

Developments on Global Network Architecture for Research and Education

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(per videolink from The Netherlands)

13th Annual Global LambdaGrid Workshop
ILF Tech – Singapore – October 3-4, 2013



Development of a Global Network Architecture for Research and Education

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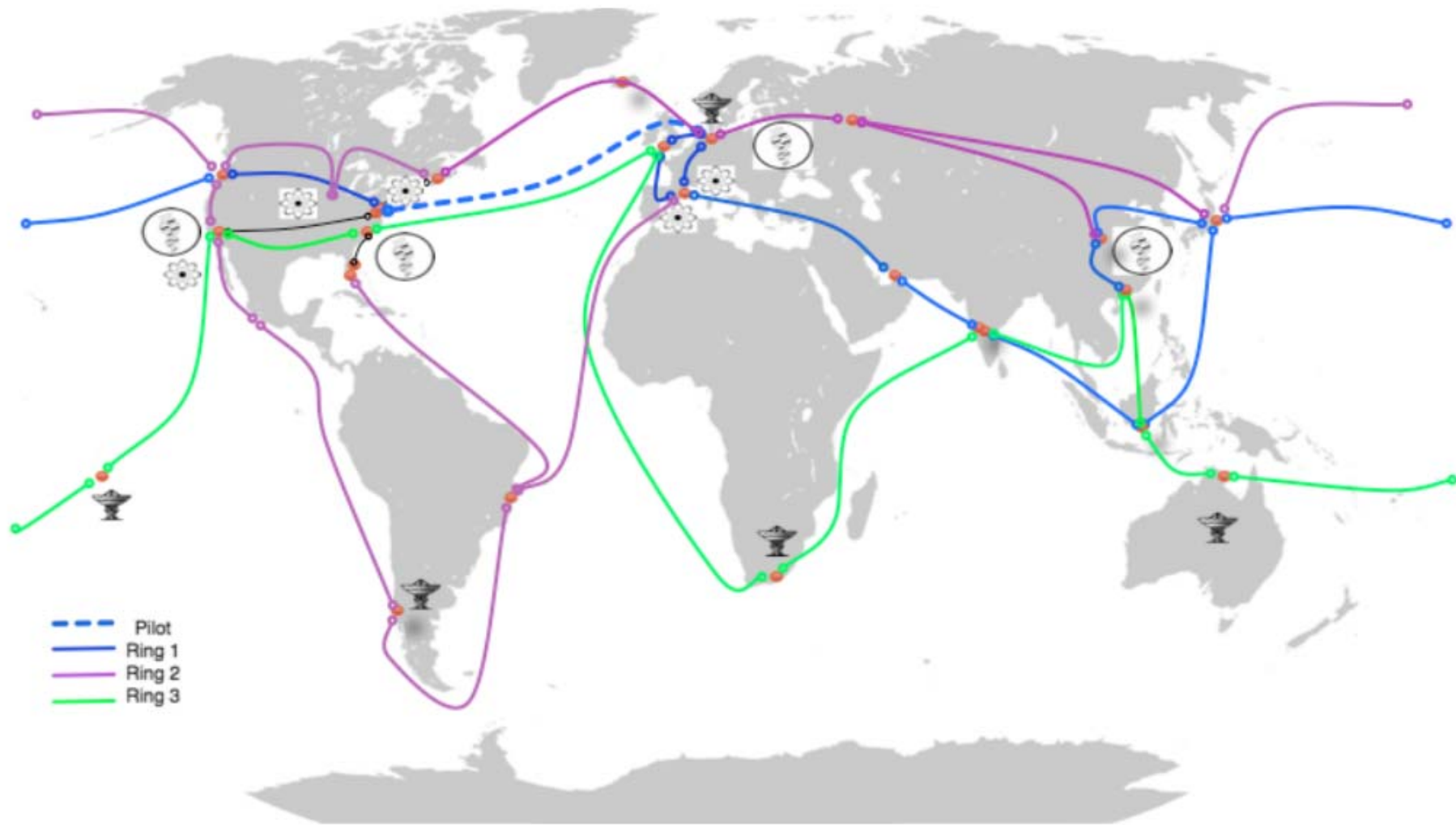
Please NOTE:
This is Work In Progress!



- No global NREN strategy coordination existed prior to 2012
- Initiative by Internet2, CERNET, NORDUnet and Janet to organize strategic dialogue
- Goal: Seamless global service delivery for users in R&E
- Participants selection based on R&E stats, smaller group "G20"
- → CEO Forum



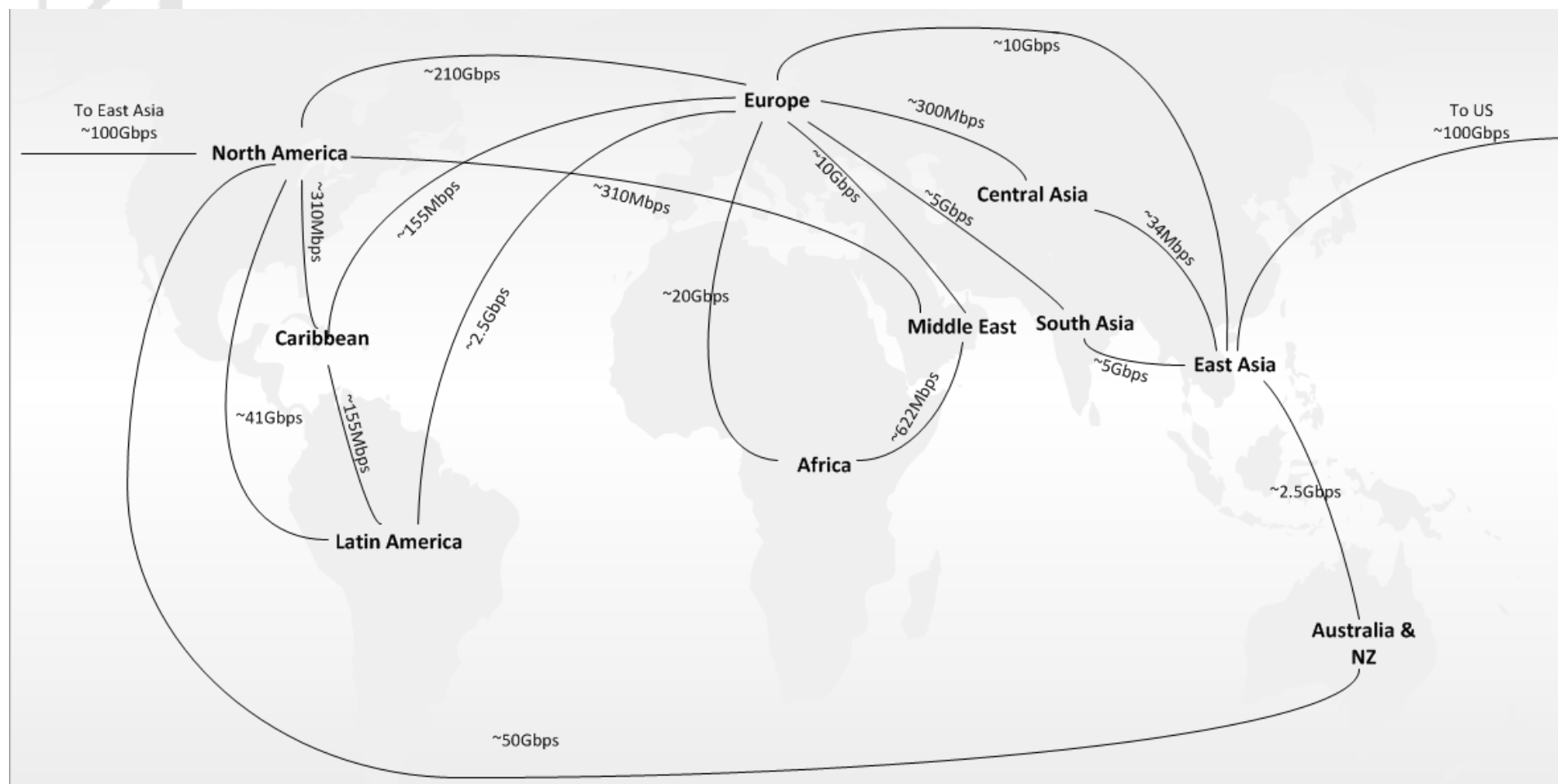
- GNA: One of the four CEO Forum's Challenges, est. Geneva, Sep 2012
- Vision: To describe an inclusive Next Gen intercontinental R&E network infra with a 5 to 10 year horizon
- Initial document by Xing Li (CERNET) and Jim Williams (Internet2) → GNA work



- Two new groups established May 2013:
 - Narrative group
 - Architecture group:
 - Jim Williams (I2) and EJB co-chairing
- Deadline:
 - Early December 2013 → Discussion Paper

- Green-field approach, leveraging:
 - Existing and planned subsea cables
 - Research and science installations
 - Advanced R&E Networks + their BCPs
- Yielding:
 - Powerful network substrate:
 - Fat pipes (fiber or spectrum)
 - Open Exchange Points
 - Overlay networks
- Migration from current → GNA





Source: Mian Usman (DANTE)



- The transport Substrate:
 - The basis for overlay networks
 - Examples include:
 - IP Routed peering
 - OPNs
 - ONEs
 - Testbeds
 - Demo networks
 - ...

- No big scenario:
 - Slow start (low hanging fruit first)
 - Gradual phasing in
 - No-one left behind
- Operating the transport Substrate:
 - First: Manual (horizon: 5 years)
 - Later: Automatic (horizon: 10 years)



- Continue with the Architecture group on preparing the December 2013 paper
 - High-level, focused on long-term goals (5-10 yr)
 - Looking at infrastructure and research trends, not so much at technologies
 - Coordinating funding in smart ways
- Exposing the GNA ideas to a broader audience, e.g. at GLIF Tech in Singapore:
 - To test ideas with broader audience
 - To solicit input



Thank you. Comments? Remarks? Questions? Discussion.

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NORDUnet

Nordic Infrastructure for Research & Education

