

# DORIS / Jason-2 : better than 5 cm real-time orbits are available for Near Real-Time Altimetry

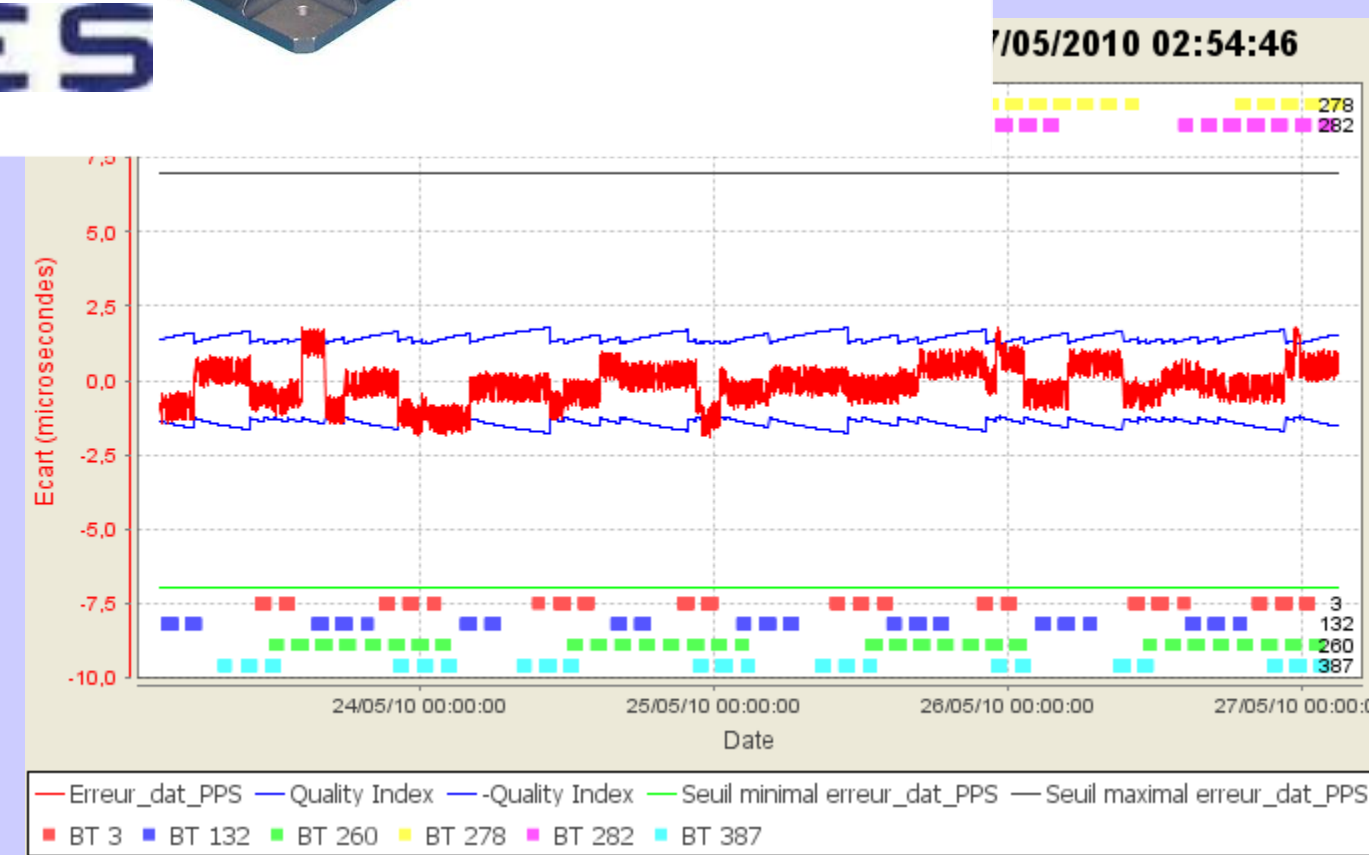


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## An improved DORIS receiver ...

- DORIS DGXX receivers
  - Already in flight on-board Jason-2 and CryoSat-2 , future flights : Pléiades, Saral/Altika and HY-2
  - Number of channels increased from 2 to 7
  - New spectral analysis mode (improving cold start)
- A LOT OF SYSTEM IMPROVEMENTS, including :
  - DORIS is able to program the altimeter by delivering the expected height of the sea surface in real-time, allowing reduction of tracking loops .
  - DORIS measurements available under a clear RINEX format
  - EGSE now allow ground-demonstration of the DORIS receiver centimeter capability before the launch.
  - ...
- Jason-2 Precise Orbit Ephemeris show a less-than-one-centimeter accuracy.

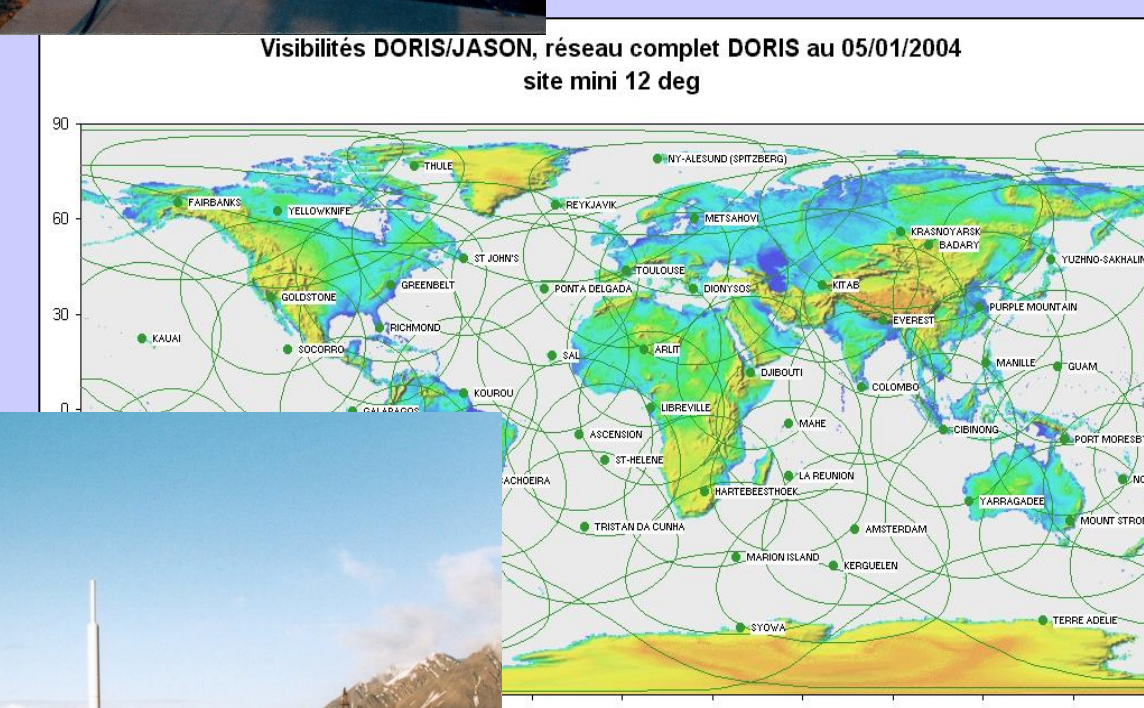
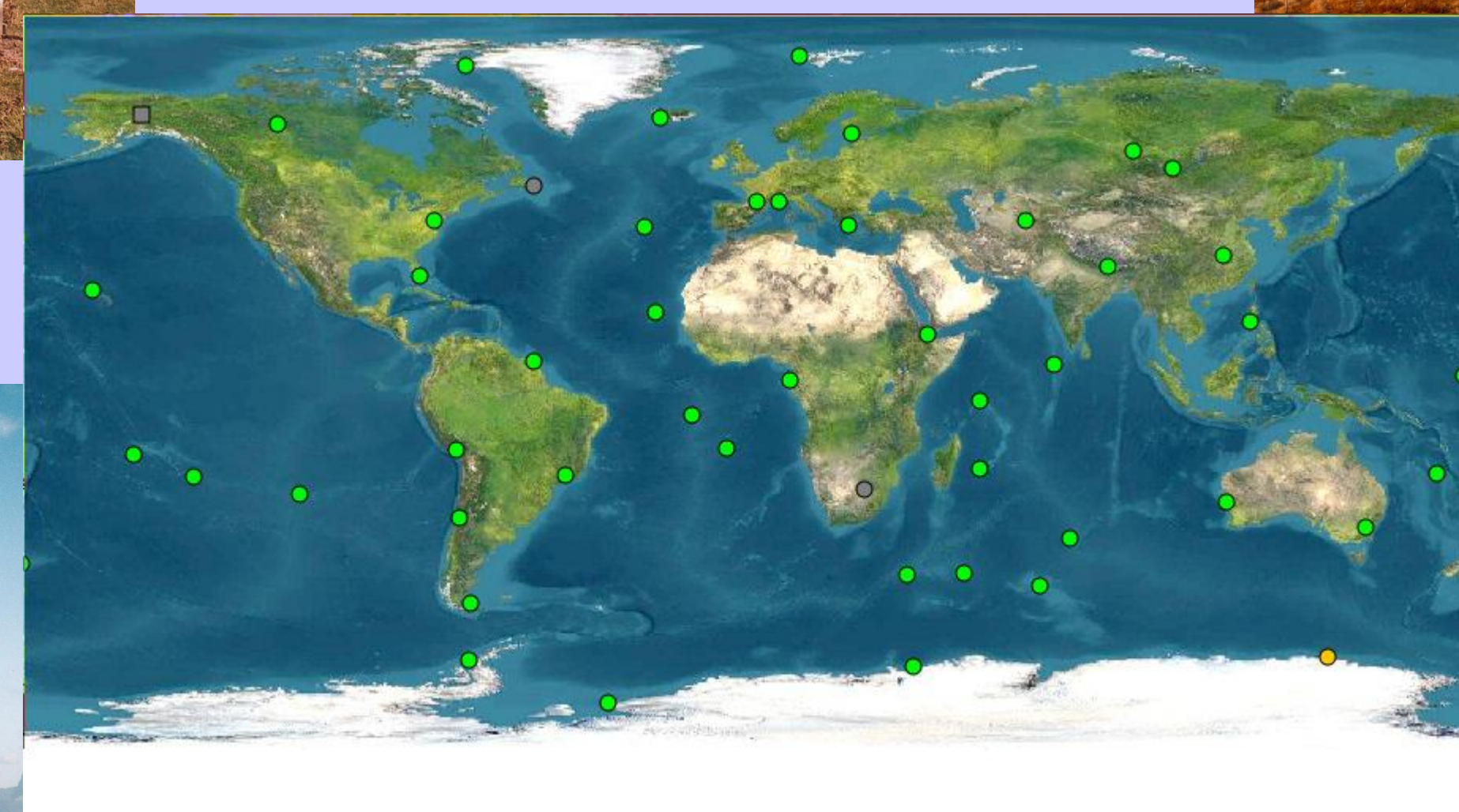
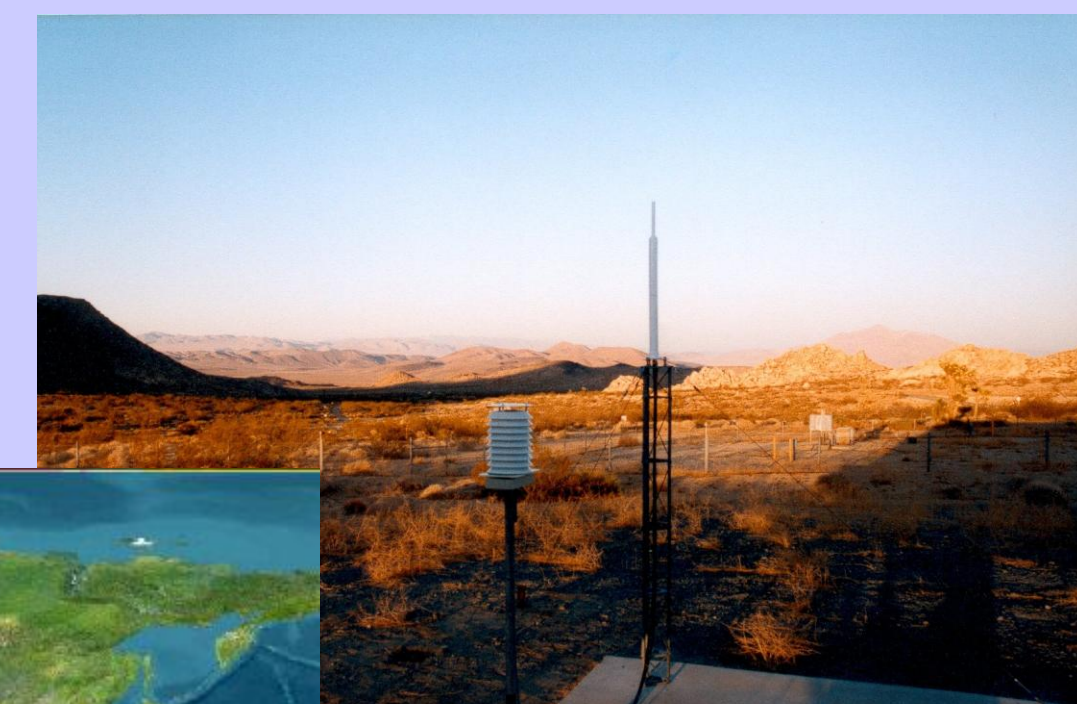
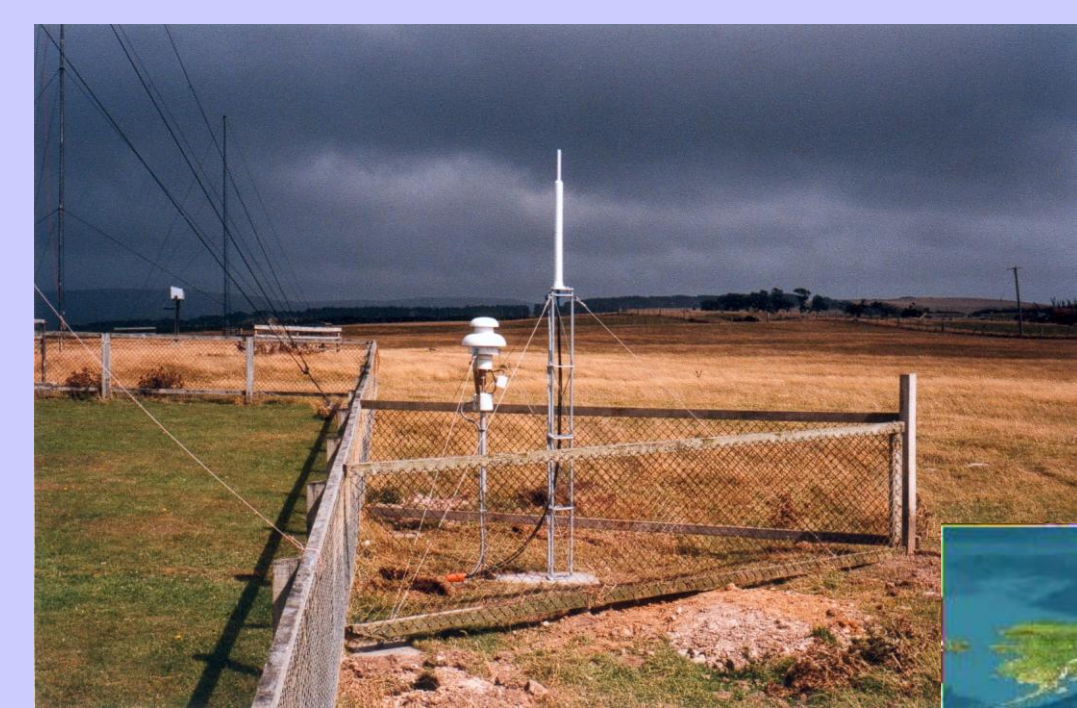


Datation capability is used by CryoSat AOCS



CHELTON Antennas

## ... flying over a dense and active DORIS beacon network ...



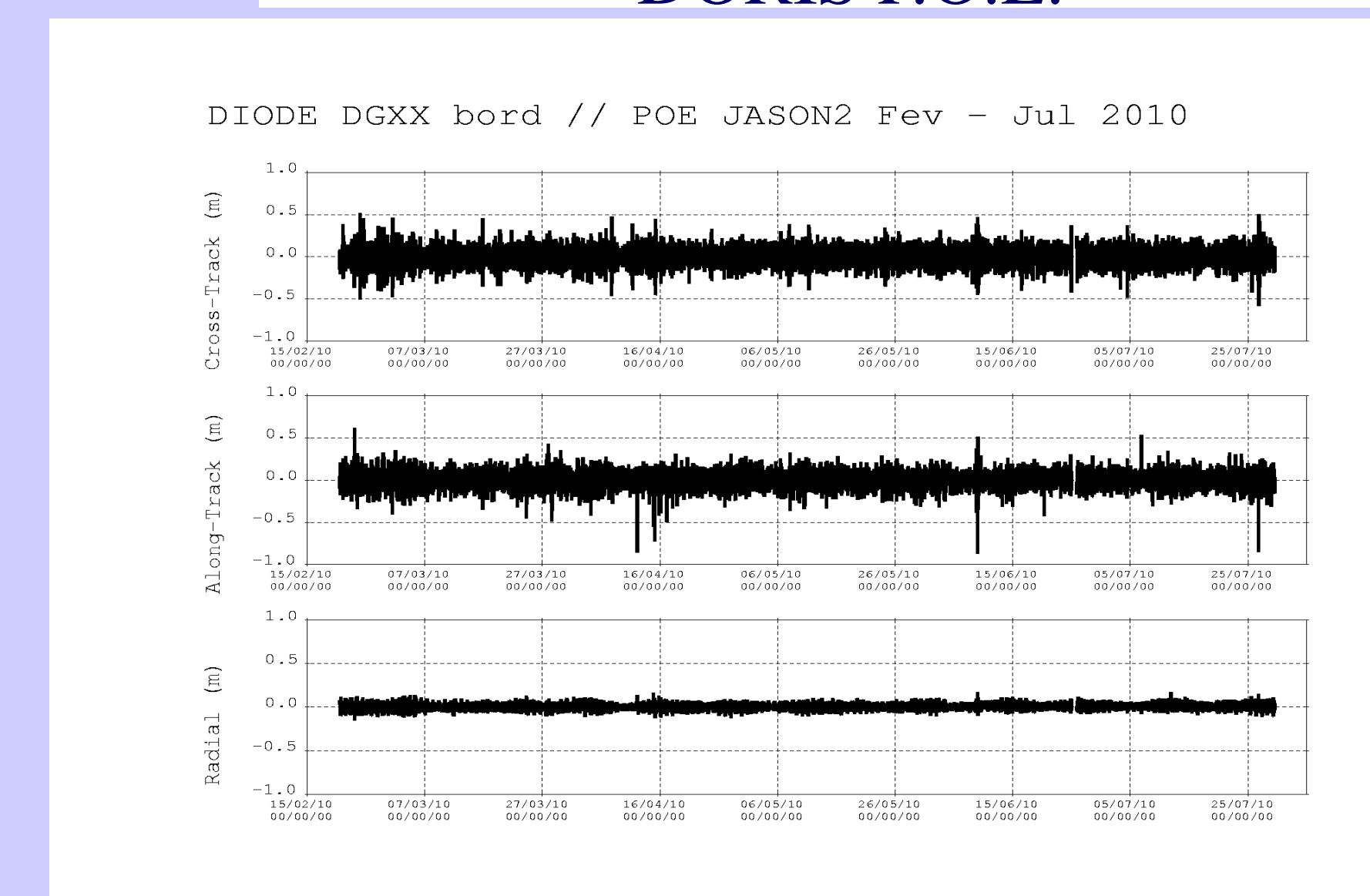
Daily check by the DORIS INTEGRITY TEAM



## ... allow an accurate DIODE Navigation Tool

- On ground before the flight, it was shown that the navigation tool was compliant with 1 cm instrumental errors (of course 1 cm was not expected in-flight).
- On Jason-2, the specifications were “below 10 cm RMS on the Radial component “ when compared to the the Precise Orbit Ephemeris (POE).
- The real-time DIODE orbits are delivered in the OGDR products and their accuracy has been improved with a new version of the on-board software
- 100% availability, even during large manoeuvres = a very robust function

ITRF positions compared with DORIS P.O.E.



STATISTICS

RMS = 0.091 m
MAX = 0.583 m
RMS = 0.078 m
MAX = 0.868 m
RMS = 0.033 m
MAX = 0.171 m

•OGDR ALTITUDE IS WELL WITHIN ITS SPECIFICATIONS NOW : accuracy between 2 and 4 cms RAD. RMS today

•DORIS participation to precise Near Real-Time Altimetry.

