VNIIFTRI TWSTFT Activity Report

20th Meeting of the CCTF Working Group on TWSTFT

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6-7 September 2012, BIPM France

Time Scale Transfer group

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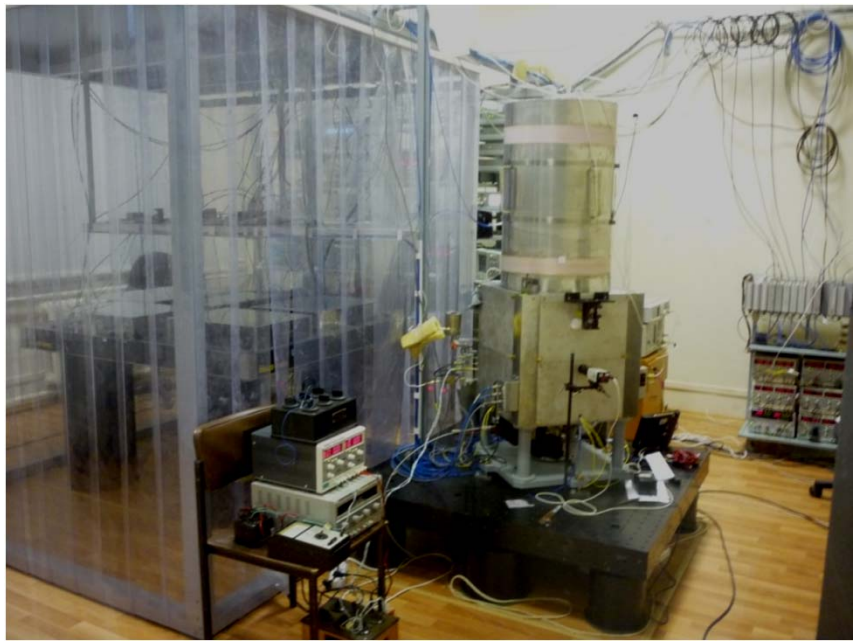
UTC(SU) Source



CSFO1, CSFO2 VNIIFTRI
Accuracy ≤ 5,0 E-16

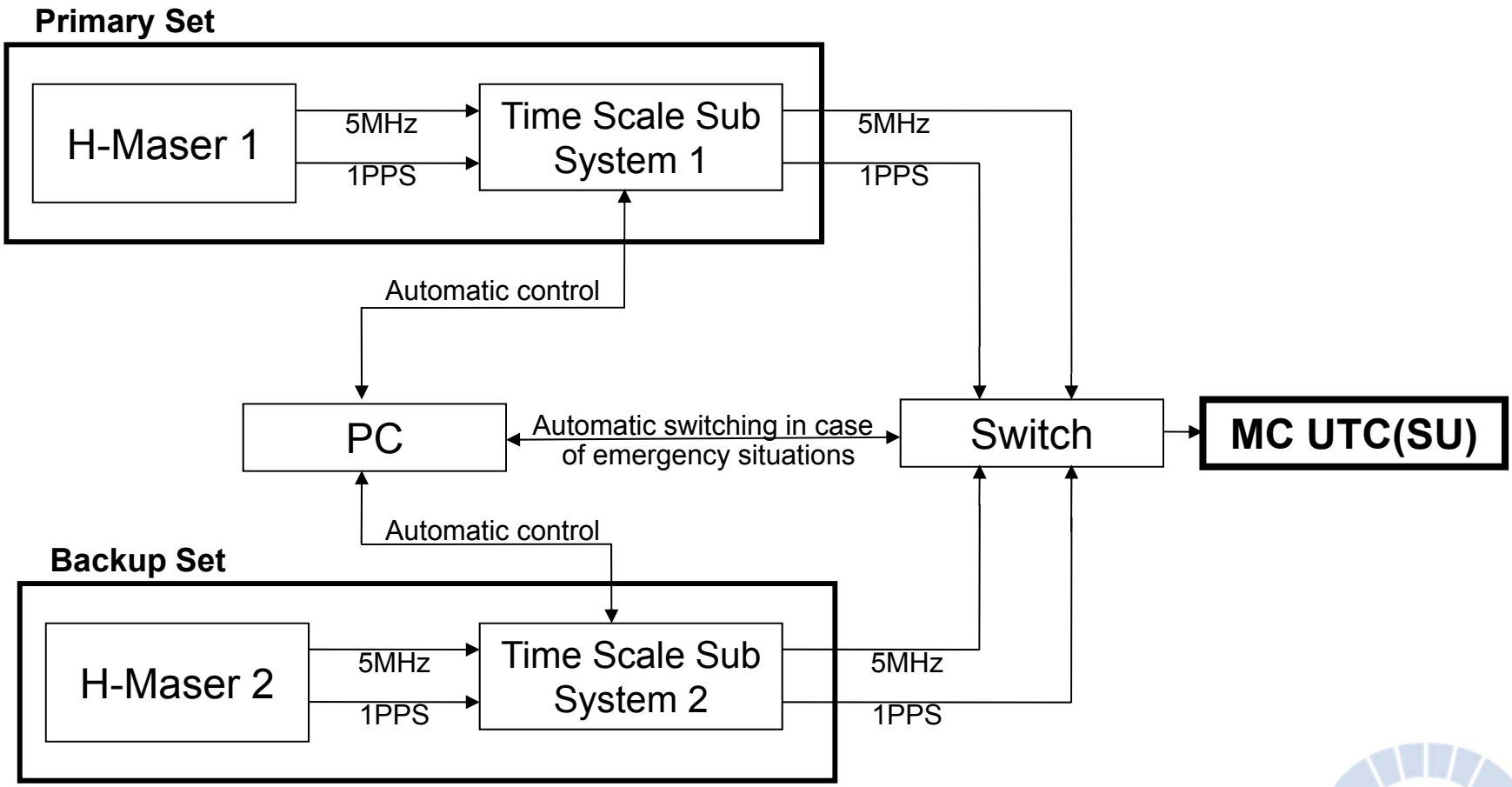
8 H-Maser clocks
Kvarz CH1-75A
$\sigma_y(\tau) \leq 5{,}0$ E-16

Physical
UTC(SU)
realization

VNIIFTRI

UTC(SU) Physical Realization

UTC(SU) – MC UTC(SU) ≤ 0.5 ns



SU01 TWSTFT Stationary station

- Antenna: 1.8 meters
- Satellite: AM2
- TimeTech SATRE 2 channels modem
- Up and Down converter : Comtech Company
- TimeTech SATSIM
- Links with PTB and Asia

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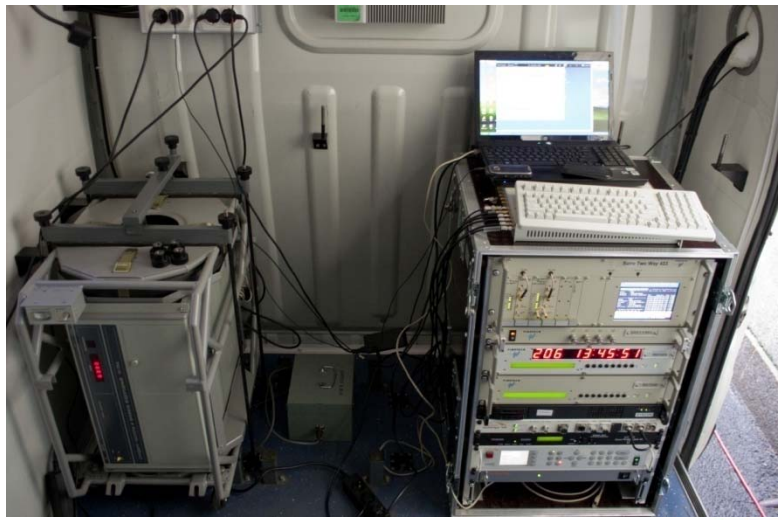
SU02 TWSTFT Transportable Station

- Antenna: 1.2 meters
- Satellite: AM2
- TimeTech SATRE 1 channel modem
- Up and Down converter : Cross Tech
- TimeTech SATSIM
- Transportable H-Maser clock Kvarz CH1-76A



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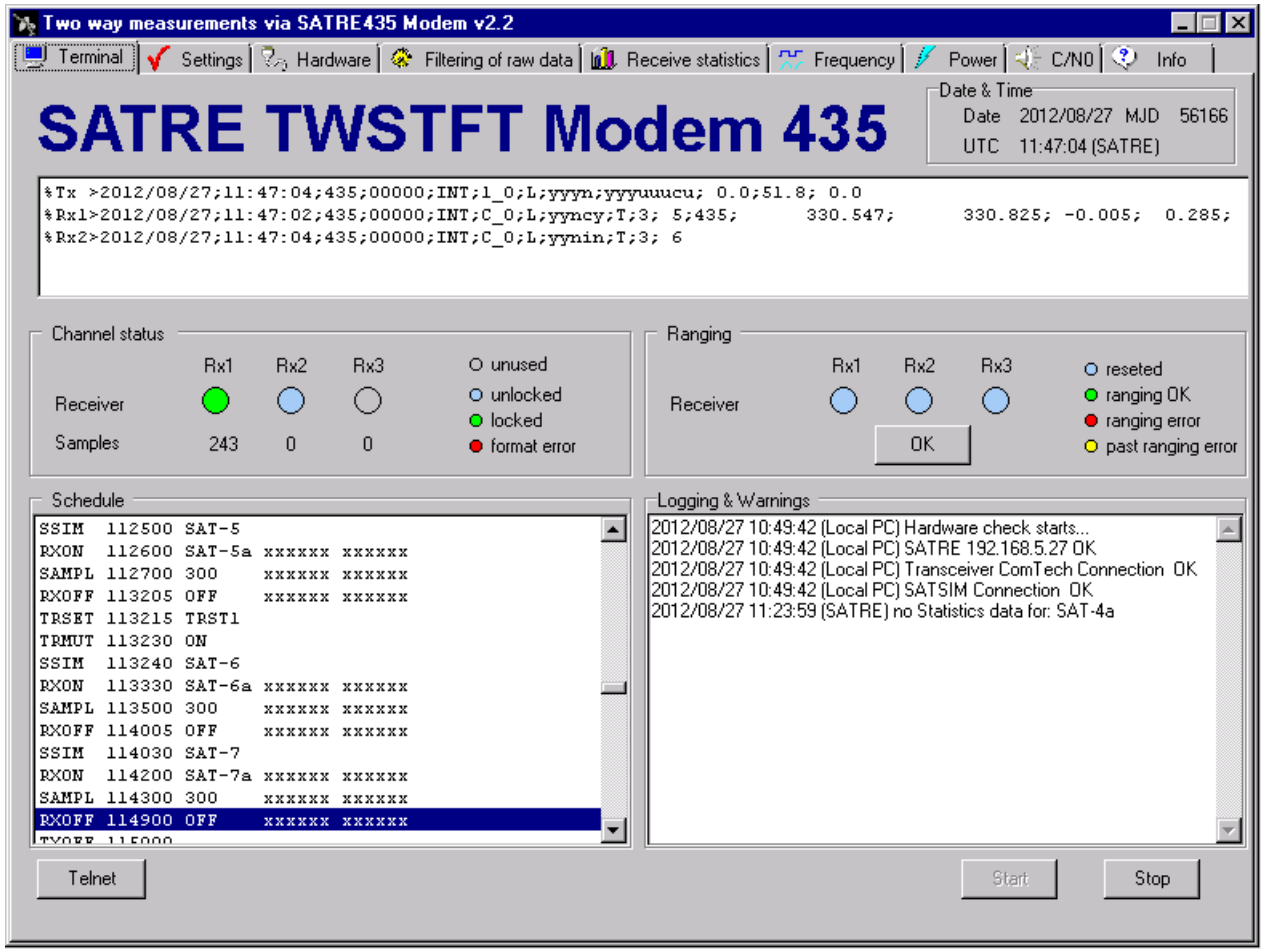
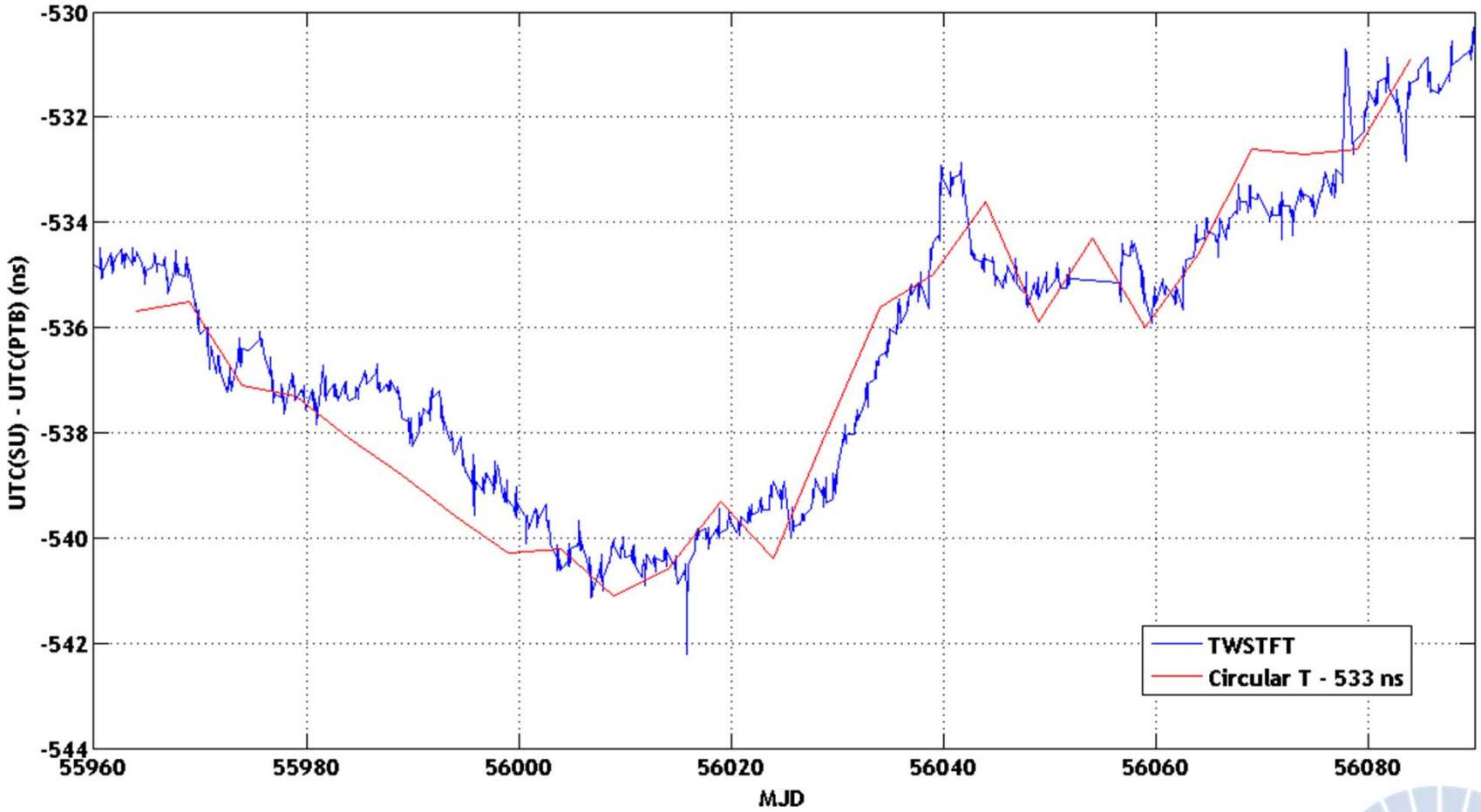
Software to control SATRE modem and producing ITU files:

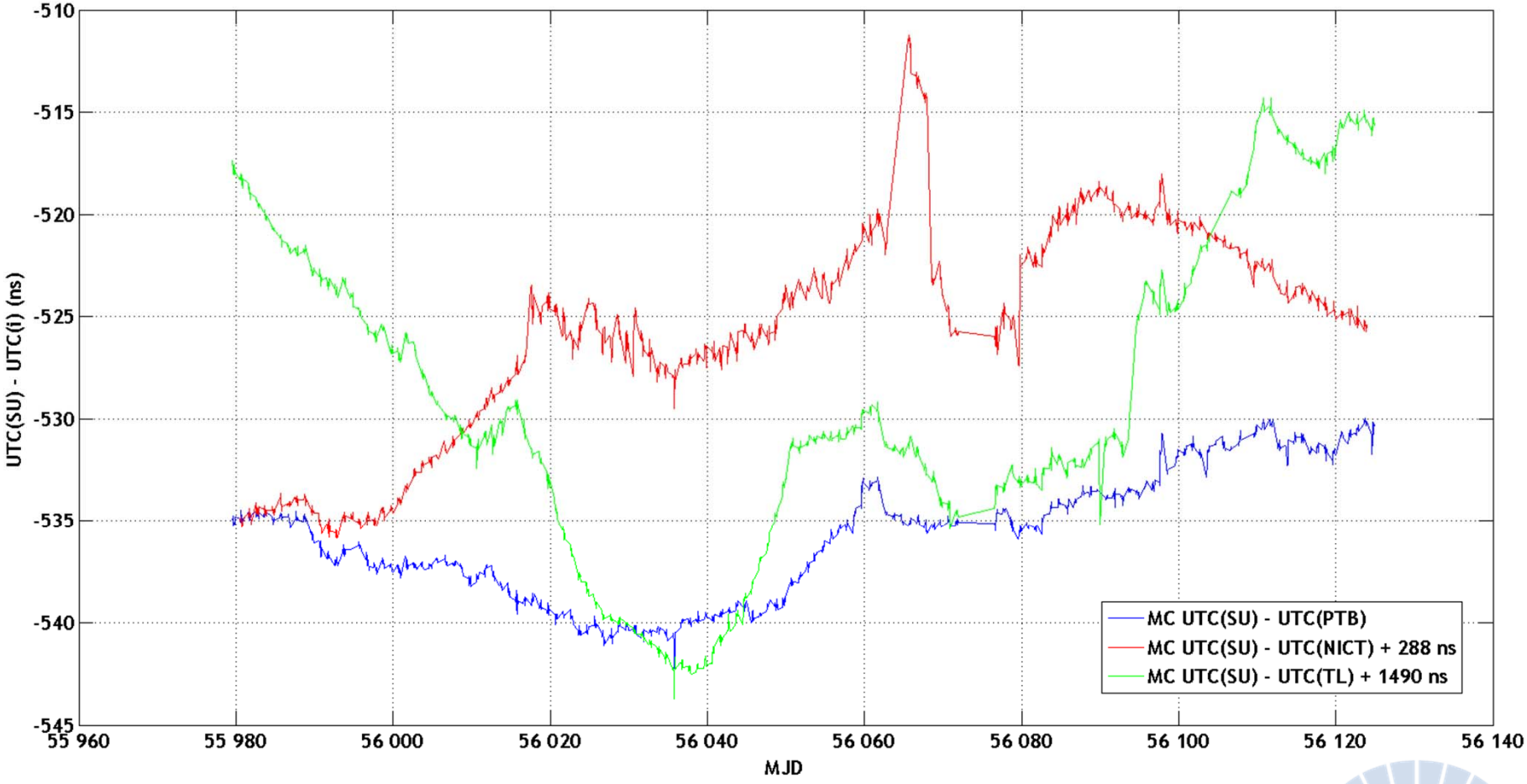
- TimeTech TWSI;



MC UTC(SU) – UTC(PTB)



VNIIFTRI with PTB, TL and NICT



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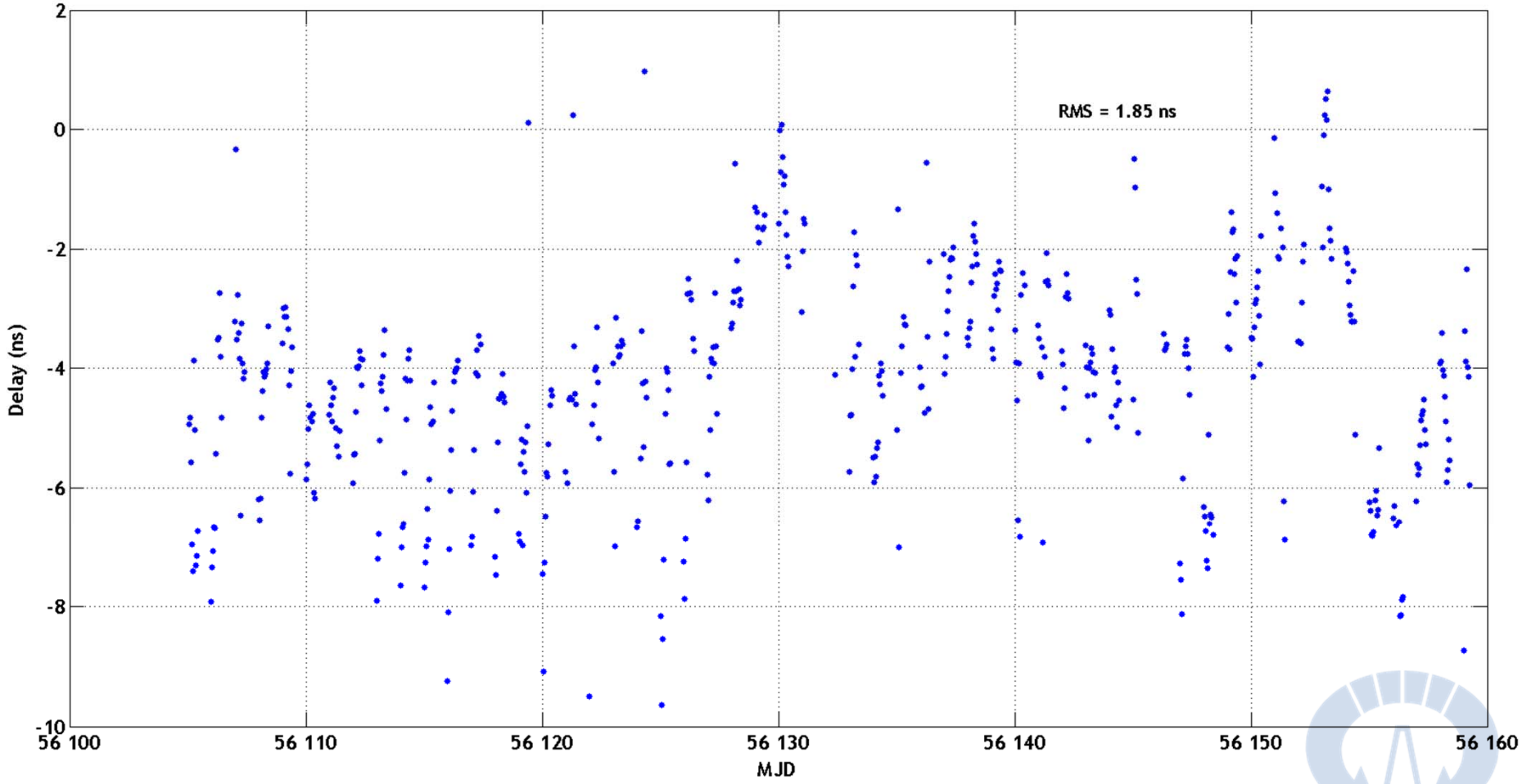
SATSIM on SU01 Station Loop Results

- one point per hour (6 SATSIM loops) from 00:00 to 11:00 UTC every day



SU02 Transportable TWSTFT Station Experiments

- Short base line SU01 – SU02, in VNIIFTRI;

- RIRT, Saint Petersburg - Local Time and Frequency standard (end of July this year). Results were confirmed with Transportable H maser clock.

Schedule of SU02

- 8 sessions of 5 minutes per hour with SU01 RX2

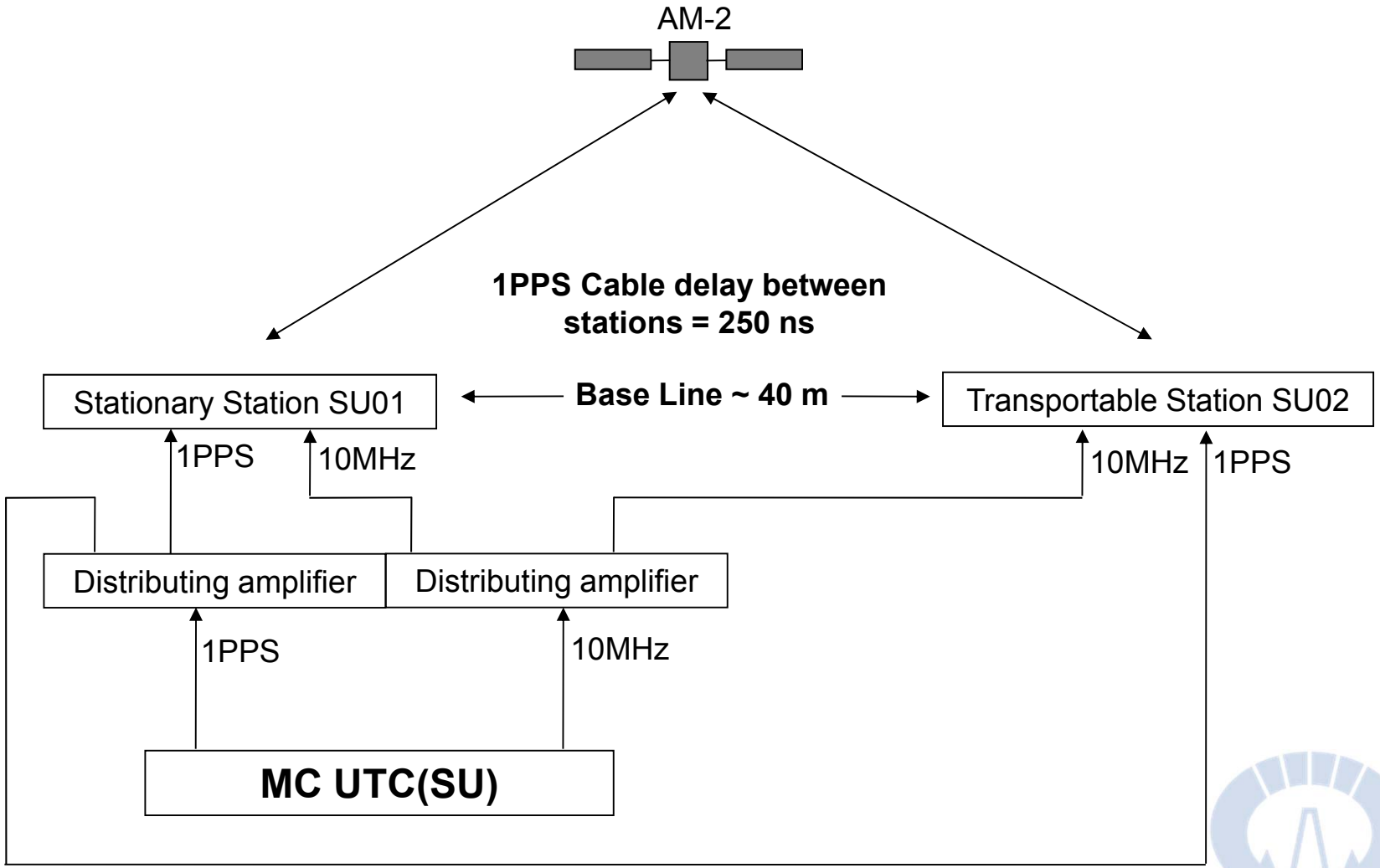
  and

- 1 session of 5 minutes per hour with SU01 RX1

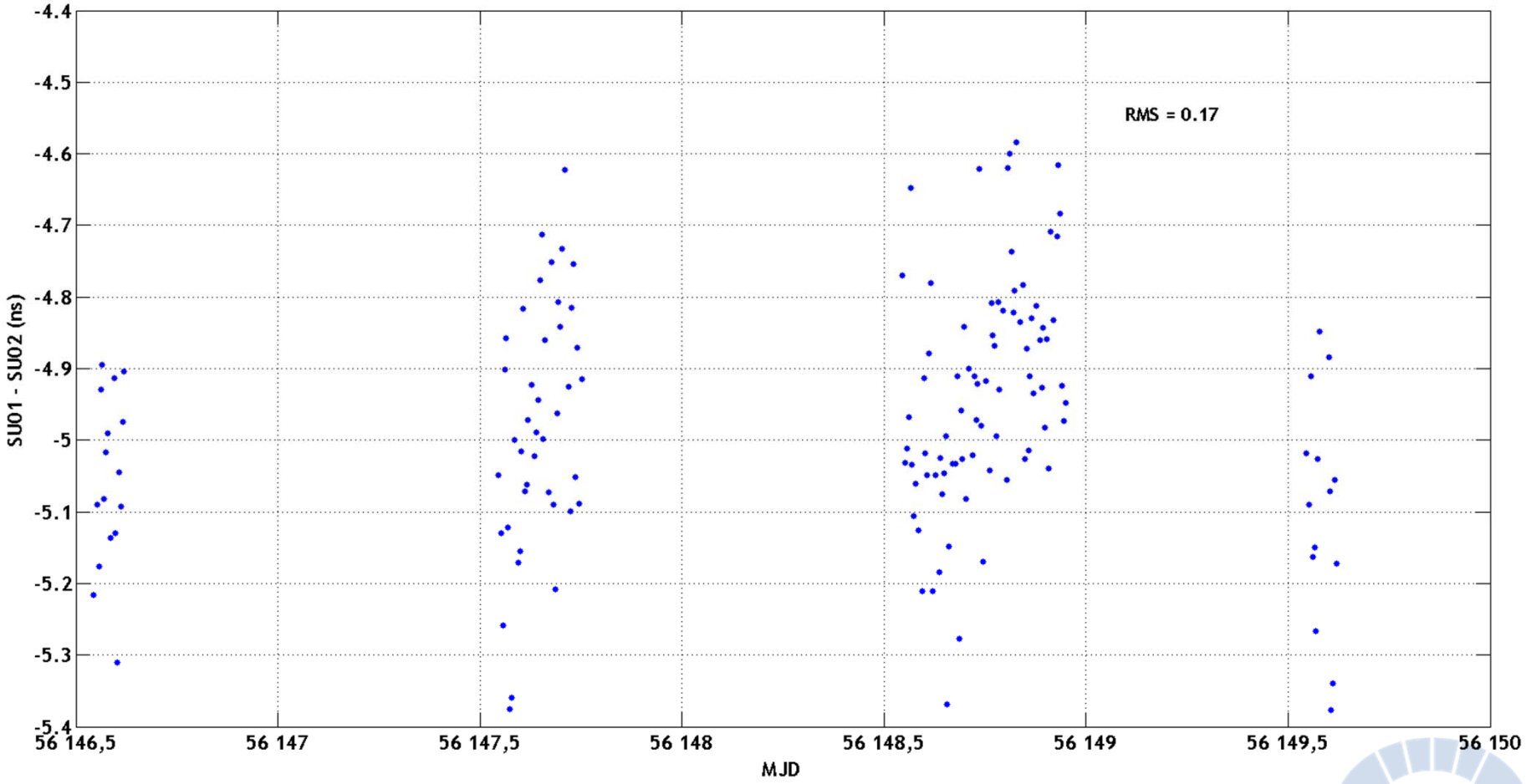
Working time of SU02

- 2-3 hours in one working cycle

VNIIFTRI SU01 – SU02 short base line connection schematic



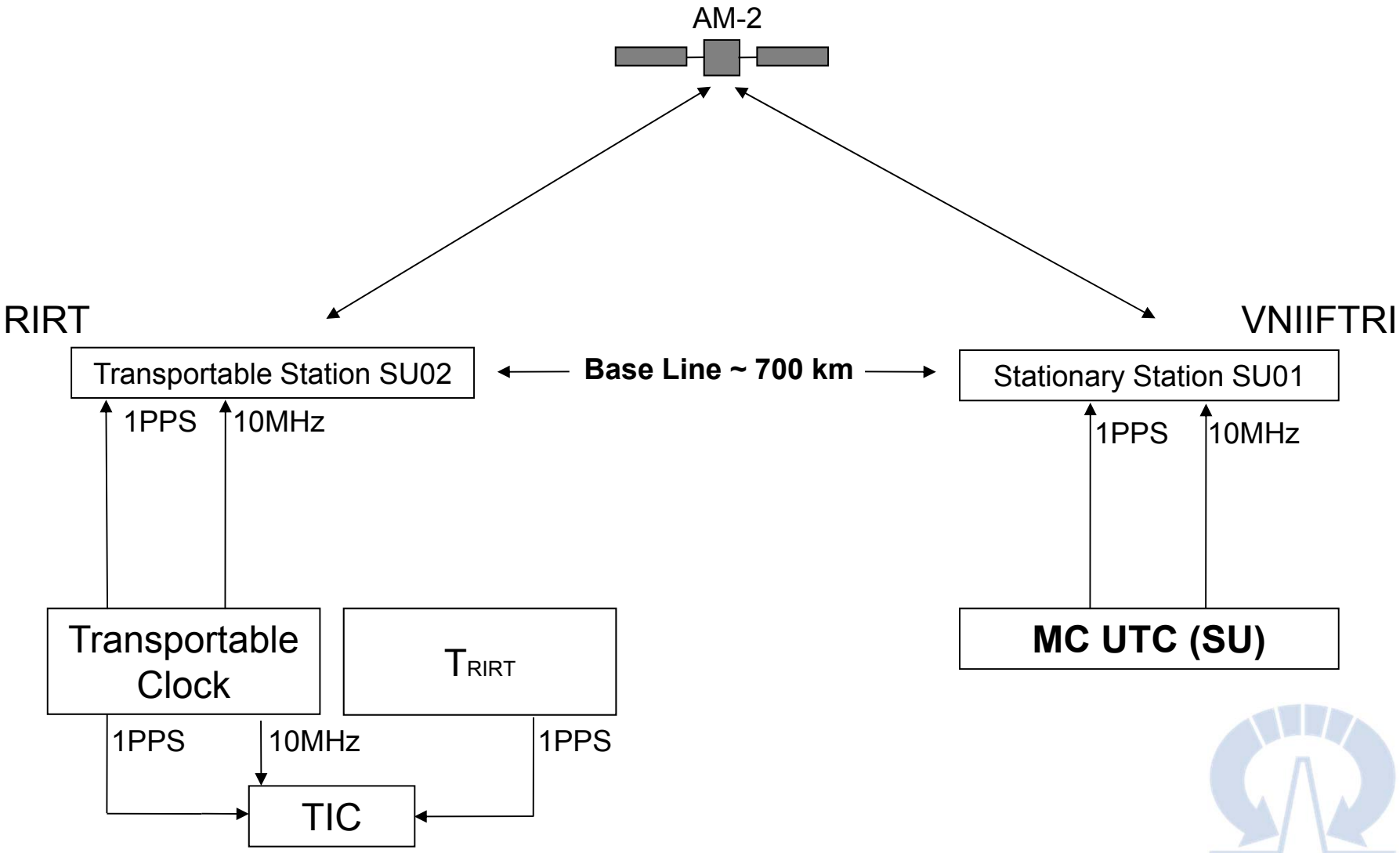
VNIIFTRI SU01 – SU02 Short base line experiment data



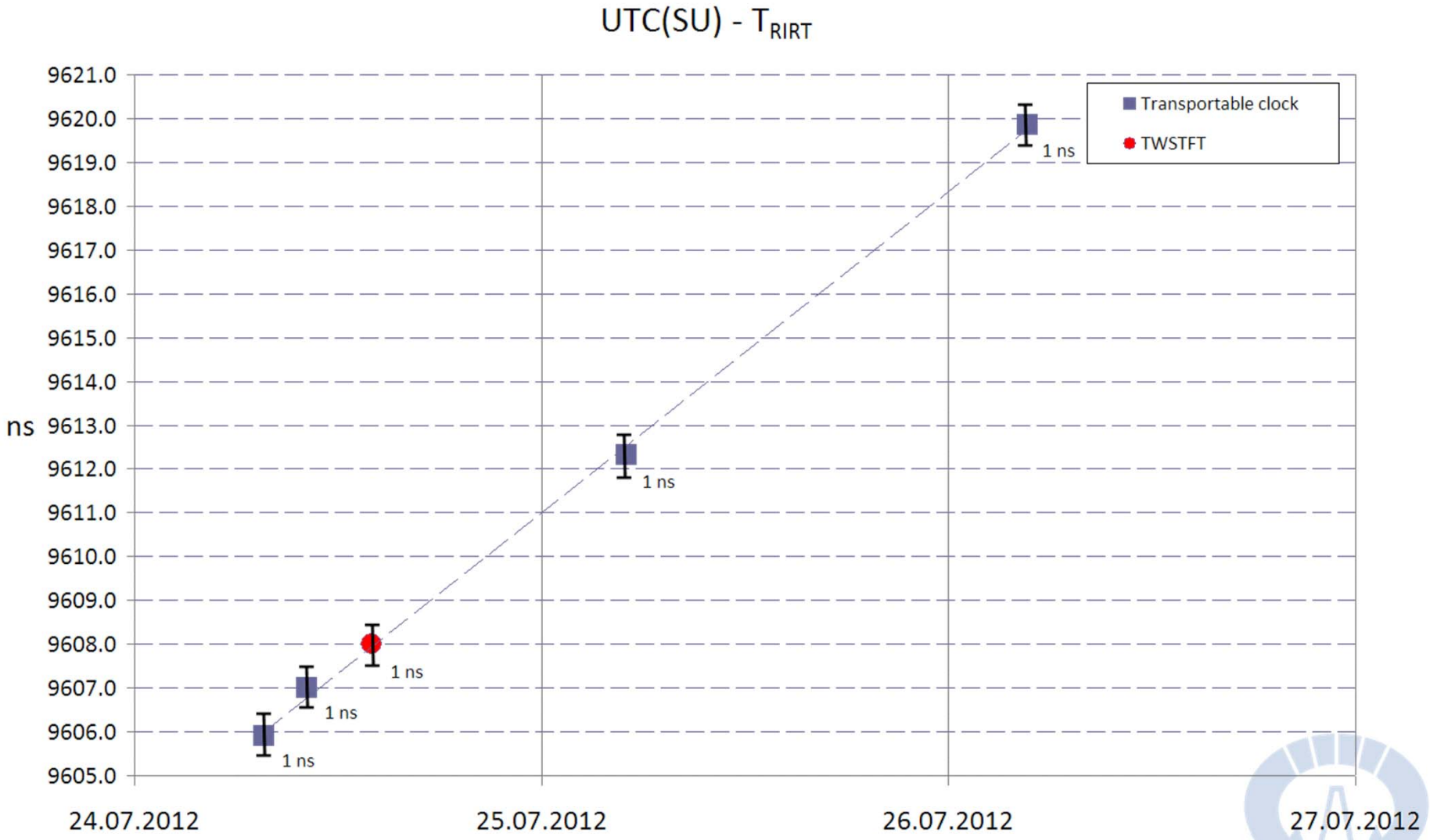
Trip Details to RIRT, St. Petersburg

In VNIIFTRI	
Event	Result
source;	
standard;	

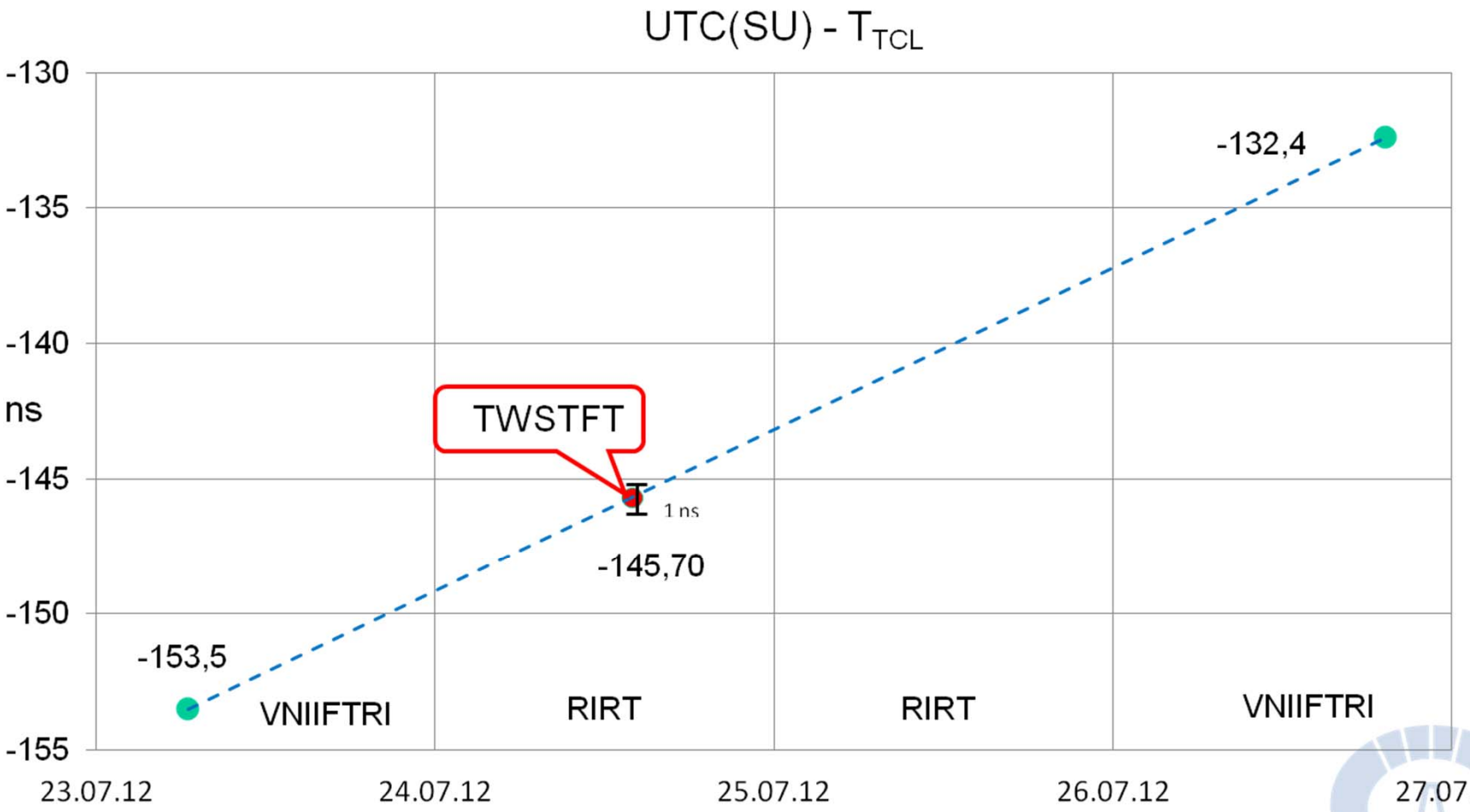
RIRT - SU02 experiment



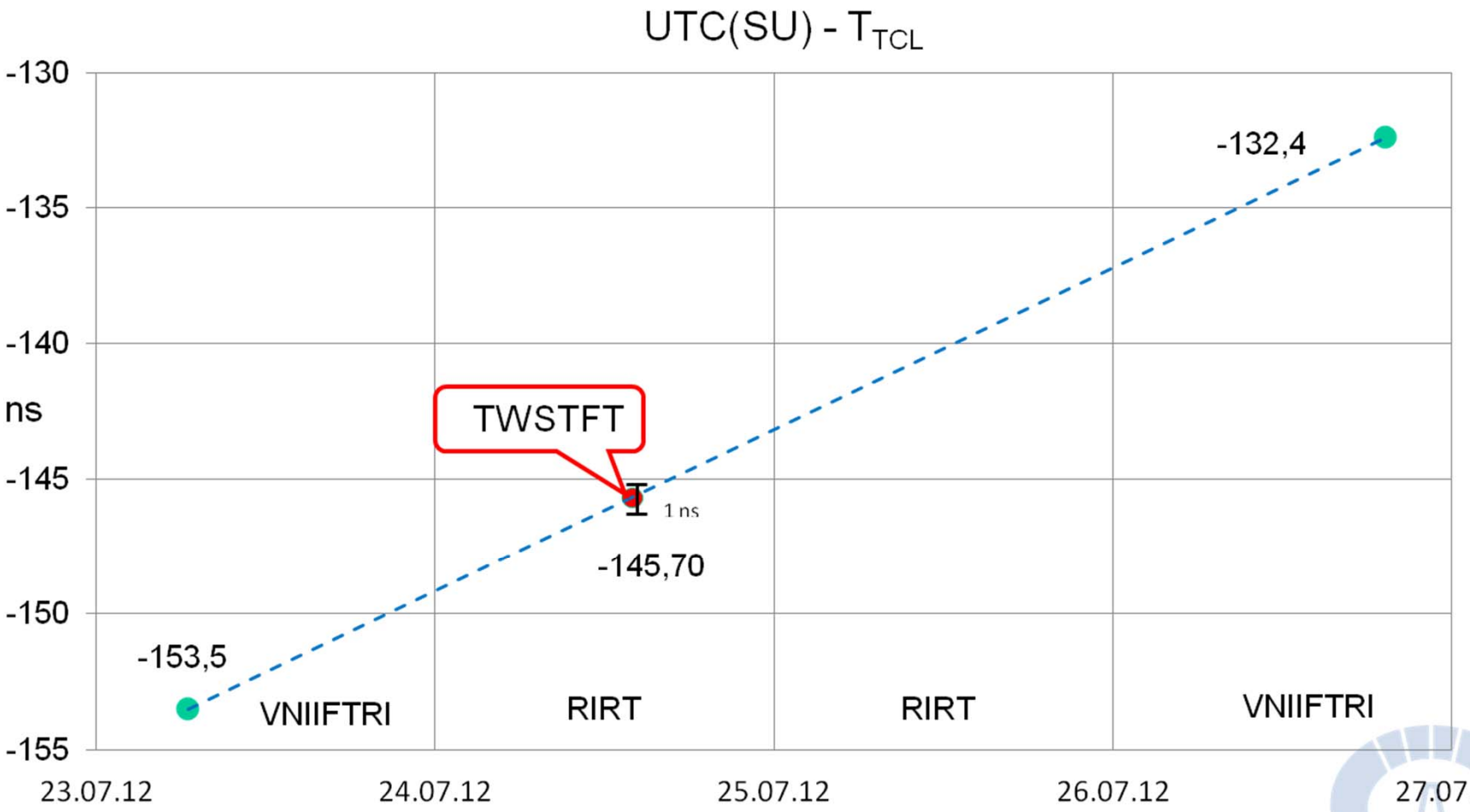
RIRT – VNIIFTRI experiment data



RIRT – VNIIFTRI experiment data



RIRT – VNIIFTRI experiment data



Thank you for attention