WIDE / ARENA-PAC Update

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WIDE Project / ARENA-PAC

ADVNET 2023 – October 5, 2023
A³ (Asian internet interconnection initiatives)
Developing resilient satellite connectivity in the Asia Pacific to support R&E infrastructure and for emergency situations and promoting inclusion.

Since 1996

SO Asia (School on internet)
(26 partners in 11 countries)
Using R&E infrastructure to provide quality education via collaboration among universities in Asia.

Since 2001
AI3 & SOI Asia partners and affiliates

Philippines: 1 Institution/2 Universities
Indonesia: 5 Universities
Timor Leste: 1 University
Malaysia: 2 Universities
Cambodia: 1 University
Thailand: 2 Universities
Myanmar: 2 Universities
Nepal: 1 University
Vietnam: 2 Universities
Bangladesh: 1 University

UNESCO Jakarta
APNIC

Network Partners

GOREX: Guam Open Research & Education eXchange
PREGINET: Philippines Research, Education and Government Information Network
IDREN: Indonesia Research & Education Network
APOnet: Asia Pacific Oceania Network
CINJI: Coalition of Interoperable Networks for Japan and International
WIDE Project
ARENA-PAC is a project of APIDT Infrastructure Pty Ltd, and operated by WIDE Project started in 2020.
- Establish submarine cables in Asia-Pacific for collaboration with global research network community
- **Operated by WIDE Project (WIDE/AI³/SOI-ASIA) with APNIC**
- Starting with Tokyo-Guam 100G and other cables
- Full collaboration with existing RENs in the region such as NSF, Internet2, TEIN, APAN and so on.
- Finance by APIDT-I (Asia Pacific Internet Development Trust Infrastructure Pty)
ARENA-PAC Mission

1. To develop intra- and inter-regional backbone infrastructure with research and education network partners.
2. To promote the operation and development of a **new Pacific topology**.
3. Mission to Asia Pacific to connect the **Asia Pacific region** to the rest of the world globally.
ARENA-PAC MAP (updated in May, 2023) available on arena-pac.net.
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ARENA-PAC (AS141682)

- Interconnection with other research and educational networks (RENs)
  - Tokyo
    - WIDE Project, GXP-Tokyo
  - Guam
    - GOREX (L3)
      - Univ. of Hawaii, UoG, AARNet, SingAREN, REANNZ, TransPAC
    - AARNet through GOREX (L2)
    - SingAREN through GOREX (L2)
    - SINET (direct)
  - Malang
    - IDREN, UB
- Research/educational traffic delivery
- Research collaborations on ARENA-PAC and interconnected RENs

Started its operation since Feb. 1, 2021 with Tokyo-Guam link and be expanding
Guam: Core site of ARENA-PAC

Equipment Installed to Guam site (Partially)

- Core site of ARENA-PAC
  - BGP full-route capable **router**
    - MX204 (Still configuring)
  - **Switch** with 100 GbE ports
    - QFX5120-48Y-8C (Connect all sites of ARENA-PAC & GOREX)

![Diagram](image-url)
Guam–Malang (Indonesia)

- Circuit to Malang
  - 100 Gbps
  - Aug. 31, 2022: Contract signed with Telkom Indonesia
  - This link is UP
- Collaboration with IDREN
  - Datacenter site at University of Brawijaya
  - Aug. 31, 2022: MoU signed with IDREN and University of Brawijaya
  - Feb. 1, 2023: Operation started (direct connection to UB/IDREN)
  - Mar. 20, 2023: Equipment installed
Uncompressed 8K audio/video traffic

40 Gbps

- Preparation
- Rehearsal
- Celemony & Demonstration
Guam–Quezon City (Philippines)

- Circuit to Quezon
  - 100 Gbps
- Collaboration with ASTI/PREGINET
  - Endpoint and Peering at ASTI
  - Nov. 15, 2022: MoU signed with DOST and ASTI
  - March 2023: Circuit got ready (waiting for equipment)
  - September 19, 2023: Link up!
  - September 20, 2023: BGP up
Summary

ARENA-PAC Operations Timeline

- Feb. 2021: Tokyo-Guam, connection with GOREX
- Jun. 2021: APOnet Agreement
- Dec. 2021 to 2022: Guam-Singapore with AARNet, Internet2, IN@IU
- Sep. 2022: Equipment delivered to Tokyo
- Oct. 2022: Equipment installation to Guam
- Dec. 2022: Equipment move and update in Tokyo
- Feb. 2023: Guam-Malang, Indonesia, peering with IDREN and UB (MoU signed in Aug. 2022)
  (Equipment delivered / installed March 20)
- July 2023: Timor-Leste from Indonesia over VPN through Indonesia (20 Mbps up/down)
- Soon: New Circuit, Connections, and Sites
  - Quezon, Philippines – Guam, collaboration with ASTI/PREGINET (Oper. MoU signed in Nov. 2022)