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## **S'pore Network Becomes 1st Asian Partner For Internet2**

The Singapore Advanced Research and Education Network ([SingAREN](#)) became the first research network in Asia to connect to the US Internet2 member universities on both the vBNS and Abilene networks when Thursday it signed an MoU with the University Corporation for Advanced Internet Development ([UCAID](#)).

At the same time, SingAREN also announced Project SPRINGi (Singapore's IP Ring for Next Generation Internet), a collaboration between SingAREN, local universities, the local industry, and networking vendors in advanced broadband network R&D.

SPRINGi will consist of an advanced Dynamic Packet Transport (DPT) based IP network infrastructure pioneered by [Cisco Systems](#), also commonly called "IP-over-light". SingAREN, the [National University of Singapore](#) (NUS), [Nanyang Technological University](#) (NTU), [Kent Ridge Digital Labs](#) (KRDL), and [Singapore Telecom](#) (SingTel) will be connected in this infrastructure.

It is modeled after the Abilene network managed by UCAID in the US.

The Abilene project supports and encourages the development of advanced applications, such as telemedicine, digital libraries, distance learning, and virtual laboratories, by UCAID university members for deployment on Internet2.

SPRINGi, the Singapore equivalent, will also support the local development of broadband network technologies and broadband applications such as that of the Abilene project.

To date, the participants of the SPRINGi project include NUS, NTU, KRDL, [Panasonic Singapore](#), and [JVC Asia](#). These project participants will develop advanced IP services such as packet video and voice, IP quality-of-service solutions, and wavelength division multiplexing (WDM) devices. More projects from other participants will be solicited in the future.

The total cost of phase one of SPRINGi amounts to S\$1.9M (US\$1.1M). The [National Science and Technology Board](#) (NSTB) is providing a broadband grant of S\$700K (US\$412K). The five project participants have to share a cost of S\$650K (US\$382K). The rest of the cost will be borne by Cisco Systems and Singapore Telecom who will provide DPT technologies and optical fiber respectively.

The link to the US research community provides information for local project developments, said Ngoh Lek Heng, operations manager of SingAREN. "We get information from the US on the pretext that we are already collaborating with them. When they give us the information, we use that for our project works."

He said Abilene is a test-bed for Internet2. Similarly, SPRINGi is a test-bed for SingaporeONE, a commercial network.

"SingaporeONE is a network that is already up and running. So in many ways it does not allow research because [research] is high risk and potentially could harm the

network operation. The only way is to try technologies on the SingAREN network. If they are found to be feasible, we would import them to SingaporeONE," said Ngoh.

Ngoh also said although Internet2 is meant to be a commercial network for quality applications that the current Internet cannot support, Internet2 is still in R&D.

"We [Singapore] want to play a key role in terms of shaping this future network. Singapore wants to benefit from it just like anybody else," he said. Thus this result in the tie up with UCAID for Internet2 R&D.

Most development projects, including the development of next generation Internet technologies and applications, have a duration of two years, he said.

As for patents, SingAREN will own the technologies it create. However, if a project participant come with a project proposal and create a technology, they own the IPR.

SingAREN is just providing a public service to help the participants achieve their goal, he said.

SingAREN is a national project funded by NSTB and Telecommunications Authority of Singapore (TAS) to provide the local research community high-speed connections to research networks in other countries.