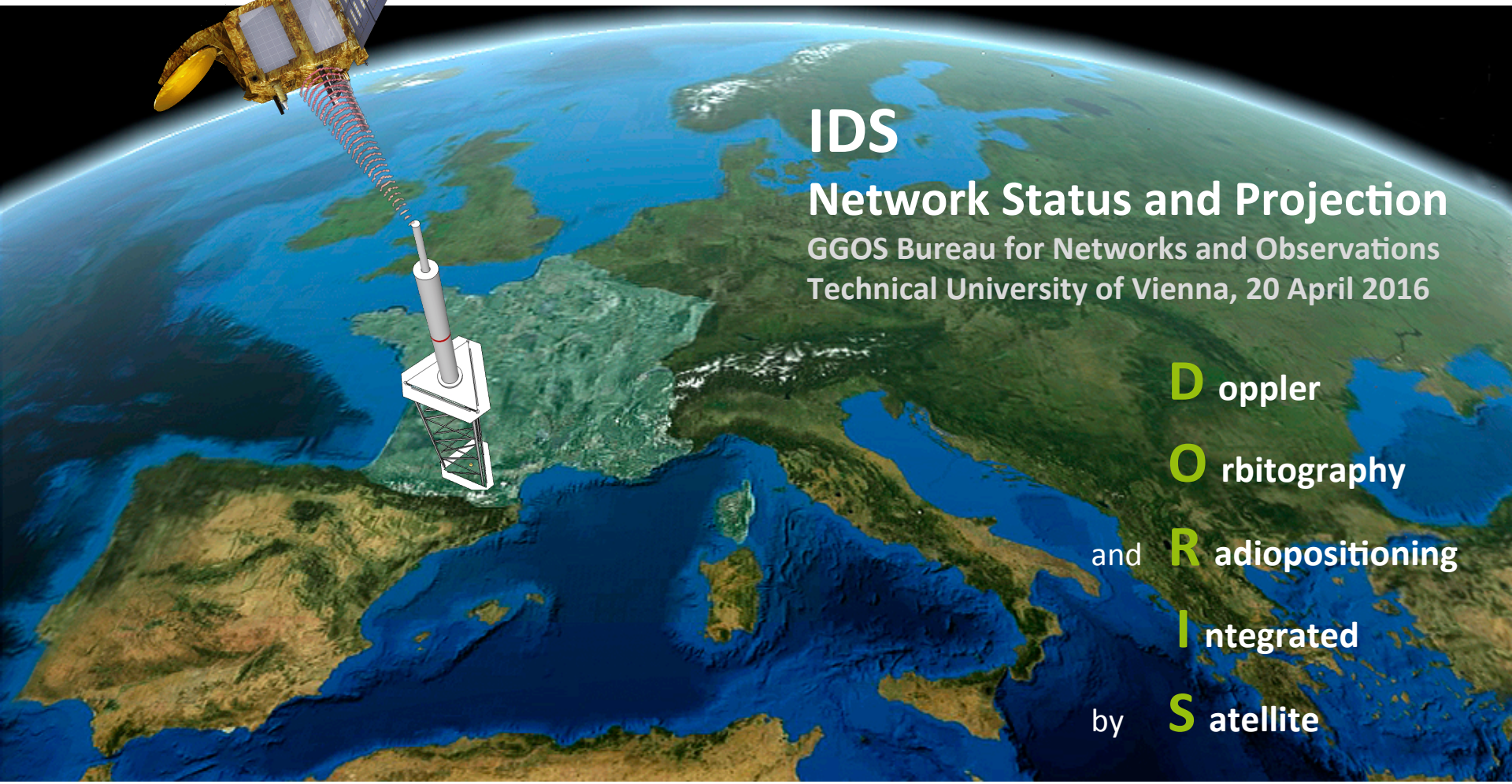


IDS

Network Status and Projection

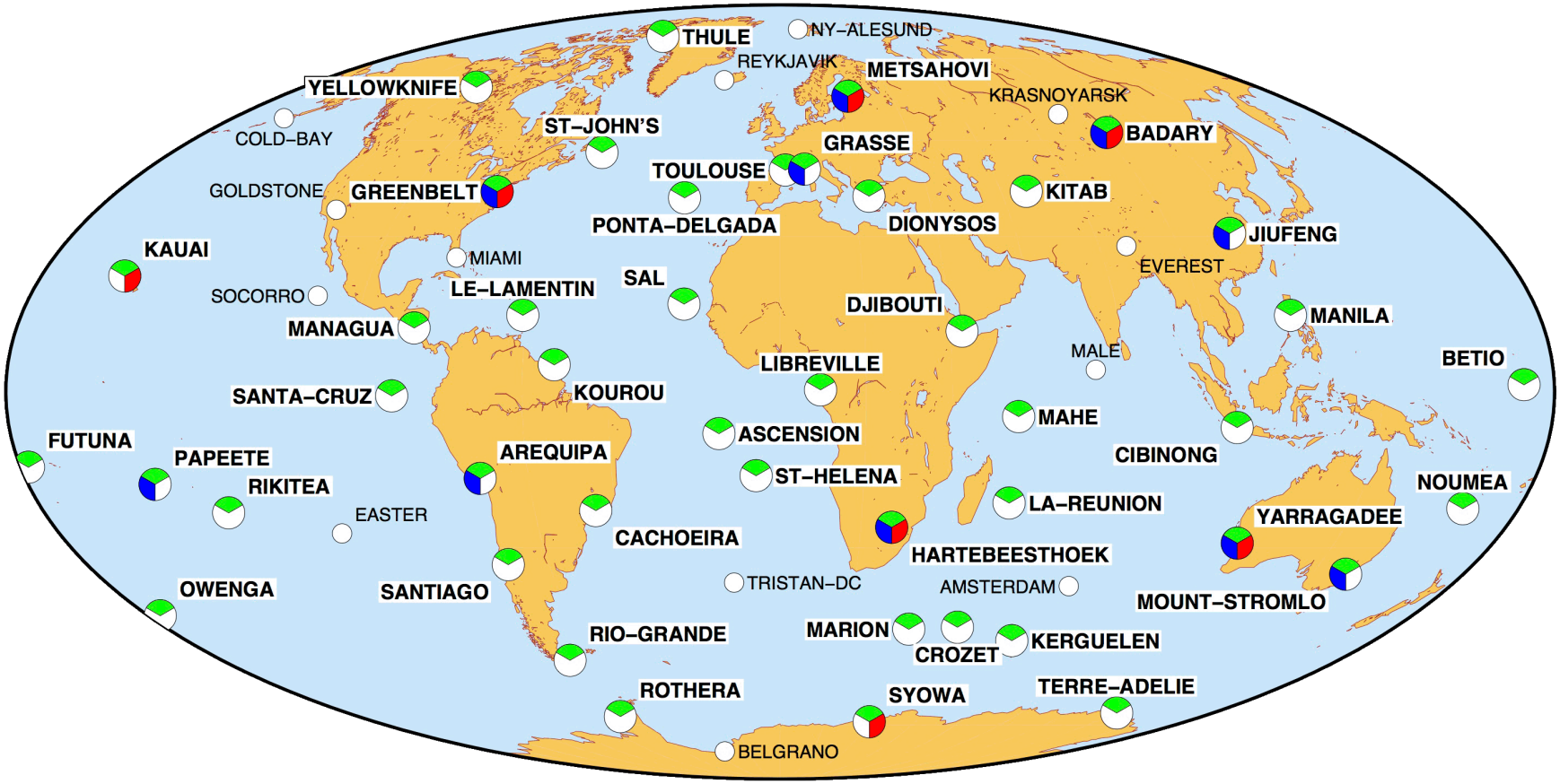
GGOS Bureau for Networks and Observations
Technical University of Vienna, 20 April 2016

D oppler
O rbitography
and **R** adiopositioning
I ntegrated
by **S** atellite

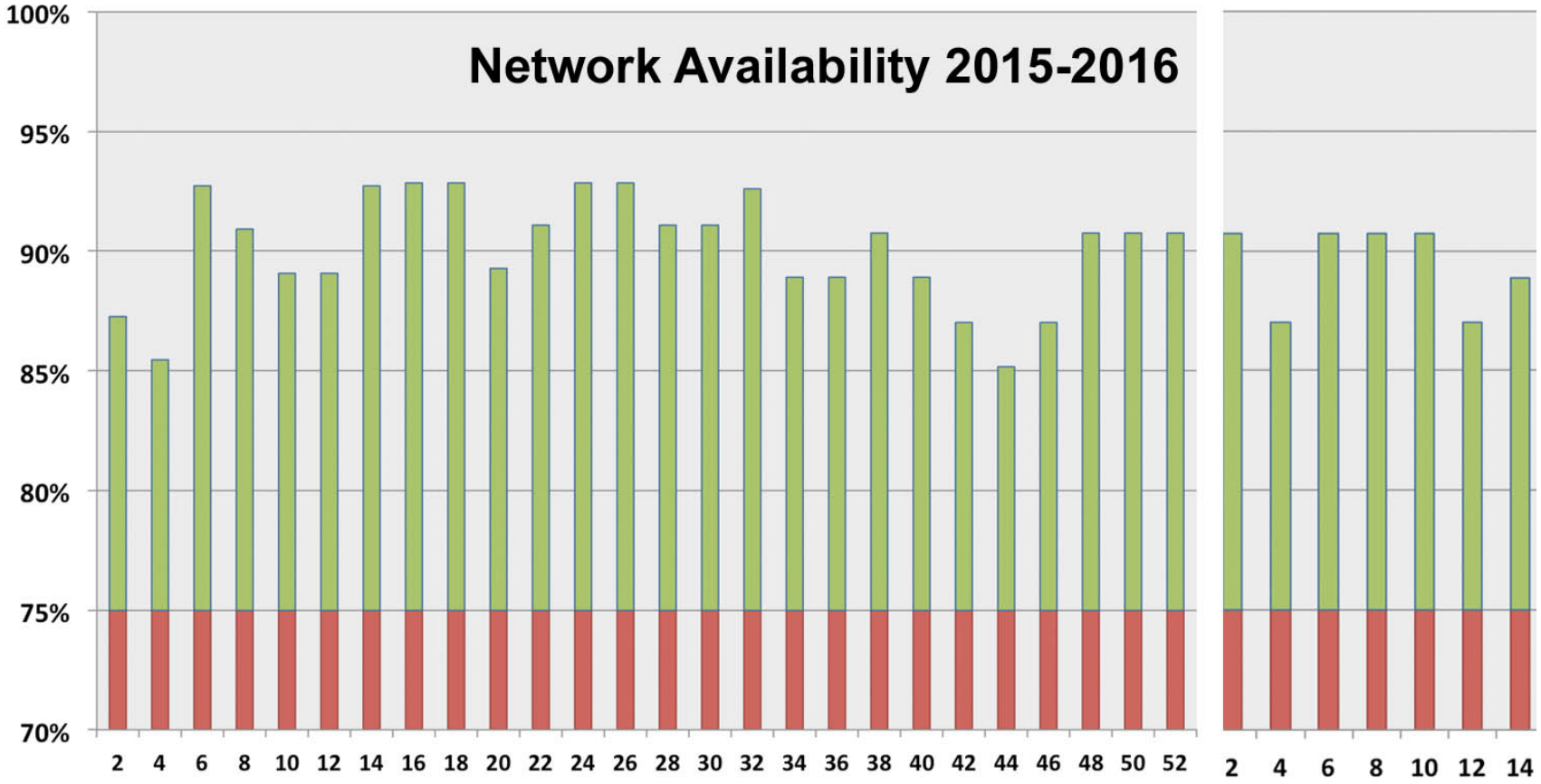
JEROME SAUNIER, IGN - FRANCE

NETWORK STATUS

- CURRENT DORIS NETWORK (APR.2016: 60 STATIONS)
- 44 CO-LOCATIONS WITH GNSS; 10 WITH SLR; 7 WITH VLBI



NETWORK STATUS



- OVER 85% OF OPERATING GROUND NETWORK STATIONS
- CONTINUOUS SERVICE REQUIRED FOR ALTIMETRY MISSIONS

NETWORK EVENTS

RECENT NETWORK EVENTS

- Jul. 2015: station decommissioning at Santiago, Chile (site refurbishment)
- Aug. 2015: station decommissioning at Easter Island, Chile (site closure)
- Mar. 2016: station re-location at Owenga, Chatham Island, New-Zealand (site refurbishment)
- Apr. 2016: **new station** installing to near IGS « MANA » at **Managua**, Nicaragua

Two new DORIS sites: Le-Lamentin (2013) and Managua (2016) in place of Miami (possible decommissioning due to interferences with mobile-TV relays)

Two stations located on the Caribbean Plate

NETWORK EVOLUTION

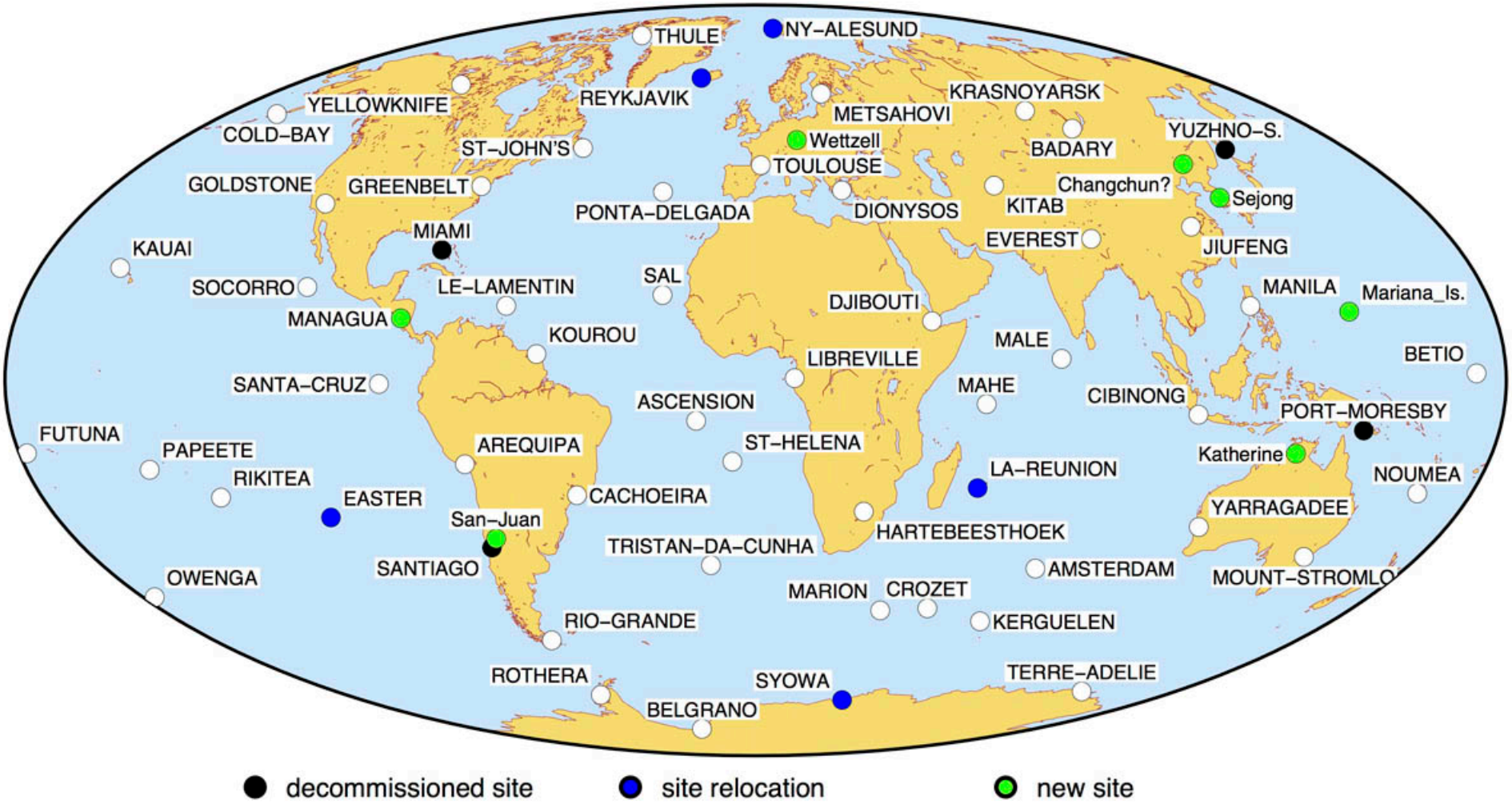
- **CONTINUOUS EFFORTS TO CO-LOCATE DORIS WITH OTHER TECHNIQUES**
  - In this aim, take advantage of any opportunity to move close other techniques

- **SHORT TERM (NEXT 6 MONTHS):**
  - Kitab, UZ: major renovation (station re-location to get better visibility)
  - Mariana Islands, US: reconnaissance with a view to installing new station
  - San Juan, AR: new station installing in place of Santiago (**3 techniques site**)
  - Wettzell, DE: new station installing (new **4 techniques site**)

- **LONGER TERM:**
  - Katherine, AS: new station installing in place of Port-Moresby (**3 techniques site**)
  - Easter Island, Chile: relocating to near IGS station, ISPA.
  - Ny-Ålesund, Spitzberg, Norway: relocating (new **4 techniques site**)
  - Under consideration: new station installing in Sejong, Korea and Changchun, China

NETWORK EVOLUTION

- PROJECTS 2016-2020 (PLANNED OR UNDER CONSIDERATION)



DORIS / VLBI COMPATIBILITY

- RFI IN THE S-BAND: DORIS EMITS A 2036MHZ FREQUENCY OF 40DBM
- VLBI SYSTEM RECEIVE WEAK SIGNALS OF THE ORDER OF -110DBM
- CRITICAL LEVEL OF THE POWER RECEIVED AT THE INPUT OF LNA

- GREENBELT = 1ST SITE WHERE RF INTERFERENCES HAVE BEEN MANAGED:
  - Favourable local topography: no inter-visibility between DORIS and VLBI
  - VLBI antenna is less sensible
- WETTZELL = NEXT OBJECTIVE; COMPATIBILITY UNDER EXAMINATION:
  - Many constraints: 3 VLBI antennae, small parcel of land
  - Many tests have been carried out since May 2015
- FIND THE COMPROMISE DISTANCE:
  - Enabling proper operation of the two instruments
  - Enabling the required degree of precision of tie vectors

- USE EXISTING SHIELDS OR RF BLOCKERS AND ABSORBERS TO MITIGATE RFI

DORIS / VLBI COMPATIBILITY

- **FIRST REPORTS AND RESULTS**
  - See EGU Session G2.2 Poster « Towards a four technique GGOS site: VLBI-DORIS compatibility tests at Wettzell » by T. Klügel et al.
- **BASIC PRINCIPLES FOR ANY SITE LAYOUT:**
  - No direct visibility between DORIS and any VLBI antenna (using local topography and RF blockers structures)
  - Maximum distance between DORIS and VLBI (ideally 300-400 m)
  - Difference in height between DORIS and VLBI: the radiated emission from DORIS is lower at low elevation
  - Ground installation of the DORIS antenna (better for shield erection and local ties)

NEXT IDS MEETINGS

IDS AWG (Analysis Working Group): May 26-27, TU Delft (Netherlands)

IDS Workshop: Oct. 31 and Nov. 1, La Rochelle (France), in conjunction with Ocean Surface Topography Science Team Meeting

For more information: see URL: http://ids-doris.org

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