DORIS / Jason-2: less than 10 cm orbits (soon) available for Near Real-Time Altimetry

An improved DORIS receiver ...

- New DORIS DGXX receivers
  - First flight on-board Jason-2, future flights: CryoSat-2, 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 now able to program the altimeter by delivering the expected height of the sea surface in real-time, allowing reduction of tracking loops.
  - DORIS measurements now available under a clear RINEX format
  - New EGSE now allow ground-demonstration of the DORIS receiver centimeter capability before the launch.

- First results: the very first Jason-2 Precise Orbit Ephemeris already show a near-one-centimeter accuracy.

A dense and active DORIS beacon network ...

An accurate DIODE Navigation Tool

- 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 is being improved as tunings of the on-board software progress

- 100% availability, even during large manoeuvres – a very robust function

- OGDR ALTITUDE IS WITHIN SPECIFICATIONS NOW: accuracy < 10 cm RMS, rather 5 or 6 cms today

- This will hopefully open the door to a fairly precise Near Real-Time Altimetry.