

# Fast and stable Network Ring between Asia-Pacific and Europe

**Extensive backup links ensure network resilience and boost connectivity between Asia and Europe for research and education**

Putrajaya, Malaysia, 22 July 2019 – Today, Asia and Europe further strengthen their collaboration with an MOU that will see eight R&E Networks agreeing to provide a backup path for each other in the event of any link failure, creating an extremely robust and resilient network ring. This remarkable collaboration enhances the 100Gbps CAE-1 system launched in June 2019 (see: <https://www.nordu.net/article/faster-connectivity-between-asia-and-europe-research-and-education>), and will benefit researchers in Europe, Asia and Australia.

## **Memorandum of Understanding (MoU)**

Eight R&E network organizations, AARNet (Australia), GÉANT (Europe), NICT (Japan), NII (Japan), NORDUnet (European Nordics), SingAREN (Singapore), SURF (The Netherlands) and TEIN\*CC (Asia-Pacific), signed a Memorandum of Understanding (MOU) today at the 6<sup>th</sup> Asi@Connect Project Meeting in Putrajaya, Malaysia. The MOU is for the collaboration to run 100 gigabit per second (Gbps) networks between Asia and Europe. The MOU partners agreed to contribute their own 100Gbps link to create a resilient system, called Asiapacific-Europe Ring (AER). In the event that one link in the ring fails, traffic between Europe and Asia will be transported over one or more of the other links.

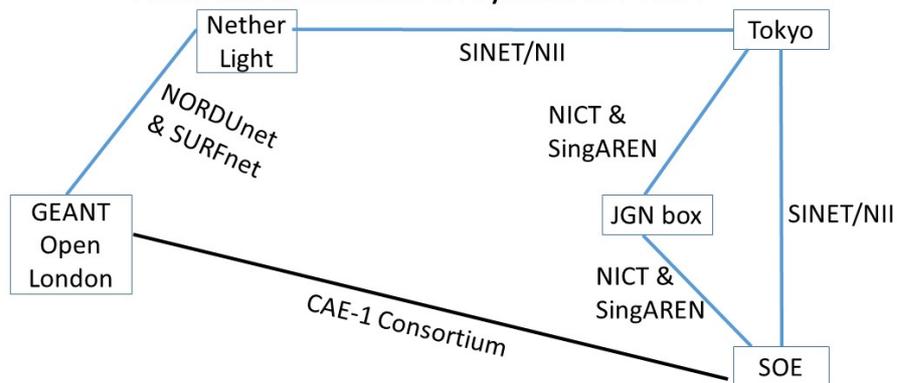
## **Remarkable collaboration**

AER is a remarkable collaboration in the field of R&E networking between Asia and Europe and significantly improves the reliability of the connectivity between various R&E network organizations. AER also is an important step forward in further developing the Global Research & Education Network (GREN), based on the Global Network Architecture (GNA) for R&E.

Prior to this MOU, an international consortium of six research and education networks, including AARNet (Australia), GÉANT (Europe), NORDUnet (European Nordics), SingAREN (Singapore), SURF (The Netherlands) and TEIN\*CC (Asia-Pacific), established CAE-1, which connects Asia and Europe via an undersea cable between London and Singapore. At the same time, NII (Japan) deployed a 100Gbps terrestrial link using the Trans-Siberian cable system, connecting Tokyo to Amsterdam.

These two intercontinental links, along with SURF and NORDUnet's Amsterdam-London link and NII, NICT and SingAREN's Tokyo-Hong Kong-Singapore network now form the AER. The AER allows more flexible network operation as well as providing high speed resilient data transfers between the R&E communities.

### Asiapacific Europe Ring – Resilient Transmission System for R&E



This new link will provide additional capacity to meet the rapidly growing bandwidth needs of transnational education and data-intensive science collaborations between Europe and the Asia Pacific region.

#### MOU for AER at Asi@Connect Meeting in conjunction with APAN48

The MOU for AER was signed by representatives of the eight organizations at the 6<sup>th</sup> Asi@Connect Project Meeting which was held in conjunction with APAN48 in Putrajaya, Malaysia on 22 July 2019. The initial term of this MOU is for a period of three years.

## QUOTES

**Mary Fleming** (Director International, AARNet) said:

“It is wonderful to see the diversity and resilience we have all gained by working together with our Japanese colleagues. It is a great model for the future and further strengthens our close ties with the Research and Education Networks of North Asia.”

**Erik Huizer** (CEO, GÉANT) said:

“Joining forces with our Japanese partners to secure mutual back-up complements and enhances the CAE-1 endeavour. GÉANT welcomes this step as it significantly improves the connectivity between the Asia-Pacific region and Europe, facilitating new collaborative research between these regions.”

**Mizuhiko Hosokawa** (Vice President, Member of the Board of Directors, NICT) said:

“With this Asiapacific-Europe Ring (AER), NICT is hoping the progress in the network research and further collaboration with international research institutes.”

**Shigeo Urushidani** (Deputy Director General, NII) said:

"It is very exciting to work with wonderful RENs in Europe and Asia towards the creation of a global collaboration platform. NII hopes that this resilient and high-speed ring through collaboration among eight organizations will produce more fruits of global research and education efforts."

**René Buch** (CEO, NORDUnet) said:

“The collaboration between innovative NRENs in Europe and Asia, resulting in the AER Facility, brings an important new milestone in the effort to create a global reliable infrastructure for Research & Education. The ground breaking efforts of the CAE-1 and ANA Partners, together with a number of other forward looking projects all over the world, is the basis for the creation of a true Global Research & Education Network (GREN), serving science and education all over the planet”.

**John Kan** (Vice-President, SingAREN) said:

“SingAREN is pleased to be a partner of the AER collaboration. The AER provides a resilient, high speed network services delivery system to facilitate more innovative research and education collaborations between Asia and Europe, especially for areas such as aero-engineering design and simulations, computational fluid dynamics, precision engineering, bio-imaging, and molecular modelling. ”

**Alexander van den Hil** (Product Manager Networks, SURF) said:

“This ring spanning between Europe and Asia shows the power of collaborating Research and Education Networks. By joining efforts, the global R&E community benefits from network capacity that could not be provided by a single organisation working on its own.”

**Yong Hwan Chung** (President, TEIN\*CC) said:

“This is a significant progress on the Research & Education network collaboration between

Asia and Europe, and as of the AER, the R&E communities will benefit from more reliable and faster network infrastructure for their research and application activities.”

## **MOU PARTNERS**

**AARNet** (Australia’s Academic and Research Network) provides high capacity national and international telecommunications infrastructure and collaboration services for the nation’s research and education sector, including universities, health and other research organisations, schools, vocational training providers and cultural institutions. AARNet serves over two million end users who access the network for teaching, learning and research. For more information, visit [www.aarnet.edu.au](http://www.aarnet.edu.au).

**GÉANT** is Europe’s leading collaboration on network and related infrastructure and services for the benefit of research and education, contributing to Europe's economic growth and competitiveness. The organisation develops, delivers and promotes advanced network and associated e-infrastructure services, and supports innovation and knowledge-sharing amongst its members, partners and the wider research and education networking community. For more information, visit [www.geant.org](http://www.geant.org)

**NICT** (National Institute of Information and Communications Technology) is Japan’s sole National Research and Development Agency specializing in the field of information and communications technology. It is charged with promoting ICT sector as well as research and development in ICT, which drives economic growth and creates an affluent, safe and secure society. NICT is providing a variety of testbed facilities including JGN, StarBED, RISE, and JOSE. For more information, visit [www.nict.go.jp/en/](http://www.nict.go.jp/en/).

**NII** (National Institute of Informatics) operates a state-of-the-art academic-information infrastructure that is essential to research and education within the broader academic community, with a focus on partnerships with universities and research institutions throughout Japan. The Science Information Network (**SINET**) is Japan's national research and education network for more than 900 universities and research institutions and more than 3 million users. For more information, visit [www.sinet.ad.jp/en/](http://www.sinet.ad.jp/en/).

**NORDUnet** operates a world-class network and e-infrastructure service for the Nordic R&E community. NORDUnet is a collaboration between the National Research and Education Networks of the five Nordic countries, i.e. Denmark (DeiC), Iceland (RHnet), Norway (Uninett), Sweden (SUNET), and Finland (Funet). While the five NRENs develop and operate the national research network infrastructures, connecting more than 400 research & education institutions with more than 1.2 million users, NORDUnet provides global network connectivity, and is a key contributor to international partnerships such as GÉANT, GNA and the GREN. For more information, please visit [www.nordu.net](http://www.nordu.net)

**SingAREN** (Singapore Advanced Research and Education Network) is Singapore's national research and education network. It is the sole provider of local and international networks

and services dedicated for serving the Research and Education community in Singapore. SingAREN's members consist of the Institutions of Higher Learning, Research Organizations, Government and network industry players. SingAREN facilitates high-speed transfers of large datasets across international boundaries for scientific research, and enables advanced network technology demonstrations through its resilient international links and high-speed fiber network. SingAREN Open Exchange (SOE) interconnects Singapore's research and education community to the Research and Education Networks (RENs) in other countries in Asia, Australia, Europe and the U.S.A. For more information, visit [www.singaren.net.sg](http://www.singaren.net.sg)

**SURF** is a cooperative association of Dutch educational and research institutions in which its members join forces. Together with the institutions, SURF ensures that the education and research community has access to the finest and newest ICT facilities for top research and talent development. SURF does that by offering fast network connections and easy and secure access to ICT facilities. This allows users in the fields of education and research to work (inter)nationally and collaborate easily and reliably. For more information, visit [www.surf.nl/en](http://www.surf.nl/en)

**TEIN\*CC** is a non-profit foundation for managing the Asi@Connect project, the EU's and 24 Asia-Pacific Partners' co-funded project. Asi@Connect provides a dedicated regional high capacity and high quality internet network, Trans-Eurasia Information Network (TEIN), for research and education (R&E) communities across Asia-Pacific and Europe, and leverages e-infrastructures developed for public service project. TEIN\*CC actively collaborate with other regional R&E network organisations around the world to provide better opportunities for research and education to the TEIN community. For more information, visit [www.tein.asia](http://www.tein.asia)