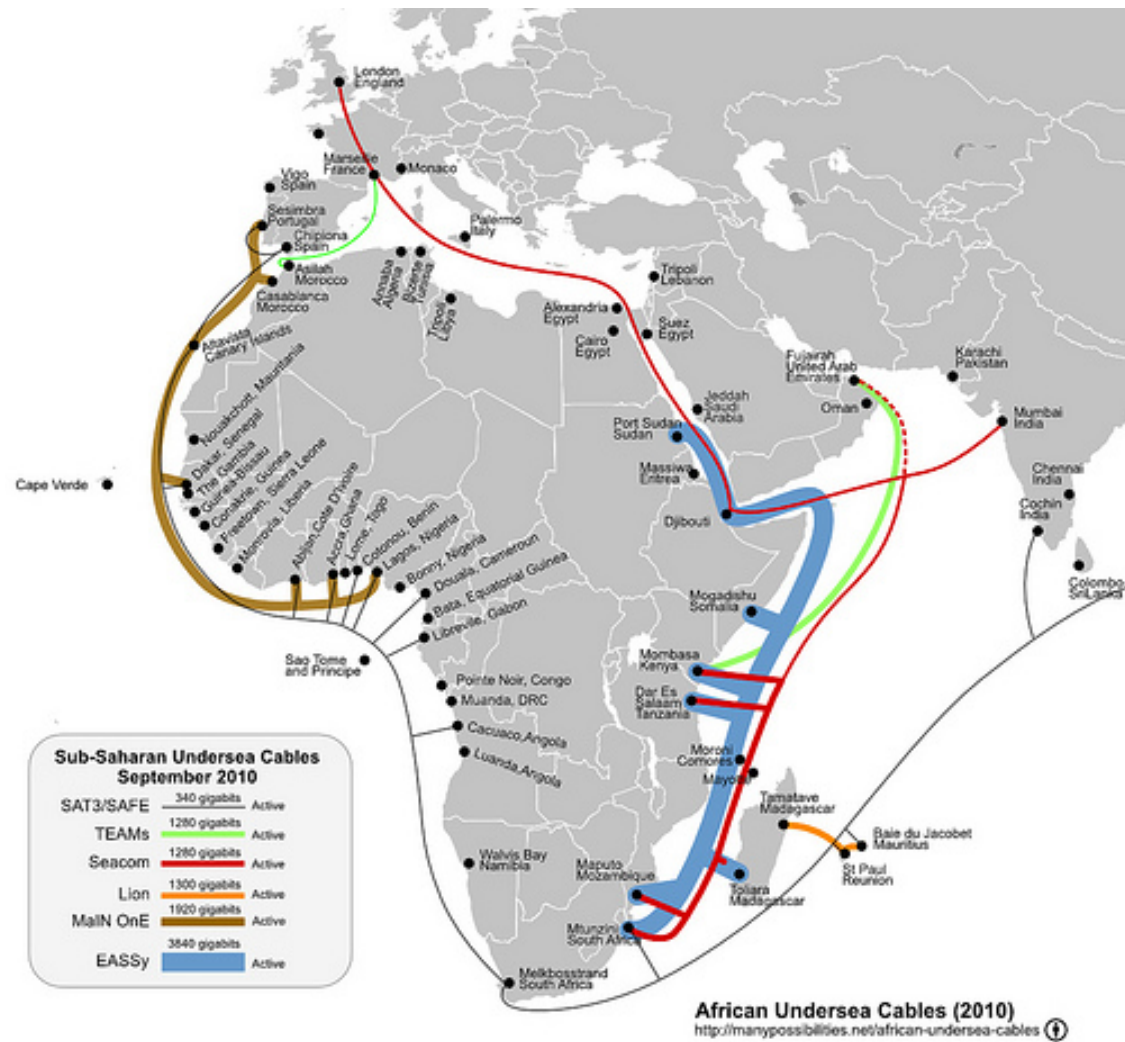


TOPICS

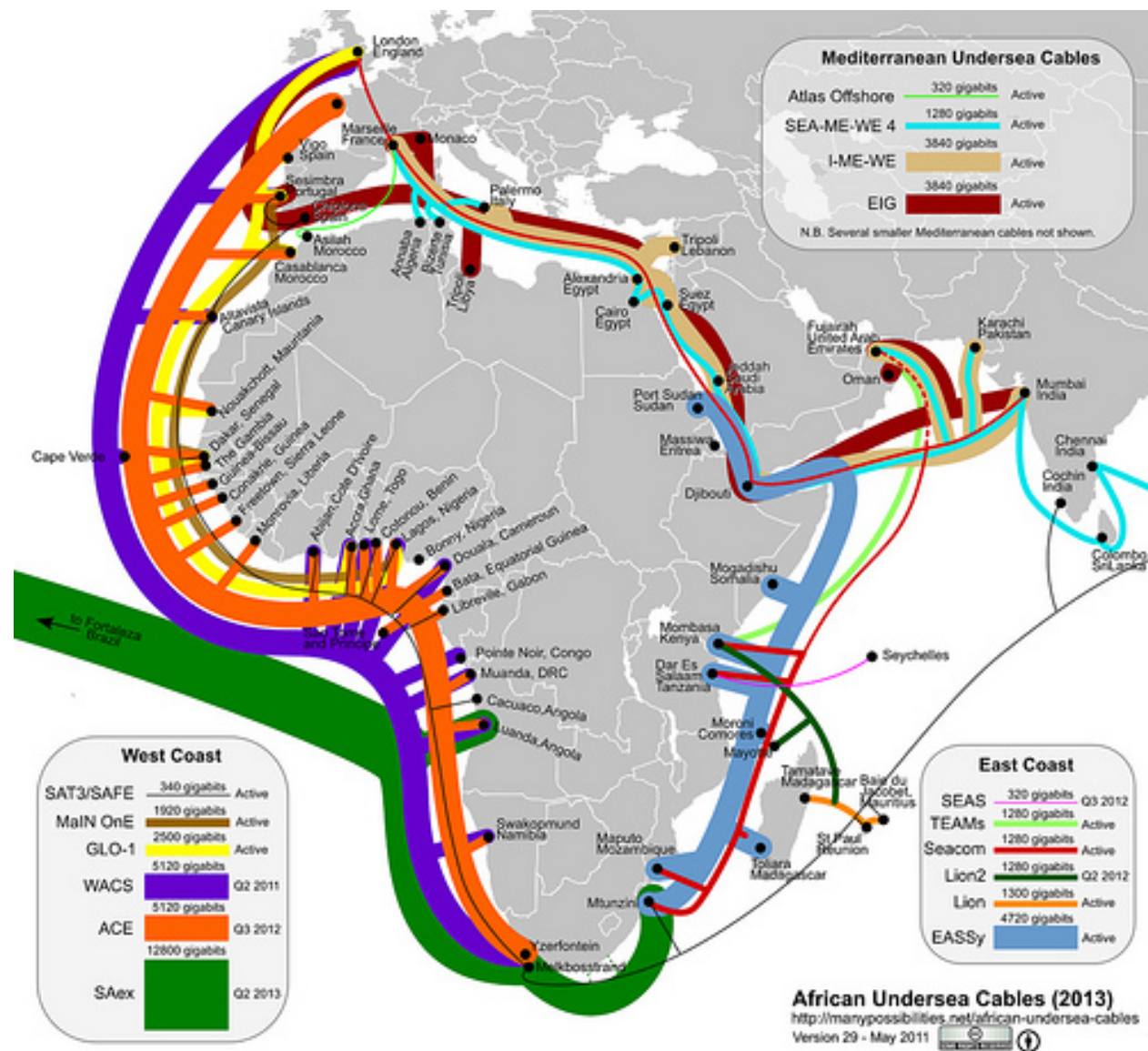
- Background on the IRNC program and the ACE project
- US-EU infrastructure collaborations
- Specific ACE initiatives related to Africa
- Connectivity in place....now what...

BACKGROUND ON THE IRNC PROGRAM AND THE ACE PROJECT

- Kevin Thompson has provided IRNC background...I have nothing to add there
- The America Connects to Europe (ACE) project provides multiple high-performance network connections from Europe to the US. Diagram follows.
- The primary ACE objective is to provide cyber infrastructure (CI), access to CI and CI support to facilitate US global science collaborations.
- Africa is now a significant partner in these global science collaborations...as we all have seen. This is facilitated by....much better continental connectivity; improving local connectivity, educational and commercial focus.



Steve Song - <http://manypossibilities.net/african-undersea-cables>

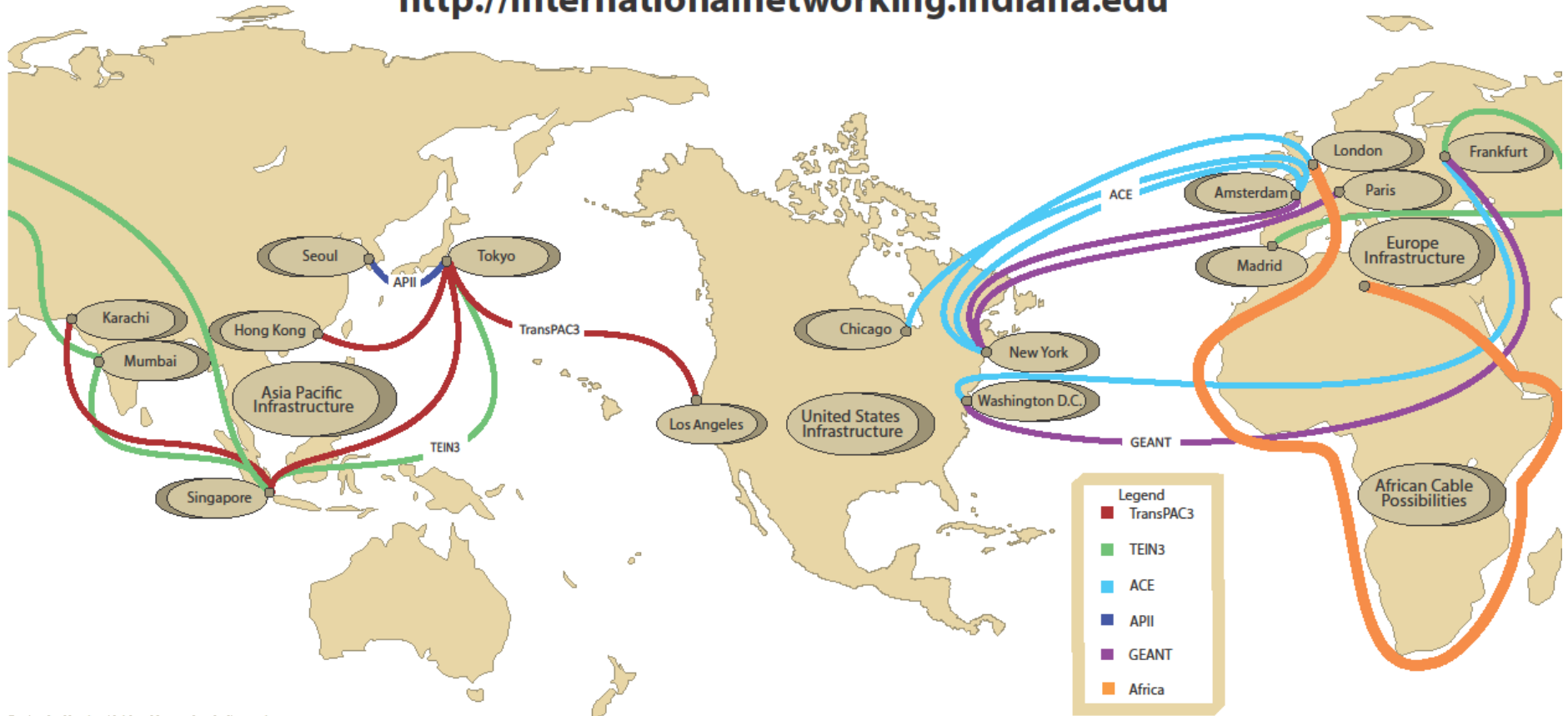


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International Networking

Selected International Connectivity

<http://internationalnetworking.indiana.edu>



Design by Heather Hubbard hmcqulst@indiana.edu

US-EU INFRASTRUCTURE COLLABORATIONS

- The US and the European Commission work closely on a number of CI related matters.
- The ACE Project is a partnership with DANTE/GEANT in the development of the US-EU network connections seen on the previous ACE slide.
- The TransPAC3 Project is a partnership with DANTE/TEIN3 and APAN in the development of networking to Asia and via TEIN3, on to Europe.

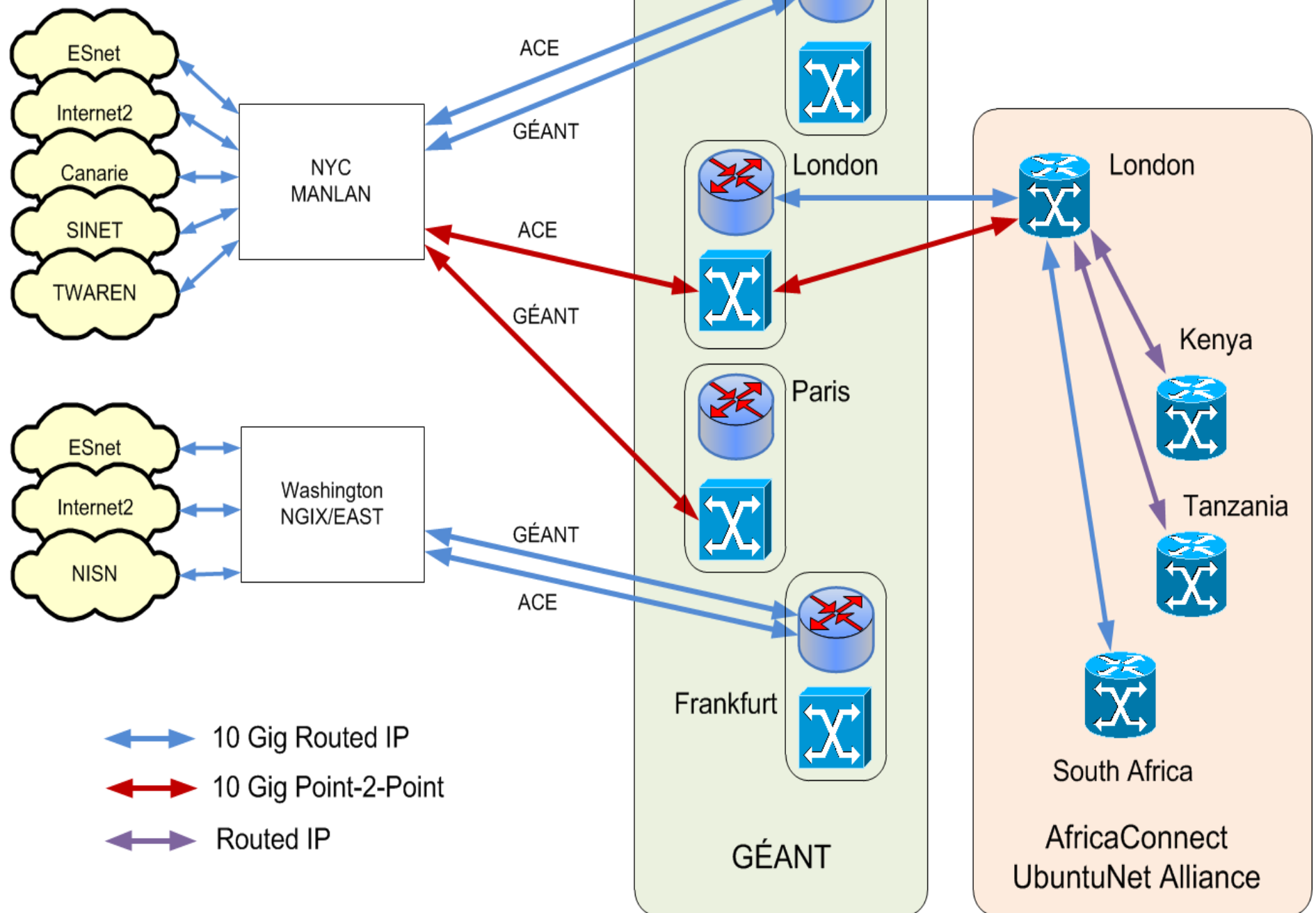


CONNECTING AFRICAN AND US SCIENTISTS

- The US has multiple mission specific national networks (Internet2, NLR, ESnet,...).
- Fortunately, reaching all these networks is relatively simple.
- If your NREN (or better yet your aggregated regional NREN) can reach an International Exchange Point (IXP) then your scientists can interact with US scientists (and scientists worldwide).
- The key concepts involved are connecting and distribution networks, IXP switches and trans-oceanic connections.



AfricaConnect - GÉANT - ACE Connectivity





ACE EU-US IXP LOCATIONS

- AMS->NYC 2x10G IP
- FRK->DC 2x10G IP
- AMS->CHI 10G circuits
- Paris->NYC 10G circuits
- London->NYC 10G circuits

SPECIFIC ACE/TP3 NETWORK INITIATIVES RELATED TO AFRICA

- London – NYC 10G network connection

Landing in the DANTE POP in London

Same space as UbuntuNet router

Direct connection London to NYC (MANLAN)

Available 15-October-2011 (hopefully)

- Also, visit the US-India workshop page at:
<http://internationalnetworking.iu.edu/us-india-workshop>
- Also, focus on measurement, operations and security.

CONNECTIVITY IN PLACE....NOW

WHAT...

- Building a sustainable technical support structure in Africa.
- Providing opportunities for encouraging, supporting and developing sustainable Africa – global science collaborations enabled by CI.
- This workshop is an example. Also see:
 - <http://internationalnetworking.iu.edu/us-india-workshop>
- Goal: Engaging Africa as a full partner in the global CI-enabled science community.

SUMMARY

- International connectivity is now in place....
- Within country and region connectivity is developing.
- As always, funding is an issue...
- Science collaborations facilitated or enabled by CI are now possible from a CI perspective. What is needed is a mechanism to develop new collaborations and enhance existing ones from a science perspective.
- Sustainability..... in every dimension....

ADDITIONAL INFORMATION

- IN@IU: <http://internationalnetworking.iu.edu/>
- DANTE – AfricaConnect:
<http://www.africaconnect.eu/MediaCentre/Pages/EC-fundedresearchinfrastructure.aspx>
- An interesting site:
<http://www.africanbrains.net/>
- Another very interesting site:
<http://www.cablemap.info/>
- Me: williams@indiana.edu