

GREN Resilience WG

Harold Teunissen (SURF) &
Erik-Jan Bos (NORDUnet)

GNA-G Community VCs – Q4 2024



Background

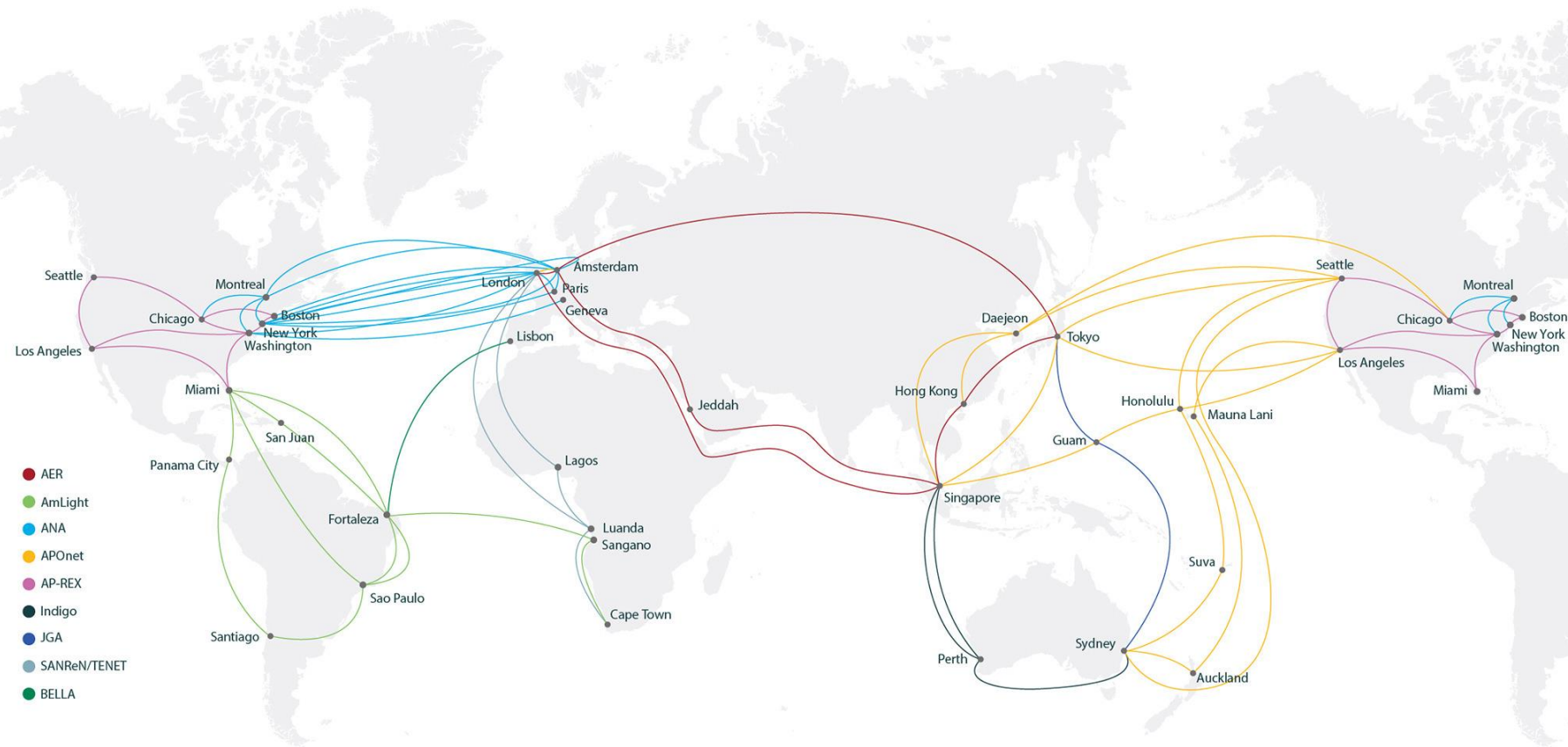


- Evolution of design principles for R&E Networks:
 - Initially: Connectivity
 - Until early 2000s: Performance
 - Into the 2010s: Reliability
 - Towards the 2020s: Security
- More recently, the goals of Reliability and Security have intersected
 - Witnessed by examples of sabotage or other malicious attacks on physical infrastructure
- Question has come up: Is the GREN sufficiently resilient?

Context for this proposed new WG

- Purpose:
 - To investigate the vulnerability of the Global R&E Network (GREN) infrastructure
 - To perform a risk analysis
 - To produce suggestions on how to improve the GREN resilience
- Idea has come through the GNA-G Leadership Team
 - Sponsor for this work to be David Wilde (AARNet)
 - Draft charter written by David Wilde (AARNet) & Harold Teunissen (SURF) & Erik-Jan Bos (NORDUnet)

GREN 'systems'



1st Step: Examine the GREN

- First by Region:
 - North Atlantic – connecting Europe and North America
 - South Atlantic – connecting South America and Western Africa and Europe
 - Pacific – connecting the Asia Pacific & Oceania, Asia and the USA
 - Indian – connecting Asia, Western Africa, Arab States, and Europe
 - The Americas – connecting North and South America
- Use the knowledge and experience of people involved in AER, AmLight, ANA, APOnet, AP-REX, ARENA-PAC, BEAA, EARPN, NA-REX, PacWave, and others
- Second, bringing it all together for a global view
 - To also include any terrestrial cross-R&E Network transit
 - May introduce or reduce vulnerability

TLP:AMBER



Proposed deliverables

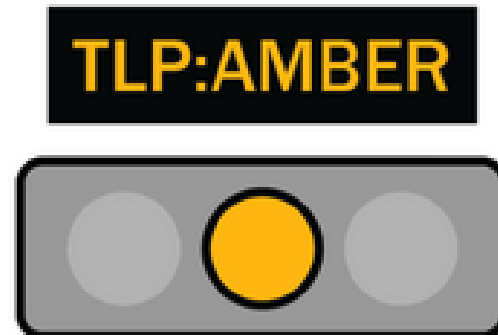
1. A high-level kick-off document:
 - Defining the problem space
 - Outlining the identified key areas of focus
 - Outlining the proposed process to complete the review
2. A four-part report:
 - a. A snapshot of the current GREN, identifying vulnerable points
 - b. Recommended updates to architectural design principles
 - c. Specific network-focused recommendations
 - d. Any other recommendations to address vulnerabilities

TLP:AMBER



Note on TLP:Amber

- Assessing our networks, vulnerabilities, and resilience
- That is information we should not share openly, hence:
- “Limited disclosure, restricted to participants’ organization and its clients (see Terminology Definitions)”.
- Source: <https://www.cisa.gov/news-events/news/traffic-light-protocol-tlp-definitions-and-usage>



Proposed timeline

- October 2024 – Present at the GNA-G Community VCs
- October 2024 – Form Working Group; appoint co-chairs; begin work
- January 2025 – Complete deliverable 1 (initial scoping document and project plan)
- January 2025 – Complete deliverable 2a (snapshot of current risks)
- April 2025 – Complete deliverables 2b (recommended updates to architectural principles) and 2c (specific network recommendations)
- May 2025 – Complete deliverable 2d (any other recommendations)
- June 2025 – Present finished deliverables at CEO Forum F2F meeting in Beijing, China

We want you!

- If... You also think Reliability and Security are important
- When... You think you can contribute to the improving GREN Resilience
- Please consider joining this WG!
- Send an e-mail to:
 - Harold: <harold.teunissen@surf.nl>
 - Erik-Jan: <bos@nordu.net>

Make A Difference





Thank you! Questions?

Harold Teunissen (SURF) & Erik-Jan Bos (NORDUnet)

GNA-G Community VCs – Q4 2024