

# Case study of 1.5Gbps un-compressed HD Streaming between Japan and Korea

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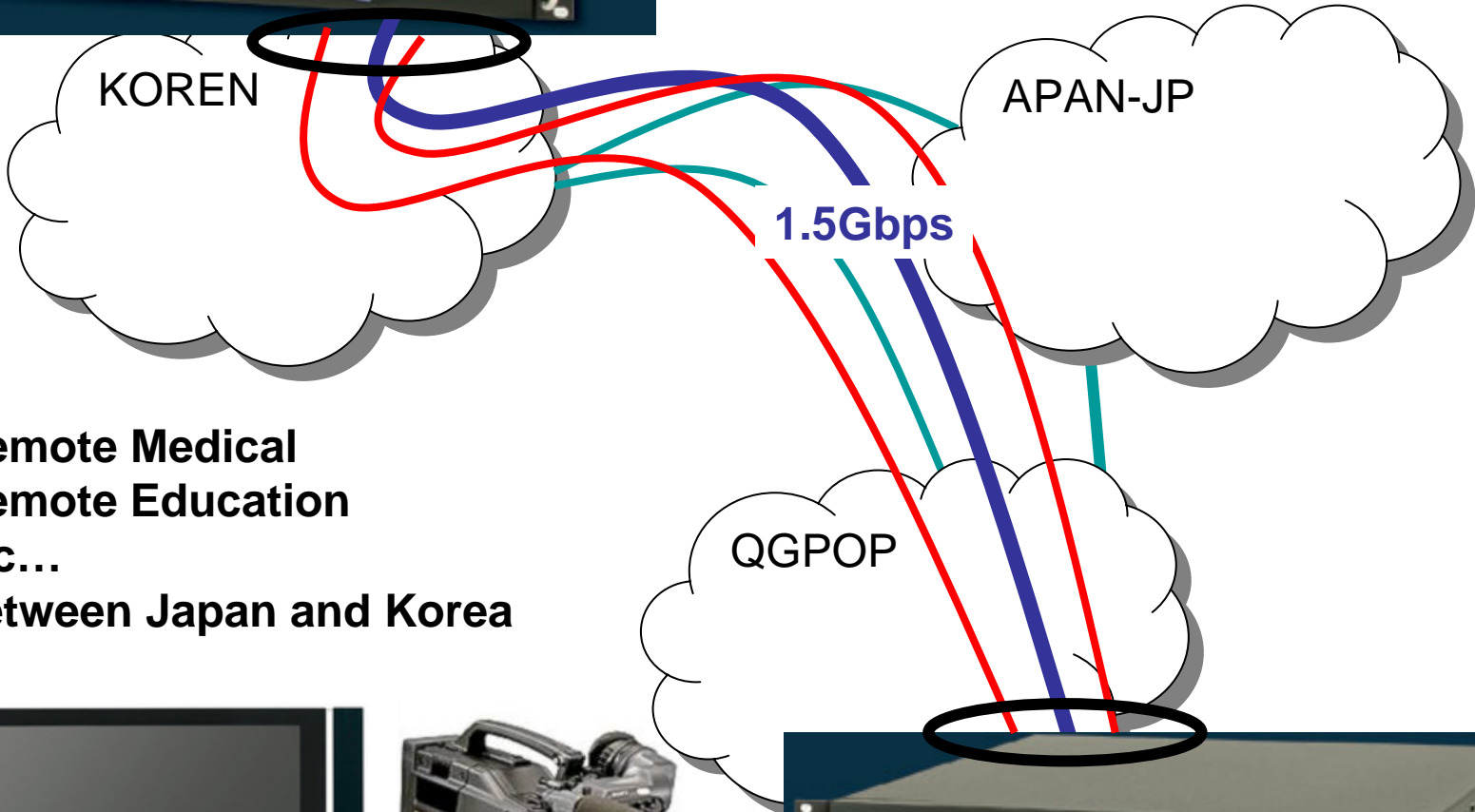
\*Kyushu University/QGPOP,JP

\*\*NTT Communications, JP

\*\*\* KT/KOREN, KR

# Purpose and Background

- Post 1G Applications than DVTS
  - How to support the Practical Usage of Such Applications which need huge band-width
- Founded by NICT
  - **Kyushu Univ. , Kyushu Sangyo Univ.,**
  - **NTT Communications**
  - **CNU,KT,KHU**
  - QGPOP,KOREN,APAN-JP,ANF
  - APII
  - JGN2



**Remote Medical  
Remote Education  
etc...  
between Japan and Korea**



# The Network Design

Seoul  
KT-NOC

Kyushu-univ

HD-Monitor

SONY LMD-171W  
(with MEU-WX1, BKM-243HS,  
SU-558)

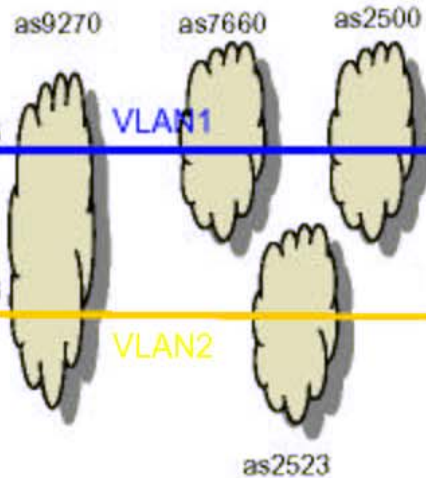
i-Visto

L2/L3 Network

i-Visto

HD-Camera

SONY HDC-X300K



HD-SDI

SDI-OUT eth1

1G

VLAN1

1G

HD-SDI

eth1

SDI-IN

eth2

1G

VLAN2

1G

eth2

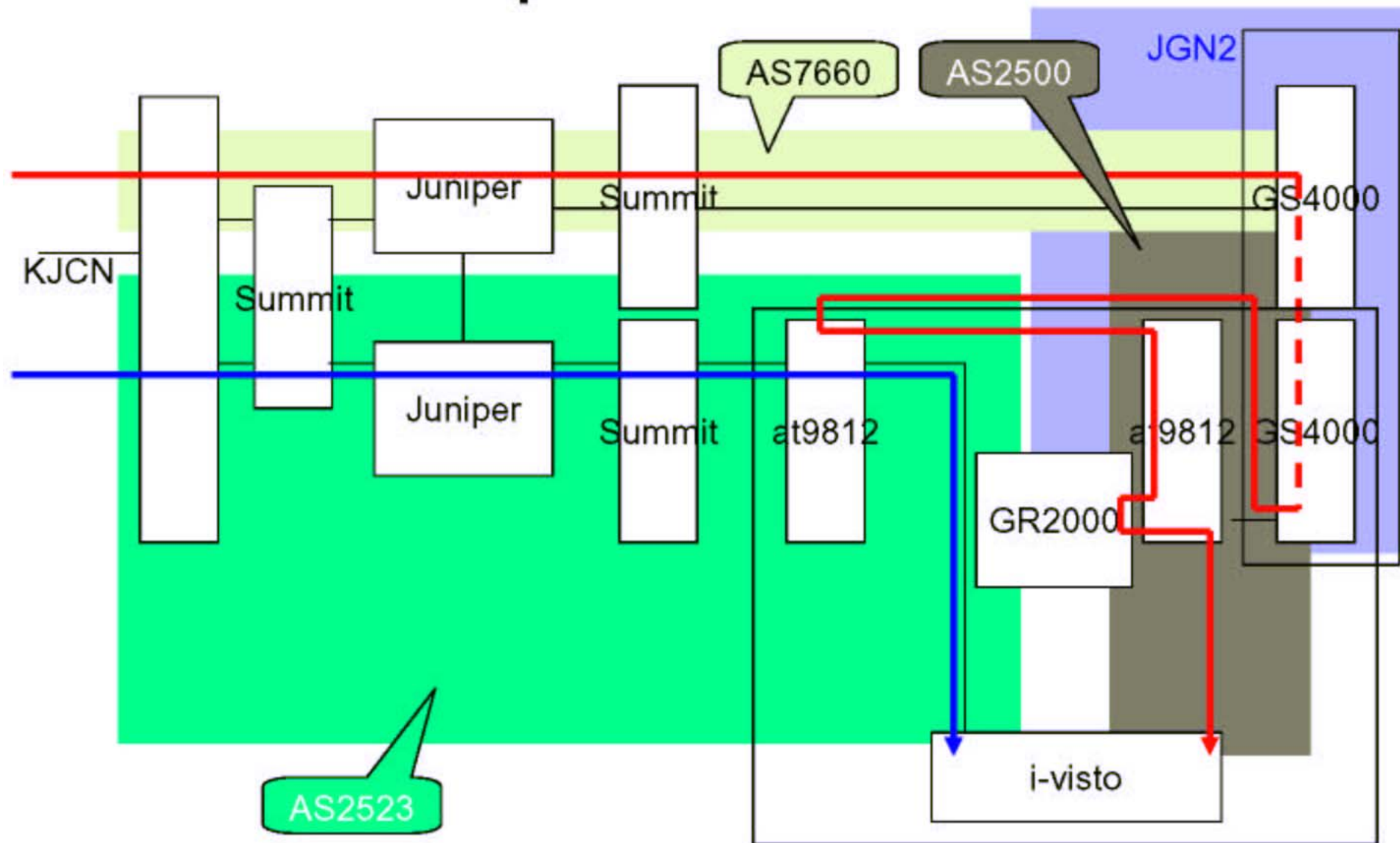
100TX

100TX

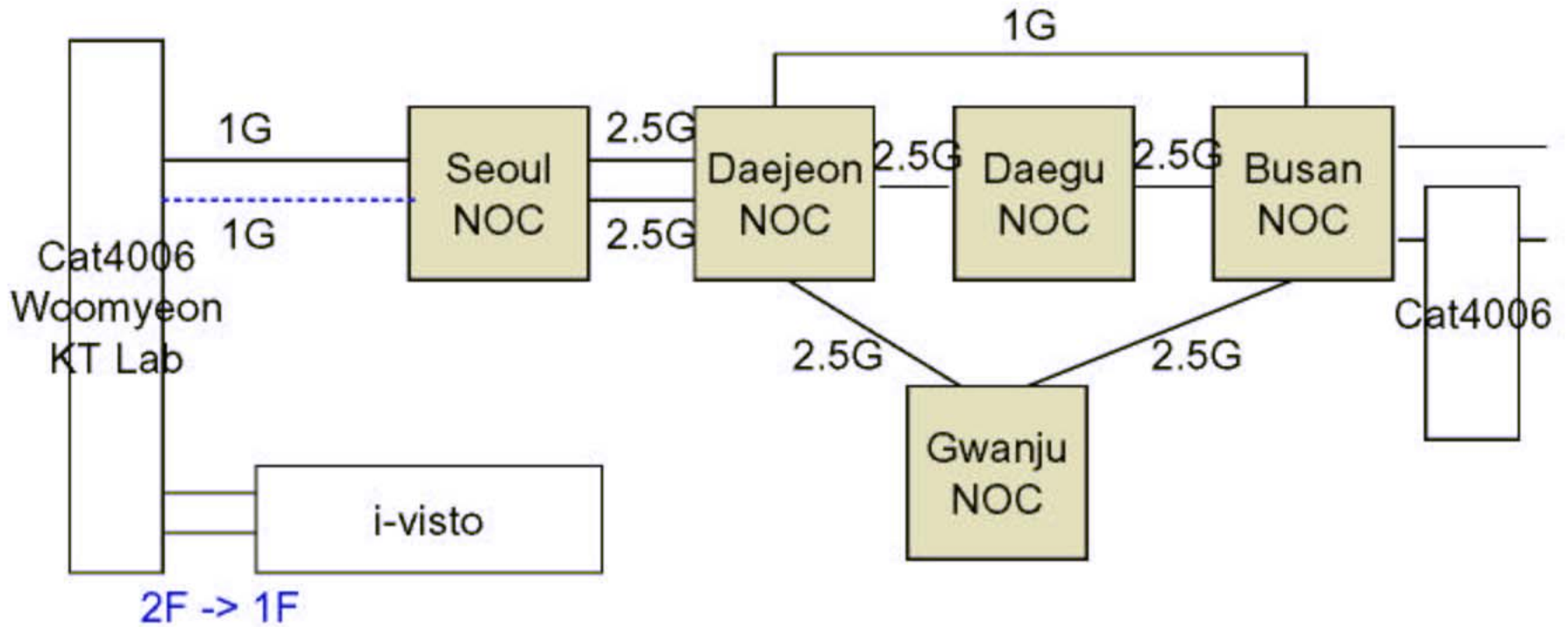
Control PC

Control PC

# Japanese Side

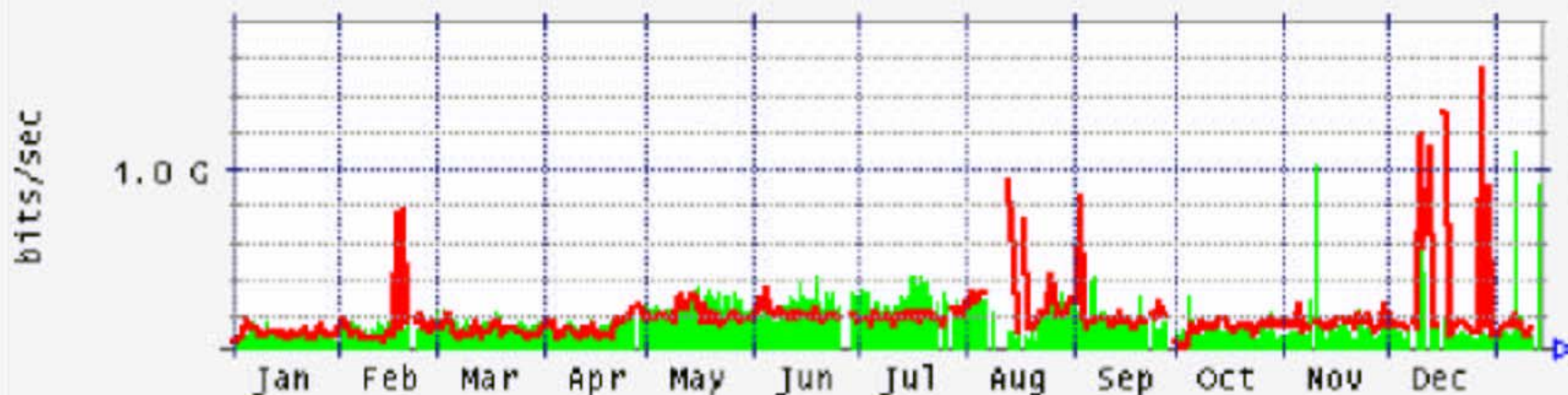


# Korean Side

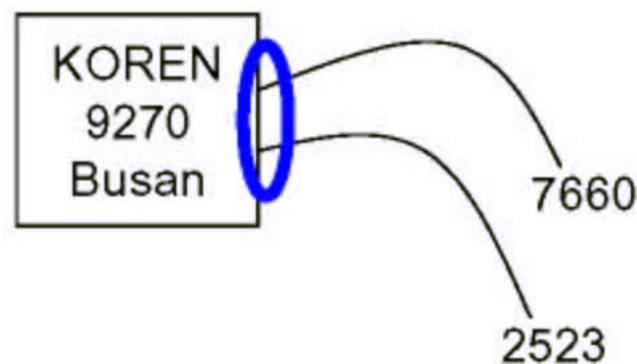


# Pusan/GSR Pusan-Japan(1G\*2) Avg. Traffic

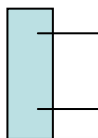
PROTOCOL / TORI DETIMER



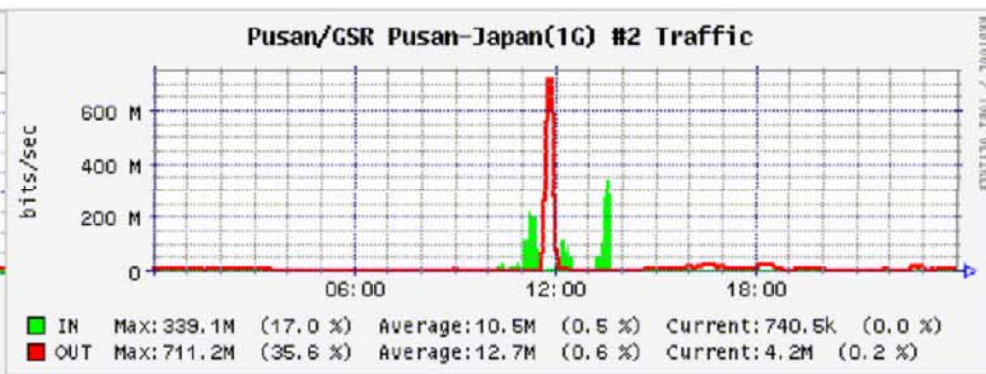
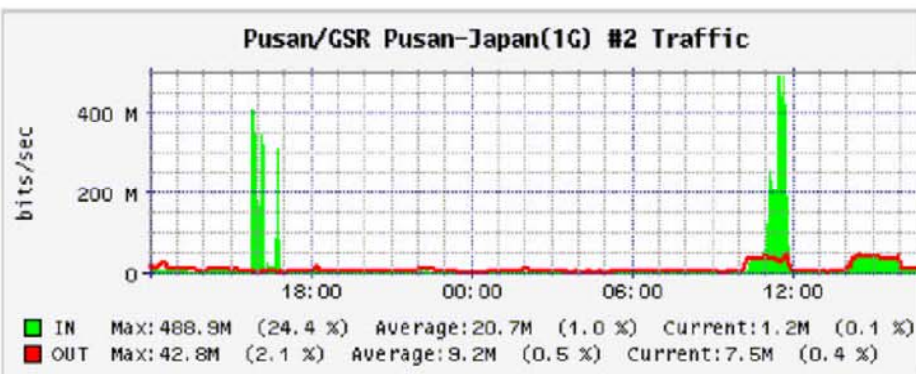
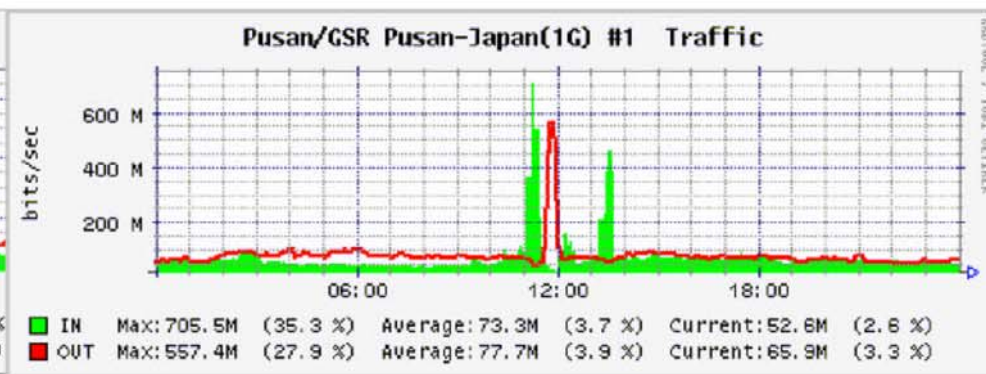
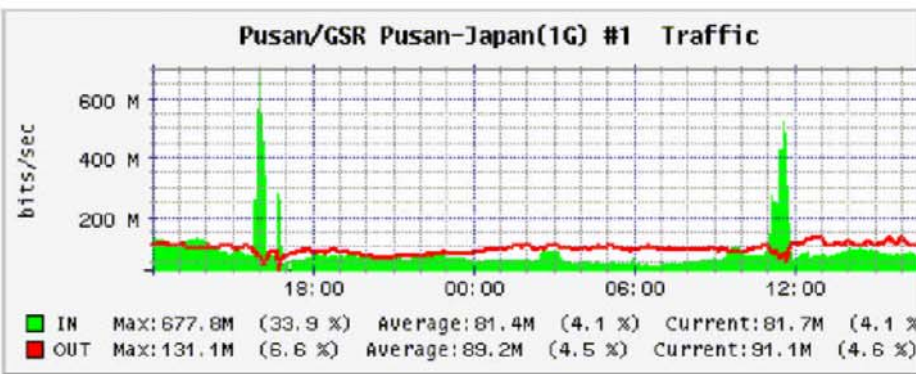
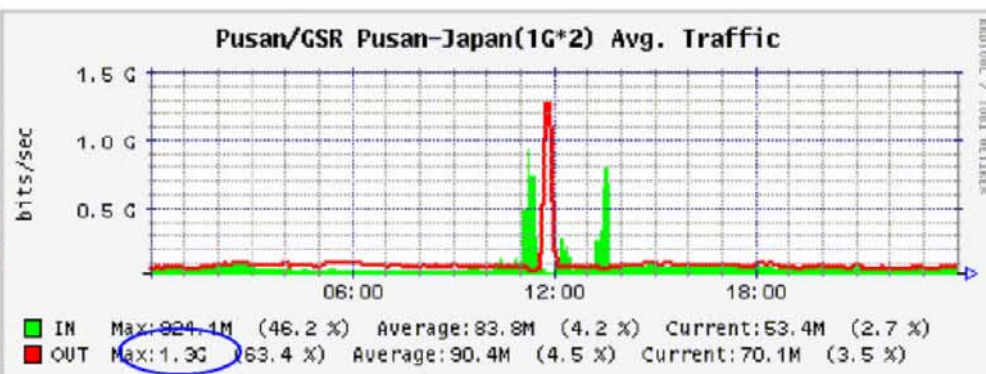
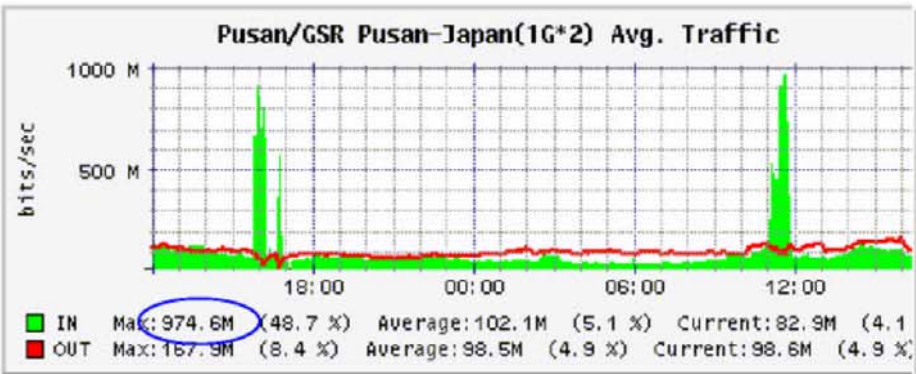
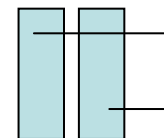
	Max	(%)	Average	(%)	Current	(%)
IN	1.1G	(54.6 %)	194.8M	(9.7 %)	912.7M	(45.6 %)
OUT	1.5G	(76.9 %)	193.4M	(9.7 %)	139.5M	(7.0 %)



8, 9 Nov. 2005



13 Jan. 2006





# Conclusion, Discussion and the Future

- Expect of Improvement APII's Quality
- HDV(20Mbps) vs. un-compressed HD(1.5Gbps)
  - If medical doctors use live-surgery movie, the stream must be encrypted by IP-sec (required by the rules of Hospital of Kyushu Univ.).
  - But real-time encryption of 800Mbps – 1.5Gbps is impossible right now.
  - If we use stored HD data, Quality of HDV is enough?
- Experimentation with other economies.

