

IGN

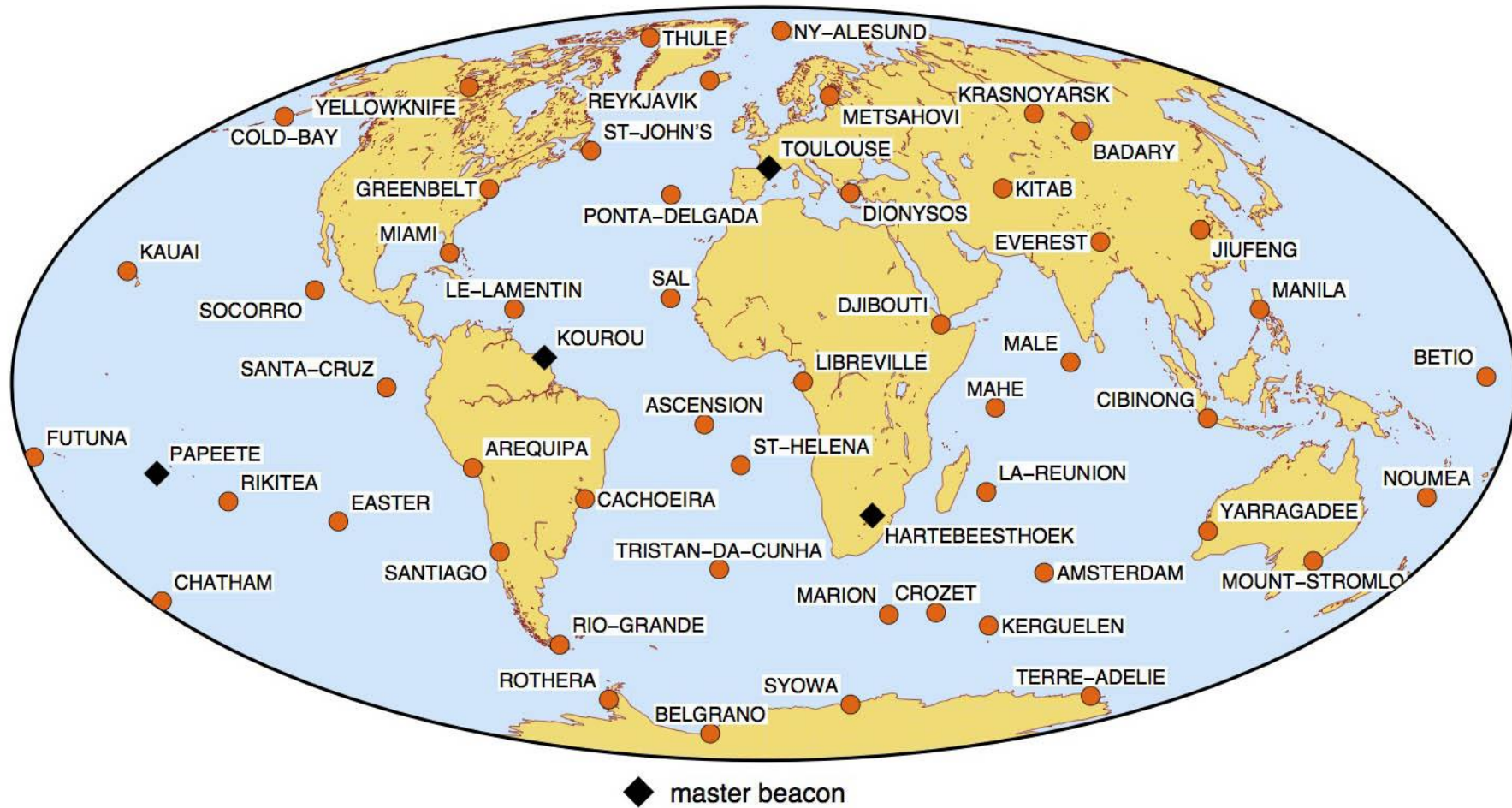
INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE

L'information grandeur nature

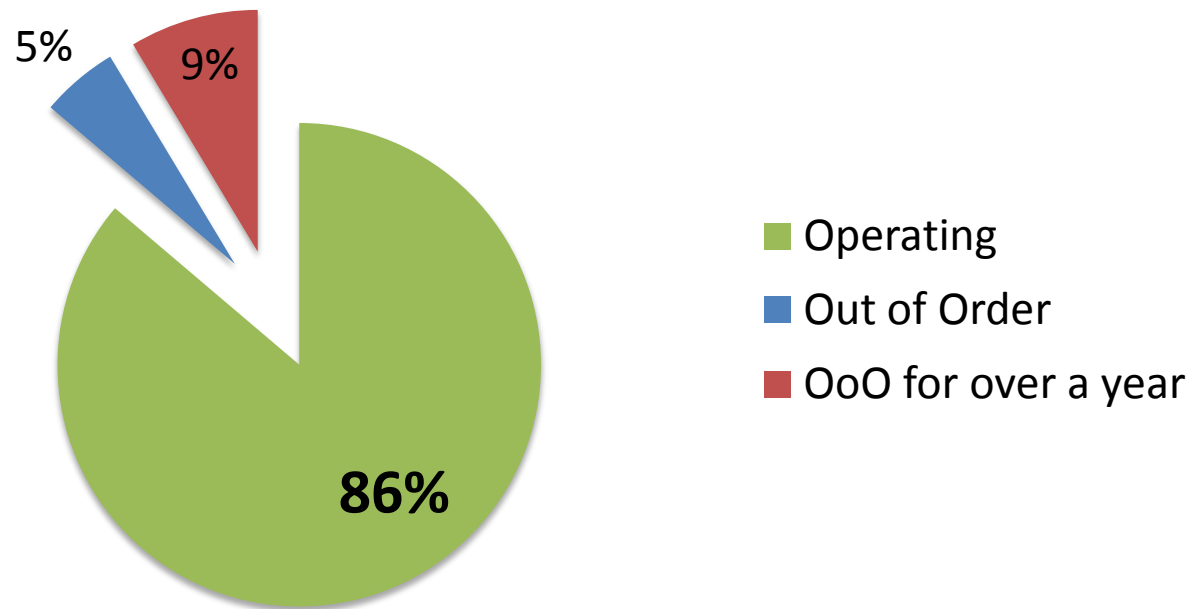


DORIS Network 2014 Status Report

THE NETWORK



Current operational status of the 58 stations



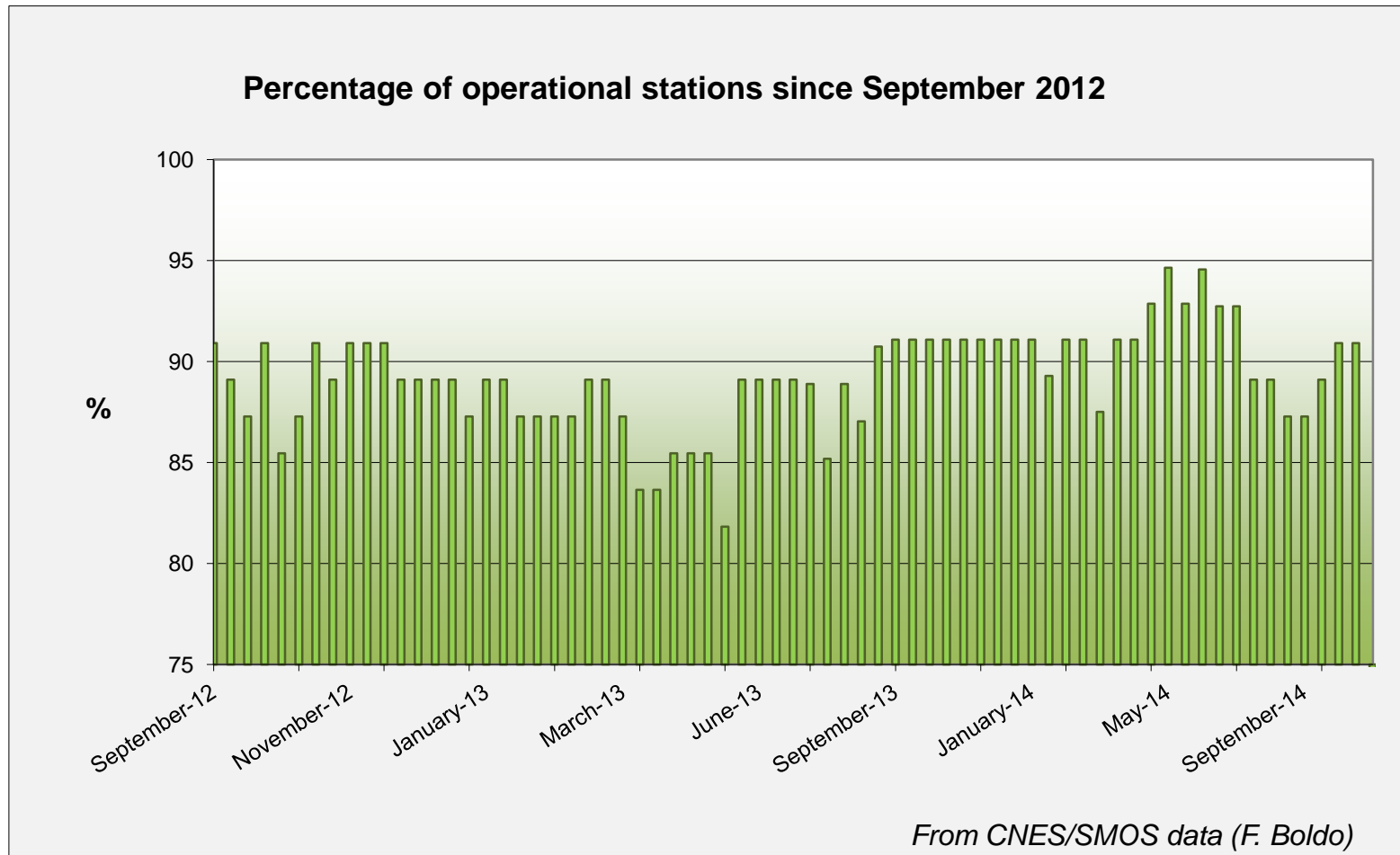
Out of Order for over a year:

Yuzhno-Sakhalinsk (11/2005), Santa Cruz (06/2009), Monument Peak (02/2010),
Santiago (05/2013), Port-Moresby (06/2013)

NETWORK AVAILABILITY



- RESULT OF THE JOINT EFFORT OF CNES, IGN AND HOST AGENCIES
- 16 BEACONS OUT OF 56 REPLACED IN 2 YEARS



■ CATALYST FOR ACTION:

- On-site event: equipment failure, host agency request, administrative issues
- Poor performance due to the environment or a hardware problem
- Network densification project

■ INTERVENTION TYPES:

- New station installation
- Station re-location
- Station renovation (upgrading to standards the installation)
- Equipment replacement
- Local tie survey

NETWORK EVENTS (1/3)

2012

October	JIVB	Jiufeng	Renovation + local tie survey (new REGINA station)
November	KRWB	<i>Kourou</i>	<i>Tracking Oscillator replacement</i>
December	MAIB	Mahé	Antenna moving (40m) Beacon 3.2

2013

February	PAUB	<i>Papeete</i>	<i>Beacon replacement (3.1)</i>
	KRWB	<i>Kourou</i>	<i>Tracking Oscillator replacement</i>
	CHAB	Chatham	Reconnaissance (site going to be closed mid 2014)
April	-	Nicaragua	Reconnaissance with a view to installing a new station
May	KIUB	<i>Kitab</i>	<i>Beacon replacement</i>
	JIVB	<i>Jiufeng</i>	<i>Beacon replacement</i>
June	MALB	<i>Malé</i>	<i>Beacon replacement</i>
	LAOB	Le Lamentin	New site installation



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

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

In bold: main events

NETWORK EVENTS (2/3)



2013

July	-	Hokkaido	Reconnaissance with a view to installing a new station
	STKB	St John's	Renovation (antenna raising and equipment replacement)
	YEMB	Yellowknife	Beacon replacement
	GR4B	Grasse	Renovation (antenna moving) + local tie survey
September	BETB	<i>Betio</i>	<i>Beacon replacement</i>
	KIUB	Kitab	Reconnaissance with a view to moving the station
	KRWB	<i>Kourou</i>	<i>Tracking oscillator replacement</i>
October	HBMB	<i>Hartebeesthoek</i>	<i>Beacon replacement</i>
December	TLSB	<i>Toulouse</i>	<i>Tracking oscillator replacement</i>
	DJIB	Djibouti	Local tie survey (new GNSS station 'DJIG')
	CRQB	<i>Crozet</i>	<i>Beacon replacement</i>

2014

January	GR4B	<i>Grasse</i>	<i>Beacon replacement</i>
February	TLSB	<i>Toulouse</i>	<i>Tracking oscillator replacement</i>
	SYOB	<i>Syowa</i>	<i>Antenna replacement + local tie survey (performed by GSI)</i>
	EASB	Easter Island	Reconnaissance with a view to moving the station

NETWORK EVENTS (3/3)

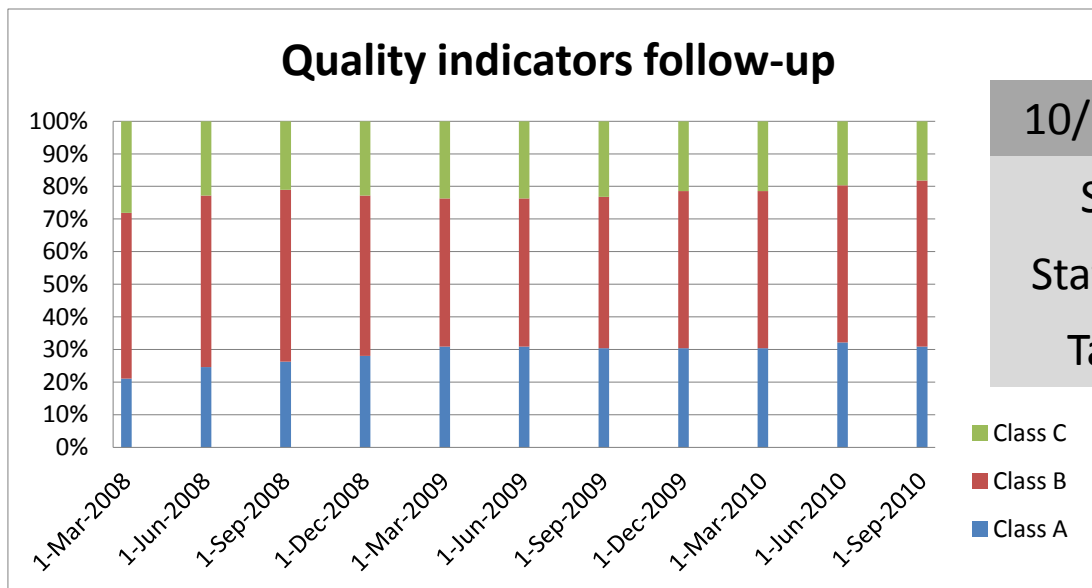


2014

March	SANB	Santiago	Reconnaissance with a view to moving the station
	HBMB	Hartebeesthoek	Local tie survey
	KETB	<i>Kerguelen</i>	<i>Beacon replacement</i>
	GAVB	Gavdos	Decommissioned
	AMVB	<i>Amsterdam</i>	<i>Beacon replacement</i>
	KRW B	<i>Kourou</i>	<i>Tracking oscillator replacement</i>
April	MAUB	<i>Marion Island</i>	<i>Antenna replacement (performed by HartRAO)</i>
	SOEB	Socorro	Station moving (260m) + equipment repl. + local tie survey
June	ADGB	<i>Terre Adélie</i>	<i>Beacon replacement</i>
	MOSB	Port Moresby	Decommissioned
	KRW B	<i>Kourou</i>	<i>Tracking oscillator replacement</i>
July	LAOB	<i>Le Lamentin</i>	<i>Beacon replacement</i>
September	NOXB	<i>Nouméa</i>	<i>Beacon replacement</i>
	PDNC	Ponta Delgada	Antenna replacement + local tie survey

QUALITY INDICATORS

- BASED ON DORIS SYSTEM REQUIREMENTS (DSR)
- 36 POINTS TO WATCH
- 3 STATION CLASSES:
 - Class A : at least 90% of DSR satisfied
 - Class B : 80 to 90% of DSR satisfied
 - Class C : less than 80% of DSR satisfied



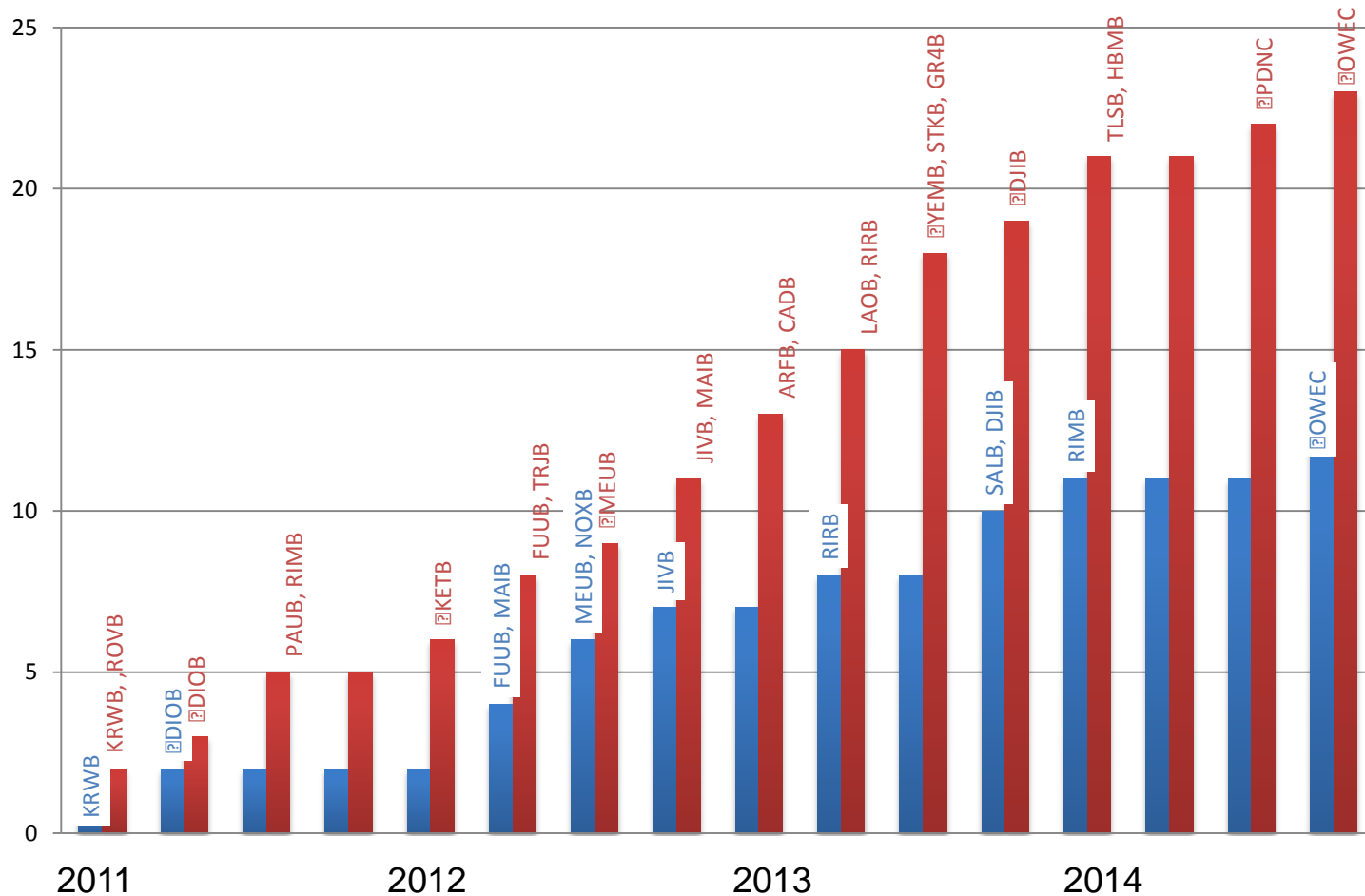
10/2014	Class A	Class B	Class C
Score	31%	51%	18%
Stations	17	28	10
Target	40%	50%	10%

■ Class C
■ Class B
■ Class A

LOCAL SURVEYS AND CO-LOCATION



- 12 NEW CO-LOCATIONS WITH GNSS THANKS TO REGINA
- 23 HIGH PRECISION LOCAL TIE SURVEYS IN THE LAST 4 YEARS



■ IGN CO-LOCATION SURVEY REPORTS AVAILABLE ONLINE:

http://itrf.ign.fr/local_surveys.php (link available on IDS website: “Documents” > Stations > Local surveys)

- GRASSE, August 2013
- LE LAMENTIN, July 2013
- JIUFENG, October 2012
- PAPEETE, July 2011
- RIKITEA, July 2011
- DIONYSOS, May 2011
- KOUROU, February 2011
- ROTHERA, February 2011

■ UPCOMING CO-LOCATION SURVEY REPORTS (DORIS + REGINA):

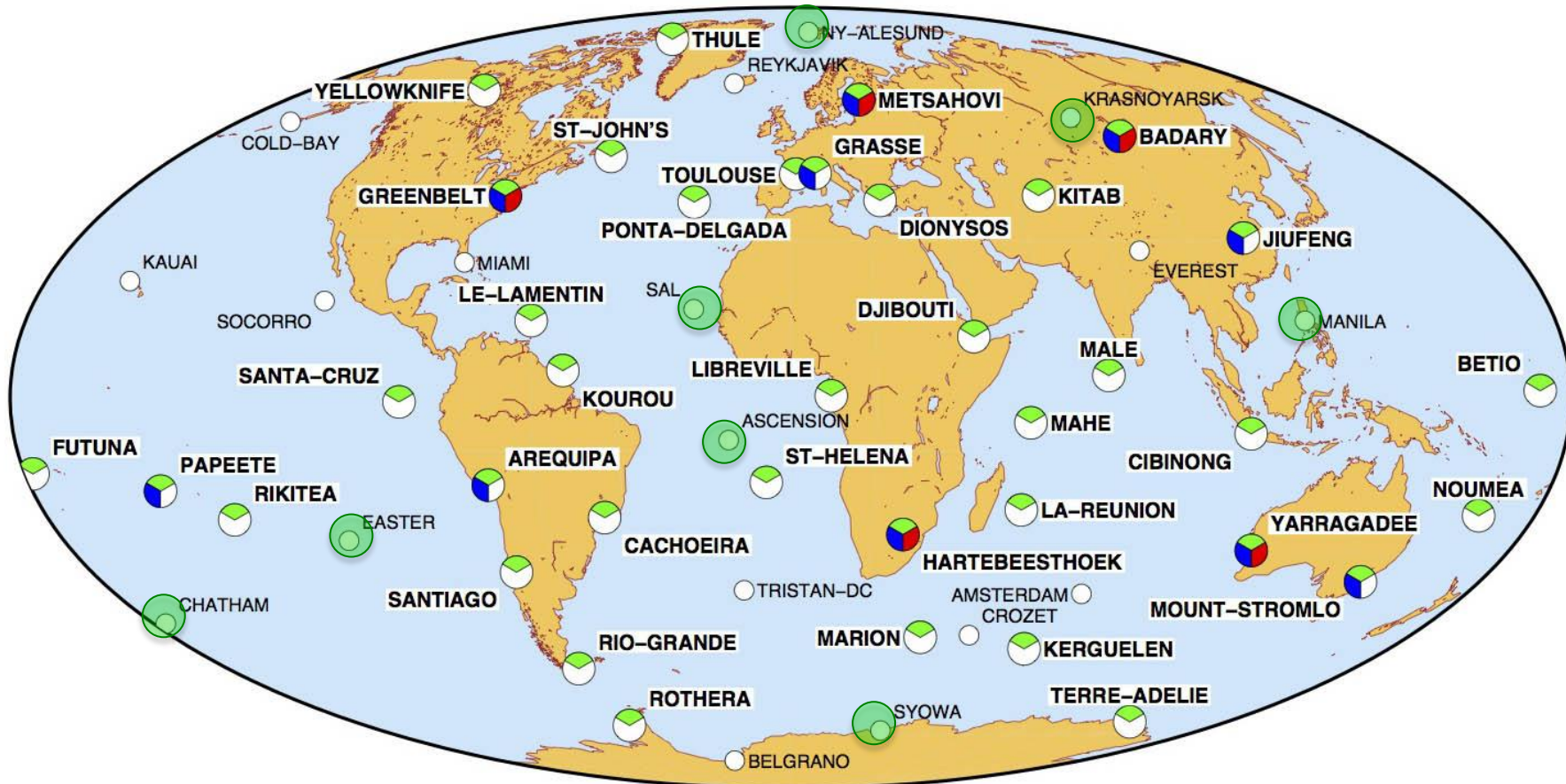
- FUTUNA, April 2012
- KERGUELEN, April 2012
- METSAHOVI, June 2012
- MAHE, December 2012
- AREQUIPA, January 2013
- CACHOIERA, March 2013
- RIO GRANDE, June 2013
- ST JOHN’S, July 2013
- YELLOWKNIFE, July 2013
- DJIBOUTI, December 2013
- TOULOUSE, February 2014
- HARTEBEESTHOEK, March 2014
- PONTA DELGADA, September 2014

■ IERS LOCAL SURVEY GUIDELINES AND SPECIFICATION

- Completed during the local tie survey at Hartebeesthoek
- IGN Draft document in the internal review process

CO-LOCATIONS

■ DORIS STATIONS CO-LOCATED WITH OTHER IERS TECHNIQUES

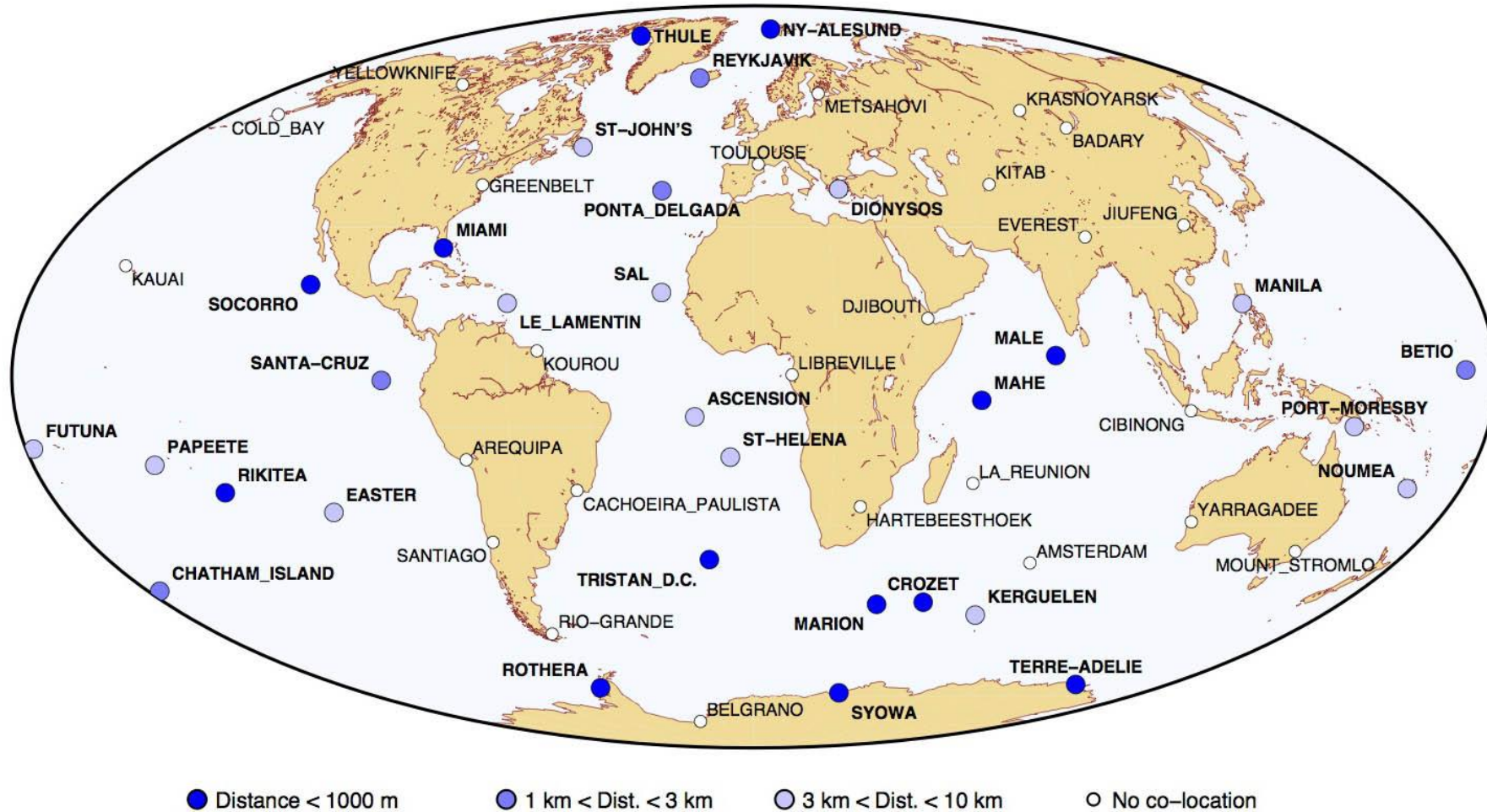


GNSS (IGS)
 SLR
 VLBI
 No active co-location < 1 km

Additional co-location to-be

CO-LOCATIONS

■ DORIS STATIONS CO-LOCATED WITH TIDE GAUGE



■ AT THE ECONOMIC LEVEL

- IGN and CNES are both affected by governmental actions to reduce spending
- Host agencies all over the world are cutting down their expenses: sites consolidation, facilities closure, automation for cutting staff... => we have to move!
- Make negotiation with host agencies much more difficult on the financial aspects

■ AT THE SECURITY LEVEL

- Political instability and terrorism
- Diseases outbreaks

■ AT THE ADMINISTRATIVE LEVEL

- Intensification of the rules everywhere in the world
- Shipping, customs, frequencies clearance, building regulations... are more complicated

■ AT THE TECHNICAL LEVEL

- Ageing network: more frequent hardware failures
- Co-location with others space geodetic techniques (ITRF, GGOS)
- Continue our efforts to further improve the network performance: evolution, densification

NETWORK EVOLUTION

■ SHORT TERM (NEXT 6 MONTHS)

- Chatham, NZ: re-location 18km SE (co-location with new GNSS station)
- Goldstone, CA: new station in place of Monument Peak
- Sal, CPV: major renovation (antenna re-location to get better visibility)

■ LONGER TERM

- Kitab, UZ: major renovation (station re-location to get better visibility)
- Easter Island, CHL: station re-location near IGS station "ISPA"
- Ny-Alesund, NOR: station re-location (future site for GGOS)

■ UNDER CONSIDERATION

- Santiago, CHL: possible re-location in Argentina, San Juan (SLR+GNSS site)
- Port-Moresby, PNG: station re-location in Australia (2 options: Weipa or Katherine)

■ NEW STATIONS

- Managua, NIC: waiting for Ministry of Foreign Affairs agreement
- Chichijima, Hokkaido, JPN: waiting for frequency clearance

■ IDS PROJECTS

- Wetzell, GE: 4 techniques site; DORIS station installation in 2015
- Guam, US: IGS “GUUC” + tide gauge co-location
- Sejong, KOR: 4 techniques site
- Tamanrasset: lying dormant

- **DORISMAILS FOLLOWING EVERY ANTENNA CHANGING OR MOVING**
 - Coordinates of the new reference point + installation characteristics

- **REGULARLY UPDATED SITE LOGS**
 - <http://ids-doris.org/network/sitelogs.html>

- **DORIS INTERNAL FILE (EVERY 6 MONTHS)**
 - Successive antenna positions on the same site
 - ftp://doris.ign.fr/pub/doris/cb_mirror/stations/DORIS_int_ties.txt

- **CO-LOCATION SURVEYS REPORTS AND SINEX FILES**
 - http://itrf.ensg.ign.fr/local_surveys.php