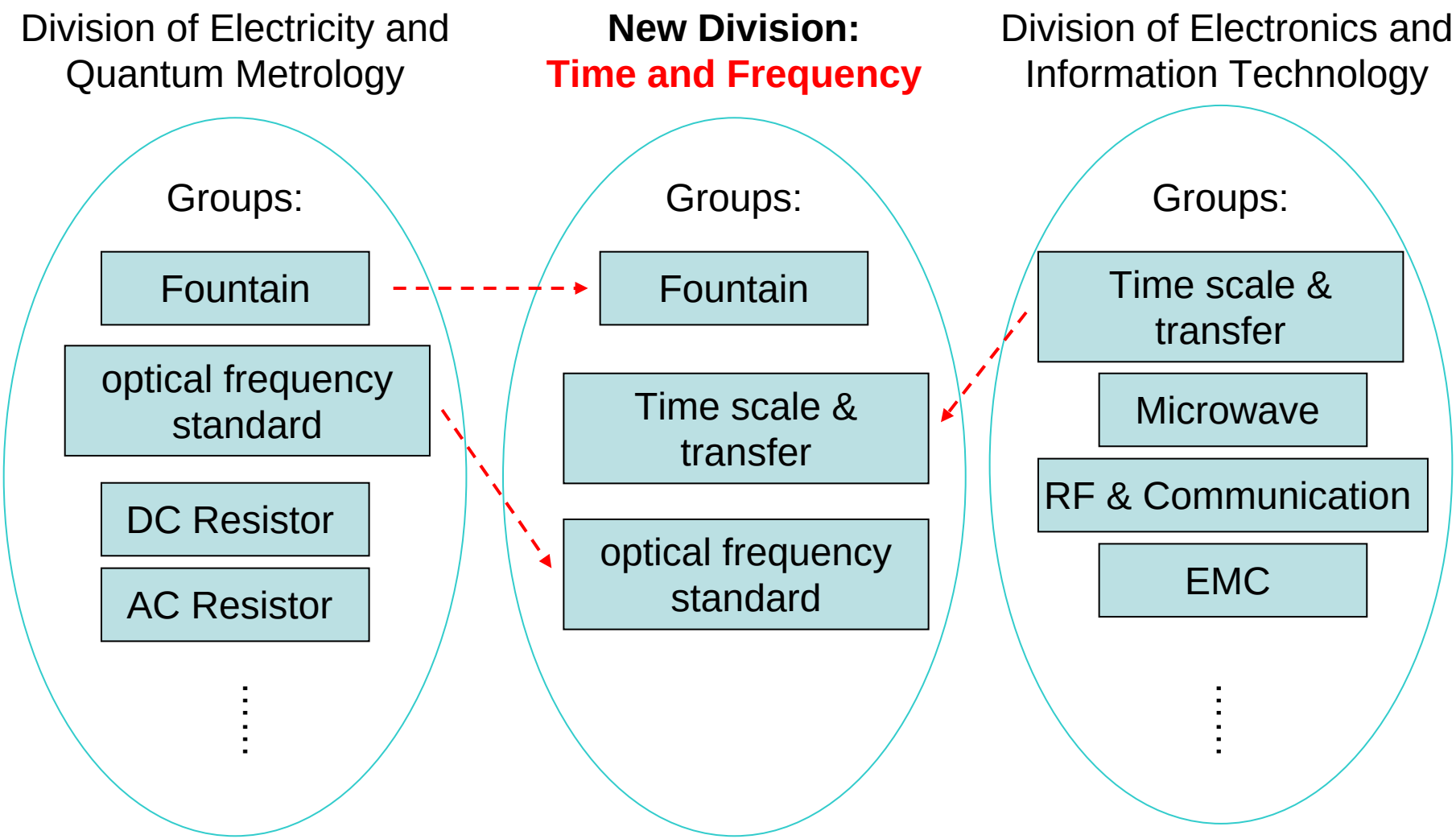
NIM TWSTFT Activities Report

National Institute of Metrology, China

Yuan GAO

Sep.12-13,2011 NMIJ Japan

Organizational restructuring



Staff

Time scale & transfer group:

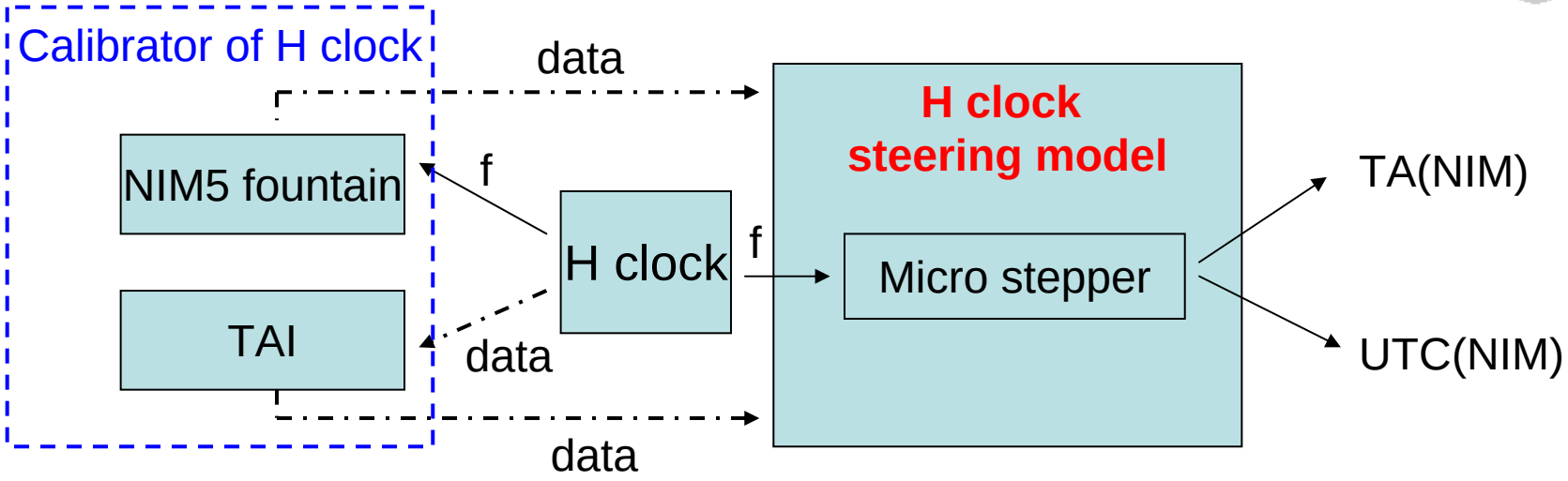
Leader: Zhang Aimin

Ning Dayu	Wang Weibo
Gao Yuan	Liang Kun
Zhao Kejia	Zhang Yue
Ma Xiulan	Yang ZhiJiang

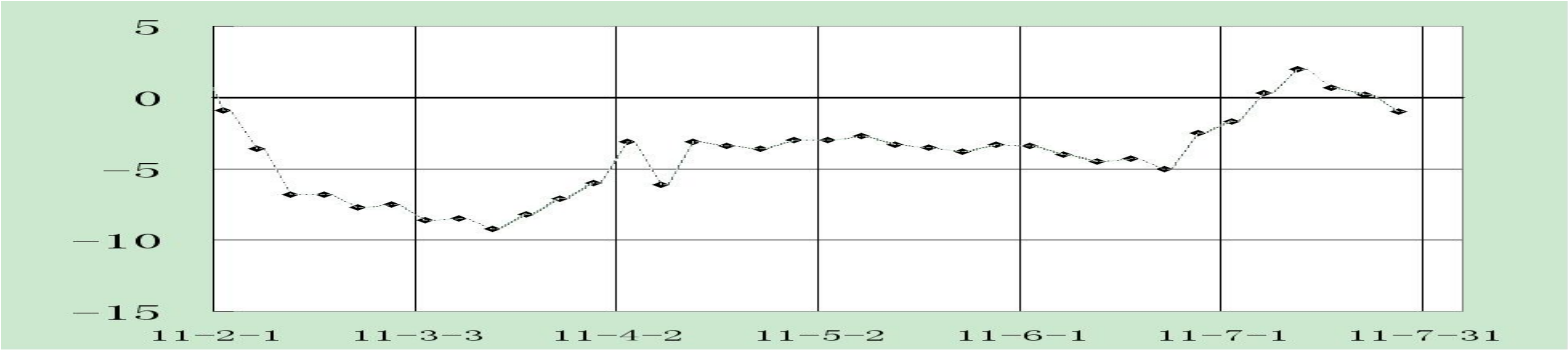
Time keeping

- Clock room UTC(NIM) located now (HePingLi campus)
  - 1 Hydrogen Maser
  - 2 Cs Clocks
  - UTC(NIM) → report to BIPM
- Clock room UTC(NIM) will be moved to (ChangPing)
  - 5 Hydrogen Masers
  - 2 Cs Clocks
  - Test run UTC(NIM) → signal links to TWSTFT
- A standby power generator is under construction.

Improvement of UTC(NIM)

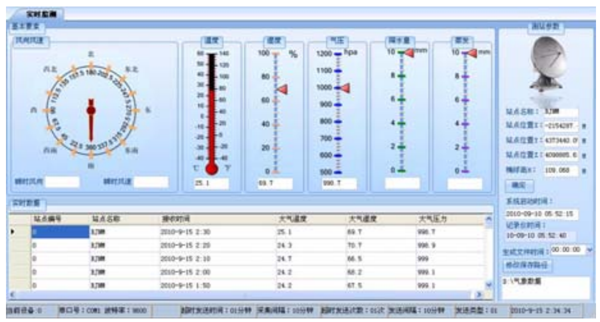


Aim of the model: keeping same frequency as the calibrator as close as possible.



TWSTFT work in this year

1. Adding weather data to TW file.



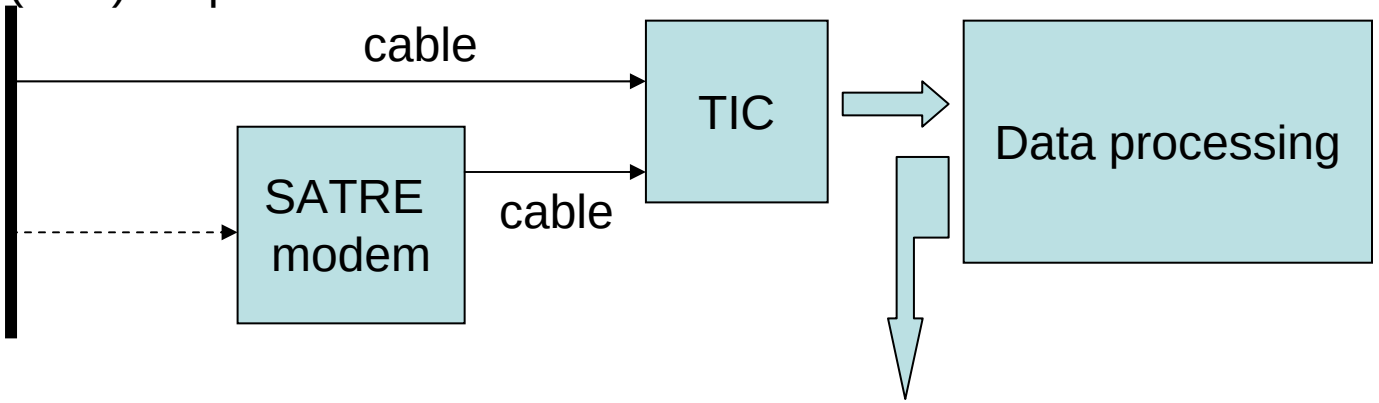
Data processing

* EARTH-STAT * LOC	REM	LI	MJD	STTIME hhmmss	NTL s	TW s	DRMS ns	SMP	ATL s	REFDELAY s	RSIG ns	CI	S	CALR ns	ESDVAR ns	ESIG ns	TMP deg	HUM %	PRES
NIM01	NTSC02	14	55808	130100	299	+0.254737532252	0.896	300	299	+0.000000894947	0.014	999	9	999999999	999999999	99999	21	70	997
NIM01	PTB03	14	55808	130700	299	+0.266244401828	0.615	299	298	+0.000000894950	0.014	999	9	999999999	999999999	99999	21	71	998
NIM01	TL02	14	55808	131300	299	+0.255643202226	0.536	300	299	+0.000000894955	0.014	999	9	999999999	999999999	99999	21	71	998
NIM01	NICT14	14	55808	133100	299	+0.261853698774	0.746	300	299	+0.000000894963	0.015	999	9	999999999	999999999	99999	21	70	997

TWSTFT work in this year

2. Adding REFDELAY and RSIG to TW file(For test run UTC(NIM) at Changping)

Test run
UTC(NIM) output



* EARTH-STAT		LI	MJD	STTIME	NTL	TW	DRMS	SMP	ATL	REFDELAY	RSIG	CI	S	CALR	ESDVAR	ESIG	TMP	HUM	PRES
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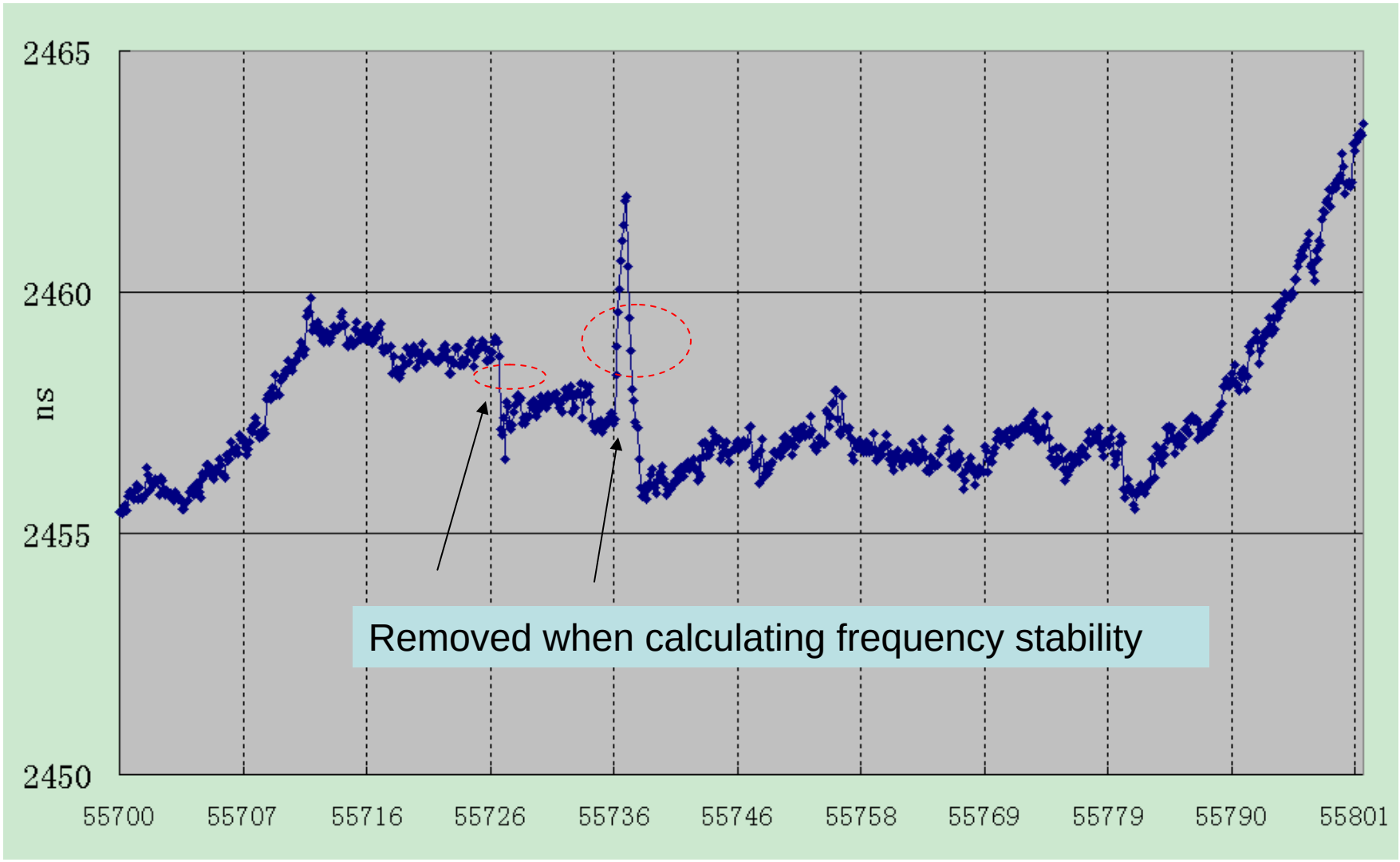
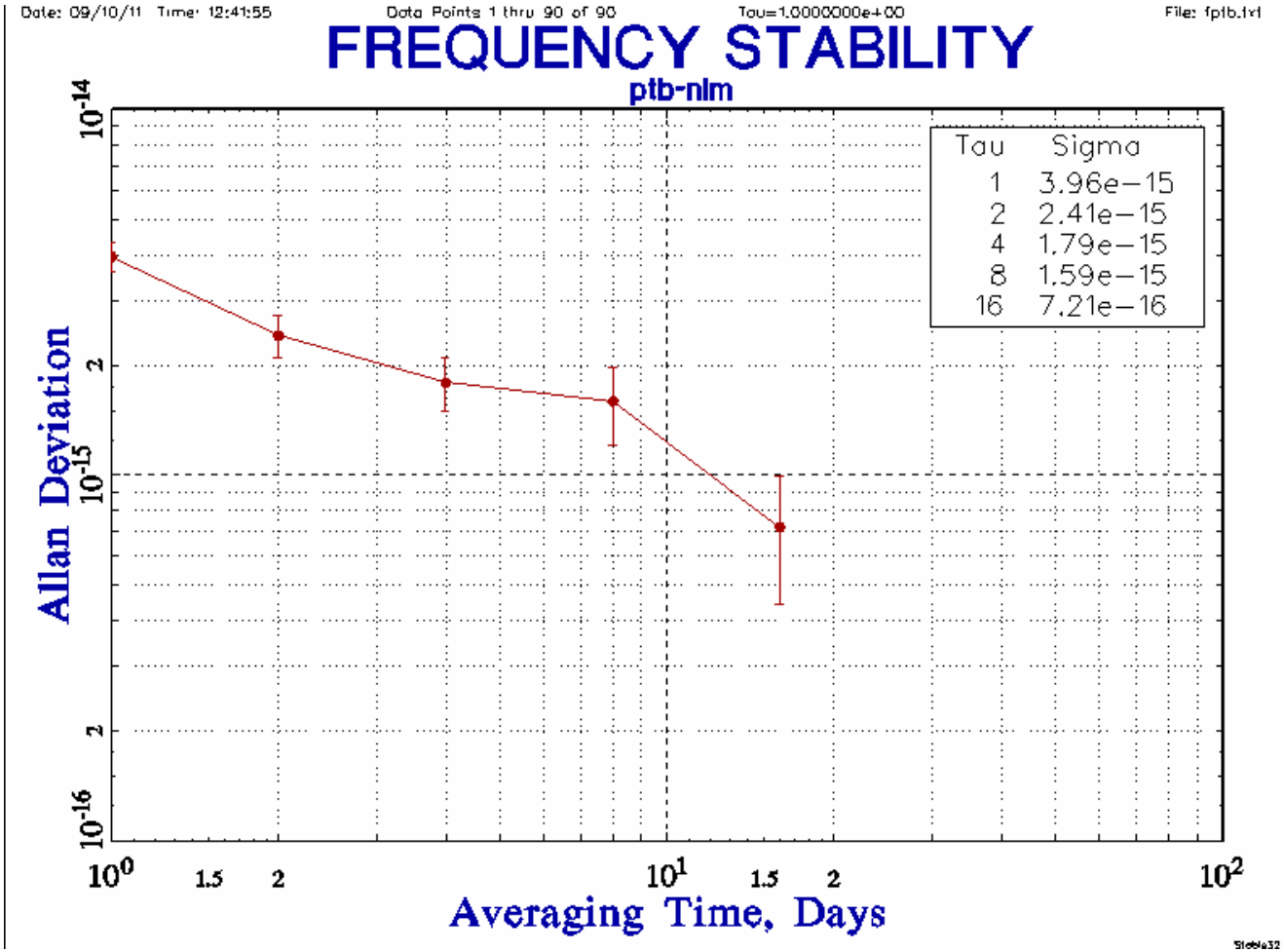
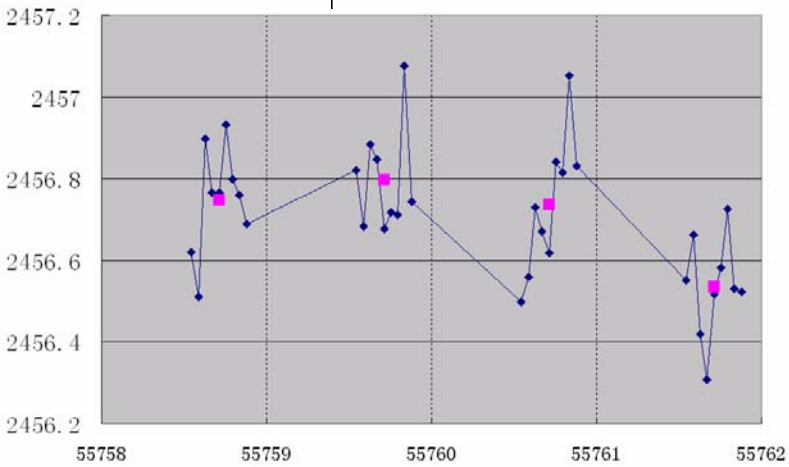
TWSTFT work in this year

3. Automatically upload TW file to BIPM ftp server daily.
4. Install rain covers for outdoor amplifier and converter.

TWSTFT measurement result
PTB-test run UTC(NIM)



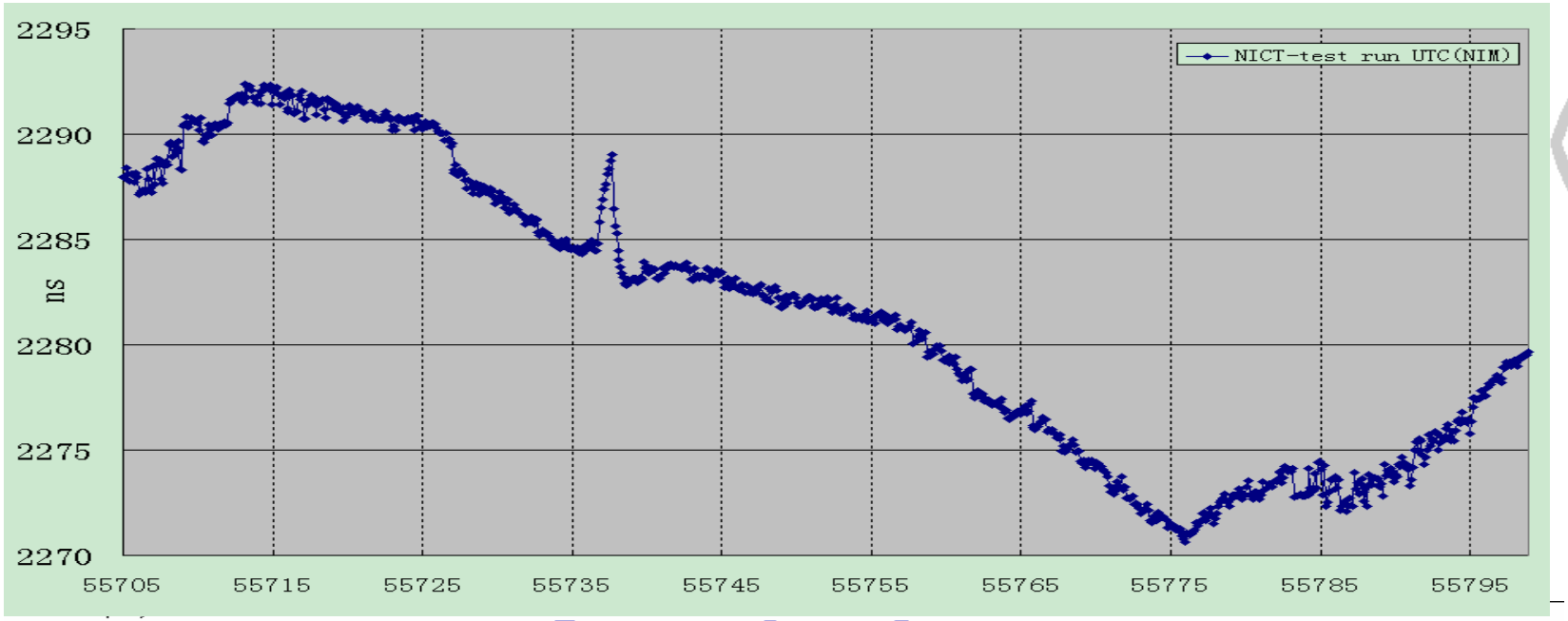


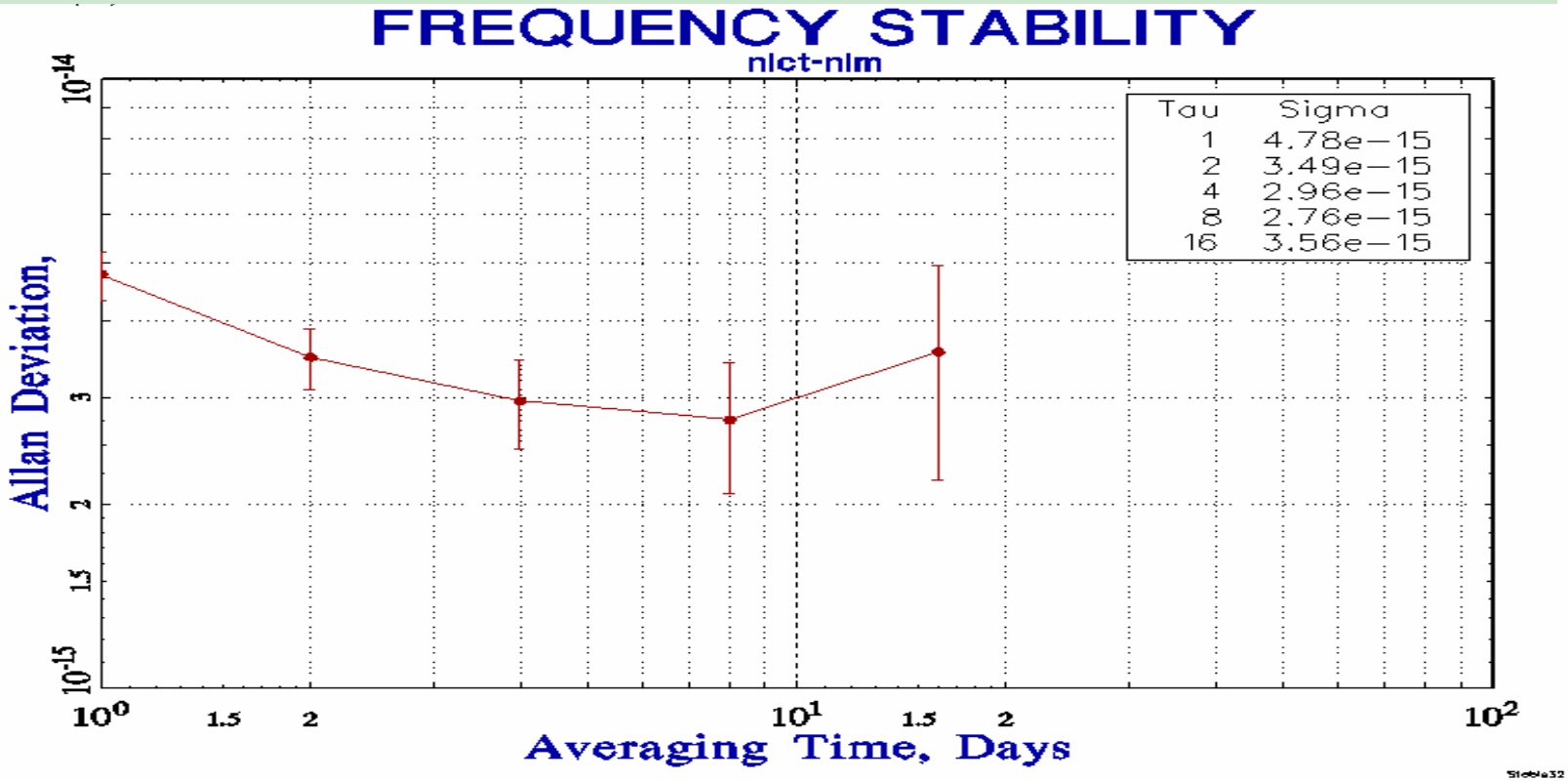


4-day time difference data

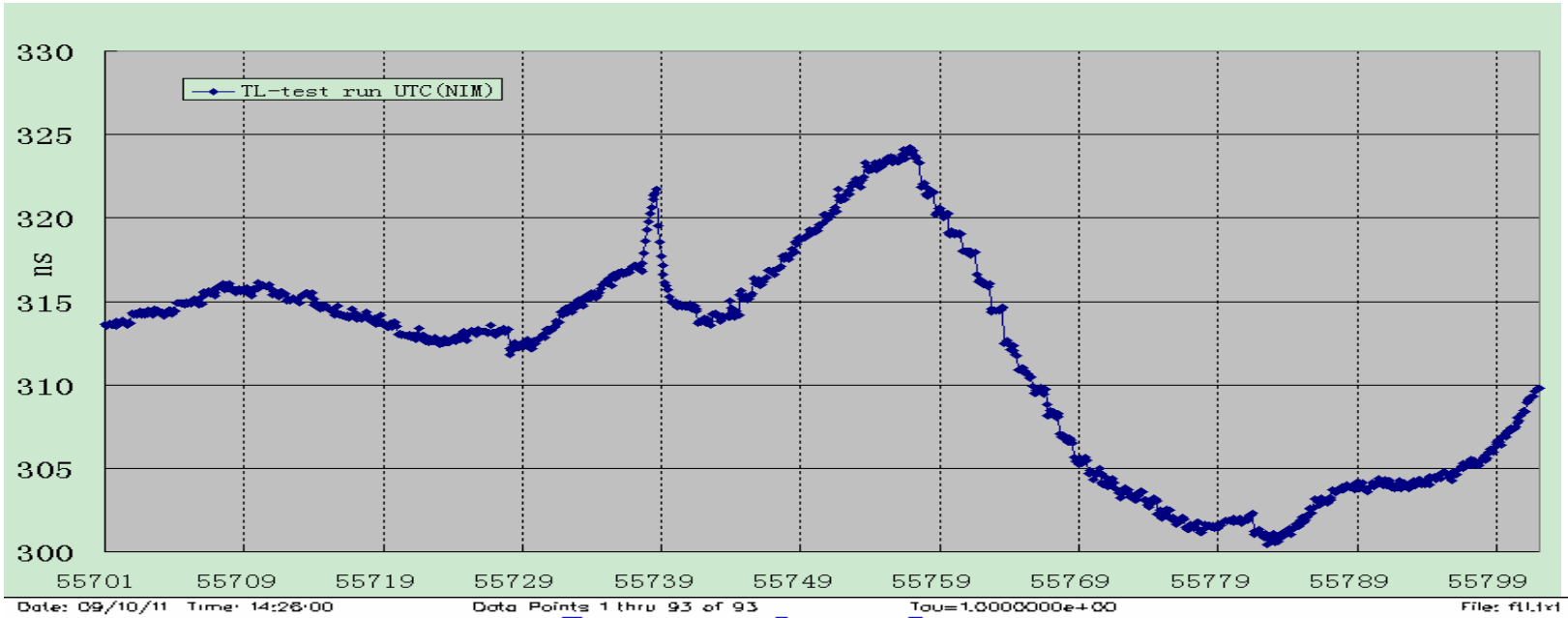
One point per hour

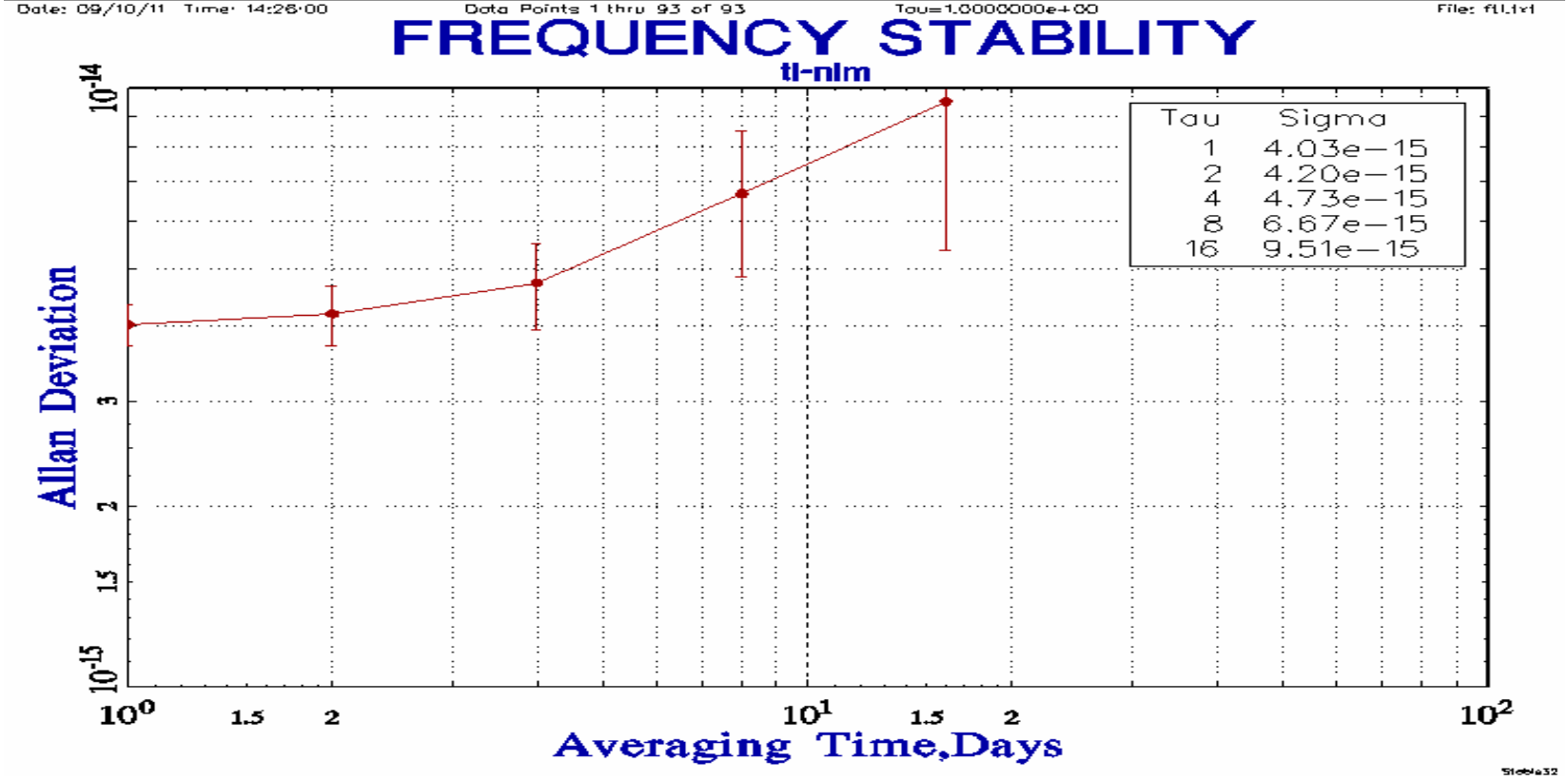
PTB-NIM(55705-55801)





NICT-NIM(55705-55801)





TL-NIM(55701-55801)

Frequency stability summary 55705-55801

Link \ Tau	days				
	1	2	4	8	16
PTB-NIM	3.96e-15	2.41e-15	1.79e-15	1.59e-15	7.21e-16
NICT-NIM	4.78e-15	3.49e-15	2.96e-15	2.76e-15	3.56e-15
TL-NIM	4.03e-15	4.20e-15	4.73e-15	6.67e-15	9.51e-15

TWSTFT frequency stability is about 4e-15/day at NIM station.

Thank You