

Activity Report of Asia-Pacific Medical Network Project in Kyushu University Hospital : Vol.4

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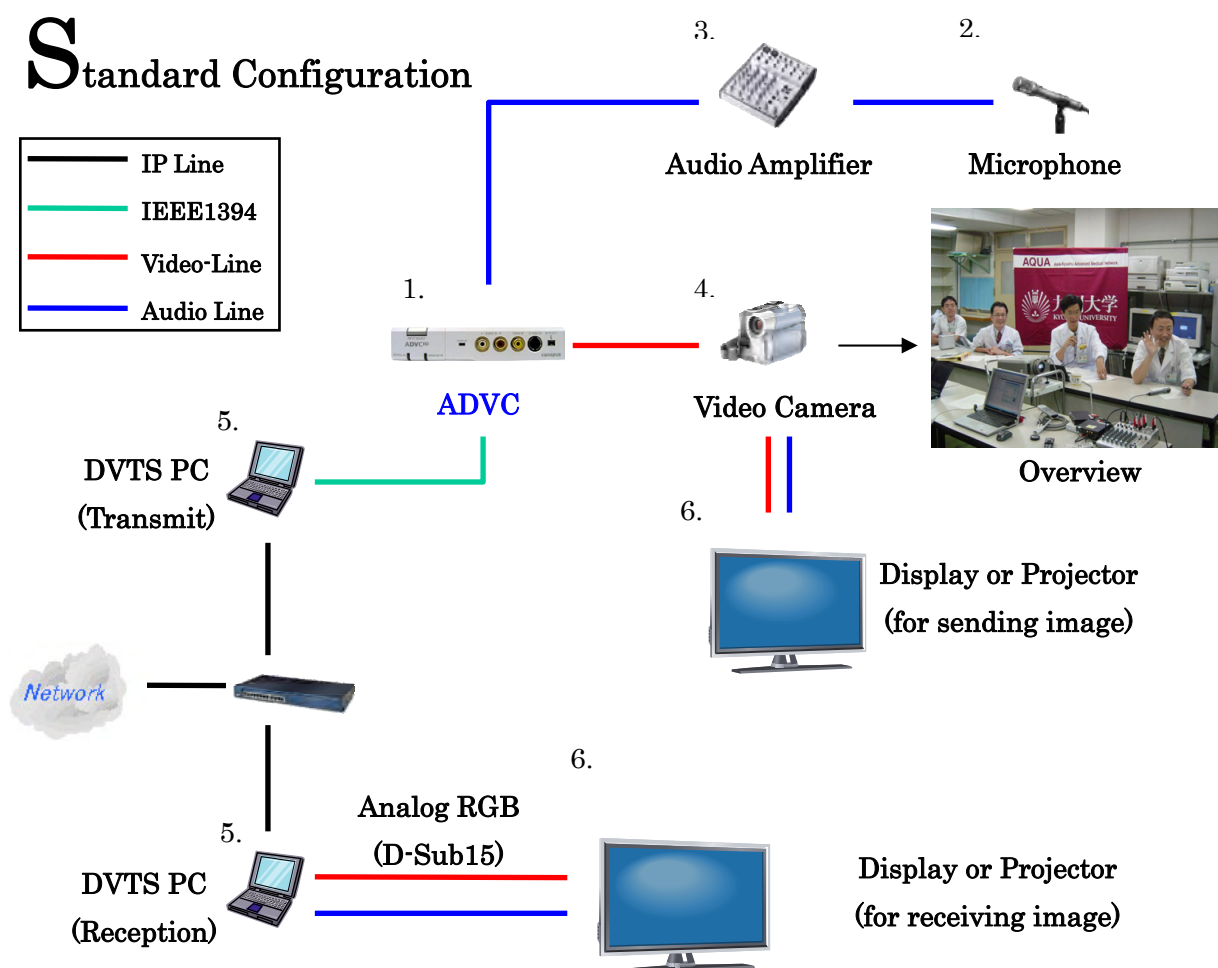
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4. New Instruments and Technical Tips

We announced the standard configuration of the DVTS setup at the Asia telemedicine symposium held 7 December 2008 at the Kyushu University Hospital. This configuration includes our technical know-how gained from over 100 conferencing event and making 300 connecting points in these past activities. The equipment here constitutes the minimal requirement for making a comfortable discussion by teleconferencing, and is conducive to reducing the testing time and problems arising among each participating station. We hope that this standard configuration will be recognized by those stations involved with us as well as newcomers. We will continue towards greater standardization in the future.

4.1 Standard configuration diagram (schema 4-1-1)



Schema 4-1-1 Standard configuration diagram

4.2 Features



- Flexible adaptation with other equipment already existing at the conference venue.
- Support for live surgery demonstrations with using a video switcher.

4. New instruments and technical tips


- Use 2 DVTS PCs to reduce risk factors.
 - + Balanced traffic between the DVTS PC and the L3 switch
 - + Minimizes the effects any PC problems

4.3 Items detail


1. Analog Digital Video converter (ADVC)

 <p>Canopus Twinpack 100</p>  <p>Sony HVR-25J</p>	<p>Convert S-video (Composite) signal to DV.</p> <p>Twinpack 100 accepts RGB signal.</p> <p>A DV (HDV) recorder like the Sony HVR-25J includes an ADVC function, and can be used as an AVDC.</p>
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2. Microphone

	<p>Handheld Unidirectional Dynamic Vocal Microphone with power switch is convenience.</p> <p>There are many kinds of such products.</p> <p>Check compatibility with your audio amplifier ahead of testing.</p>
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3. Audio amplifier (Audio Mixer)


	<p>Used to adjust audio input and output levels. An AUX port on the audio amplifier is useful for independent adjustments between DVTS sound input and output.</p>
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4. Video camcorder


	<p>Video Camera, with no DV port, is acceptable for use. Analog digital Video converter (ADVC).</p> <p>DVTS multipoint connection unit (Quatre) supports only a NTSC signal.</p>
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4. New instruments and technical tips


5. DVTS PC (2 units)

	<p>Recommended spec</p> <p>OS: Microsoft Windows XP</p> <p>CPU: Pen-IV, III, M, Celeron over 2GHz</p> <p>RAM: over 256-512MB RAM</p> <p>Graphic card: Require to work DirectX</p> <p>Network card: 100Mbps or over</p> <p>IEEE1394 port: OHCI compatible</p> <p>We recommend using 2PCs for each stream (Send & Receive)</p>
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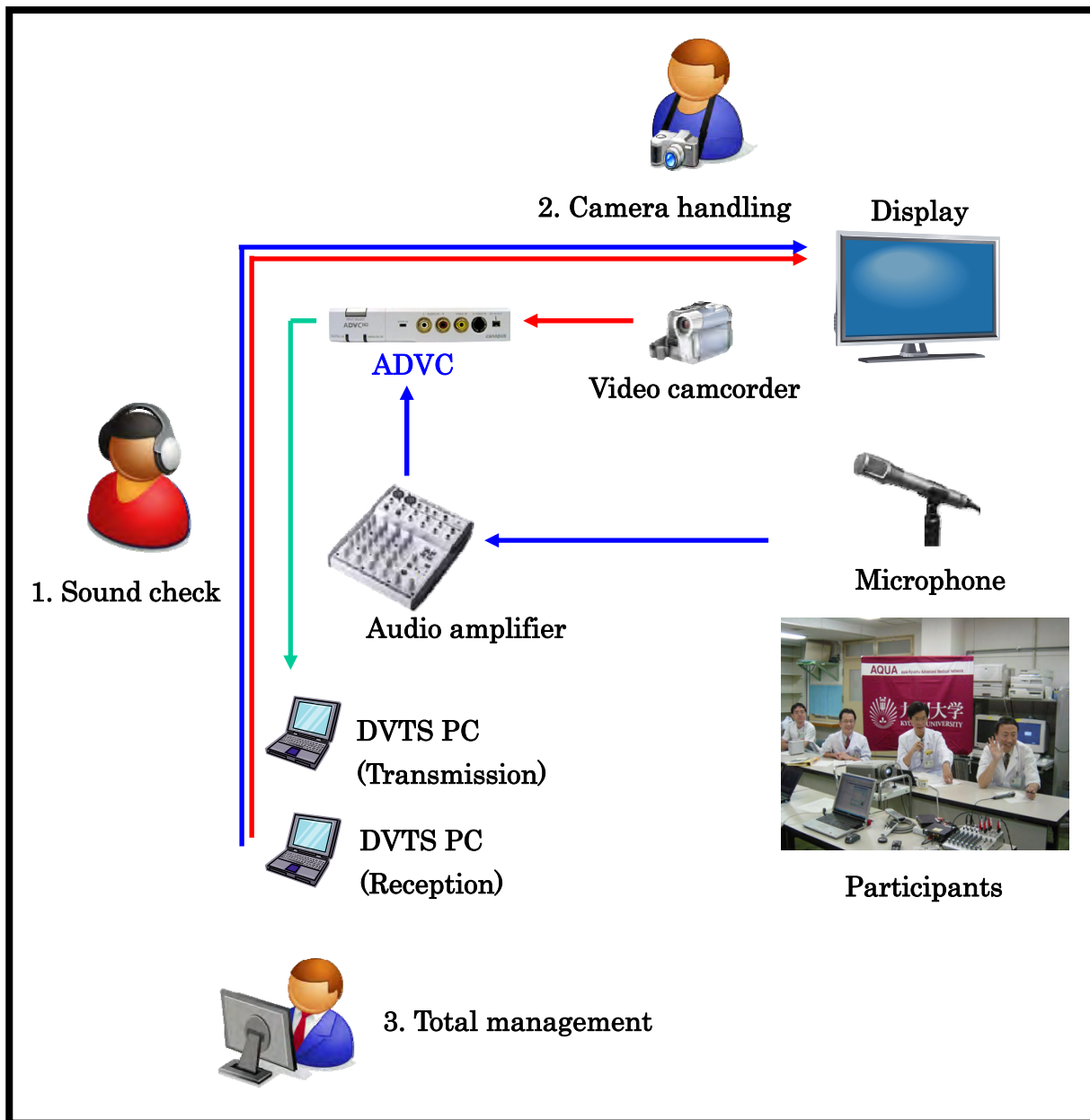
6. Display

	<p>Very important factor for the impression of the video image.</p> <p>Flat panel monitors (LCD or PDP) are recommended.</p> <p>Require enough brightness for a projector.</p> <p>(At least 3000 ANSI for a small room, over 5000 for larger rooms)</p>
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7. VPN router

	<p>Required in a live demonstration event such as surgery and endoscopy to secure patient privacy.</p> <p>We use Allied Telesis AR550S, or AT-AR750S.</p> <p>AT-AR750S (World wide model)</p> <p>http://www.alliedtelesyn.com/products/line.aspx?pid=32</p>
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Staff allocation



Need two staff for a casual event, 3 for a regular conference event.

1. Sound Check and adjustment

- broken voice
- too strong or too quiet sound level
- microphone position

2. Camera handling

- Video camera and Digital camera (taking pictures)

3. Total management

- Contact with other stations and support presenter etc.

4. New instruments and technical tips

Event Preparation details

Equipment preparation

- | | |
|-----------------------------------|---------------------------|
| 1. Analog digital video converter | 6. Display |
| 2. Microphone/s | 7. DVTS software |
| 3. Audio amplifier | 8. Cables |
| 4. Video camcorder | 9. VPN router (as needed) |
| 5. DVTS PC (2 units) | |

Check list for event preparation (*Depends on the size and the importance of the event).

Deadline*	Medical staff	Network engineer	Local setup engineer
Over 3 months before	<ul style="list-style-type: none"> • Design event (draft) 	<ul style="list-style-type: none"> • Check Network environment at new stations 	<ul style="list-style-type: none"> • Check local equipments at new stations
2 months before	<ul style="list-style-type: none"> • Decide connecting stations • Confirm all medical participants • Announce the event to all stations. 	<ul style="list-style-type: none"> • Check Network environment and adjustment 	<ul style="list-style-type: none"> • Confirm engineer's information (name, e-mail, mobile, MSN messenger) • Make mailing list • Arrange VPN routers (if needed)
1 month before	<ul style="list-style-type: none"> • Finalize program • Abstract deadline 		<ul style="list-style-type: none"> • Confirm each station's equipment. • Plan test schedule. (Check time difference) • Collect IP address information from each station.
2 weeks before		<ul style="list-style-type: none"> • Install VPN. (If needed) • Setup Quatre 	<ul style="list-style-type: none"> • Test with new stations • Check network conditions and equipment • Troubleshooting.
1 week before	<ul style="list-style-type: none"> • Rehearsal 	<ul style="list-style-type: none"> • Troubleshooting 	<ul style="list-style-type: none"> • Tests with all stations • Check network conditions and equipment, • Troubleshooting.
3 days before		<ul style="list-style-type: none"> • Troubleshooting 	<ul style="list-style-type: none"> • Test (Back-up dates)
Previous day		<ul style="list-style-type: none"> • Troubleshooting 	<ul style="list-style-type: none"> • Final test
Event day		<ul style="list-style-type: none"> • Troubleshooting 	<ul style="list-style-type: none"> • Final check, real event

4. New instruments and technical tips

Results of questionnaire about supporting team and instruments for telemedicine in each institution

Support structure 1

	Homepage	Name
<u>ASTI (PH)</u>	http://www.asti.dost.gov.ph , www.pregi.net	ASTI (Advanced Science and Technology Institute)
<u>Université Victor Segalen Bordeaux 2 (FR)</u>	http://www.dcam.u-bordeaux2.fr	Département Communication, Audiovisuel, Multimédia
<u>Chulalongkorn Univ. (TH)</u>	http://www.md.chula.ac.th	Faculty of Medicine, Computer Unit
<u>Chinese University of Hong Kong (CN)</u>	http://www.med.cuhk.edu.hk	Information Technology
<u>Flinders Univ. (AU)</u>	http://som.flinders.edu.au/staff/groups/lab_man/Default.htm	School of Medicine, Support Services
<u>Fukuoka Univ. (JP)</u>	http://www.ipc.fukuoka-u.ac.jp/	Technology Center, Center for Medical Information
<u>Gyeongsang National Univ. (KR)</u>	http://www.gelc.or.kr	e-Learning Center
<u>Universitätsklinikum Hamburg-Eppendorf, Hamburg, (DE)</u>		2 Doctor's work it for by their selves
<u>Kyoto 2nd Red cross Hosp. (JP)</u>		Support from IT company
<u>Kyushu Univ. Hosp (JP)</u>	http://aqua.med.kyushu-u.ac.jp	AQUA + Kyushu Electronic company
<u>Mahidol Univ. Siriraj Hosp. (TH)</u>	http://www.si.mahidol.ac.th/metc	Medical Education Technology Center
<u>Miyazaki Hayasuzu Hosp. (JP)</u>		Support from commercial company
<u>Red Cross International Nursing College, Fukuoka (JP)</u>		Support from commercial company
<u>MYREN (Malaysia Research & Education Network)</u>	http://www.iperintis.com	iPerintis (IT Consultants)
<u>Nagasaki Univ. (JP)</u>	http://www.cc.nagasaki-u.ac.jp/	Information Media Center
<u>National Taiwan Univ. (TW)</u>	http://mi.mc.ntu.edu.tw	Division of Medical Informatics
<u>National Univ. of Singapore (SG)</u>	http://www.cit.nus.edu.sg	Centre for Instructional Technology
<u>Seoul National Univ. Bundang Hosp.(KR)</u>		Medical Media Studio
<u>Stanford Univ. (US)</u>	http://summit.stanford.edu	SUMMIT (Stanford Univ. Medical and Multimedia Information Technology)
<u>Taipei VGH (TW)</u>	http://www.vghtpe.gov.tw	Information Services Center
<u>Tata Memorial Hosp (IN)</u>		Medical Information center
<u>Tsinghua University (CN)</u>	http://www.nrc.tsinghua.edu.cn/7_english/index_english.htm	Network Research Center
<u>Univ. of Indonesia (ID)</u>	http://www.fk.ui.ac.id/	IT Developing & Services
<u>Yonsei Univ. (KR)</u>	http://sev.iseverance.com	audio/visual team
<u>Taichung VGH (TW)</u>	http://www.vghtc.gov.tw	Computer Center

4. New instruments and technical tips

Support structure 2

	Affiliation	Main business contents	No. of staff	cost	involved staff
ASTI	NREN	Government	5	No	3
Bordeaux	University	Teaching and learning support	17	Yes (if demand not directly linked)	3
Chulalongkorn	University	Medical / Education	Over 1000	No	10
CUHK	University				
Flinders Univ.	University		3	No	1 to 2
Fukuoka Univ.	University	Support for Education & Research with IT.			3 to 5
GNU	University	Internet based educational support	5	No	3
Hamburg			1		
Kyoto 2nd RCH			1		1
KUH	Not official organization		8	No	2 to 3
Siriraj Hosp.	University & Hospital	Producing educational media	110	No	Unlimited
Hayasuzu Hosp.			1		1
RCINC			1		1
MYREN		IT Consultancy and Technology Services	10		1
Nagasaki Univ.	University	Operation of Networks and Computers	12	No	2
NTU	University	E-learning Support, Information Management	4	No	2
NUS	University	Supports Teaching and Learning	40	No	2
SNUBH	Hospital	medical media	5	No	1 to 3
Stanford Univ.	Medical School	education technology	6	No	2
Taipei VGH	Hospital	information management	80	No	2
Tata Memorial Hosp.	Hospital			No	4
Tsinghua Univ.		research on network and administration of networks	200		3
Univ. of Indonesia	Hospital	Developing & Services (Unit), Main : Education	6	No	6
Yonsei Univ.	Hospital & University	Recording operation, Supporting events	3	No	4 to 5
Taichung VGH	Hospital	Health Care, Medical Education	2		

Equipments 1

	Configuration	Video	DVTS	Display	Mic. power SW / Wired-	Amplifier
ASTI	Basic	Both	2	LCD	- (No data)/ Wired	PA
Bordeaux	Basic	Both	2	Projector	-/ Wireless	Portable
Chulalongkorn	Advance	PAL	2	LCD & Projector	Yes/ Both	PA & portable
CUHK	Advance	PAL	2	various	various	
Flinders Univ.	Advance	Both	2	PDP & Projector	Yes/ Both	Portable
Fukuoka Univ.	Advance	NTSC	2	PDP & Projector	Yes/ Wired	Portable
GNU	Advance	NTSC	2	LCD & Projector	Yes/ Wireless	Portable
Hamburg	Basic	NTSC	2	LCD	Yes/ Wired	Portable
Kyoto 2nd RCH	Advance	NTSC	2	LCD & PDP	Yes/ Wireless	Portable
KUH	Advance	NTSC	2	LCD & Projector	Yes/ Wired	Portable
Siriraj Hosp.	Advance	Both	2	LCD & Projector	Yes/ Both	PA & portable
Hayasuzu Hosp.	Advance	NTSC	1	Projector	Yes/ Wired	Portable
RCINC	Advance	NTSC	1	Projector	Yes/ Wired	Portable
MYREN	Other	PAL	1	Projector	Yes/ Wired	PA
Nagasaki Univ.	Advance	NTSC	2	LCD & Projector	Yes/ Both	PA
NTU	Advance	NTSC	2	LCD & Projector	Yes/ Wired	PA
NUS	Advance	PAL	1	LCD & Projector	Yes/ Wireless	PA
SNUBH	Advance	NTSC	2	LCD	No/ Both	PA & portable
Stanford Univ.	Basic	NTSC	2	LCD	-/ Wireless	Not use
Taipei VGH	Basic	NTSC	1	LCD & Projector	Yes/ Wired	Not use
Tata Memorial	Basic	NTSC	2	Projector	Yes/ Wired	PA & portable
Tsinghua Univ.	Advance	Both				
Univ. of Indonesia	Advance	Both	2	Projector	Yes/ Wireless	Not use
Yonsei Univ.	Advance	NTSC	1	Projector	Yes/ Both	Portable
Taichung VGH	Advance	NTSC	2	Projector	Yes/ wireless	Portable

4. New instruments and technical tips

Equipments 2

	ADVC	VPN	VC system	PAL/NTSC converter
ASTI	Not available	Not available	Available	Not available
Bordeaux	Not available	Not available	Available	Available
Chulalongkorn Univ.	Available	Available	Available	Available
CUHK	Available	Available	Available	Available
Flinders Univ.	Available	Available	Available	Available
Fukuoka Univ.	Available	Not available	Available	Not available
GNU	Available	Not available	Not available	Not available
Hamburg	Available	Rent		?
Kyoto 2nd RCH	Available	Not available	Not available	Not available
KUH	Available	Available	Available	Not available
Siriraj Hosp.	Available	will buy	Available	Not available
Hayasuzu Hosp.	Available	Available		Not available
RCINC	Available			Not available
MYREN	Available	Available	Available	Available
Nagasaki Univ.	Available	Available(Yamaha)	Available	Not available
NTU	Available	Available	Available	Not available
NUS	Available	Available	Available	Available
SNUBH	Available	Available		
Stanford Univ.	Available	Not available	Available	Not available
Taipei VGH	Not Available	Not available	Available	Not available
Tata Memorial Hosp.	Not available	Not available	Available	Not available
Tsinghua Univ.	Available	Not available		
Univ. of Indonesia	Available	Not available	Available	Available
Yonsei Univ.	Available	Not available	Not available	Not available
Taichung VGH	Available	Available	Available	Available