

“The Impact of Distance and Time in Large Scientific Collaborations”

Geography Matters

-from a country in Asia

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Disclaimer

- I'm neither a developer nor a heavy user.
 - I'm using only limited feature of various collaborating tools.



Collaboration

UX15 Geneva Mon Dec 11 09:30:02 2006

- LHC Atlas experiment
 - Construction, installation and commissioning
 - Preparation for physics analysis
- Atlas Japan
 - ~80 members
 - Solenoid Magnet, SCT, TGC, Muon TDC
 - DAQ, HLT, Physics analysis
 - 20~30 members at CERN (short/long stay)



Geographical Matters - Location

- Time Zone

- JST (Japanese Standard Time) = +9 Hour
UTC

- Inevitable

- Language

- Japanese = Two byte code

- May matter when localizing a tool.

- Contents are also. Search engine for example.

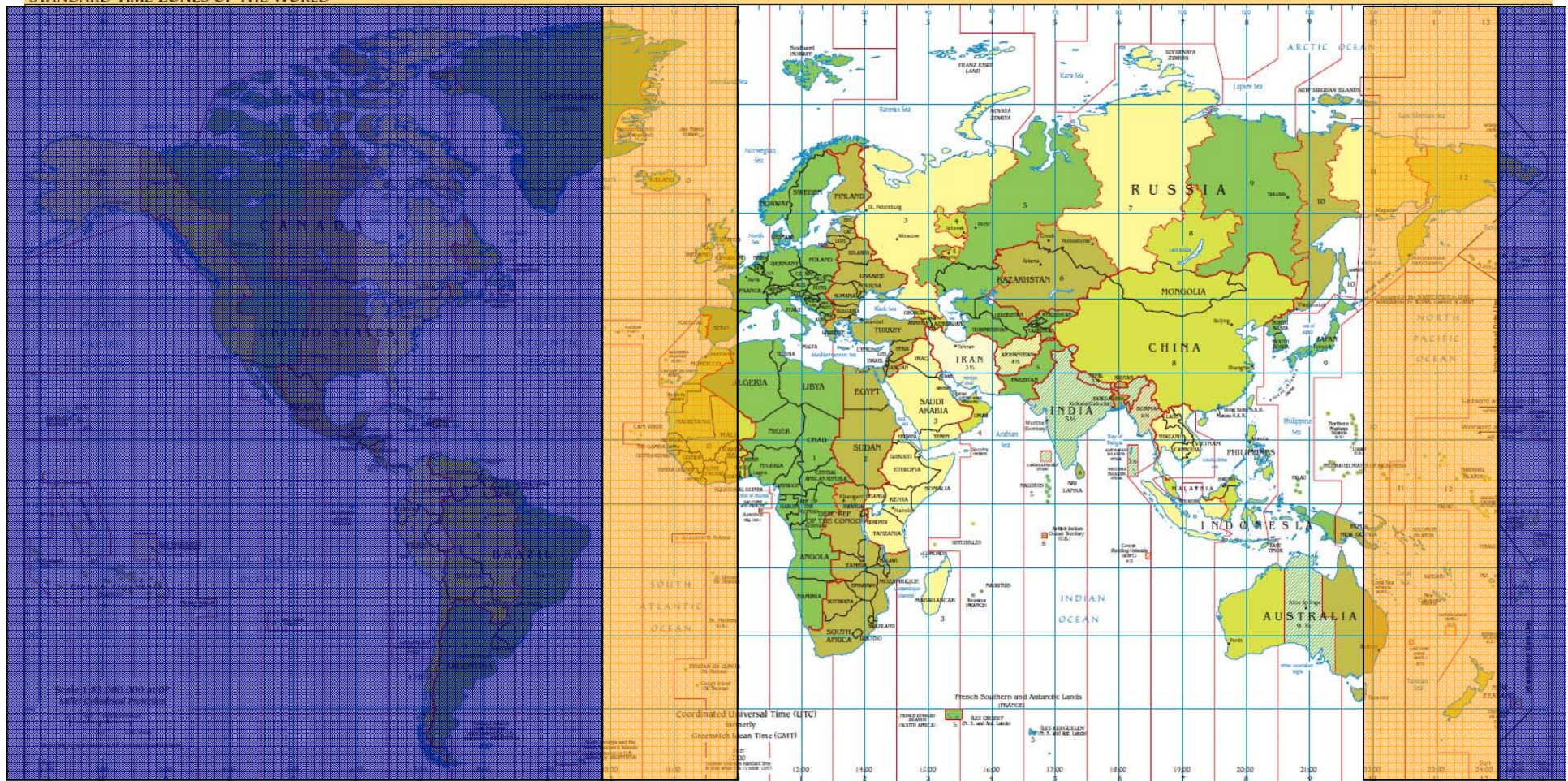


Prime time for inter-continental meetings

- Tokyo-Geneva(+8hours)
 - 9:00am~11:00am ECT
 - 5:00pm~7:00pm JST
- Tokyo-New York(-10hours)
 - 8:00am~10:00am JST
 - 6:00pm~8:00pm ET
- Geneva-N.Y.(+6hours)
 - 10:00am~12:00am ET
 - 4:00pm~6:00pm ECT
- Tokyo-Geneva-N.Y.
 - 10:00am~12:00am ET
 - 4:00pm~6:00pm ECT
 - 0:00am~2:00am JST



STANDARD TIME ZONES OF THE WORLD



6:00am 8:00am

6:00pm 8:00pm

In case of a world-wide meeting, we (Asians) attend the meeting from Home at midnight.



December 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01 7h-9h Ochi 09h-13h TPE Asai , Ueda 15h-16h Kawamoto ?	02
03	04 07h -08h Nagoya Sugimoto 10h-12h TGCJ-EB Kawamoto	05 9h-10h Uedal 10h-12h ICEPP_group	06 9h-10.5h TGC-elec Ishino 10h30-12h30 HLT Kono	07 14h-18h Ishino 9h-12h Tanaka(J)	08 09h-13h TPE Asai , Ueda 15h-16h Kawamoto ?	09
10	11 07h -08h Nagoya Sugimoto 10h-12h TGCJ-EB Kawamoto	12 9h-10h Uedal 10h-12h ICEPP_group	13 9h-10.5h TGC-elec Ishino 10h30-12h30 HLT Kono	14 9h-12h Tanaka(J)	15 09h-13h TPE Asai , Ueda 15h-16h Kawamoto ?	16
17	18 07h -08h Nagoya Sugimoto 10h-12h TGCJ-EB Kawamoto	19 9h-10h Uedal 10h-12h ICEPP_group 14h-15h30 LCG-FR T2T3 Uedal	20 9h-10.5h TGC-elec Ishino 10h30-12h30 HLT Kono	21 9h-12h Tanaka(J)	22 09h-13h TPE Asai , Ueda 15h-16h Kawamoto ?	23 Tennou's Birthday
24	25 CERN Closure 10h-12h TGCJ-EB Kawamoto	26 CERN Closure 10h-12h ICEPP_group	27 CERN Closure 9h-10.5h TGC-elec Ishino 10h30-12h30 HLT Kono	28 CERN Closure 9h-12h Tanaka(J)	29 CERN Closure 15h-16h Kawamoto ?	30 CERN Closure
31 CERN Closure						

Reservation status of video conferencing room at CERN



	Mon December 4	Tue December 5	Wed December 6	Thu December 7	Fri December 8
8:00					
9:00					
10:00					
11:00					
12:00					12:00» Testing for Shaping Collab 2006 conference
13:00					12:00» Testing for Shaping Collab 2006 conference
14:00					
15:00	15:00» Collaborative Tools Meeting	15:00» UM-ATLAS Group Meeting			
16:00		16:30» DZERO Physics		16:00» MDT Installation & Commissioning	
17:00					17:00» AGLT2 planning mtg
18:00					
19:00					19:00» PHB group meeting
20:00					
21:00				21:00» ATLAS Collaboratory Project	

<http://vesuvio.physics.lsa.umich.edu/acp/videoconf/>

Atlas Collaboratory Project, Univ. Michigan



The Impact of Distance and Time in Large Scientific Collaborations
Hiroshi Sakamoto, Shaping Collaboration 2006, Geneva Dec. 11th

Geographical Matters - Connection

- Flight (ANA, Dec. 2006)

- Narita – Geneva

- 139,000JPY (~1,400CHF)

- 11 hours

- Narita – New York

- 105,000JPY (~1,100CHF)

- 8.5 hours



Geographical Matters - Connection

● Phone (KDDI) from Japan



- To Switzerland : 220 JPY/min. (2.3 CHF/min)
 - 1 hour meeting 13,200 JPY (~130CHF)
- To USA : 60 JPY/min. (0.63 CHF/min)
- To Brazil : 280 JPY/min. (2.95 CHF/min)

● Swisscom (Switzerland)



- To Japan : 0.22 CHF/min (1/10!!) (20 JPY/min)
- To USA : 0.12 CHF/min (11 JPY/min)
- To Brazil : 0.65 CHF/min (62 JPY/min)

● AT&T (USA)



- To Japan : 0.10 USD/min (1/5!!) (12 JPY/min)
- To Switzerland : 0.11 USD/min (13 JPY/min)
- To Brazil : 0.18 USD/min (21 JPY/min)

Call back, please!



A few more examples...

- **Chunghwa Telecom (Taiwan)**  **Chunghwa Telecom**
 - To Japan: 13NT\$/min (1NT\$=3.7JPY) **48JPY/min**
 - To USA: 6NT\$/min! **22JPY/min**
 - To Switzerland: 20NT\$/min **74JPY/min**
- **Korea Telecom (Korea)**  **KT**
 - To Japan: 700Won/min (1Won=0.13JPY) **88JPY/min**
 - To USA: 280Won/min **35JPY/min**
 - To Switzerland: 1210Won/min **153JPY/min**
- **Embratel (Brazil)** 
 - To USA: 0.38 R\$/min (1R\$=0.47USD) **20JPY/min**
 - To Japan: 0.68 R\$/min **37JPY/min**
 - To Switzerland: 0.68 R\$/min **37JPY/min**



Geographical Matters - Connection

● Network

● Round Trip Time

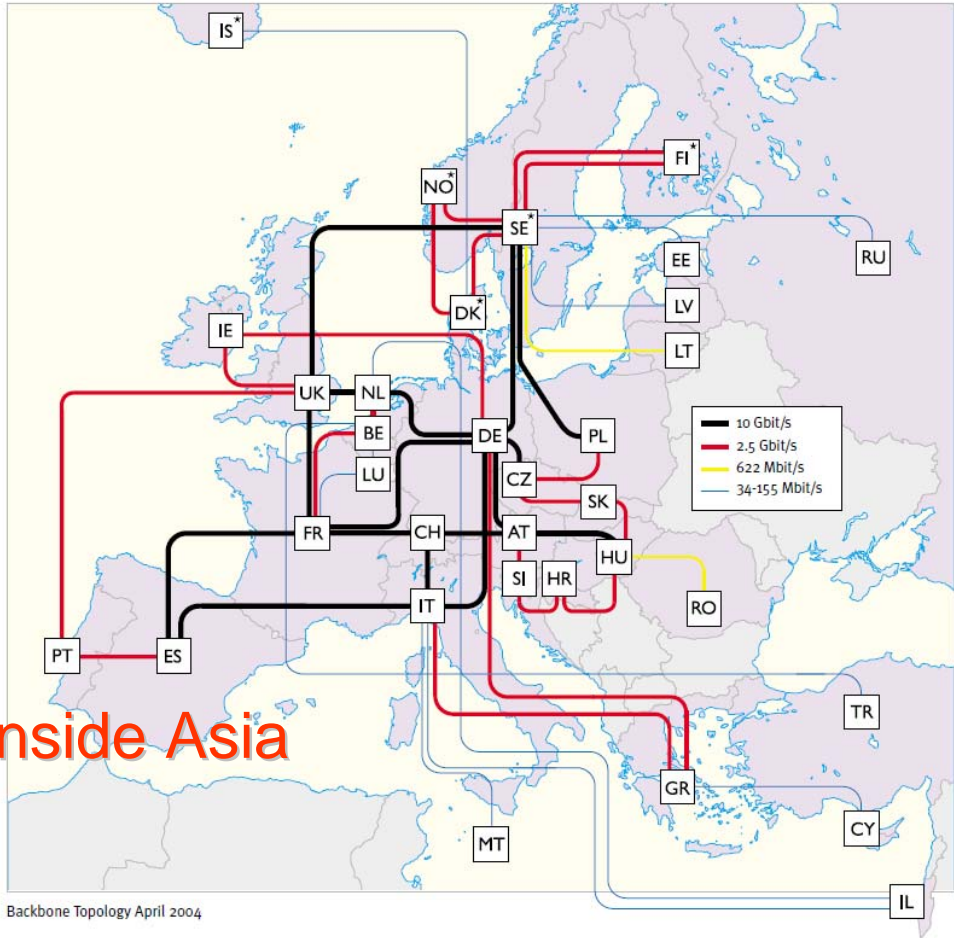
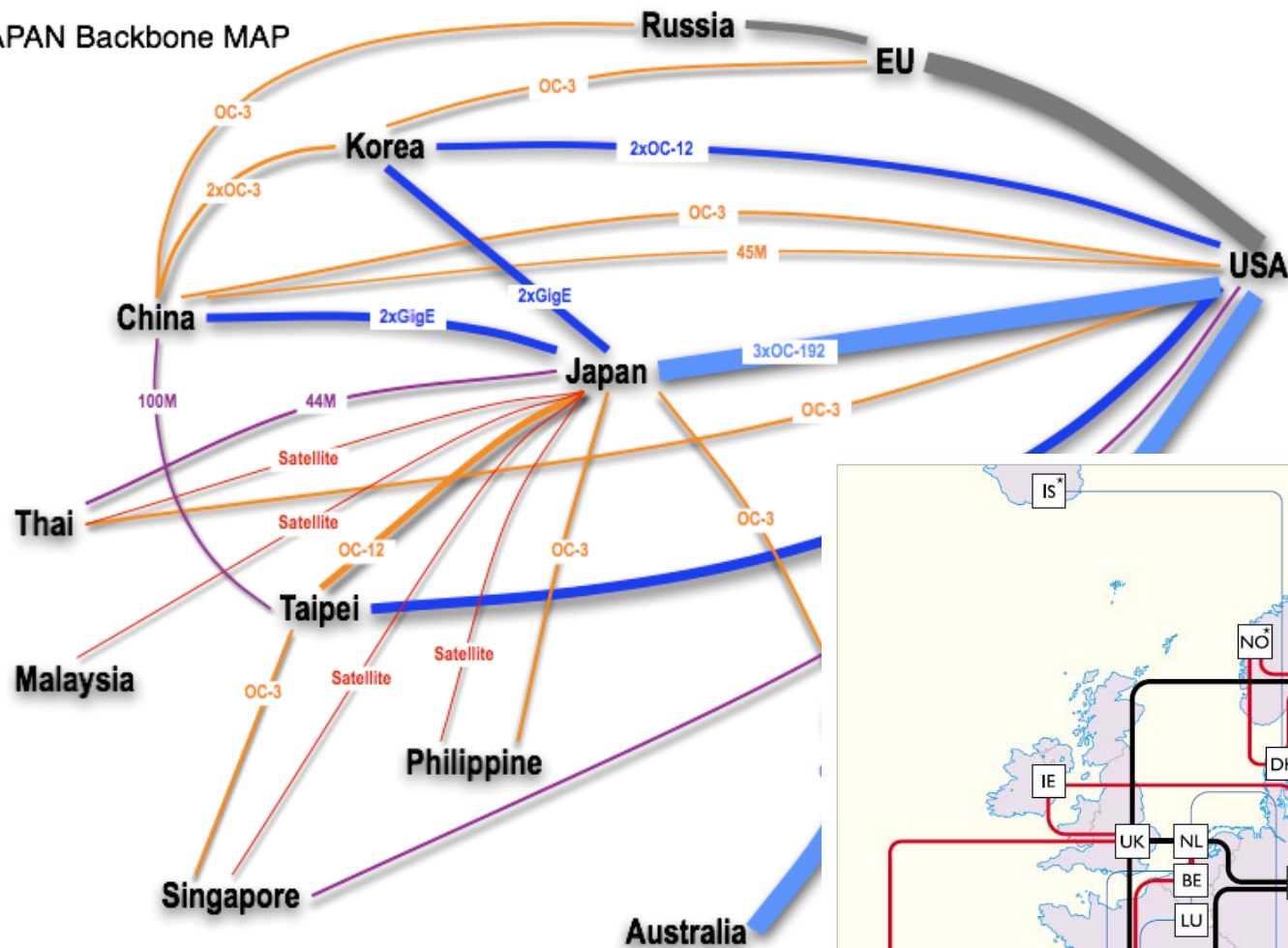
- 200ms to US
- 300ms to Europe
- Interactive session is quite irritating. ☹️

● Bandwidth

- 10Gbps to US and then to Europe
- Streaming of video/audio is OK. 😊



APAN Backbone MAP



Thick connection to US/EU
Quite thin mutual connections inside Asia



The Impact of Distance and Time in La
Hiroshi Sakamoto, Shaping Collaborat

Backbone Topology April 2004

Collaboration Tools

-- Conferencing

- Phone Conference

- Not so preferable

- Please call back to Japanese colleagues.

- VoIP?

- Video Conference

- H.323: Mainly used among Japanese groups.

- MCU is running at KEK.

- Shifted from H.320 on ISDN due to high phone tariff.

- VRVS: Atlas standard?

- Presentation material

- VNC to manipulate PPT files remotely

- Sharing action of speakers.

KDDI: JP-CH:220JPY/min

SkypeOut: JP-CH:
2.38JPY/min



Collaboration Tools – Information Sharing

- Agenda system
 - Very good tool
 - Sharing of materials
 - Also as an archival space
 - Extension to display Japanese characters
 - Done by KEK
 - Previous agenda system: shut down now.



Collaborating Tools

-- Communication

● Voice

- Phone is so expensive from Japan.
- Skype is widely used, but not allowed in some institutes, mainly due to its P2P nature.
- Any other VoIP?

● Text

- E-mail
- Chatting



Comment from a friend in Brazil

- Video Conferencing

- VRVS for research and education

- It is free, easy to use, and depend of a very short training to see the best conditions to connect.

- Phone Conferencing

- Skype

- Common telephone calls : expensive

- Text Base Communication

- MSN for chat

Input from Prof. Alberto Santoro,
DFNAE/IF-UJRJ (CMS member)



Requests to Developers and Service Providers -- Summary

- Attend a meeting from home at midnight.
 - Phone conference
 - Expensive telephone charge.
 - VoIP is strongly required
- More effective collaboration
 - Video conference
 - VRVS is provably OK.
 - Quality of Video/Audio
 - Sharing of speaker's actions is desirable.
 - Paging a PPT file
 - Moving a pointer on a page

