DORIS NETWORK
STATUS REPORT

IDS Analysis Working Group Meeting
Paris, 30 September 2019

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THE CURRENT DORIS NETWORK

today: 47 co-locations out of 58 DORIS sites
PERMANENT NETWORK OPERATIONAL STATUS

- **Decommissioned (pending replacement)**
- **Out of Order for over a year**
- **Out of Order**

60 stations of which: 8 beacons are out of order and 3 decommissioned
At least 80% of the network stations have been operating since the beginning of 2019.

The 4th generation beacon deployment (from mid 2019) arrives on time to replace the equipment at the end of its life.

Network availability 2019
## NETWORK EVENTS 2019

<table>
<thead>
<tr>
<th>2019</th>
<th>Station</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>GONC Goldstone HEMB St-Helena</td>
<td>Beacon replacement Service interruption: beacon shelter rebuilding until May</td>
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<td>Feb.</td>
<td>JIWC Jiufeng</td>
<td>Beacon replacement</td>
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<tr>
<td>Mar.</td>
<td>ROXC Rothera GR4B Grasse</td>
<td>Beacon replacement Beacon qualification 3G &gt; 4G: invalid data until August 5th</td>
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<td>May</td>
<td>KEVC Kerguelen</td>
<td>Antenna replacement</td>
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<td>Jun.</td>
<td>GRFB Greenbelt STKC St-John’s</td>
<td>Beacon replacement Equipment replacement (beacon 4G) + site survey</td>
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<tr>
<td>Jul.</td>
<td>PDOC Ponta-Delgada FUUB Futuna SVAC Ny-Alesund II</td>
<td>Beacon replacement: 3G &gt; 4G Beacon replacement Beacon replacement</td>
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<tr>
<td>Sep.</td>
<td>SCRC Santa-Cruz</td>
<td>Equipment replacement + site survey</td>
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**In bold:** main events  
**In normal font:** on-site operations carried out by IGN  
**In italics:** operational maintenance (equipment replacement) managed by CNES with the participation of Host Agencies
UPDATE ON THE STATIONS DEDICATED TO IDS

Wettzell:
Into operation since September 2016
Good performance: 13th in the network ranking 2018

Mangilao:
Commissioning in April 2018
Significant contribution to the coverage in Pacific area
DORIS Performance Group meeting (P. Yaya 18 Sept. 2019): looking at POE residuals, performance is correct considering its location near the Equator (similar to Manilla, Cibinong, Kourou, Managua)
DORIS Mission Group meeting decision (19 Sept. 2019): Mangilao is part of the DORIS permanent network

=> IDS has to decide on another site for its second dedicated DORIS station
NETWORK EVOLUTION

Scheduled in 2019:

Oct.: **Santa-Cruz**, Ecuador: commissioning after 10-years outage (pending frequency clearance)

Oct.: **Russian stations**: restarting after 18 months of shutdown (pending frequency clearance)

Dec.: **La Réunion**: antenna relocation and 4\textsuperscript{th} generation beacon installation

Dec.: **Crozet**: 4\textsuperscript{th} generation beacon installation

Short term (2020):

**Reykjavik**: relocating in the LMI geodetic observatory at Hôfn (reconnaissance in June 2019)

**Katherine**, Australia (co-location GNSS + VLBI): installation before the VLBI upgrade

**Easter island**: following site closure in 2015, relocation and hosting migration

**Changchun**, China (co-location GNSS + SLR): disagreement on the financial level

**Dionysos**: relocating before site closure; ESA Altimeter calibration site under consideration

Longer term:

**Malé**, Maldives: relocation and 4\textsuperscript{th} generation beacon installation

**Le Lamentin**, French West Indies: relocation and 4\textsuperscript{th} generation beacon installation

**Papenoo**, French Polynesia (co-location GNSS + SLR + VLBI): budgeting under way
4th generation beacon deployment

First installation in March 2019 at Grasse
Beacon qualification phase during 3 months
Start of the deployment in June at St-John’s
Today: 3 stations are equipped with B4G (with Ponta-Delgada)

Gradual replacement of Starec antennae B type with C

Reminder: the uncertainty of the vertical location of the 2GHz phase center is reduced from 5 to 1 mm
18 stations equipped with Starec C: 30% of the network
Last stations equipped with Starec C:
- St-John’s (STKC)
- Santa-Cruz (SCRC)
ITRF2020 DORIS NETWORK CONTRIBUTION

8 additional sites / ITRF2014
ITRF2020 DORIS NETWORK CONTRIBUTION

16 sites equipped with Starec C type antenna
2 renovated sites: better antenna environment

SAPC: 10/2015

KIVC: 06/2016

IDS AWG, Paris, September 30th, 2019
DORIS LOCAL TIE SURVEYS

DORIS tie vectors (TVs) at co-located sites

All available tie vectors with instruments identification, co-location dates, site survey date and precision

File available on [ftp://doris.ign.fr/pub/doris/cb_mirror/stations/DORIS_ext_ties.txt](ftp://doris.ign.fr/pub/doris/cb_mirror/stations/DORIS_ext_ties.txt) or CDDIS

Successive antenna locations on the same site

All available (since 1992) tie vectors are compiled in a text file: [ftp://doris.ign.fr/pub/doris/cb_mirror/stations/DORIS_int_ties.txt](ftp://doris.ign.fr/pub/doris/cb_mirror/stations/DORIS_int_ties.txt) or CDDIS server

Under preparation: new complete delivery of DORIS TVs (SINEX files)

The ITRS Product Center makes use of old SINEX files and provides ties residuals (discrepancies between space geodesy and terrestrial ties): poor results for DORIS

Full reassessment and sorting of the DORIS tie vectors according to the current practices

UAW- session “Site Survey and Co-location”, Paris, 2-4 October 2019

Friday, October 4, 14:00-14:14:30: “IGN Recent and Planned Site Survey Activities and Contribution to the EURAMET GeoMetRE Project” by Damien Pesce and Jerome Saunier
MERCI DE VOTRE ATTENTION

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