



CCTF TWSTFT meeting in 2005
TWSTFT WG Activity and Future
Plan in the Asia-Pacific-Rim Region

NICT
APMP TCTF TWSTFT WG

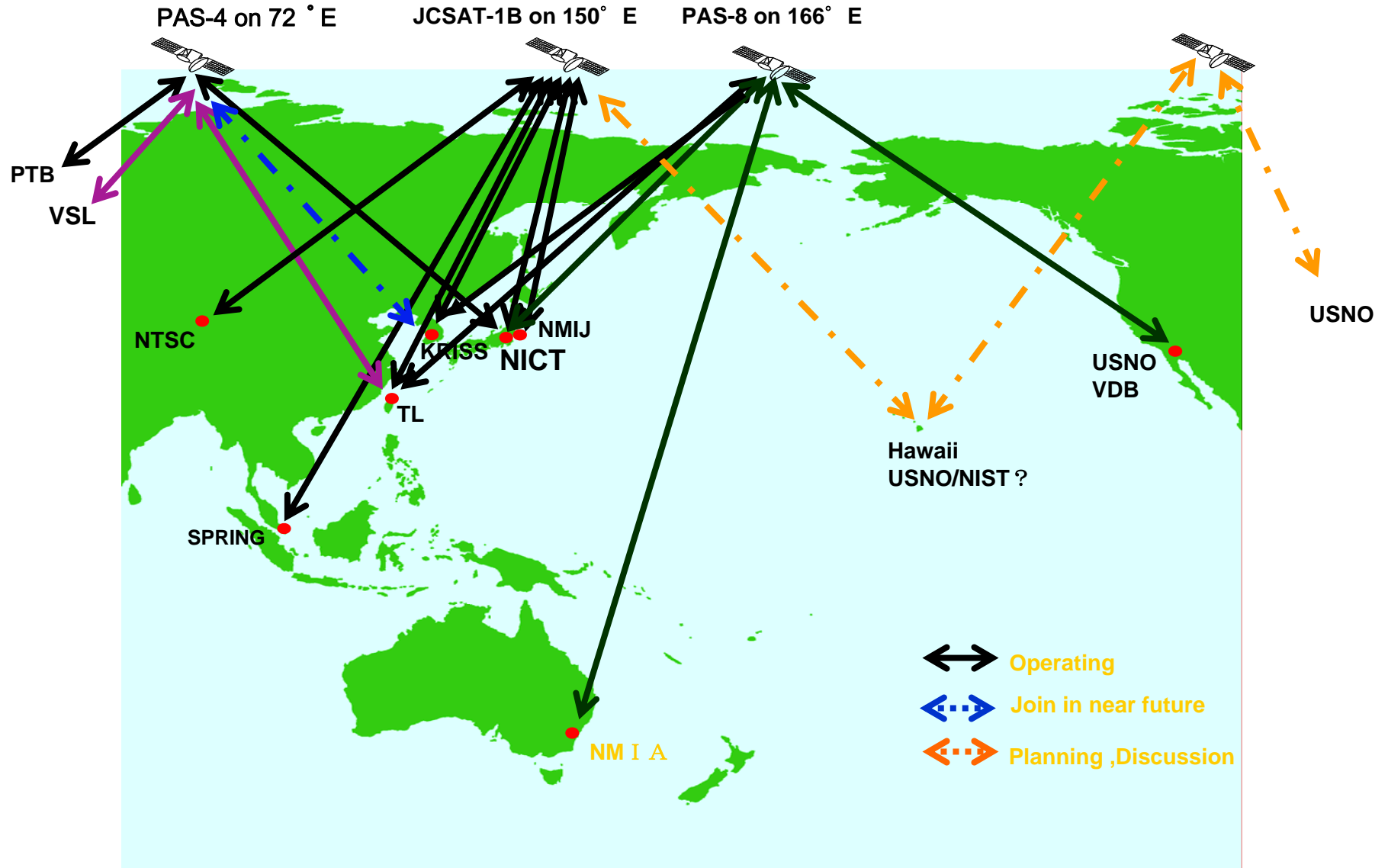
Content

- TWSTFT Status
- TWSTFT Routine Observation in Asian - Pacific Rim Region
- Special Observation (Research Observation)
- Calibration observation on the NICT portable system
- Future Plan
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TWSTFT Status

- 1) Routine observations are done by using the multi-channel modems (NICT modem)
- 2) China NTSC system is updated
- 3) PTB station and Asian link is established
- 4) Hawaii station is planned in order to improve USA-Asia link
- 5) Domestic link is started in Australia
- 6) JCSAT-1B is troubled but now recovered

The network of TWSTFT



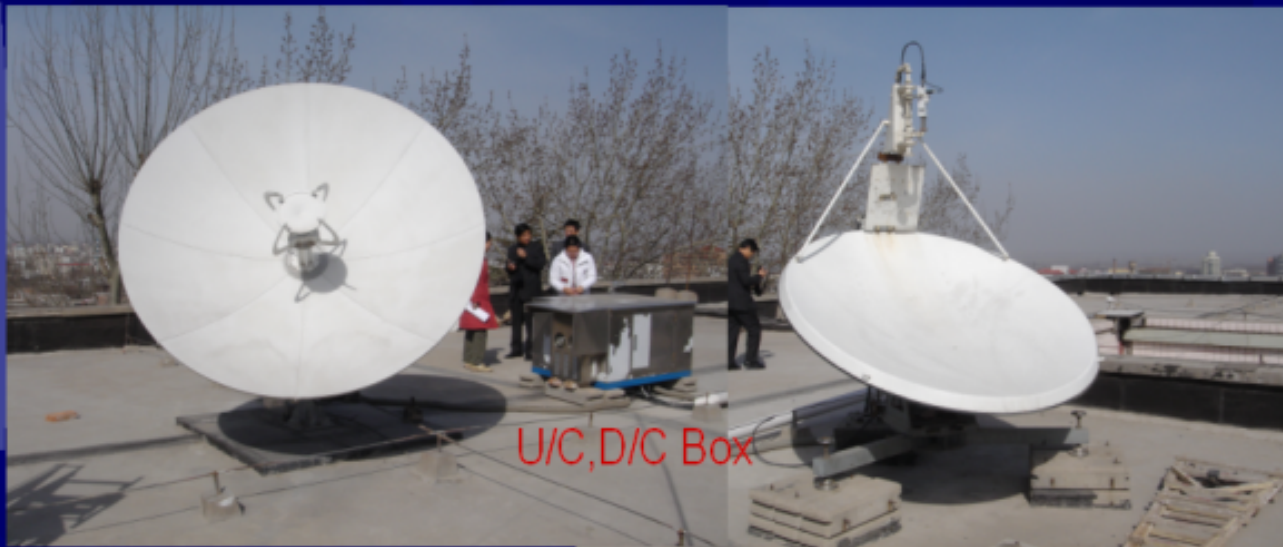
2) Renovation of China NTSC system

Cassegrain Antenna



Offset Antenna

Indoor units



2.4 m (sub)

1.8 m (main)



Antennas for TWSTFT installed on the roof of NTSC office building.

3) Establishment of Germany PTB station



**NICT
2.4 m Offset Antenna**



**PTB
2.4 m Cassegrain Antenna**



4) Plan to establish Hawaii station



Participating Stations:

TL, NICT, USNO, NIST

Links:

Asia-Hawaii on JCSAT-1B

Modem: SATRE

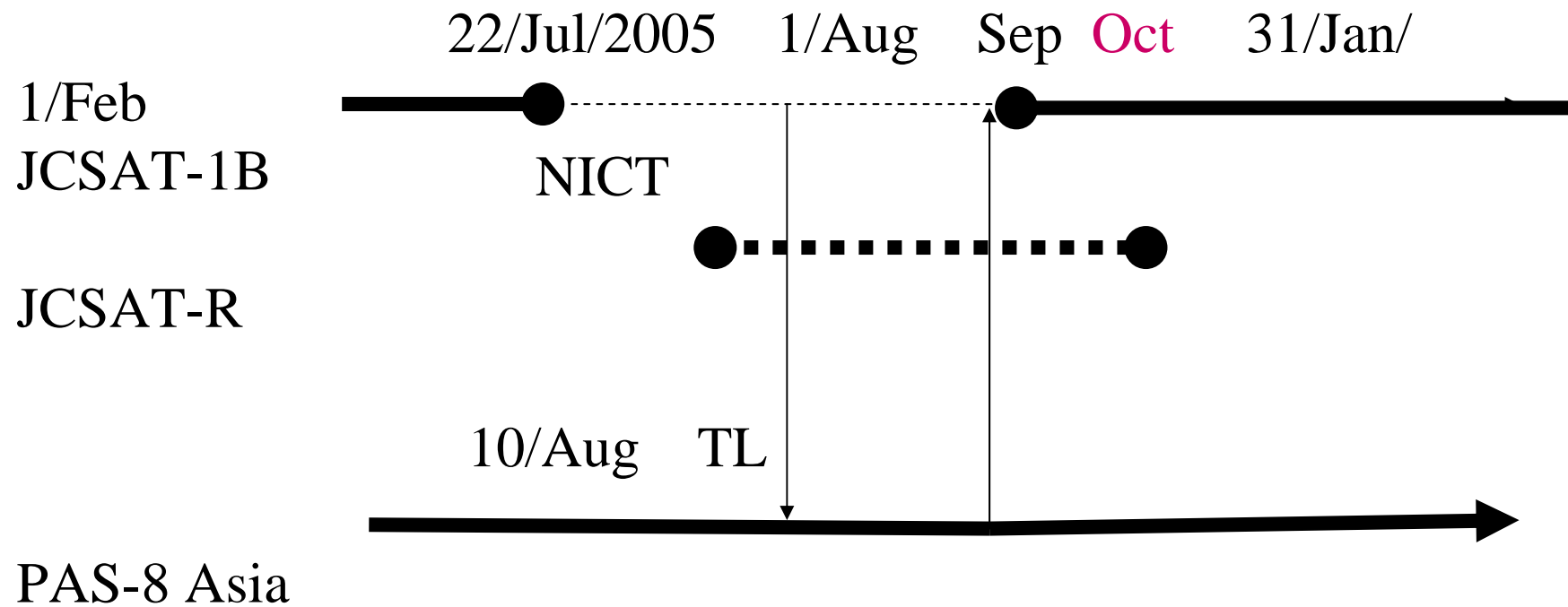
because of the operation together with USA station

5) Domestic station in Australia

A domestic link between NMIA and the West Australia University in Australia is established in this year.



6) Problem of JCSAT-1B

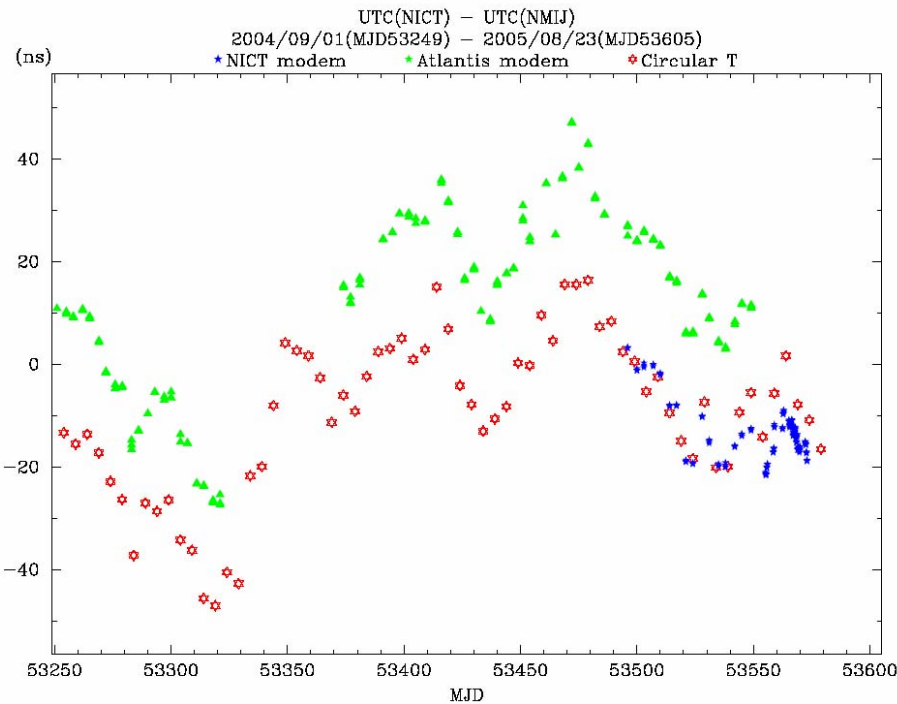


Routine observation:

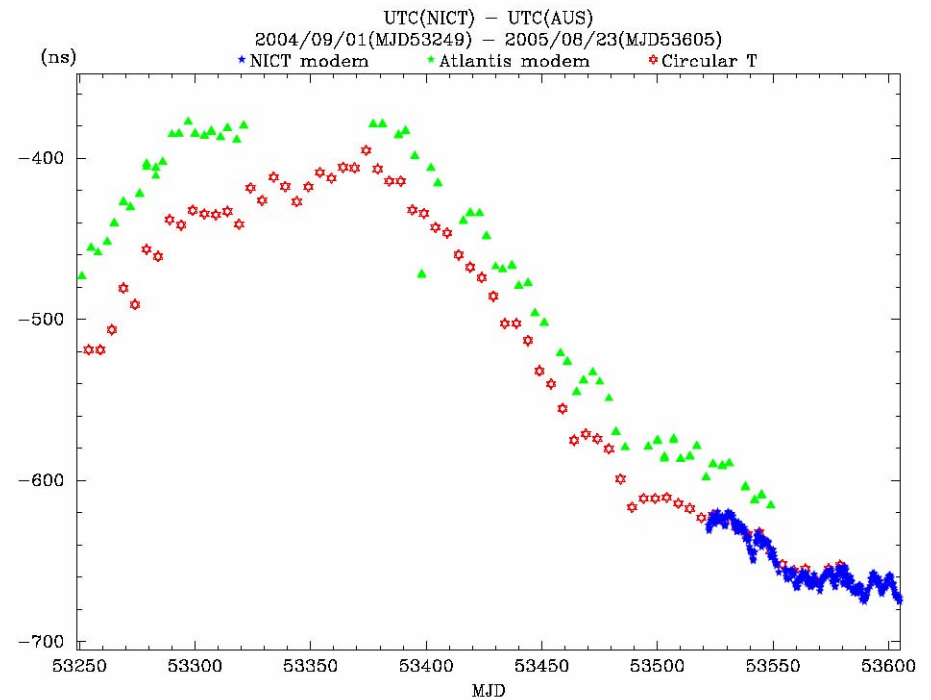
- a) The routine observation are reported to BIPM
- b) Routine observation is operated 4 times as core times.
00:00 - 00:20 UTC, 06:00 - 06:20 UTC
12:00 - 12:20 UTC, 18:00 - 18:20 UTC
- c) NICT-VDB link observations are operated on the Atlantis modem (or SATRE modem) via PAS-8.
Observation time: 03:35-04:05 UTC and 04:45-05:15 UTC (Tuesday and Friday).

Result of TWSTFT Observation on the NICT modem and Atlantis modem from Sep. 2004 to Aug. 2005

NICT-NMIJ



NICT-AUS



The data using NICT modem are offset by GPS data and Circular T data

Data acquisition rate (Atlantis and NICT modems)

Table 2 (a) :Data acquisition rate on Atlantis modems

Links	2004/09/01-2005/06/30 Atlantis modem	
	Observed/Scheduled	%
NICT-NMIA (P8)	78/80	97.5
NICT-NMIJ (J1)	79/80	98.7
NICT-NTSC (J1)	49/80	61.2
NICT-TL (J1)	77/80	96.2
NICT-TL (P8)	54/80	67.5
NICT-VDB (P8)	148/167	88.6

J1: JCSAT-1B, P8: PAS-8

Average : 86%(485/567)

Table 2 (b) :Data acquisition rate on NICT modems

Links	2005/02/01-2005/08/19 NICT modem	
	Observed/scheduled	%
NICT-KRISS (J1)	62/64	96.8
NICT-NMIJ (J1)	62/64	96.8
NICT-TL (J1)	62/64	96.8
NICT-NTSC (J1)	38/43	88.3
NICT-SG (J1)	33/33	100
NICT-AUS (P8)	110/115	95.6
KRISS-NMIJ (J1)	62/64	95.9
KRISS-TL (J1)	62/64	95.9
KRISS-NTSC (J1)	38/43	88.3
KRISS-SG (J1)	33/33	100
KRISS-AUS (P8)	100/115	97.3
NMIJ-TL (J1)	62/64	95.9
NMIJ-NTSC (J1)	38/43	88.3
NMIJ-SG (J1)	33/33	100
TL-NTSC (J1)	38/43	88.3
TL-SG (J1)	33/33	100
NTSC-SG (J1)	28/33	84.8

Average : 94%(894/951)

Report of Routine Observation Data to BIPM

1. Routine observations using the NICT modem have been conducted since February 1st, 2005.
2. Observations using the atlantis modem were stoped on June 28th 2005 except for the NICT-VDG link.
3. NICT calculated CALR (CALR report) Based on ITU-R TF.1153-2 Type 1 format. Official reports to BIPM from June 2005.

Data uploaded Website:

<http://www3.nict.go.jp/dk/c253/data/TWSTFT/NICTmodem/>

Special observation (research observation)

The special observation is started for the research.

- a) Time: 00:30 - 05:30 (UTC) from Monday to Friday.
- b) It is applied for APMP members.

NMIA applied the comparison between SATRE and NICT modem.

contact

maeno@nict.go.jp and to other related institutes

NICT portable system for calibration

1. The first experiment of the portable system was conducted on August, 2005 in Japan.
2. Other TWSTFT calibration trips with TL will be planned by next February.
3. NICT will promote the calibration observation using portable system for APMP TWSTFT stations since next year.

Future Plan

Improvement of TWSTFT observation

1. To start the full-automatic routine observation
2. To carry out the calibration observations using the portable system.
3. To check the data quality
4. To monitor the internal delay and diurnal variation
5. To develop the new system using carrier signals less than 0.1 ns precision
6. To extend the network
 - Hawaii link
 - Europe link
 - closure observation of around world

Conclusion

1. Asia-Pacific TWSTFT observation on multi-channel NICT modem has started. However, observation has been halted due to the malfunction of JCSAT-1B from 22 July 2005. Now the routine observation restarted.
2. The routine observations are conducted four times every day.
3. The special research observation is started.
4. The link extends to Europe (PTB and VSL) , USA (Hawaii, USNO).

Thank you...