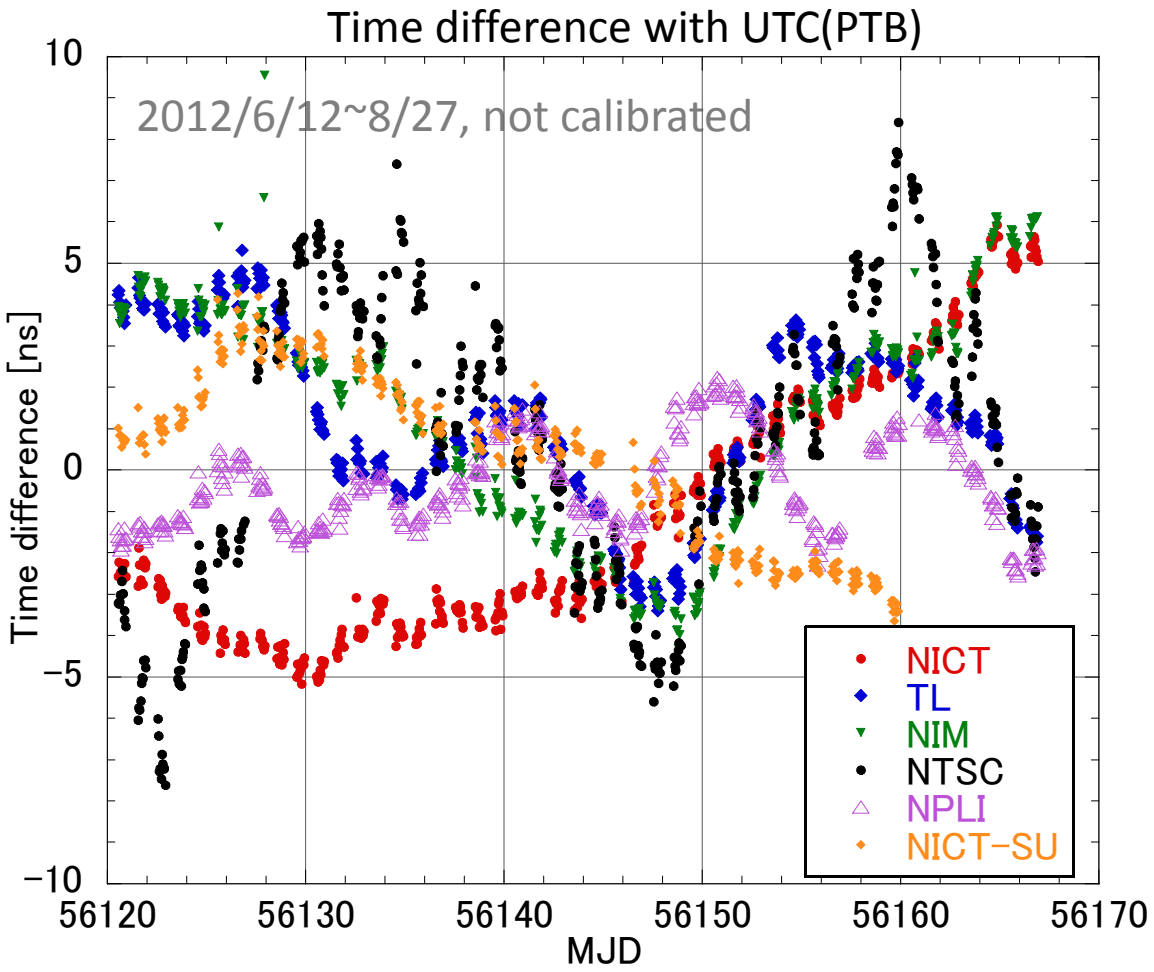
National Institute of Information and Communications Technology

Eu-Asia link

CCTF WG meeting on TWSTFT Sep. 6, 2012

Eu-Asia link via AM2



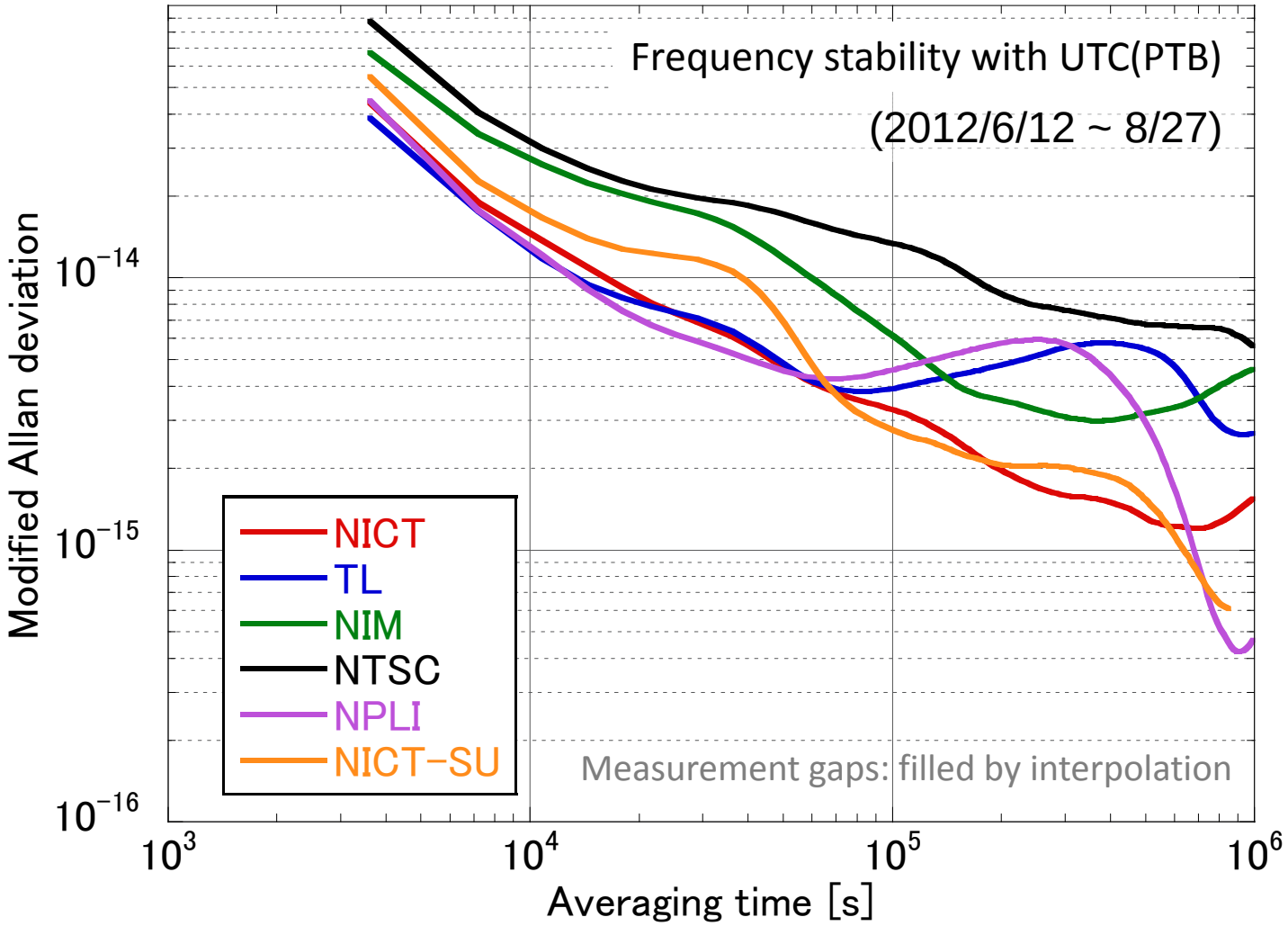
Data acquisition rate w/ PTB
(2012/6/12 ~ 8/27)

Lab	Rate
NICT	0.95
TL	0.99
NIM	0.96
NTSC	0.95
NPLI	0.94
SU	N.A.*

*No data in BIPM web site

Time transfers among PTB, TL, NIM, NTSC, NICT, VNIIFTRI, NPLI are steadily performed once per hour from 13h to 22h in UTC.

Eu-Asia link via AM2



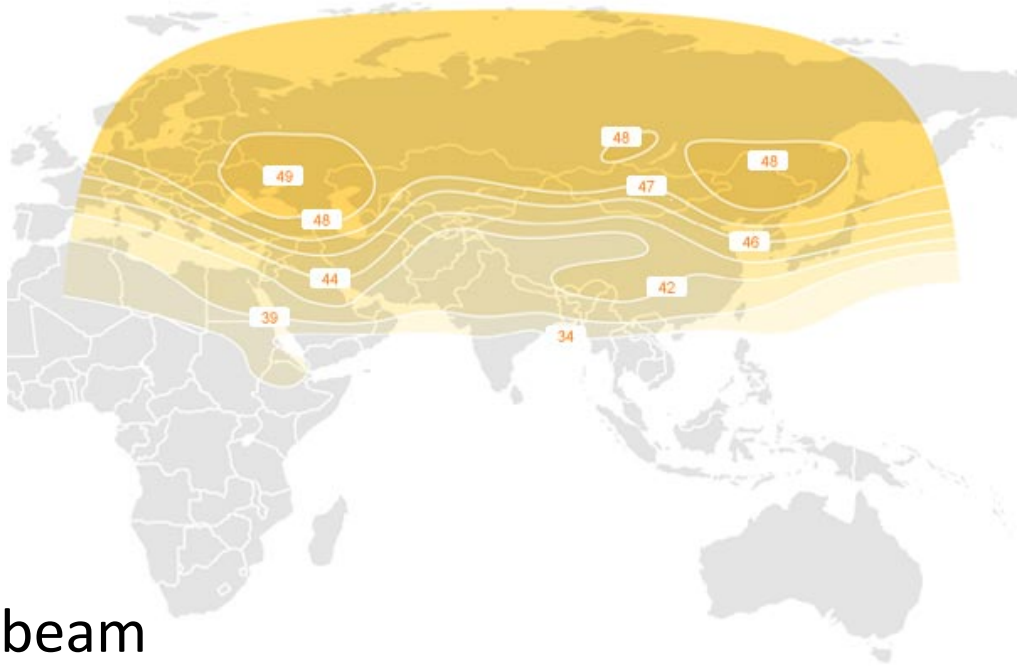
Links for TAI *NICT/PTB*, *TL/PTB*, *NPLI/PTB* *TWGPPP, NTSC/PTB TWSTFT*

Eu-Asia link in 2013

- It's fixed that
  Eu-Asia link will be continued via AM2 until Feb 2013.
- Link fee is shared by all participating stations.
- The lifetime of AM2 still remains an open question.
- There are 2 options on satellite after Feb 2013.

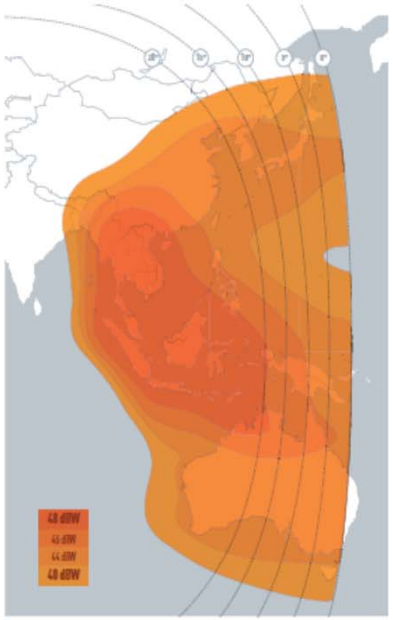
  1. AM2
  2. Eutelsat 70B

AM2

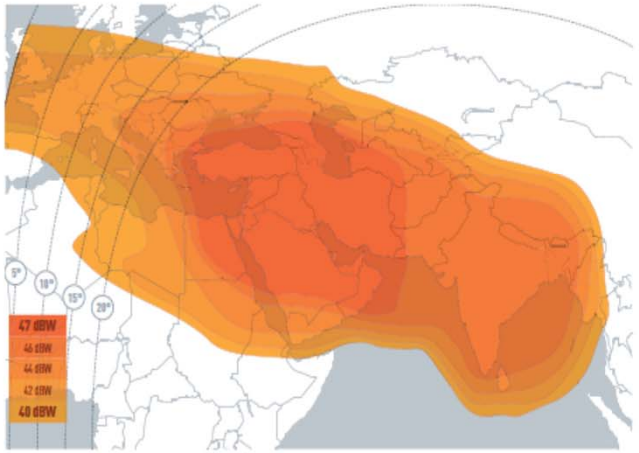


- 80° E
- One global beam
- Transponder working time: 12:30 ~ 22:59 UTC
- About 5600 USD/month/2.5 MHz for 10.5 hours service
- Successor, AM4R, will be launched in 2014.

Eutelsat 70B



EUTELSAT 70B South-East Asia downlink coverage



EUTELSAT 70B Widebeam downlink coverage

- Operational from February 2013
- About 20,000 USD/month/2.5 MHz for 24-hours service
- Eu-Asia connection will be established by 2 transponders.
- India will be covered by same beam as Europe.
  Russia will be out of service.

Questionnaire: Which satellite is preferable?

Lab	First choice No of months for contribution on link fee	Second choice No of months for contribution
NICT	AM2 3 months	70B w/ 2.5 Mcps 2 months
TL	AM2 1 month	
NPLI	AM2 1 month	70B w/ 2.5 Mcps Connection with Asia only
NTSC	70B 1 or 2 months	
KRISS	AM2 1 month	70B
VNIIFTRI	AM2 2 months	
NIM	AM2 1 or 2 months	
PTB	AM2 1 or 2 months	
NMIJ	70B 1 month, cost reduction is necessary.	

Further questions for Eu-Asia link from March 2013

One question:

One of the objectives of the link is connection with PTB.

Which one is better?

1. Stations as many as possible can connect PTB.

2. Data as many as possible are reported to BIPM.

4 links via AM2 are used for TAI network already.
No of Data, 10 points per day, is not enough
but minimal amount.

Further questions for Eu-Asia link from March 2013

NICT would like to continue the link via AM2 as far as it's alive.
When AM2 will be out and AM4R won't be operational,
we want to think about satellite switch to 70B.

1. Could you agree with our idea?

70B with 2.5 Mcps is too expensive. (20,000 USD)

2. 70B with 1 Mcps is acceptable?

(8,000 USD/1MHz or 12,800 USD/1.6MHz)

A new BPF is necessary in the case of 1 MHz.

Eu-Asia link from March 2013

Eu-Asia link will be continued using AM2 after Feb 2013 as far as AM2 is alive.

When AM2 will end, satellite switch will be considered.
In the case of 70B, chip rate of 1 Mcps is preferable for cost reduction.

Thank you for your kind attention.

Link-fee share table for 2011/12 ~ 2013/2

2011 12	2012 1	2	3	4	5	6	7	8	9	10	11
NICT	NICT	PTB	TL	NIM	NPLI	KRISS	NTSC	NTSC	NMIJ	VNIIFTRI	VNIIFTRI

2012 12	2013 1	2	3	4	5	6	7	8	9	10	11
NIM	PTB	NICT									

Link-fee share table for 2013/3 ~ 2014/2

2013 3	4	5	6	7	8	9	10	11	12	2014 1	2
TL	NICT	NICT	NICT	NIM	NPLI	PTB	VNIIFTRI	VNIIFTRI	NTSC	NMIJ	KRISS

2013 3	4	5	6	7	8	9	10	11	12	2014 1	2
TL							VNIIFTRI	VNIIFTRI			