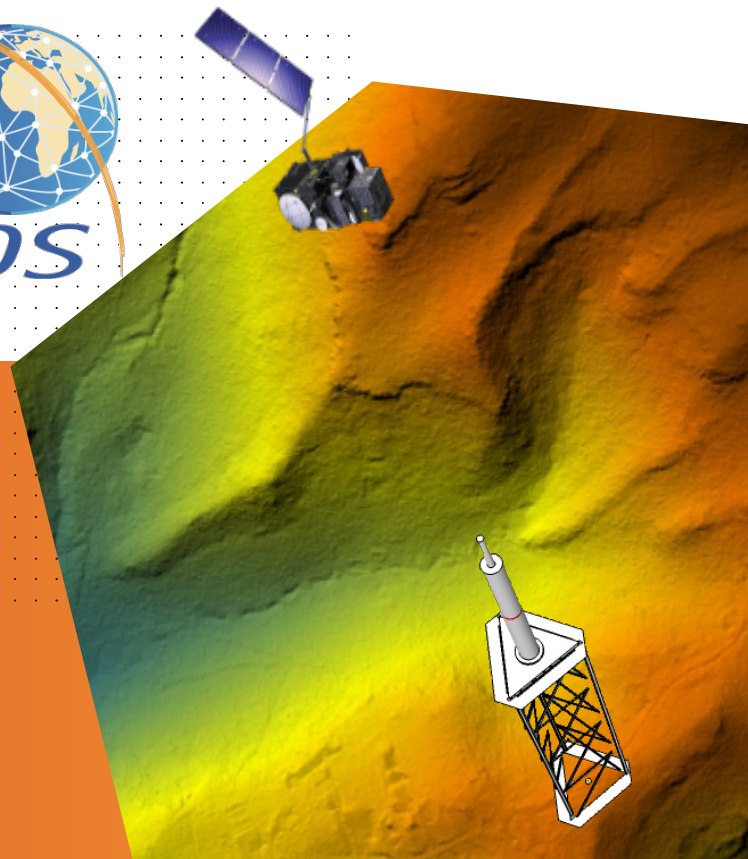




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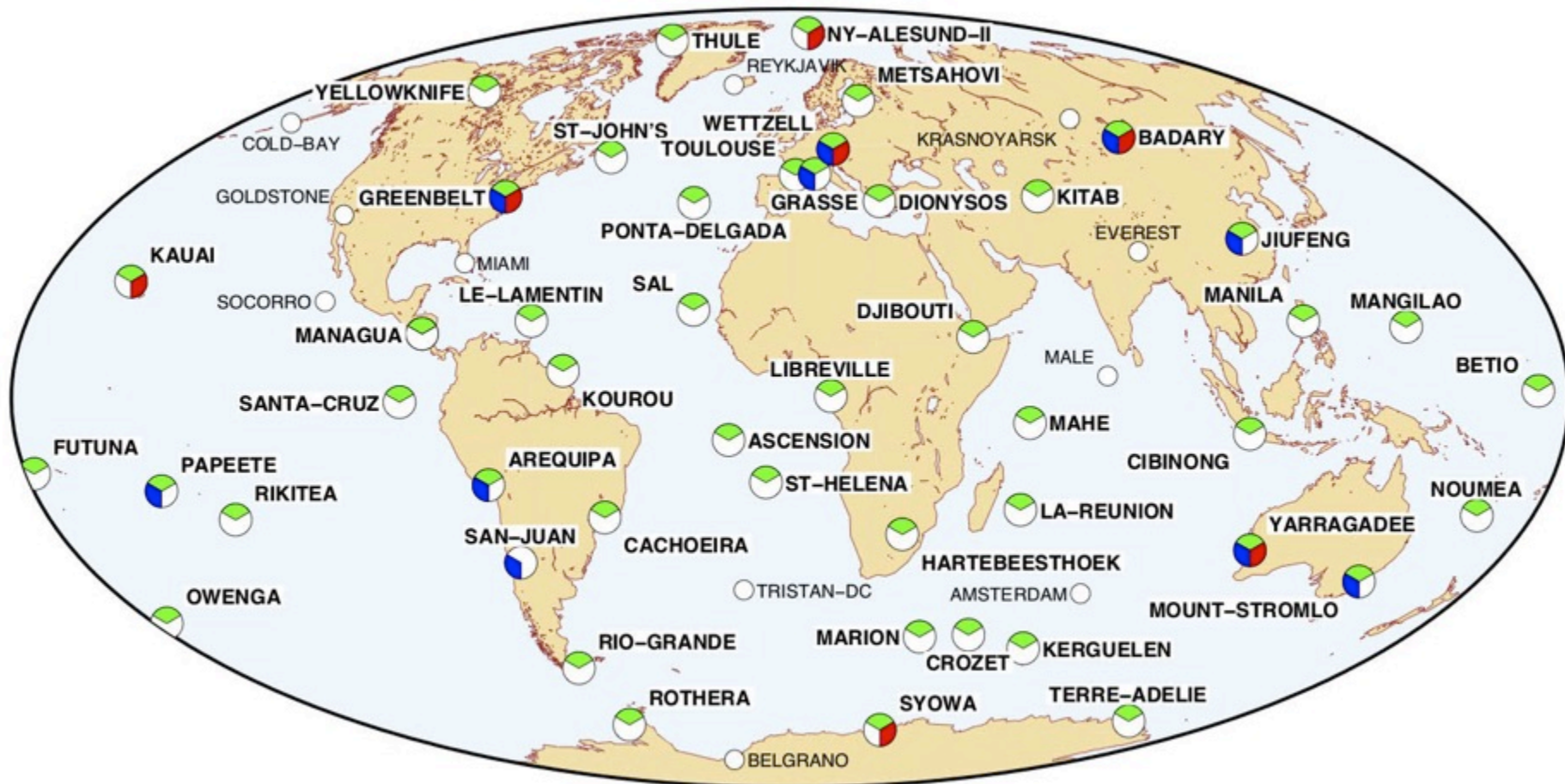
DORIS NETWORK STATUS REPORT

IDS Analysis Working Group Meeting
Paris, 30 September 2019

Jérôme Saunier, IGN - France

THE CURRENT DORIS NETWORK

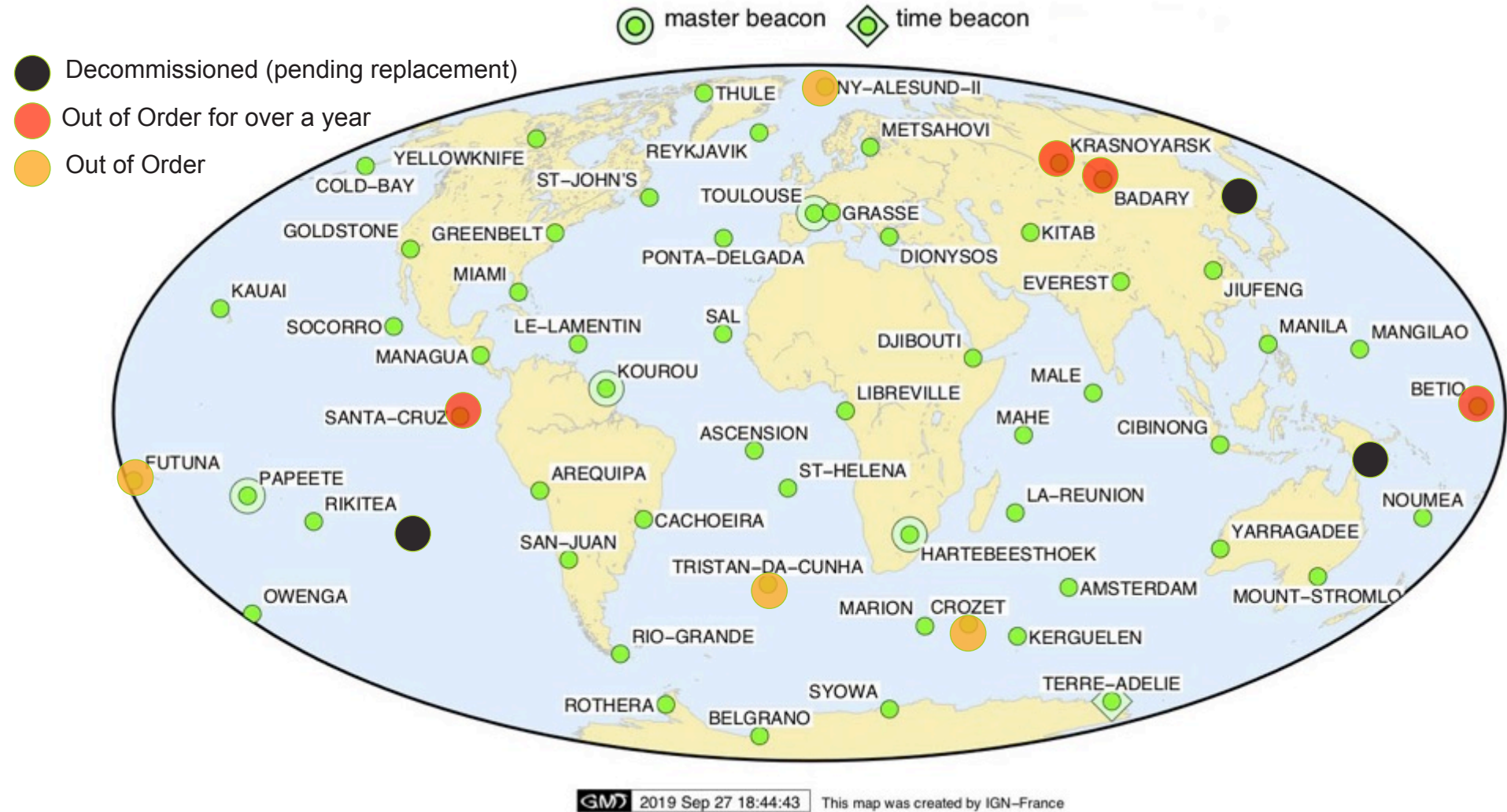
 GNSS (IGS)
  SLR
  VLBI
  No active co-location < 1 km



 2019 Aug 05 16:12:28 This map was created by IGN-France

 today: 47 co-locations out of 58 DORIS sites

PERMANENT NETWORK OPERATIONAL STATUS

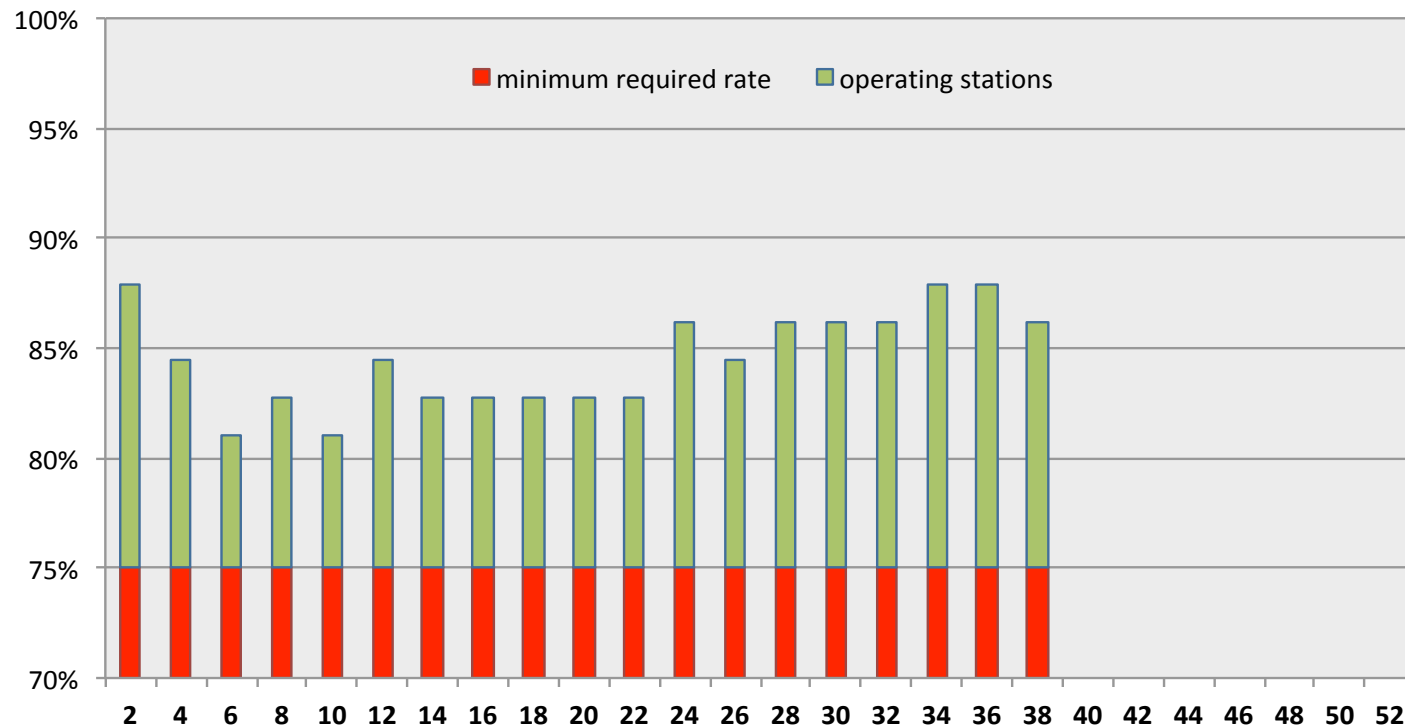


60 stations of which: 8 beacons are out of order and 3 decommissioned

NETWORK AVAILABILITY

- 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

2019	Station		Event
Jan.	GONC	<i>Goldstone</i>	<i>Beacon replacement</i>
	HEMB	<i>St-Helena</i>	<i>Service interruption: beacon shelter rebuilding until May</i>
Feb.	JIWC	<i>Jiufeng</i>	<i>Beacon replacement</i>
Mar.	ROXC	<i>Rothera</i>	<i>Beacon replacement</i>
	GR4B	<i>Grasse</i>	<i>Beacon qualification 3G > 4G: invalid data until August 5th</i>
May	KEVC	<i>Kerguelen</i>	<i>Antenna replacement</i>
Jun.	GRFB	<i>Greenbelt</i>	<i>Beacon replacement</i>
	STKC	St-John's	Equipment replacement (beacon 4G) + site survey
Jul.	PDOC	<i>Ponta-Delgada</i>	<i>Beacon replacement: 3G > 4G</i>
	FUUB	<i>Futuna</i>	<i>Beacon replacement</i>
	SVAC	<i>Ny-Alesund II</i>	<i>Beacon replacement</i>
Sep.	SCRC	Santa-Cruz	Equipment replacement + site survey

In bold: main events

In normal font: on-site operations carried out by IGN

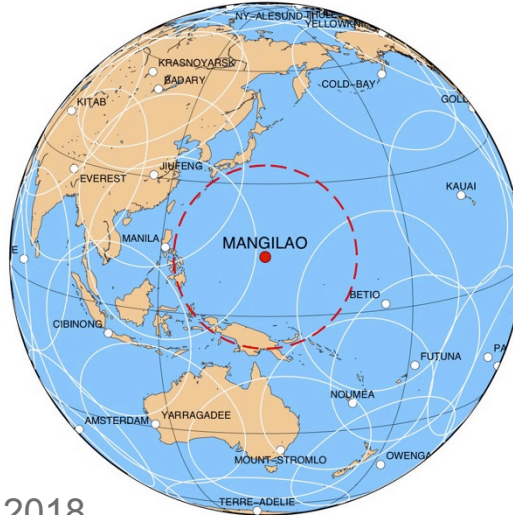
In italics: operational maintenance (equipment replacement) managed by CNES with the participation of Host Agencies

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, Cibirong, 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 4th generation beacon installation

Dec.: **Crozet**: 4th 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 4th generation beacon installation

Le Lamentin, French West Indies: relocation and 4th generation beacon installation

Papenoo, French Polynesia (co-location GNSS + SLR + VLBI): budgeting under way

NETWORK EQUIPMENT

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)



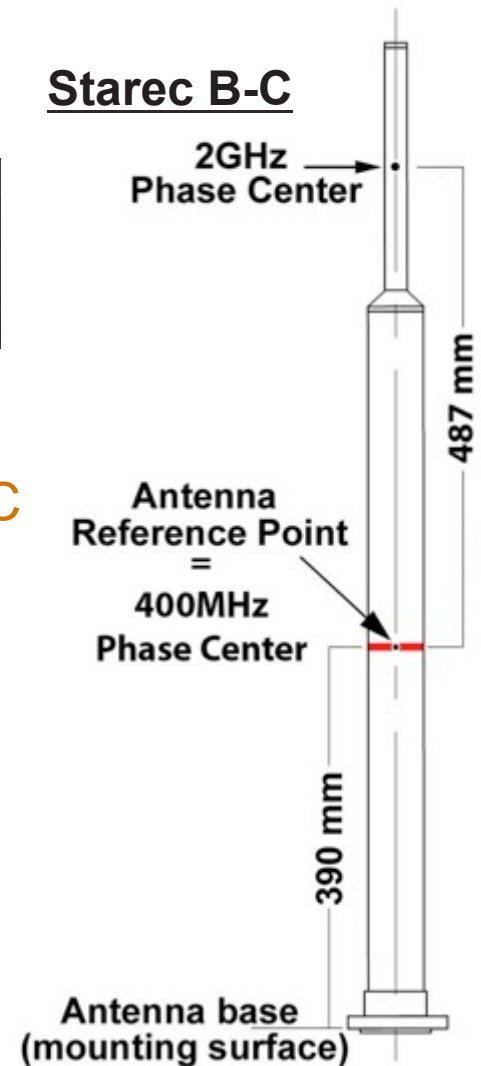
Gradual replacement of Starec antennae B type with C

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



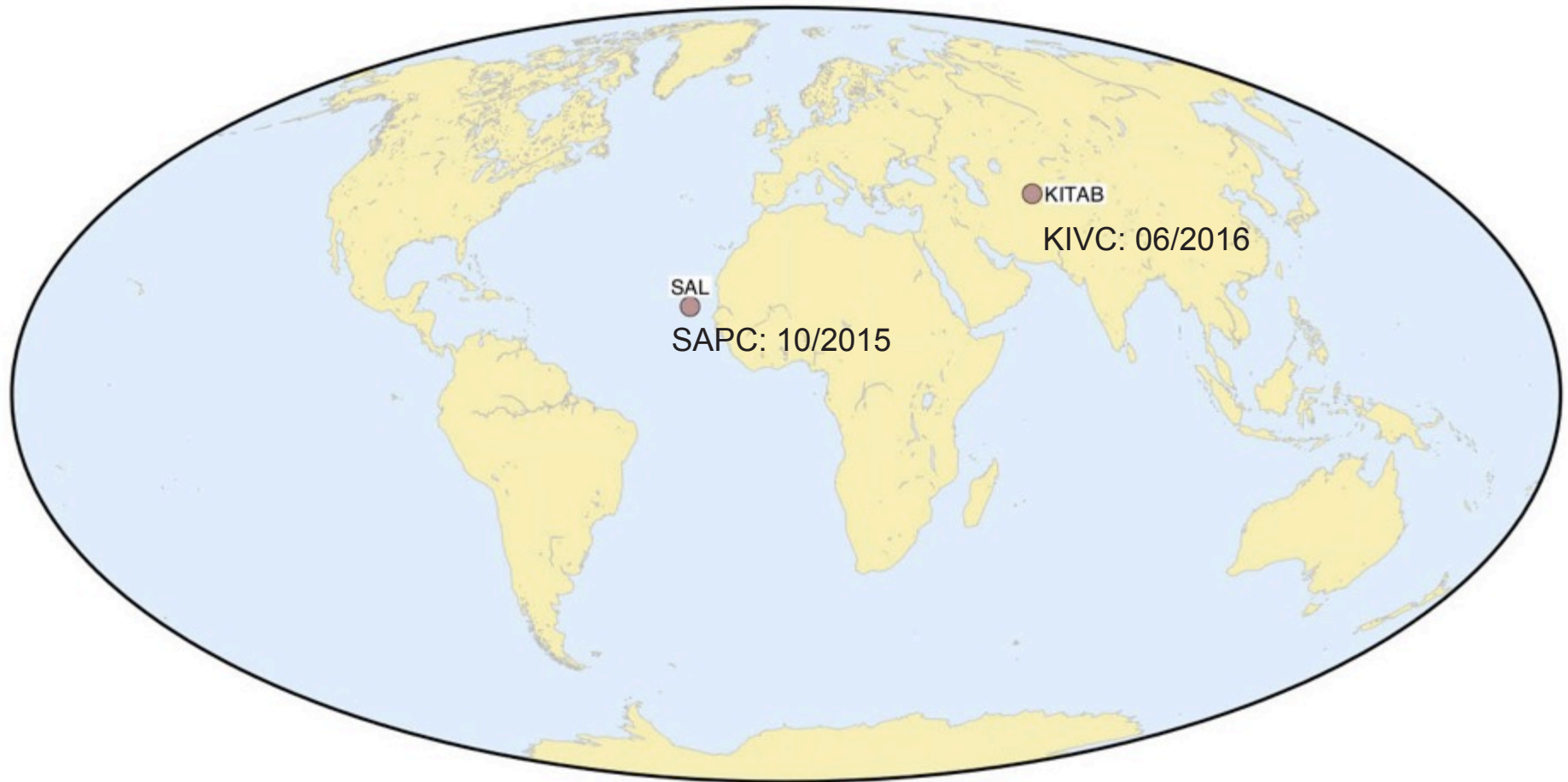
ITRF2020 DORIS NETWORK CONTRIBUTION



📍 16 sites equipped with Starec C type antenna



2 renovated sites: better antenna environment



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 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 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



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