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To :

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Precise orbit determination is based on a network of some sixty stations that represent the heart of the DORIS system. The antenna reference point and the determination of its coordinates are crucial elements, especially for the most demanding scientific applications such as positioning.

Currently, all stations are equipped with the same antenna model: STAREC 52291-type (except Everest 52290-type), which were deployed beginning in 1999.

Topometrically, this antenna no longer meets the current needs; its configuration makes installation and precise local tie surveys (e.g. between successive DORIS antenna positions) difficult for a number of reasons:

- (1) the location of the reference point is inappropriate (difficult access for sighting...);
- (2) the marker of the reference point is approximate;
- (3) the electronic reference point (2GHz phase center) is not materialized;
- (4) there is no marker to orient the antenna.

In addition, the relative position of the electronic reference point (2GHz phase center) with respect to the conventional antenna reference point (center of the red ring) is poorly defined (within + or - 5mm according to the manufacturer).

In the context of the 4th generation beacon development, a working group, which included members of the IDS, collected feedback from key players in the network and identified some potential improvements in the antenna design.

IDS urges CNES to further investigate the development of a new antenna compliant with the future 4G beacon allowing it to better meet the current needs of precise positioning associated with GGOS. IDS is interested in participating in the definition of the specifications for this new antenna.

**Pascal Willis**  
Chair of International Doris Service Governing Board