

**Presentation of the receiver  
PolaRx2 from Septentrio, a good  
candidate for the participation  
to the project TAIP3**

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6th meeting of representatives of laboratories contributing to TAI  
BIPM – MARCH 31 – 2004

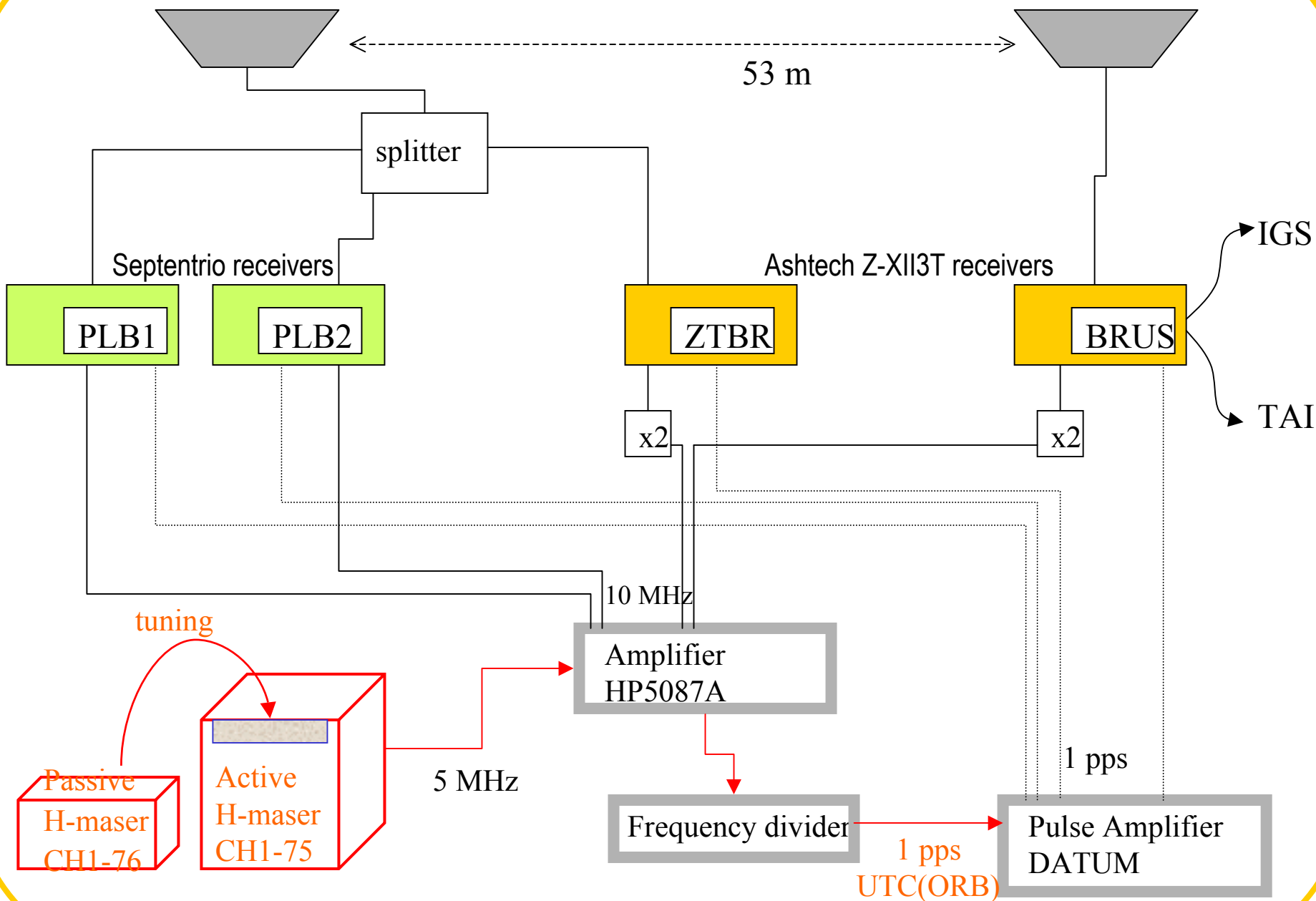


## PolaRx2 receiver (Septentrio)

[www.septentrio.com](http://www.septentrio.com)

- ◆ dual-frequency tracking of the GPS signal;
- ◆ simultaneous tracking of up to 6 SBAS satellites;
- ◆ accepts a 10 MHz external frequency and an associated 1 pps input;
- ◆ synchronization of the internal clock on the 1 pps input;
- ◆ 1 pps output synchronized on the internal clock
  - allows differential calibration

# setup



Code noise level

Zero-baseline tests

*2 Septentrio receivers*

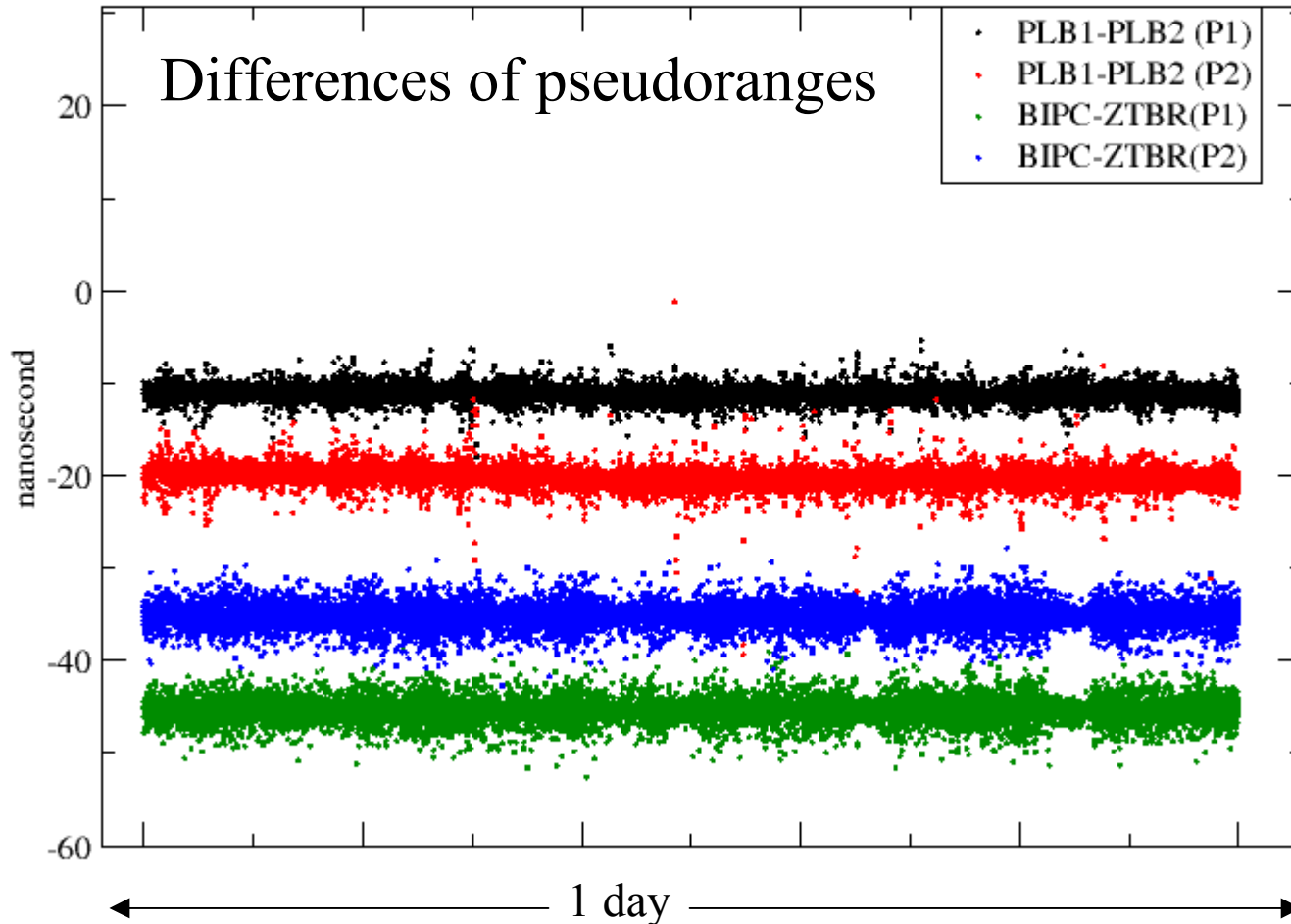
*2 Ashtech receivers*

Rms : PLB1-PLB2 P1: 0.6 ns

Rms : BIPC-ZTBR P1: 1.1 ns

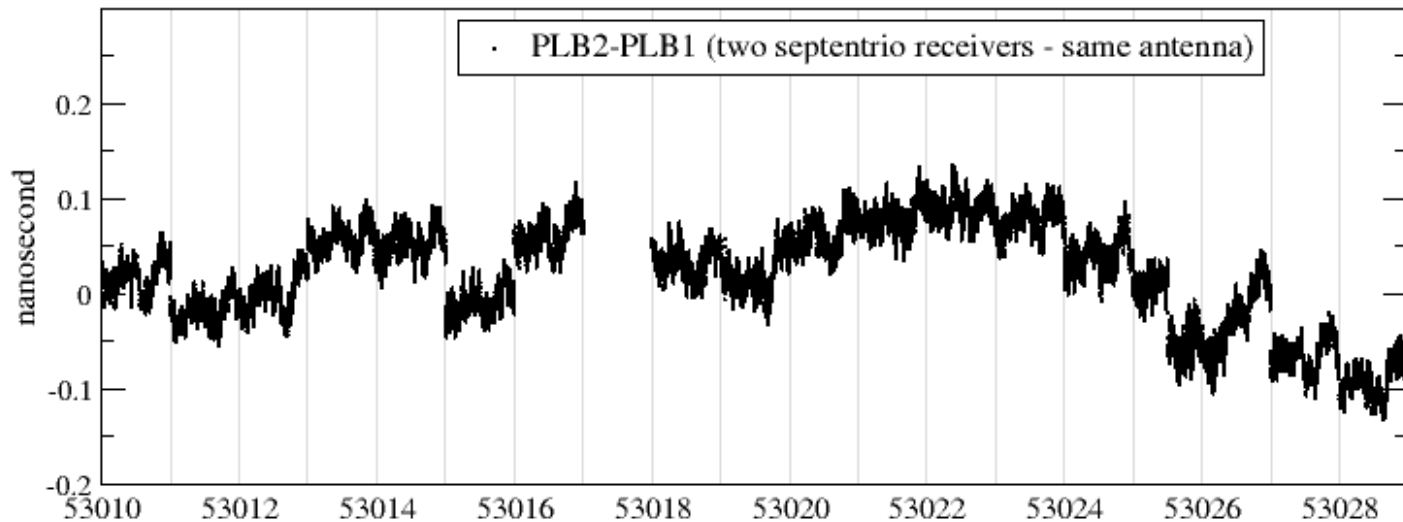
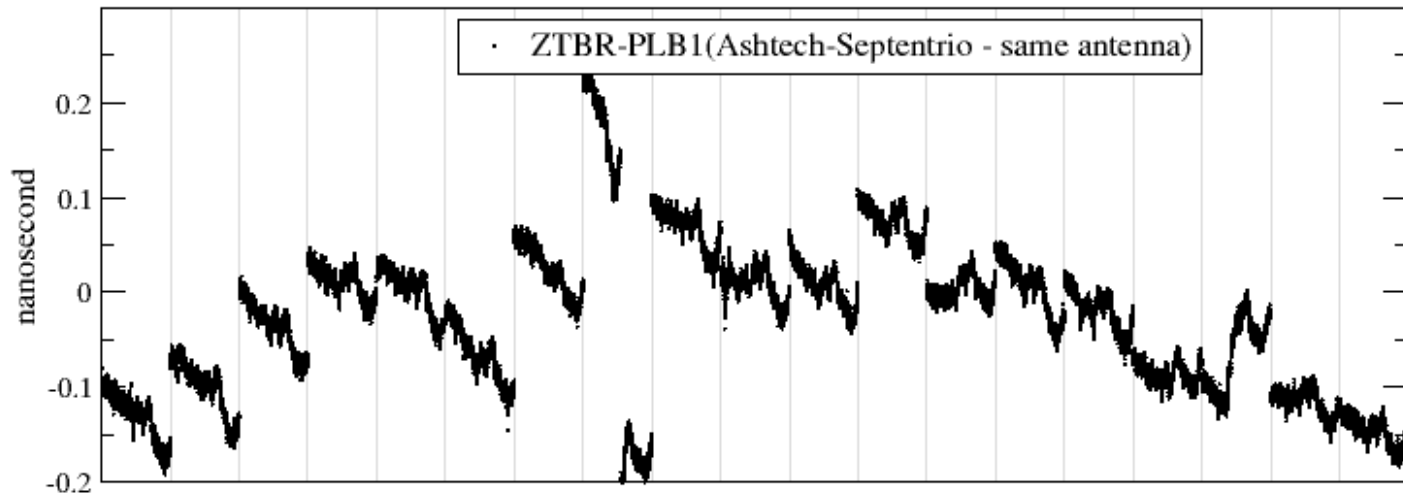
P2: 0.9 ns

P2: 1.1 ns



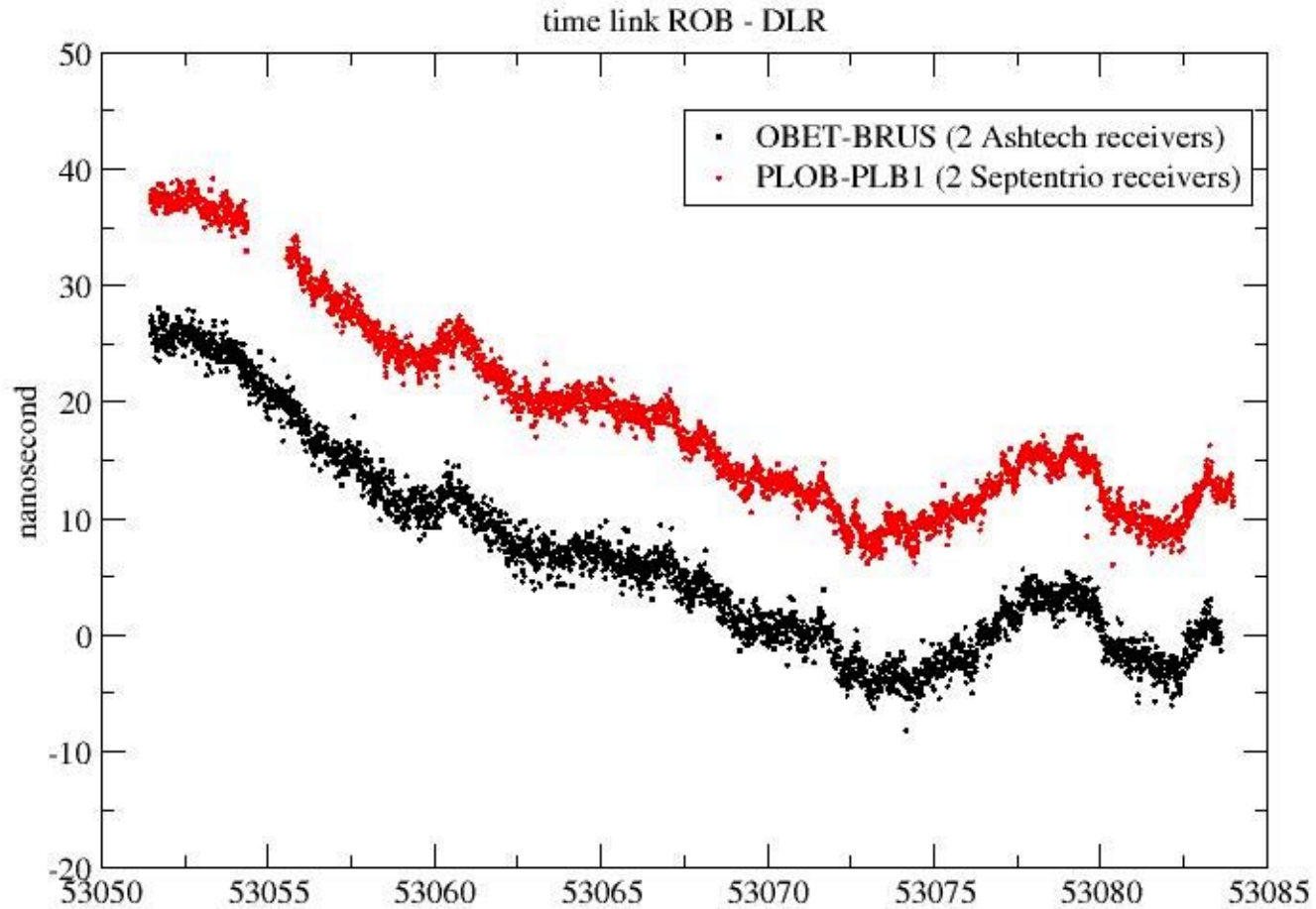
# Septentrio :

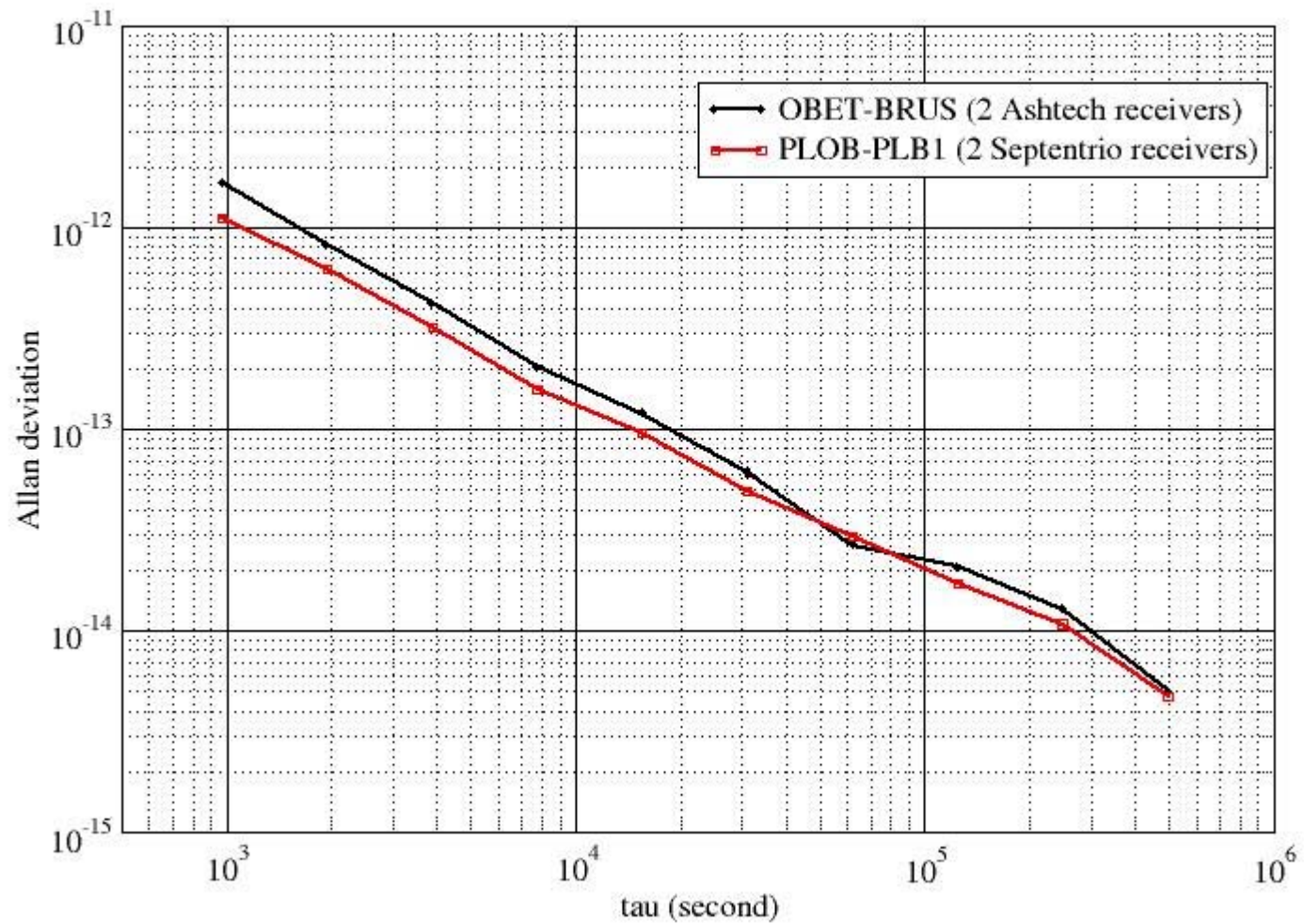
## Reduced jumps at the day boundaries



# Time transfer for TAI :

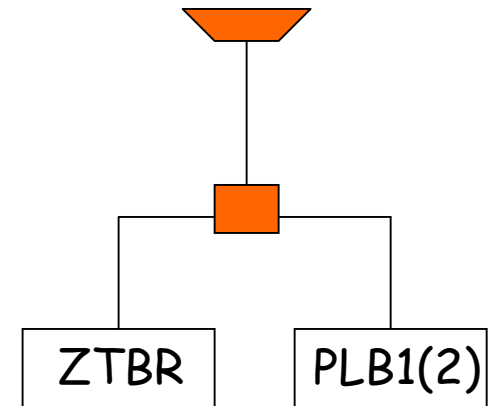
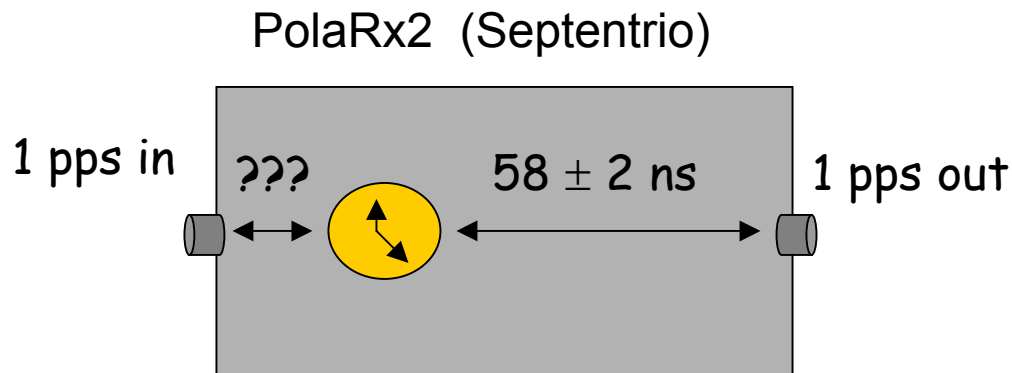
RINEX-CGGTTS using P3 and IGS orbits





# Differential calibration

Using the Ashtech receiver ZTBR calibrated with respect the BIPM  
Ashtech receiver (BIPC)



Hardware delays so-determined:

**PLB1** : 204.8 ns (P1) and 223.7 ns (P2)

**PLB2** : 203.8 ns (P1) and 221.8 ns (P2)

# Conclusions

Septentrio receiver PolaRx2

- ✓ suitable for time and frequency transfer
- ✓ Suitable for the project TAIP3
- ✓ Very small pseudorange (and carrier-phase) noise level