



Media Release
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Broadband on the water – NICTA teams with Singapore’s Institute for Infocomm Research to create a wireless mesh network for ships

In an exciting international collaboration, NICTA, Australia’s Information and Communications Technology (ICT) Research Centre of Excellence, has joined Singapore A*STAR’s Institute for Infocomm Research (I²R) to demonstrate a prototype wireless mesh network for maritime traffic.

Under a new six-month agreement, NICTA will use its “go-anywhere” router technology to supply satellite connectivity for the I²R network, which provides data and voice communications between a collection of mobile nodes on ships and land-based networks. The I²R network is designed to provide communications to port authorities, container terminals and other ships, by WiMax inter-ship connectivity. However, if bad weather or distance makes the connectivity unavailable, an affordable satellite capability is needed.

This is where NICTA’s technology has a role. “When shore mesh nodes cannot be reached, traffic will be directed to the mesh node on a ship which has a satellite connection,” explains NICTA Project Leader Dr Roksana Boreli. “As standard Voice-over-Internet Protocol (VoIP) and data transport techniques don’t work well with satellite communications, the mesh system will use NICTA’s mobile routers to handle satellite connectivity in these cases.” This allows the traffic to reach its destination by going through the mesh either directly to shore or via the router and the satellite system.

I²R’s maritime mesh technology project aims to deliver a 6 Mbps long-range (20km) ship-to-ship and ship-to-shore mesh communication system capable of ad hoc multi-hop communication with other vessels and shore command stations. It will seek to develop this system to serve multiple applications such as general voice and data communications, messaging, surveillance and navigational safety. “If the research outcomes are successful, trials will be conducted to further validate the system,” said I²R’s Programme Manager for High Speed Maritime Mesh Networks, Dr Jaya Shankar.

“This is an important international research collaboration that offers NICTA the opportunity to use some of its leading technology in an innovative way,” said NICTA’s Chief Executive Officer Dr David Skellern. “By working together, NICTA and I²R have a stronger chance of developing a robust maritime communications network capable of serving the world’s busiest ports.”

“I have no doubt that I²R and NICTA working jointly on this project will yield some promising results for the advancement of this highly beneficial technology for the maritime industry,” said I²R’s Deputy Executive Director (Research) Professor Lye Kin Mun.

About NICTA

National ICT Australia Ltd (NICTA), Australia's Information and Communications Technology (ICT) Research Centre of Excellence, is developing technologies which will meet the current and future needs of the community in fields which will lead to large economic, social and environmental benefits for Australia. NICTA has five laboratories around the country. Since NICTA was founded in 2002, it has created four new companies, developed a substantial technology portfolio of patent applications and continues to supply new talent to the ICT industry through the NICTA-enhanced PhD program.

NICTA is funded by the Australian Government as represented by the Department of Broadband, Communications and the Digital Economy and the Australian Research Council through the ICT Centre of Excellence program. It was established and is supported by its members: The Australian Capital Territory Government; The Australian National University; NSW Department of State and Regional Development; and The University of New South Wales. NICTA's partners include: the University of Sydney; University of Melbourne; the Victorian Government; the Queensland Government; Griffith University; Queensland University of Technology; and The University of Queensland.

About the Institute for Infocomm Research

The Institute for Infocomm Research (I²R - pronounced as i-squared-r) is a member of the Agency for Science, Technology and Research (A*STAR) family. Established in 2002, our mission is to be the globally preferred source of innovations in 'Interactive Secured Information, Content and Services Anytime Anywhere' through research by passionate people dedicated to Singapore's economic success.

I²R performs R&D in information, communications and media (ICM) technologies to develop holistic solutions across the ICM value chain. Our research capabilities are in information technology and science, wireless and optical communications, and interactive digital media. We seek to be the infocomm and media value creator that keeps Singapore ahead. Website: www.i2r.a-star.edu.sg

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