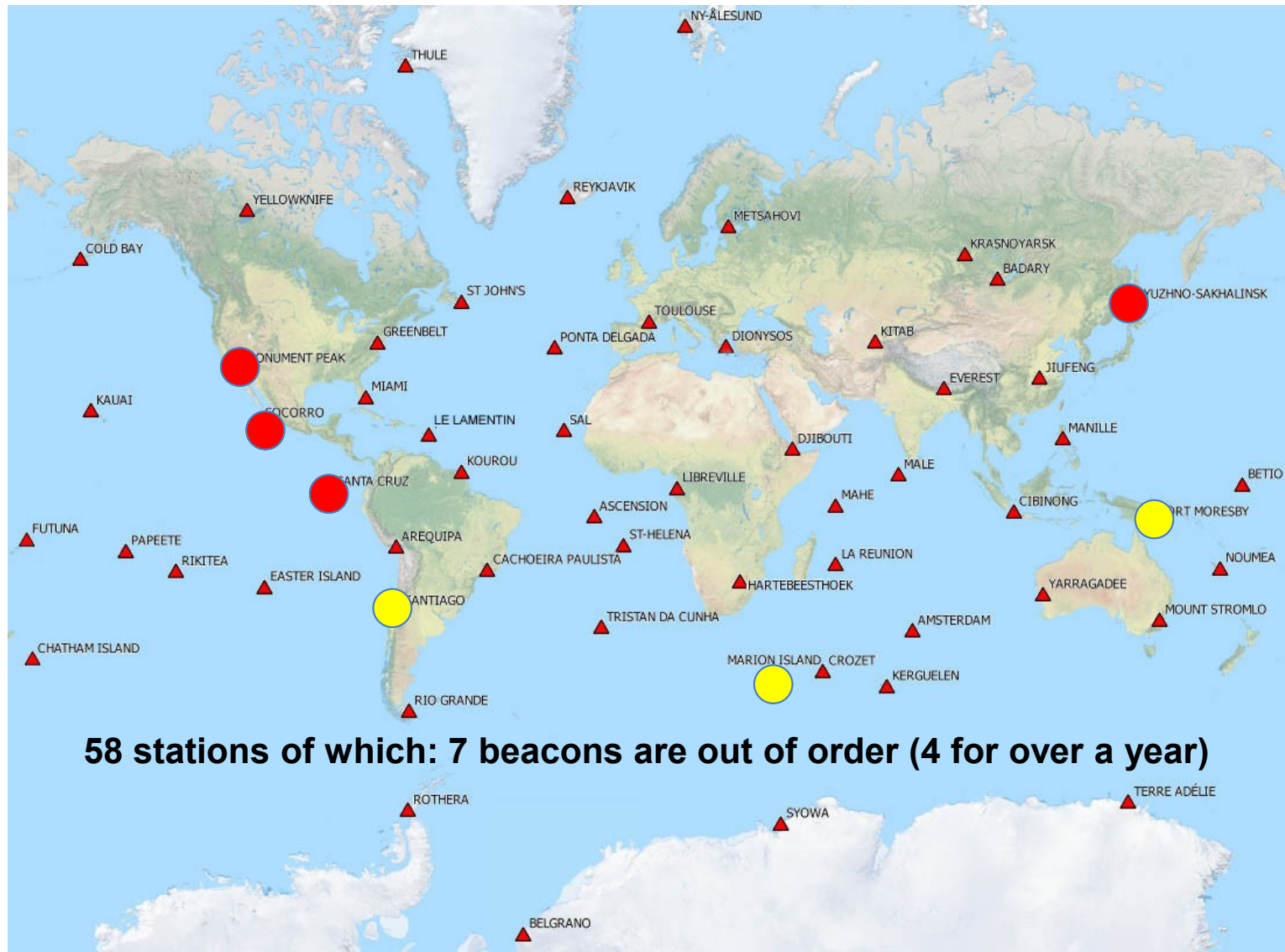


DORIS NETWORK STATUS

OCTOBER 2013

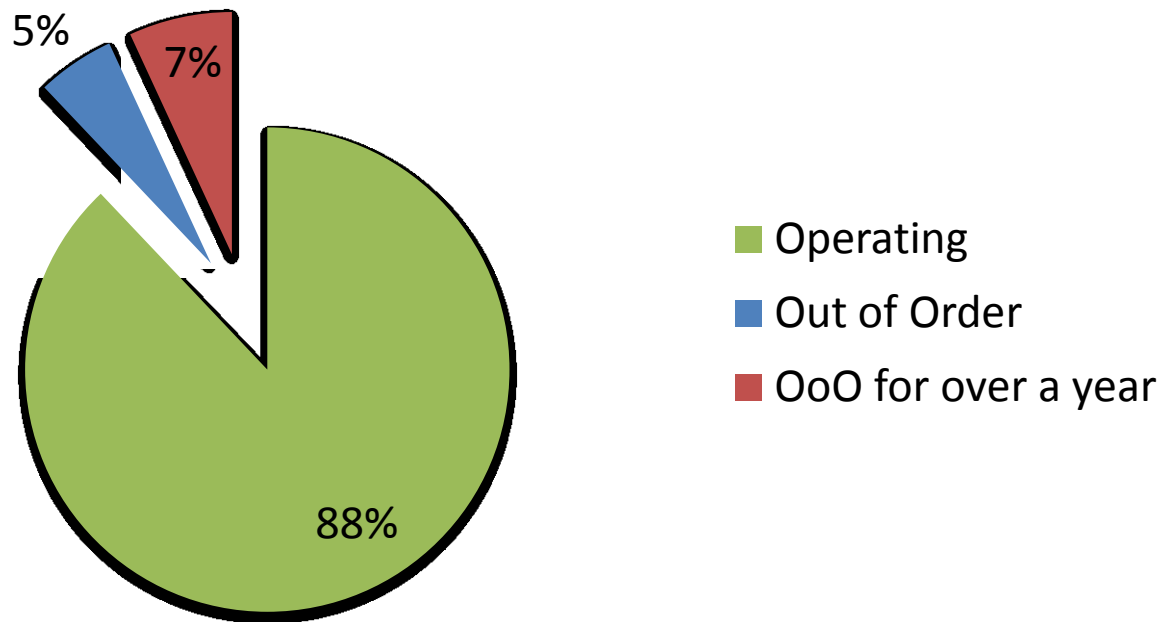


OPERATIONNAL STATUS



58 stations of which: 7 beacons are out of order (4 for over a year)

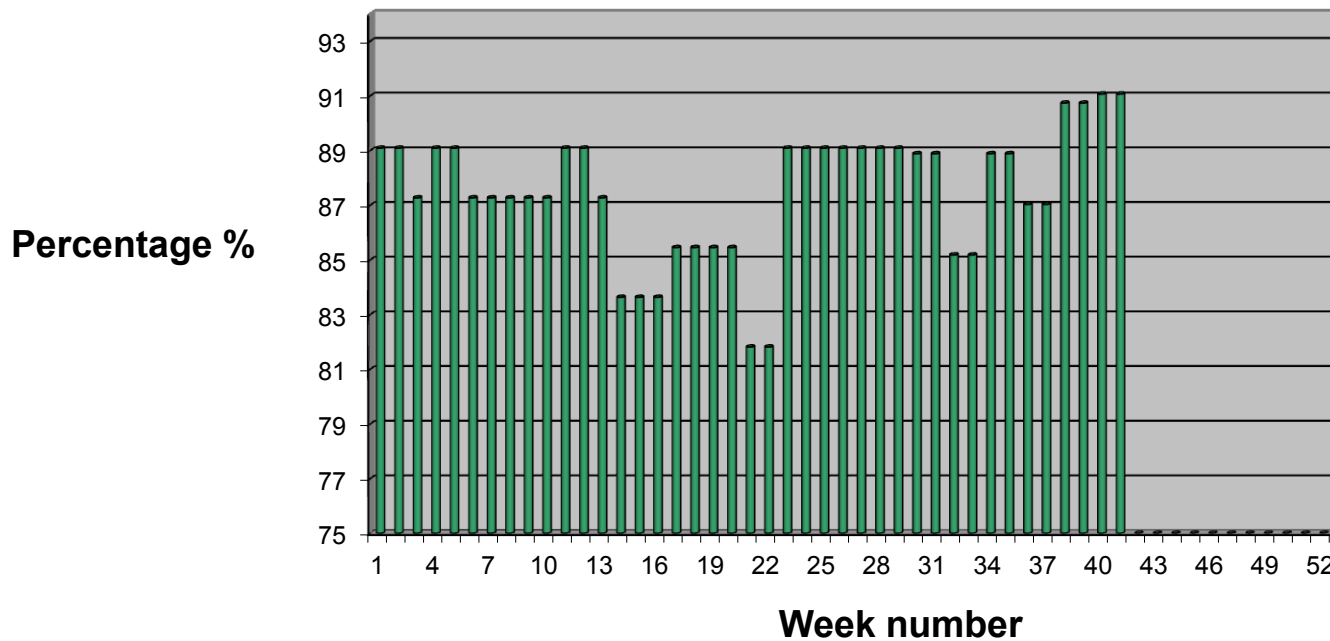
Current status of the 58 stations



Out of Order for over a year:

Yuzhno-Sakhalinsk (11/2005), Santa Cruz (06/2009), Socorro (10/2009), Monument Peak (02/2010)

Stations in operation 2013 status



From CNES/SALP data

NETWORK EVENTS



2013	Station		Event
February	PAUB	<i>Papeete</i>	<i>Beacon replacement (3.1)</i>
	KRWB	<i>Kourou</i>	<i>Tracking Oscillator replacement</i>
	CHAB	Chatham Island	Reconnaissance (site going to be closed in July)
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	MAIB	<i>Mahé</i>	<i>Beacon replacement</i>
	LAOB	Le Lamentin	Installation
July	-	Hokkaido	Reconnaissance with a view to installing a new station
	GRFB	St John's	Renovation (antenna raising and equipment replacement)
	YEMB	Yellowknife	Beacon replacement + Maser tests
August	BETB	<i>Betio</i>	<i>Beacon replacement</i>
	GR4B	Grasse	Renovation (antenna moving) + local tie survey
September	KIUB	Kitab	Reconnaissance with a view to moving the station
	-	-	Site logs updating

■ SHORT RUN (NEXT 6 MONTHS)

- Syowa: antenna raising + replacement (carried out by GSI Japan)
- Socorro: major renovation (equipment, antenna moving...)
- Chatham: station re-location
- Kitab: major renovation (station moving 200 m)

■ LATER

- Goldstone: new station in place of Monument Peak
- Hokkaïdo: new station in place of Sakhalinsk
- Miami: definitive shutdown (interferences with TV-mobile)
- Easter Island: major renovation

■ NEW STATIONS

- Chichijima: waiting for frequency clearance
- Managua: waiting for agreement signature
- Korea: under negotiation with KASI, co-location GNSS+SLR+VLBI
- Wake island (Marshall): under consideration
- Tamanrasset: lying dormant

GEODESY SECTION

ANTENNA REFERENCE POINT: CURRENTLY DORIS

■ DEFINITION

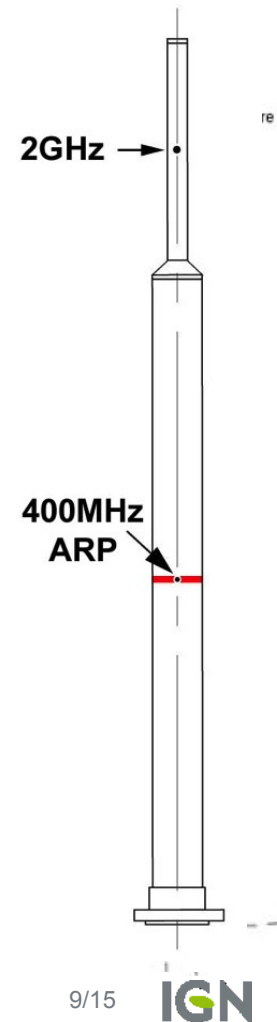
- Physically: intersection of the antenna axis and the red disk (400 MHz phase center)
- Technically: vertical projection of the measurement point (2 GHz phase center) on the horizontal plane containing the 400 MHz center

■ IN PRACTICE

- 2 GHz and 400 MHz phase centers may not be on the same vertical
- Possible manufacturing defect
- Possible installing defect (non-verticality)

■ DORIS DATA PROCESSING

- Only Up eccentricity is used: 487 mm
- Misalignment of 2 GHz wrt 400 MHz is not taken into account

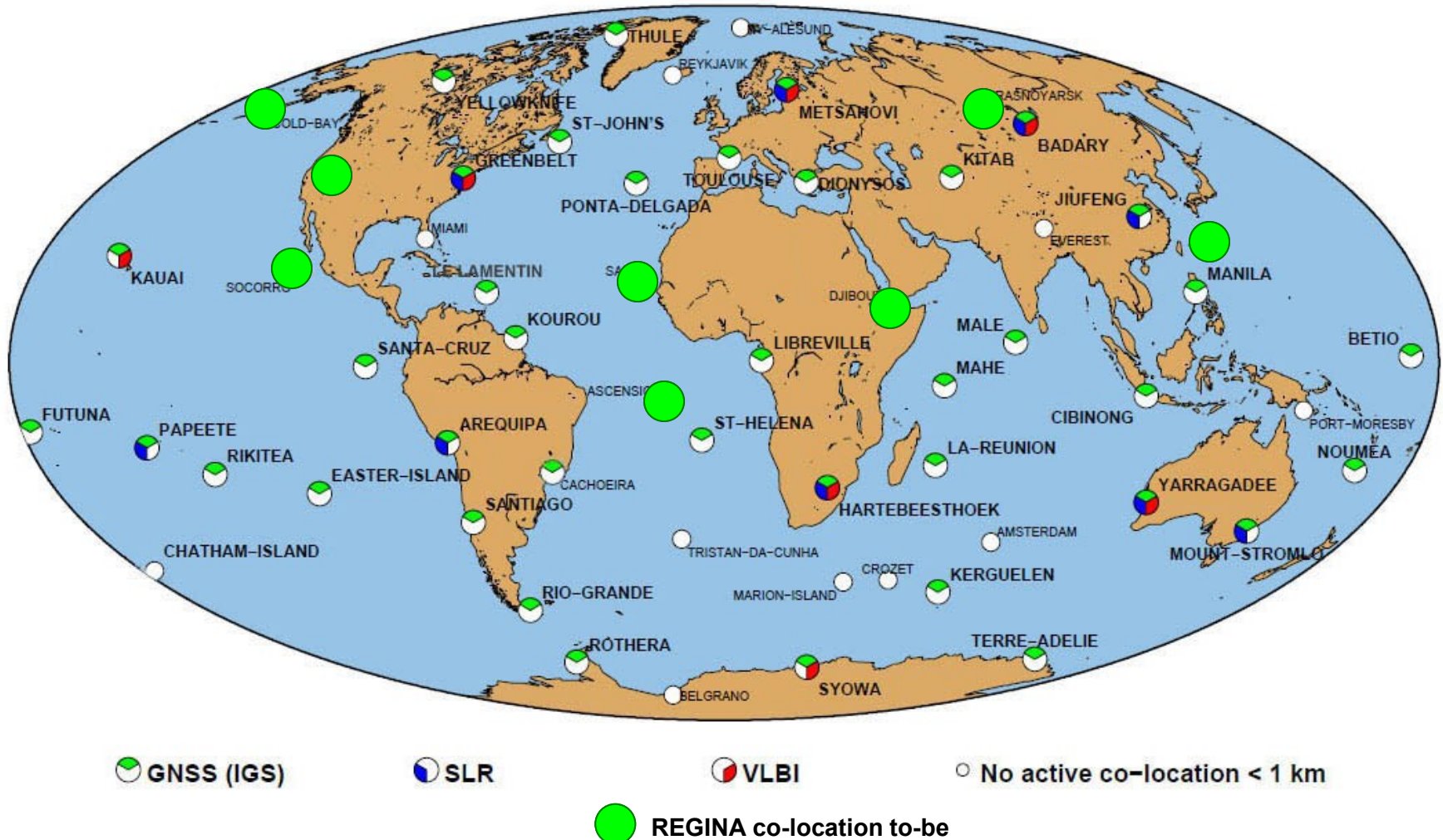


ANTENNA REFERENCE POINT: EVOLUTION

- **SOLUTION 1: MEASURING IN THE FIELD AND PROVIDING COORDINATES OF THE VERTICAL PROJECTION OF THE 2 GHz PC**
 - We already do it but...
 - This point is not accessible for sighting (no mark)
 - This makes it difficult to tie successive antenna locations
 - ARP definition is ambiguous
- **SOLUTION 2: INTRODUCING NORTH AND EAST ECCENTRICITIES**
 - For each antenna: ARP > 2 GHz PC Up, North, East Ecc. + date
 - Better link between ARP and measurement point
 - Better traceability of successive antenna locations and events (antenna tilt)
 - Where? Inside sitelogs?
- **SOLUTION 3: DESIGNING A NEW ANTENNA MODEL**
 - IDS letter to CNES on August 5th, 2013
 - CNES – IGN dedicated meeting planned at the beginning of December

CO-LOCATIONS

■ DORIS STATIONS CO-LOCATED WITH OTHER IERS TECHNIQUES



HIGH PRECISION LOCAL TIE SURVEY



■ CO-LOCATION SURVEY REPORTS AND SINEX FILES AVAILABLE ONLINE

- ROTHERA, February 2011
- KOUROU, February 2011
- DIONYSOS, May 2011
- RIKITEA, July 2011
- PAPEETE, July 2011

http://itrf.ign.fr/local_surveys.php

(link available on IDS website "Documents" page)

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

- FUTUNA, April 2012
- KERGUELEN, April 2012
- TRISTAN DA CUNHA, June 2012
- METSAHOVI, June 2012
- JIUFENG, October 2012
- MAHE, December 2012
- AREQUIPA, January 2013
- CACHOIERA, March 2013
- LE LAMENTIN, June 2013
- RIO GRANDE, June 2013
- ST JOHN'S, July 2013
- YELLOWKNIFE, July 2013
- GRASSE, August 2013

■ UPCOMING CO-LOCATION SURVEYS (DORIS + REGINA):

- SAL, October 2013
- DJIBOUTI, December 2013
- CHATHAM, January 2014

IGN-SGN CONTRIBUTION TO ITRF2013



- **ADDITIONAL CO-LOCATION SURVEYS: RIYADH 2012, GRASSE 2013**
- **RE-COMPUTING OF CO-LOCATION SURVEYS CARRIED OUT BY IGN IN THE PAST**
 - In order of priority: Nouméa / Easter / Male / Ponta Delgada / St-Helena / Kauai / HBK / Kitab / Terre Adélie / Reykjavik / Ascension / Thule...
- **SINEX FILES CLEANING**
 - No tie vectors sums if the antenna base changed > several SINEX files on a single site
- **ITRF WEB SITE OVERHAUL**
 - Objective: first part into service in mid-2014, full version in mid-2015
 - Status: analysis is closed, development will start from November
 - Portal for local tie surveys metadata and DOMES numbers administration
 - Teaching content
 - New web-services:
 - Time series handling
 - Data downloading
 - Coordinates and velocities computing
 - Earthquakes impact: shifting caused by earthquakes (magnitude > 6) in a period of time

OTHER ACTIONS IN PROGRESS



- **TERS WORKSHOP ON LOCAL SURVEYS & CO-LOCATIONS (PARIS, MAY 2013)**
IGN IN CHARGE OF:
 - Writing draft document « Local survey guidelines and specifications)
 - Setting up of local surveys archive
 - Establishing a contact list of the surveys team

- **EQUIPPING SITES WITH GEODETIC CONTROL POINTS IN ORDER TO MONITOR THE MONUMENTATION STABILITY**
 - Grasse chosen as experimental site : first observations campaign carried out last August
 - Results will be presented during a DORIS “Groupe Performance” meeting

- **DORIS NETWORK DATABASE OVERHAUL**
 - Taking into account IDS or DORIS users requests and making easier outputs: maps, plots, lists, files...
 - First requests:
 - Publishing a file of tie vectors between DORIS and others space geodetic techniques
 - Tracing the history of local surveys (add dates)

- **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