

Proposal for a Telemedicine Testbed between Japan and Singapore

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Introduction

- ㅈ Telemedicine is defined as the use of telecommunication technology to provide capabilities to extend the reach of the physician
- ㅈ A leading-edge, interactive technology set to dramatically alter health care delivery
- ㅈ Rapidly evolving as it rides on advances of today technology in telecommunication



Introduction

- ▶ Pursued by leading medical centres in the USA, Europe, Japan and Australia
- ~ Beth Israel Deaconess Hospital's telemedicine project that allows family member of patients to telemonitor their sick children
- ~ FEST (Framework for European Services in Telemedicine) in Europe



Telemedicine is being used to



- 짚 Improve access to health care for remote and rural patients
- 짚 Supply continuing education for patients and caregivers
- 짚 Enhance the use of medical resources through telemedicine activities like teleconsultation, telepathology and teleradiology



Telemedicine in ASEAN

- ▶ Singled out as key healthcare technology in Malaysian Multimedia Super Corridor (MSC)
- ▶ Enabled health centres in rural Thailand to tap medical expertise of specialists in Bangkok by the Thai National Telemedicine Project



Telemedicine Testbed Initiative

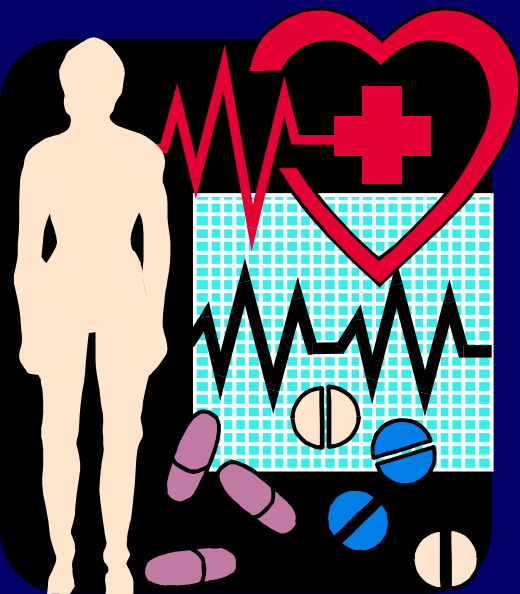
Background

- 짚 Singapore and Japan, both members of APEC TEL, are committed to building an Asia Pacific Information Infrastructure (APII).
- 짚 Japan proposed to collaborate on telemedicine with Singapore initially, and with other APEC members later.
- 짚 Consensus was established to hold a telemedicine testbed between NUH Oncology Department and the NCC of Japan.



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Telemedicine Testbed Initiative



ㅈㅊㅊ Telemedicine initiative will involve a clinical trial for a cancer drug, CPT-11

ㅈㅊㅊ Participating Centres

~ Oncology Research Institute

~ National University Medical Institutes,
NUS

~ National Cancer Center, Japan



Objectives of the CPT-11 Telemedicine Trial



- ~ ㅈ Teleconsultation
- ~ video conferencing to discuss research protocols
- ~ exchange knowledge and experience on medical diagnosis, treatment and surgery of cancers

Objectives of the CPT-11 Telemedicine Trial

- ▶ Telepathology
 - ~ confirm diagnoses of cancer using high-resolution transmission of histopathological images
 - ~ cross-institutional teaching on cancer pathologies



Objectives of the CPT-11 Telemedicine Trial

썈 Teleradiology

- ~ review of radiological images (X-rays, CT and MRI scans)
- ~ share opinions and expertise in cases of questionable diagnoses

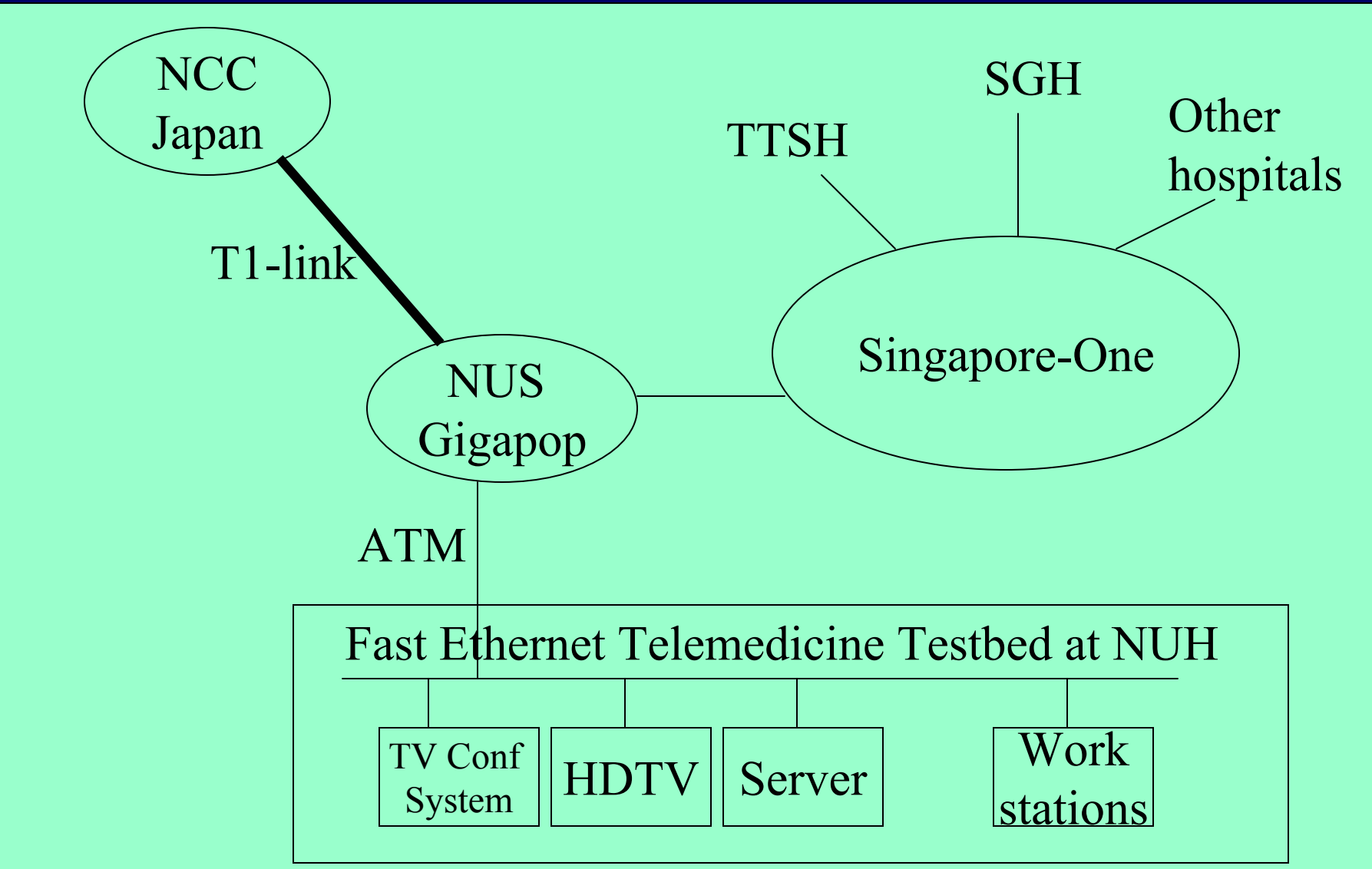


Equipment Involved

- ㅉ NTSC TV conference system using IP
- ㅉ HDTV display system
- ㅉ Computer server to host radiological and pathological databases
- ㅉ Histopathological image digitizing system comprising CCD video camera-mounted microscope
- ㅉ High-resolution radiological image scanner
- ㅉ ATM switches



Proposed Network Architecture for Singapore-Japan Telemedicine Testbed



Benefits and Deliverables

- 짚 Telemedicine links beneficial to oncologists in Japan and Singapore professionally
- 짚 Cancer patients will benefit from second expert opinions and advise
- 짚 Singapore and Japan make significant contribution to APEC-TEL and APII
- 짚 Telemedicine testbed with NCC can be further extended to other Singapore hospitals

