DORIS Perspectives

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ABSTRACT

DORIS system has celebrated this year its 10th anniversary this year. Its success is threefold technical, operational and scientific.
At the time DORIS was decided some key technology such as ultra stable oscillators were not available. The operational performances of such a system based on a worldwide network were not obvious. Technical and operational performance of the DORIS system has played a key role in the scientific success of TOPEX/POSEIDON.

Continuous improvements are necessary to support science progress.
In the near future technical progress will be possible thanks to several improvements such as:

- New instruments will fly on-board ENVISAT, Jason-1 and SPOT5. Those receivers will benefit from a precise phase measurement and a smaller measurement noise.

- The new beacons, which are under development, will have a frequency tuning functionality. This will allow to have a denser network by avoiding jamming between beacons.

- The gravity field missions (CHAMP, GRACE, GOCE) will allow to improve orbit modelling and then precise orbit determination.

In addition to that, further progress will be made to decrease, size, mass and cost of on board instruments. This is a key factor to increase the number of instrument simultaneously in flight which directly drives the accuracy of precise positioning.

The major perspective of the next years is the set-up of the International DORIS system. The main purposes of this initiative are to allow new partners to join the system and to strength the partnership between the various actors.