

Asia Pacific Oceania Network (APOnet) Collaboration

Dr. Jennifer Schopf
(on behalf of the APOnet Leads)
June 15, 2021

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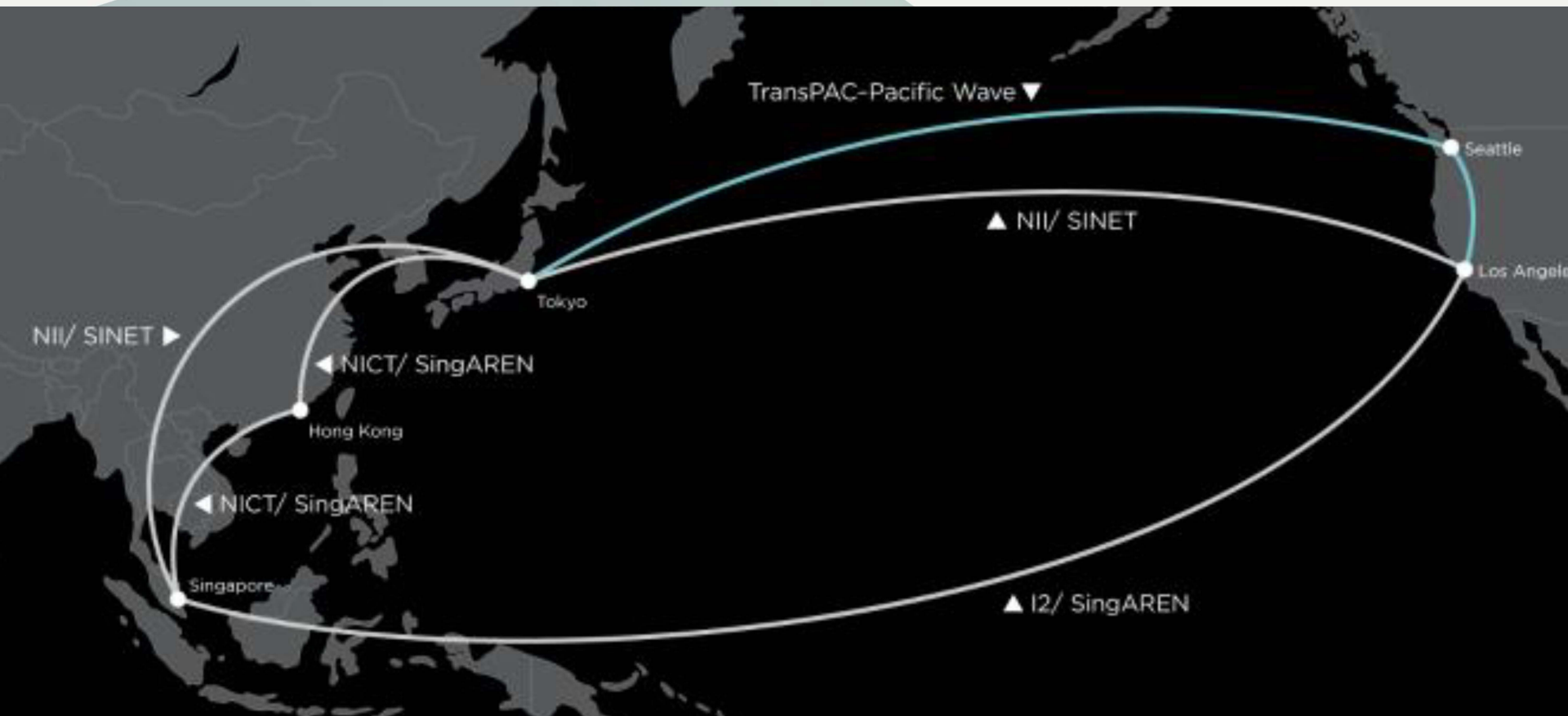
Before: Asia Pacific Ring (APR)

- Internet2
- NICT
- NII
- Pacific Wave
- SingAREN
- TransPAC
- WIDE

Before: Asia Pacific Ring

- MOU -December 2017
- Primary Goals:
 - Coordination on new capacity
 - Backups - planned and otherwise





Why a New Agreement?

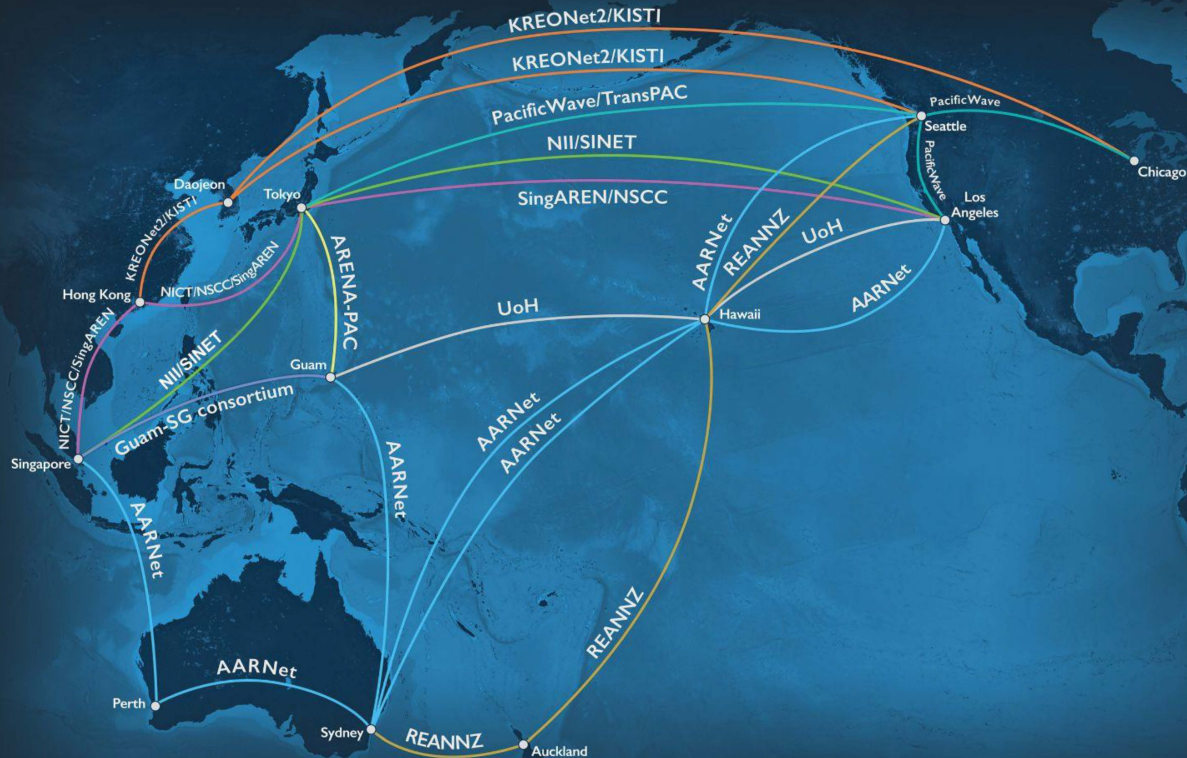
- Explosive growth in sensors, instruments, high resolution imagery
 - Unprecedented volumes of experimental data
- Multidisciplinary discoveries
 - Teams of experts
 - Spread around the world
 - collaborating across national boundaries

This collaboration can contribute specific resources from each of our individual investments that together create a resilient, high speed trans-oceanic network services delivery system

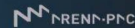
New Collaboration

- AARNet
- ARENA-PAC (WIDE)
- Internet2
- KISTI
- NICT
- NII
- Pacific Wave
- REANNZ
- SingAREN
- TransPAC
- UHawaii

aponet ASIA PACIFIC OCEANIA NETWORK (APOnet)



- NII/SINET
- AARNet
- KREONet2/KISTI
- ARENA-PAC
- UoH
- Guam-SG consortium
(ARENA-PAC, AARNET, Internet2, TransPAC)
- PacificWave
- PacificWave/TransPAC
- SingAREN/NSCC
- NICT/NSCC/SingAREN
- REANNZ



Planned Activities

1. **Supporting highly available connectivity**

- Build multiple paths between R&E networks

2. **Backup traffic**

- Best effort backup connectivity in case of outages
- BGP resiliency as well as vlans

Planned Activities (2)

3. Cooperation and coordination

- Regular meetups for engineering and policy
- Coordinator selected annually

4. Network research and services

- Explore and cooperatively deploy, emerging networking technologies/services

Planned Activities (3)

5. Application development and support

- Stimulation of application development
- Experimentation with high bandwidth demand apps
- Troubleshooting end-to-end connectivity

6. External experiment support

- External experiments and demonstrations
- Provide access to the full bandwidth on a production quality interconnect for pragmatic experimentation

Planned Activities (4)

7. Preferred route identification and resolution

- Develop and support shared routing practices

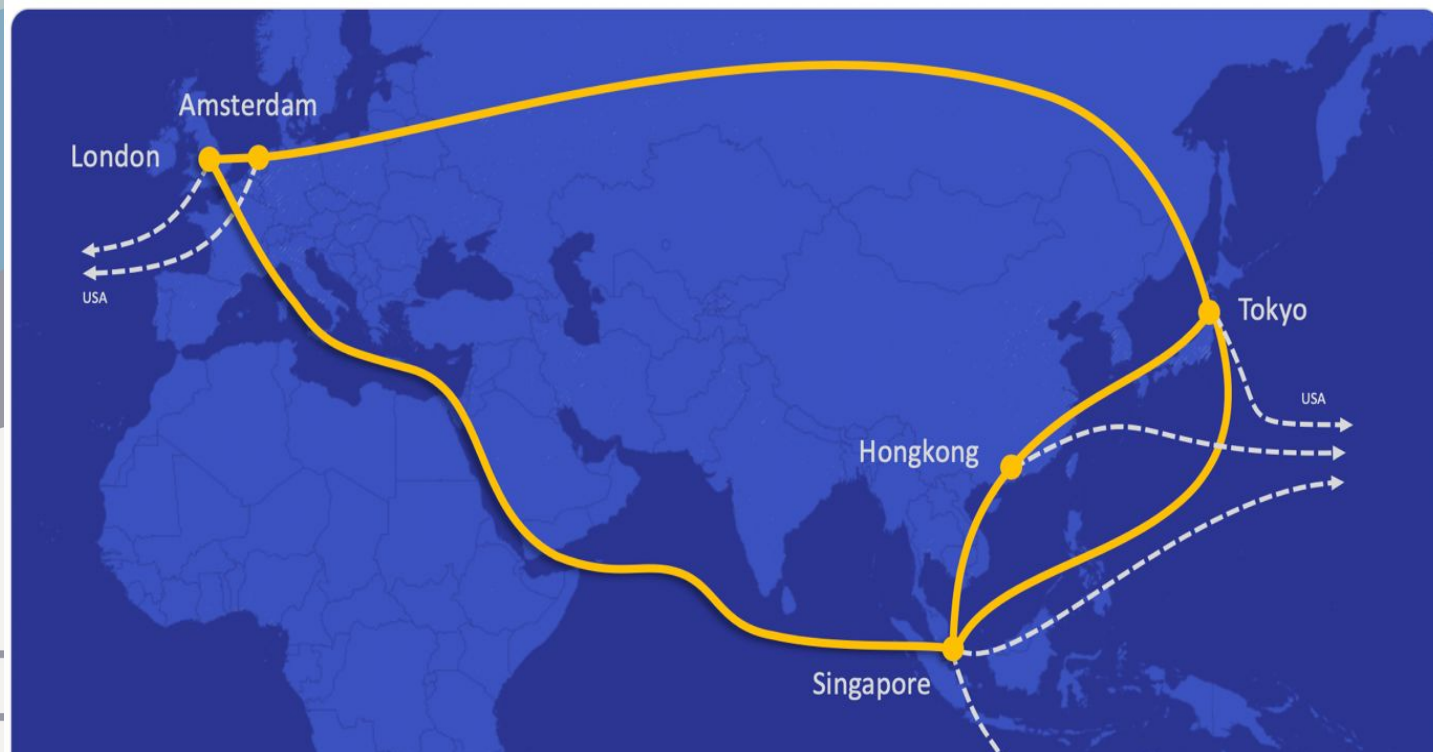
8. Sharing of measurement data

- SNMP, streaming telemetry, or de-identified flow data
- <http://aponet.netsage.global>

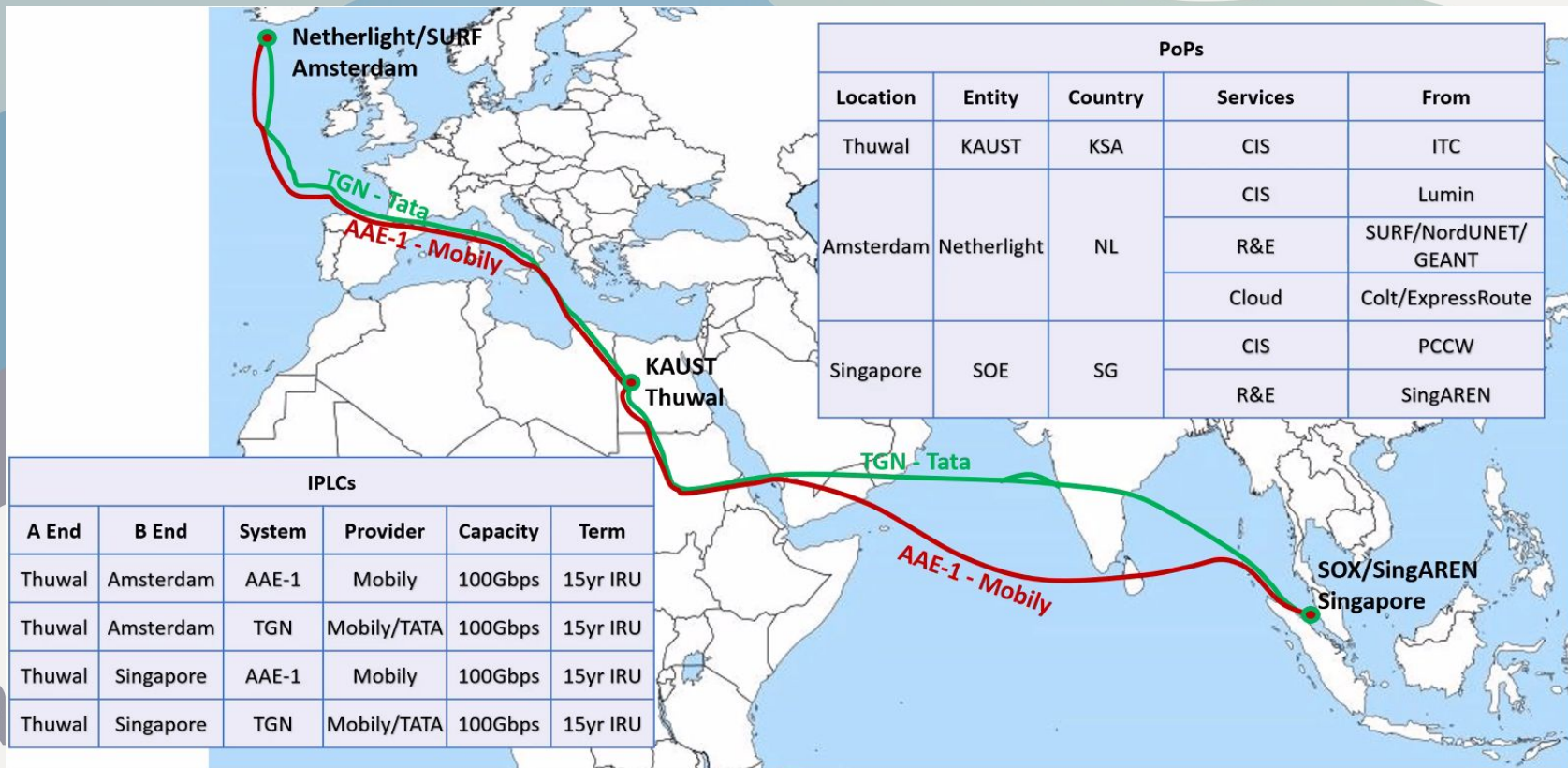
MOU Signing

- Jun 16, 2021 08:00 PM US Eastern Time
- Register to attend:
 - https://cenic.zoom.us/webinar/register/WN_Jt0m5q_XR5yVgixdvWeknQ MOU Signed December 2018
- Press release expected June 17, 2021

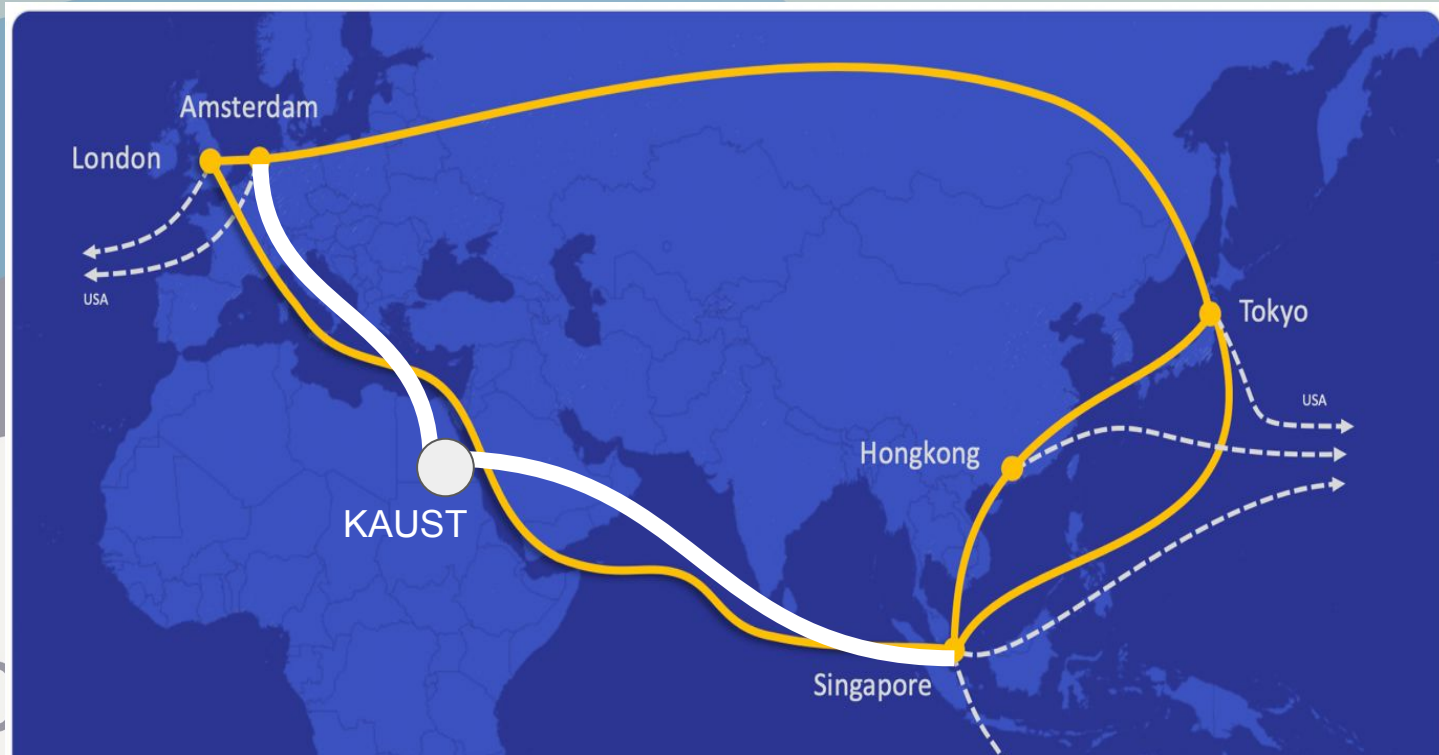
Connecting Asia to Europe (CAE)/ Asiapacific-Europe Ring (AER)



KAUST Connectivity



CAE/AER/KAUST



Asia-EU Traffic

- Expectation -
 - Bulk of Asia traffic to EU would use CAE/AER
- But we know this isn't happening (yet)
- Join the Routing Working Group!

Routing Working Group

- **Engineering focus**
 - Document possible erroneous routes
 - Identify teams to address them
 - Check in together as we work through them
- **Policy Focus**
 - Detail routing policies for paths
 - Including preferred backup paths!
 - Verify if policy is being followed

Routing Working Group Info

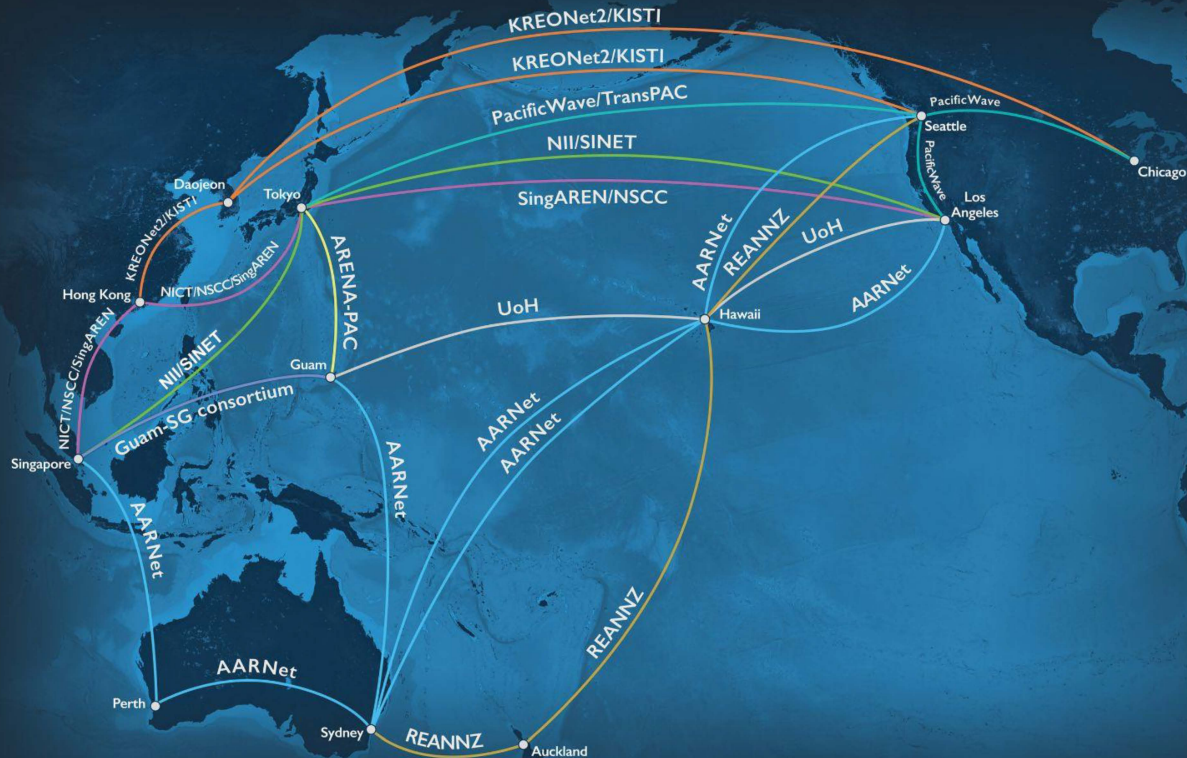
- Mailing list routing-wg@gnag.net
 - To be added addlema@iu.edu
- Slack
 - APAN Slack Instance, Channel: Routing
- Web
 - <https://www.gna-g.net/join-working-group/gna-g-routing-wg/>

Questions or comments on APOnet?

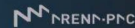
- More information
 - <http://aponet.global>
- Jennifer Schopf
 - jmschopf@iu.edu

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- US NSF award #2028495 for NEA3R

The TransPAC Pacific Wave 100gb/s network fabric is provided by Pacific Northwest GigaPop

"Any opinions, findings, conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Networking and Information Technology Research and Development Program."

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