



SingAREN

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Treasurer, SingAREN



History of SingAREN

- SingAREN : Singapore Advanced Research and Education Network
- Started in 1997 as a national project funded by the government hosted by NUS to maintain network connectivity to the Internet2 and APAN.
- Managed “Broadband 21” from 2001 to 2003 for A*STAR supporting 10 Network & 7 Application R&D projects.
- Officially registered as a non-profit organisation (Society) on 1st Oct 2003. Open for both Individual & Institutional Members.



SingAREN Objectives

- To be an advocate and champion for advanced network applications and technology in Singapore
- To be a platform for collective representation of the community of research and education networks (RENs) in Singapore
- To facilitate cost-competitive adoption of advance Internet technologies for the research and education community in Singapore



SingAREN Members and SIGs

- 3 SIGs
 - VoIP SIG
 - eLearning SIG
 - Network Planning

- Main Institutional Members
 - National University of Singapore
 - Nanyang Technological University
 - Singapore Management University
 - Singapore Polytechnic
 - Nanyang Polytechnic
 - Infocomm Development Authority
 - Cisco Systems (USA) Pte LTd
 - Lilly Systems Biology Pte Ltd

- Funded by membership & bandwidth subscriptions



Singapore National GRID

The screenshot shows a Mozilla Firefox browser window with the title "Welcome to National Grid Website! - Mozilla Firefox". The address bar displays "http://www.ngp.org.sg/". The browser's menu bar includes File, Edit, View, Go, Bookmarks, Tab, Tools, and Help. The toolbar shows navigation buttons (back, forward, home, stop, reload) and a search icon. The browser's tab bar shows several tabs, including "BlogRoll It!", "Post to del.icio.us", "Popup post to del.icio.us", "Usage Statistics for j...", and "bugmenot". The main content area displays the "National Grid SINGAPORE" logo on the left and the "National Grid" title in large black text on the right. Below the title is a purple banner with the text "WELCOME TO NATIONAL GRID WEBSITE". The main content area is divided into two columns. The left column is a "NAVIGATION" menu with buttons for "About Us", "Seminars", "Articles", "Press", "Events", "Applications", and "Links". The right column contains the "About National Grid" section, which includes a quote: "To facilitate the seamless use of an integrated cyber infrastructure in a secure, effective and efficient manner to advance scientific, engineering & biomedical research and development, with the longer term goal of transforming the Singapore economy using grid." Below this is a green banner with the text "UPDATES". At the bottom of the page is a blue banner with the text "FUTURE EVENTS".

Welcome to National Grid Website! - Mozilla Firefox

File Edit View Go Bookmarks Tab Tools Help

http://www.ngp.org.sg/

BlogRoll It! Post to del.icio.us Popup post to del.icio.us Usage Statistics for j... bugmenot

Welcome to National Grid Website!

National Grid
NG
SINGAPORE

National Grid

WELCOME TO NATIONAL GRID WEBSITE

About National Grid

"To facilitate the seamless use of an integrated cyber infrastructure in a secure, effective and efficient manner to advance scientific, engineering & biomedical research and development, with the longer term goal of transforming the Singapore economy using grid."

UPDATES

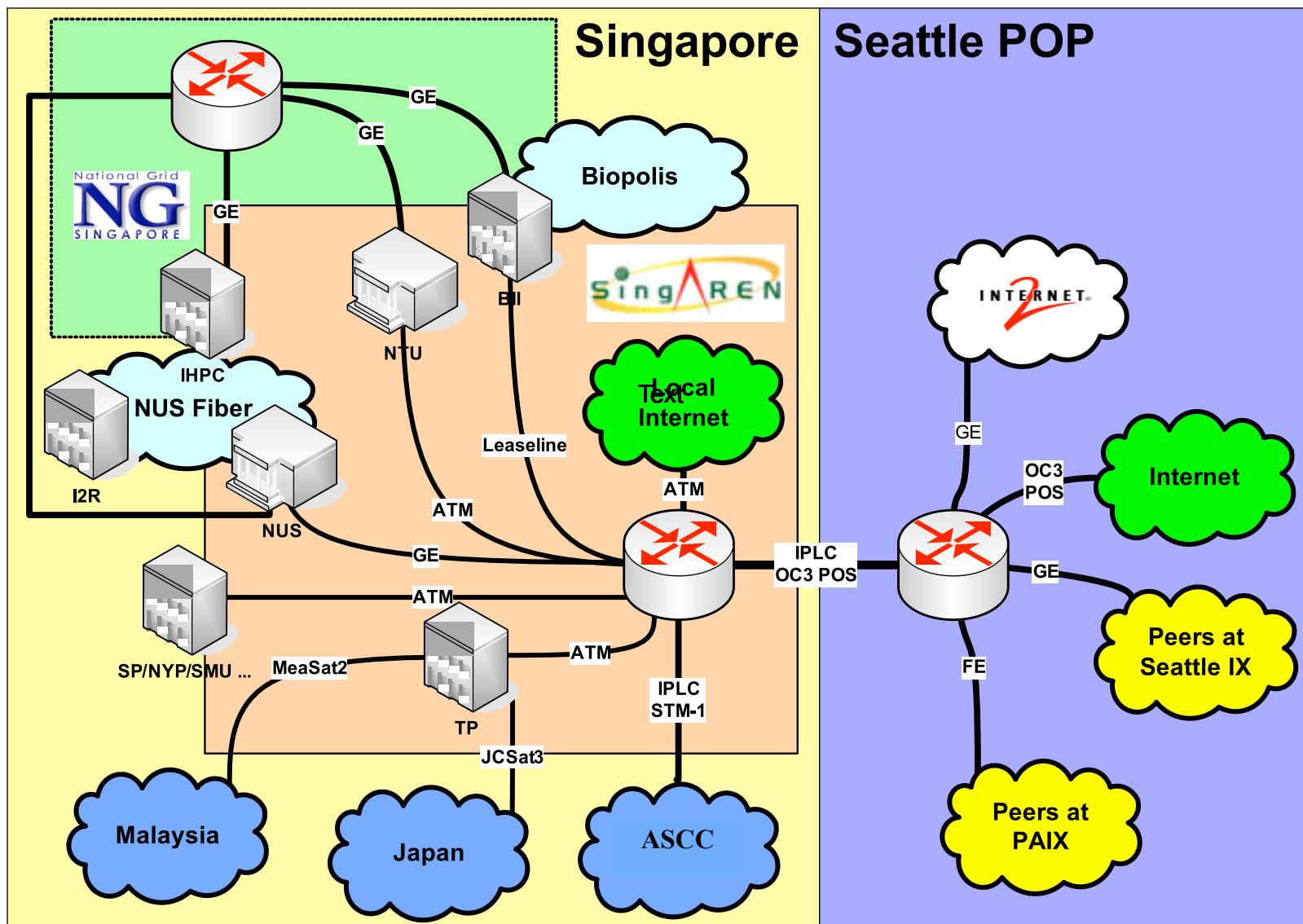
[FUTURE EVENTS](#)



Singapore National GRID

- NGPP is a high-speed network connecting technical computing resources to support GRID Computing for academic, research and industry.
- Virtual GRID Community
 - Life Science
 - Physical Science
 - Digital Media
 - Manufacturing
- Working Groups
 - Network
 - Security
 - Middleware & Architecture
 - Governance & Policy
 - Applications
- SIG
 - Access GRID
 - PC GRID







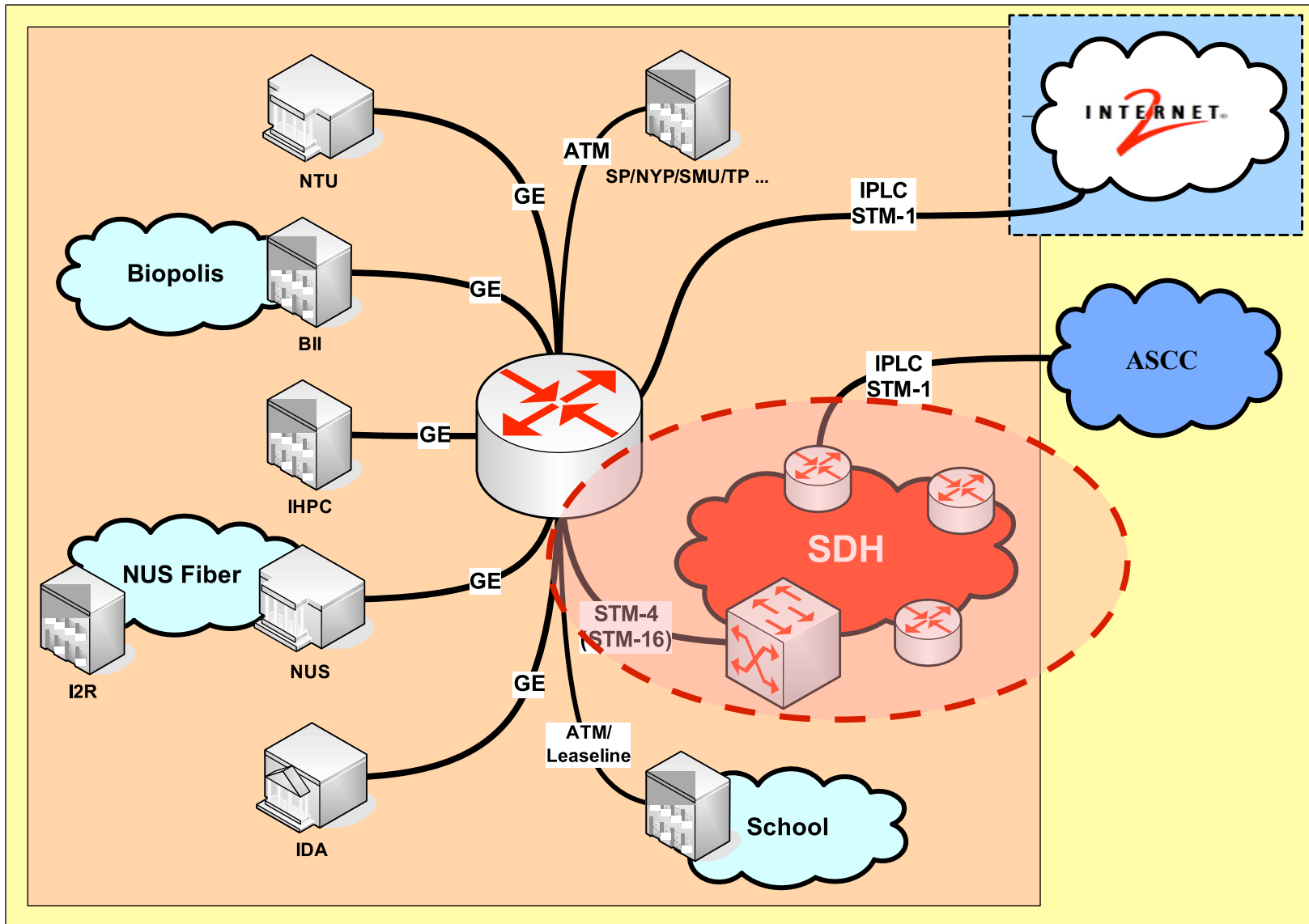
SingAREN Network

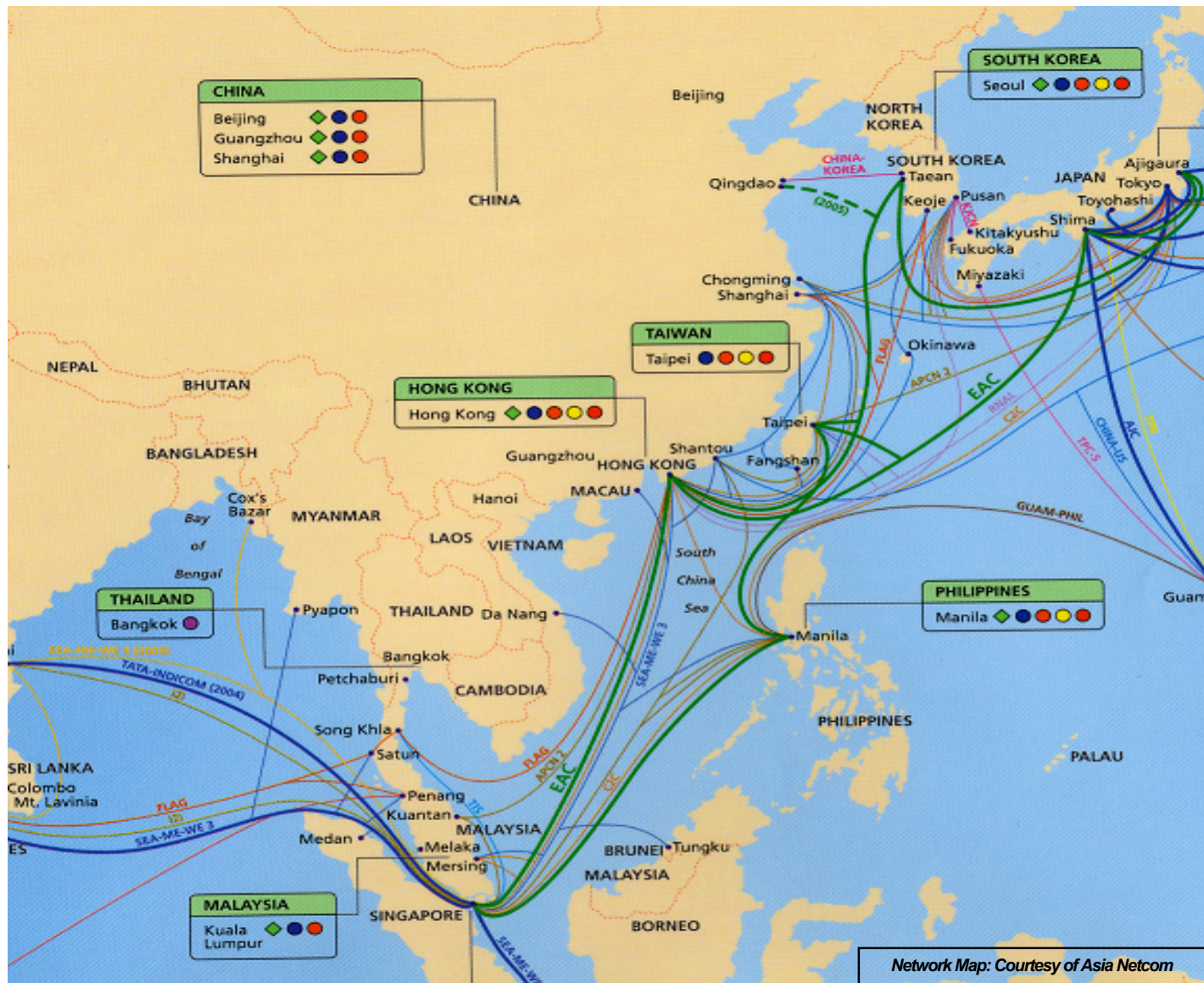
- Based on design in 1997 and evolved over the years.
- Problems
 - Coupling of NUS & SingAREN Infrastructure
 - Coupling of Internet & R&D traffic
 - Duplicated local links
 - Best Effort Network
- Solution: ***SINGAREN GIX***

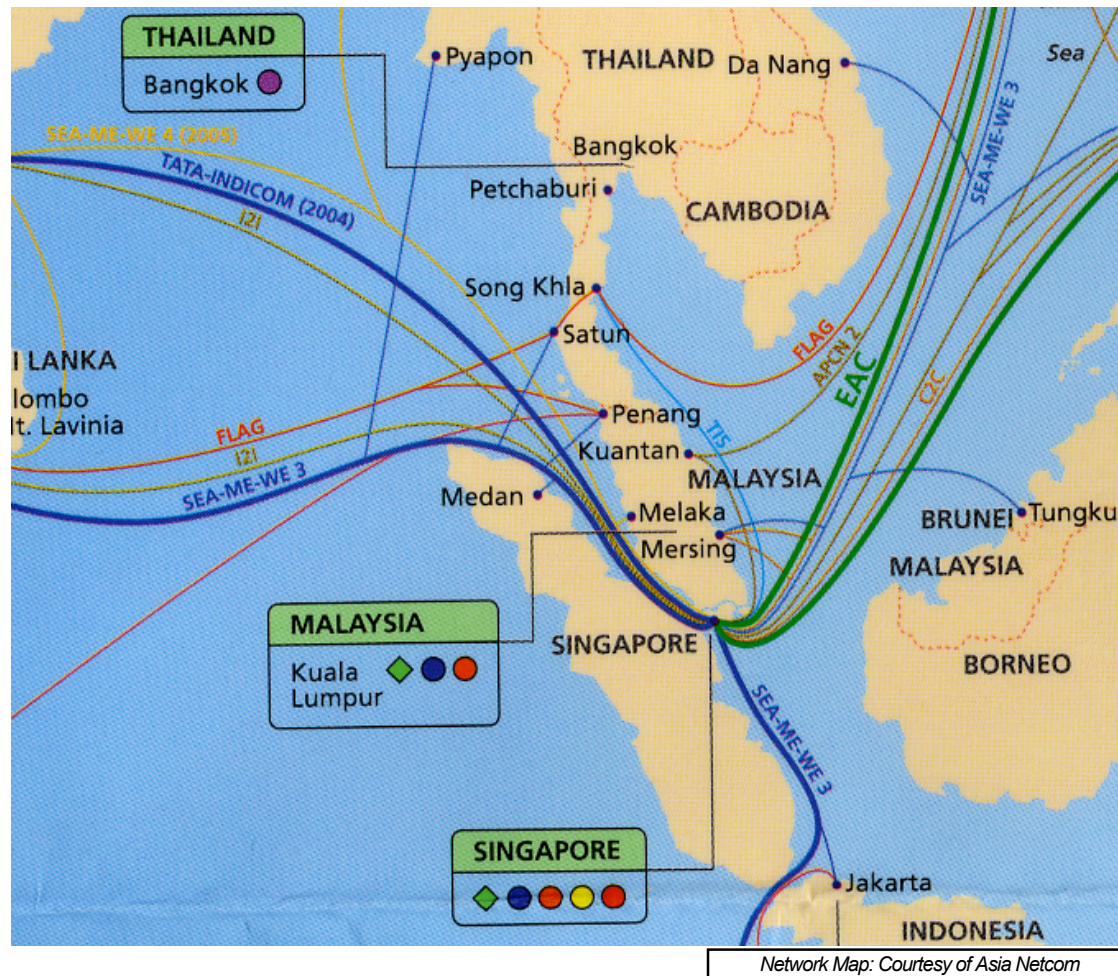


SINGAREN GIX

- A Gigabit Internet Exchange for Research and Education community
 - Gigabit connectivity to local Research and Education Institutions
 - Multiple Interfaces (E1 to STM-4 to GE to Lamda)
 - Open Exchange for any members (local or International)
 - Carrier-neutral
 - Allow Private/Public Peering
 - Provide Traffic Aggregation/Transit to Internet2
 - 24x7 NOC support







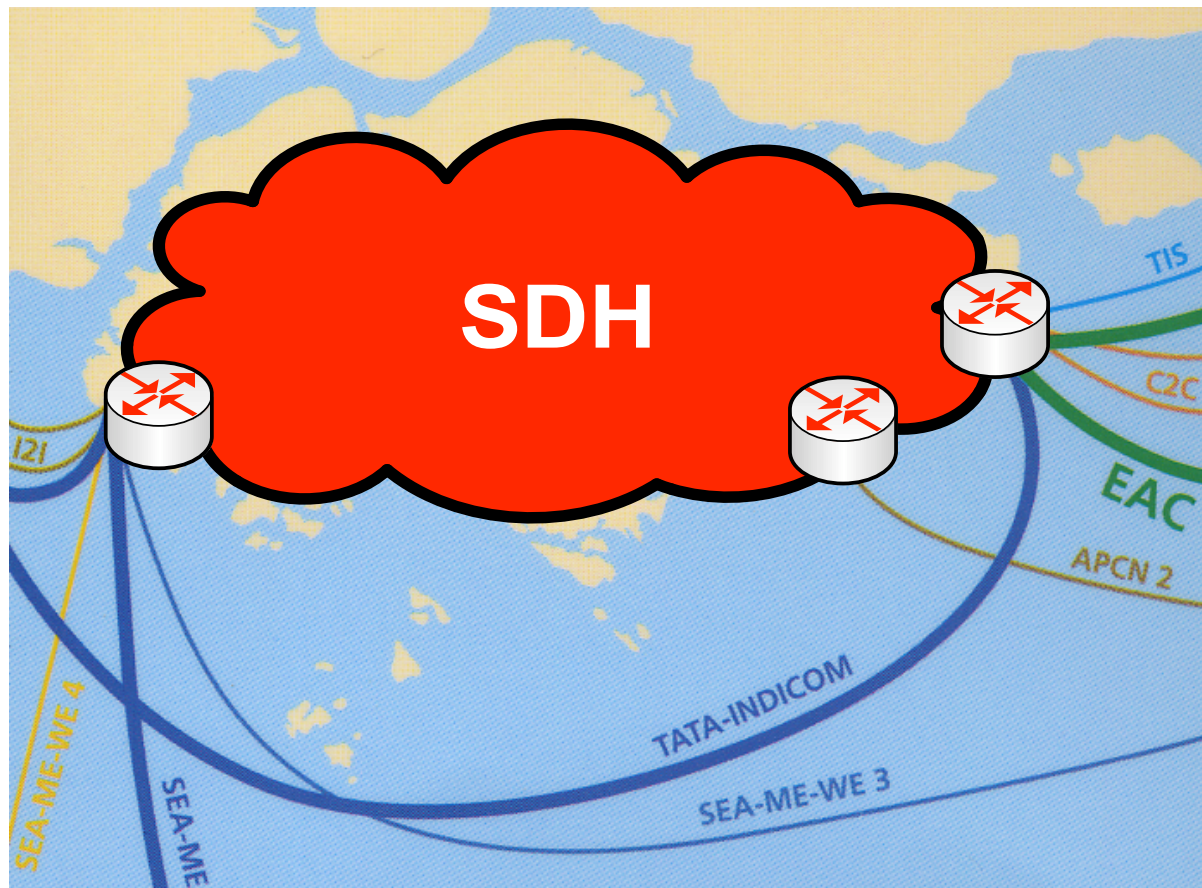
- APC 1.68Gbps
- APCN 10Gbps
- Sea-Me-We2 1.12Gbps
- Sea-Me-We3 55Gbps
- APCN2 2560Gbps
- C2C 7680Gbps
- EAC2 2560Gbps
- i2i 8400Gbps
- TIS 320Gbps
- TIC 5120Gbps

■ Total: 26.7Tbps (Q4-04)

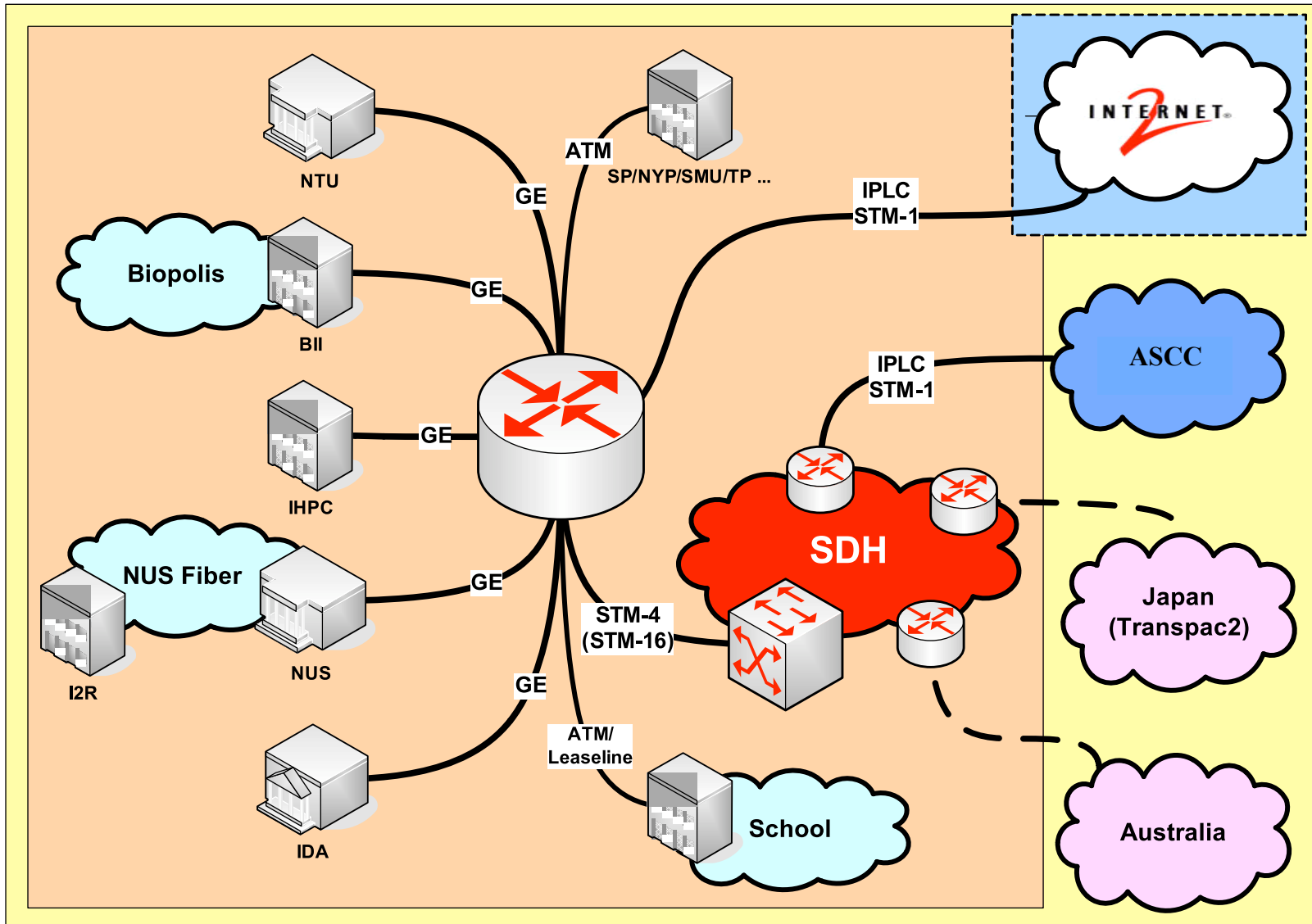
■ Se-Me-We4 1280Gbps

■ Total: 27.9 Tbps (Q3-05)

Cable Landing in Singapore



Network Map: Courtesy of Asia Netcom





SINGAREN GIX

- Discussion with Carriers and Suppliers
- Expected Completion – Apr-May 2005

Last Note

If your cable already coming through Singapore, come talk to us!



OR





Broadband 21 Projects

- Network R&D Projects
 - Service Creation in Broadband & Wireless Network
 - Multi-protocol Lambda Switching for Optical Network
 - Managing DiffServ on QBone
 - Measurement-based Admission Control for DiffServ
 - Process-Oriented Simulation for Hi-speed Network
 - TDMA-based Satellite Network
 - Multicast QoS
 - QoS Routing Protocol
 - Advanced Internet POP Architecture & Services
 - Dynamic Transport Layer Protocol

- Application R&D Projects
 - Digital Library Infrastructure for Distributed Geospatial Data
 - Distributed Simulation: Scalability, Interoperability and Application
 - High-speed Information Retrieval Processing & Management
 - Distributed E-Commerce Agents on High Speed Network
 - Highly Scalable Video Codec
 - Virtual Reality Interface for Web-based Remote Experimentation
 - Packet Voice over Non-QoS Network