



International DORIS Service

San Francisco
8 December 2012
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IDS GB meeting

AGENDA:

- Data Center
- IDS GGOS representative
- IDS/DATA (HY-2A)
- Network status (including IDS stations, DORIS/VLBI, DORIS/TV at US sites...)
- System and missions status
- Central Bureau status
- Combination Center status
- IDS report 2011
- Previous meeting reports (IUGG, UAW GGOS)
- Next IDS meetings : AWG, IDS workshop



MAIN DECISIONS :



ATTENDEES:

Carey Noll, Pascale Ferrage, Frank Lemoine, , Laurent Soudarin, Pascal Willis, John Ries, Chopo Ma
Invited : Guilhem Moreaux (CLS),
, Bruno Garayt, Michiel Otten

Excused

DATA Center	<p>IDS could join the WDC (World Data System) to obtain financial support for IDS CB (small amount). Carey proposed to send the application, and then the CB will fill this application for IDS.</p>	Central Bureau
IDS GGOS representative	<p>GGOS consortium requires 2 representatives from IAG service IDS nomination proposal: CB chairman (Laurent) and GB chairman (Pascal) Pascal will inform the consortium.</p>	
IDS/DATA	<p>HY-2A DORIS is working nominally but difficulties getting information from the Chinese. Michel Dejus (CNES HY2A project manager) thinks that data could be delivered operationally to IDS around march-April 2012 Pascal Willis suggests writing a letter to ask for test data from the Chinese. NB: A specific meeting is scheduled in CNES in January 12th, then we'll decide on the pertinence of sending such a letter.</p> <p>SINEX: Guilhem pointed out a problem with the SINEX filename: a version number is missing; this should be added by the ACs in the filename. This may be an issue for the ACs, P. Willis suggests that the Data Center manage this version number, Carey will check what is done elsewhere. Action to FL: ask the ACs of about giving version numbers to SINEX (end of February)</p>	Frank L.

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	<p>RINEX data:</p> <p>This format will be the only one to be delivered for the future missions (Sentinel3 and after). Frank will ask the ACs to develop a tool to process RINEX data, then provide analysis for the next AWG (May in Prague).</p>	<p>Frank L.</p>
<p>Network status</p>	<p>Goldstone: In progress; Frank will send new information next week.</p> <p>DORIS in US: Miami must be moved. A telecom will be organized with CNES, IGN and NASA/GSFC (F. Lemoine) in January to find new locations.</p> <p>Network status, see presentation in annex1</p> <p>IDS stations, new locations: As Riyadh and Tamanrasset dossiers are progressing very slowly, other places to install a future DORIS station are being evaluated. Although the Korea project is the most advanced, the priorities decided in May are maintained: 1 Kwajalein Marshall Island, 2 West Indies (Antilles), 3 Korea.</p> <p>Pascal suggests also to contact M.L Gobbindass (Guadeloupe).</p>	
<p>DORIS system</p>	<p>See presentation in annex2</p> <p>DORIS/VLBI interference:</p> <p>In Yarragabee: The idea that the DORIS beacon would be moved in Yarragadee seems to be a misunderstanding. Chopo proposes to help the CNES/DORIS team to solve this problem.</p> <p>In Greenbelt: C. Beaudoin gave a presentation in an AGU session, see annex 3</p> <p>Ground Antenna calibration: (position of the 2GHz center of phase) Calibration test performed on 7 STAREC ==> First results: A common offset wrt the reference position (given by the manufacturer) is observed: around -17mm on the vertical axis (no dispersion)</p> <p>Pascale will send the first results to the GB, then the complete report as soon as it is available.</p> <p>A specific presentation will be given on this point during the next AWG meeting in May</p>	<p>Pascale Ferrage</p> <p>CNES</p>
<p>IDS Combination Center</p>	<p>Some actions were decided on:</p> <ol style="list-style-type: none"> 1/ identify the best test period for Envisat/Spot4 for a new campaign 2/ ask the ACs to identify geophysical model differences through series to produce STCD. 3/ ask the ACs to provide solutions every month (instead of every 3 months) 	<p>Frank L.</p>

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	<p>4/ Next ITRF = ITRF2013 (last data 12/31/2013), solutions are expected in mid 2014 :) → discussion about the temporal gravity field and atmospheric loading shall be planned for the next AWG.</p>	
<p>IDS activity report 2011</p>	<p>Call for participation to be sent, deadline: February 1rst.</p>	
<p>IDS website</p>	<p>Visualization tool: the tool plottool displays graphs of time series as well as of orbits' residuals. It is very easy to use, and a lot of useful functions are available.</p> <p>L. Soudarin will send an email (to DORIS, GGOS, ILRS, IGS, UAWG) to announce it when the tool is available on the IDS website. A presentation of the tool is also expected in Mai (AWG meeting)</p> <p>IDS survey: the IDS survey will start in January 2012.</p>	<p>L. Soudarin</p> <p>L. Soudarin</p>
<p>Next IDS Meetings: AWG, GB</p>	<p>The next IDS Analysis Working Group meeting is scheduled for 31 May – 1 June 2012, in Prague. A GB meeting will be planned at the end (Friday afternoon).</p> <p>An IDS workshop is scheduled in Venice , 25-26 September 2012 on the occasion of the symposium “20 years of Progress in Radar Altimetry” and OSTST2012.</p> <p>The call for participation shall be sent in January (deadline for abstracts: mid</p> <p>About a next GB meeting at AGU, we can ask the JPL for a room</p>	<p>L. Soudarin</p> <p>Pascale & Frank</p>
<p>Review of actions</p>	<p>See updated xls file “IDS actions_2012_01_09.xls“</p>	

IDS GB meeting

San Francisco, AGU, 2011/12/08



Outlines



- **1/ DORIS missions**

- **2/ Network / beacons**
 - ◆ Beacon status
 - ◆ Beacon improvements
 - ◆ New DORIS stations
 - ◆ DORIS in US
 - ◆ VLBI/DORIS compatibility

- **DORIS ground antennas calibration study**



9 DORIS satellites in flight (7 IDS contributors)



- **HY-2A (CNSA)** : 963km, 99.3° **launched on 2011/08/15 → mid 201**
 - **BUT DATA not AVAILABLE at IDS (expected from 2nd trimestrial 2012)**

- **CRYOSAT-2 (ESA)**: 717 km, 92° April 8, 2010 → end 2013, (DGXX)

- **JASON-2 (CNES/NASA)**: 1336 km, 66° June 2008 → end 2013, (DGXX+LRA+GPS)

- **ENVISAT (ESA)**: 800 km, 98.5° March 2002 → 2013, (D2G + LRA)

- *Helios 2A, Hélios 2B* *dec 2004 et dec 2009 → 2014, 2019*

- **SPOT5 (CNES)**: 830 km, 98° May 2002 → 2015 (D2GM only)

- **JASON-1 (CNES/NASA)** 1336 km, 66° Dec 2001 → 2013 (D2G+LRA+GPS)

- **SPOT4 (CNES)**: 830 km, 98° March 98 → end **2012**





Futures missions DORIS



- **PLEIADES (DUAL) :** **17 décembre 2011, (8 ans)**
2ème satellite : + 10-18 mois (8 ans)

- **SARAL/ALTI-KA (ISRO) :** 800km, 98.5° **mid 2012 (5 years),**

- **SENTINEL3A (GMES) :** 814km, 98.6° **Nov. 2013, (7.5 years + 5)**
 - ◆ Sentinel 3B: **2017(TBC)**

- **JASON-3 (Eumetsat/NOAA/NASA/CNES) :** 1336 km, 66° **2014 (5 years)**

- **HY-2 B, C, D *** **2013, 2015, 2017 (3 ans)**

- **GRASP (JPL)*:** 1300 - 2000 km, 102 -105° **2017 (3 years)**

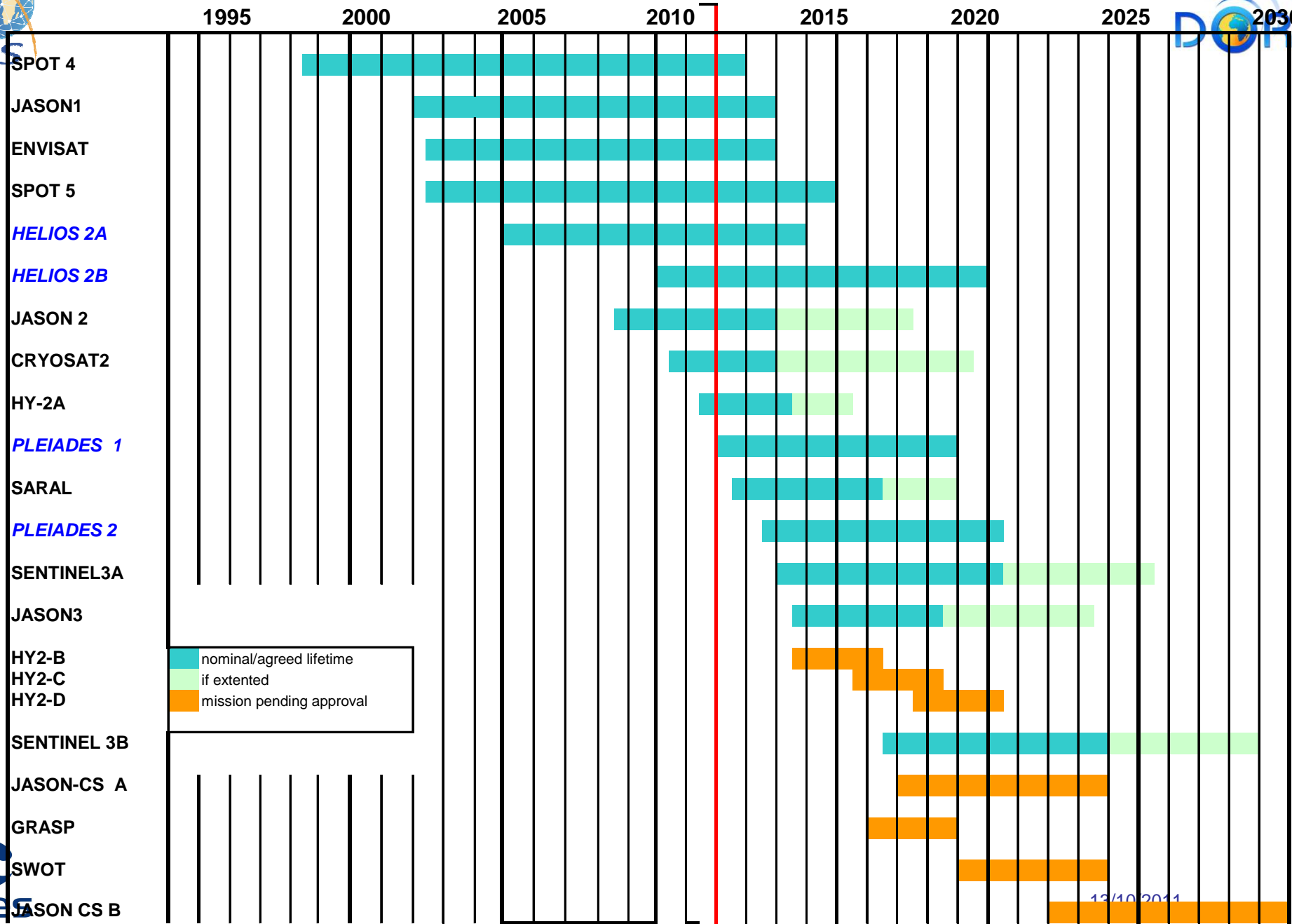
- **JASON-CS* (Eumetsat/NOAA) :** 1336 km, 66° **2017 (7 ans)**
 - ◆ Jason-CS (B): **2023 (7 ans)**

- **SWOT* (NASA/CNES) :** 970km, 78° **2020 (3 ans)**

* Missions TBC



Missions DORIS



13/10/2011



Beacons status



■ Unavailable beacons :

- ◆ Tristan Da Cunha : no measurement from 2010/01/23 , Renovation planned in February
- ◆ Futuna : No measurement from December 2008 => Renovation expected early in 2012
- ◆ Santa Cruz : No data from 05/06/2009, beacon blocked to the customs, contact established
- ◆ Socorro : No data from October 2009, beacon 3.0 on site, complete renovation planned.
- ◆ Port Moresby : No reception (again) from January 2011, new contact.
- ◆ Cachoeira : Beacon switched off from May 2011, due to on site work
- ◆ Rikitea : beacon failed from October 2011
- ◆ Yuzno-Sakhalinsk : will be replaced

■ The good news:

- Manille : OK from October 2011





Beacon improvements



■ Beacons 3.1; 3.2

- ◆ 3.1 :
In Toulouse from January 2011
In Yaragadee
- ◆ 3.2 :
In Mahe

■ Current beacon procurement and maintenance

- ◆ New contrat with the manufacturer ELTA (June 2006 → 2014)
- ◆ but AREVA has officially announced the sale of ELTA → **manufacturing risk**

■ → TOWARD a new generation of beacons (4.0)

- ◆ To upgrade the technologies
- ◆ To decrease costs and material volumes
- ◆ Improvements: adjust the power requirements wrt the site, ...

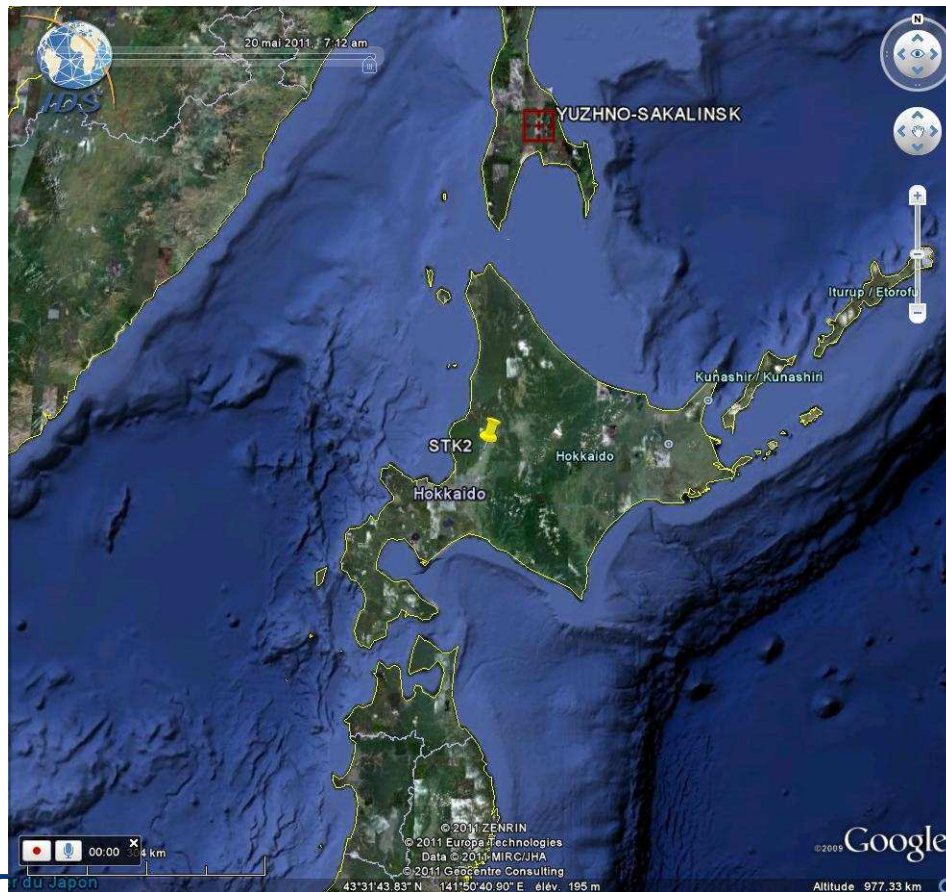
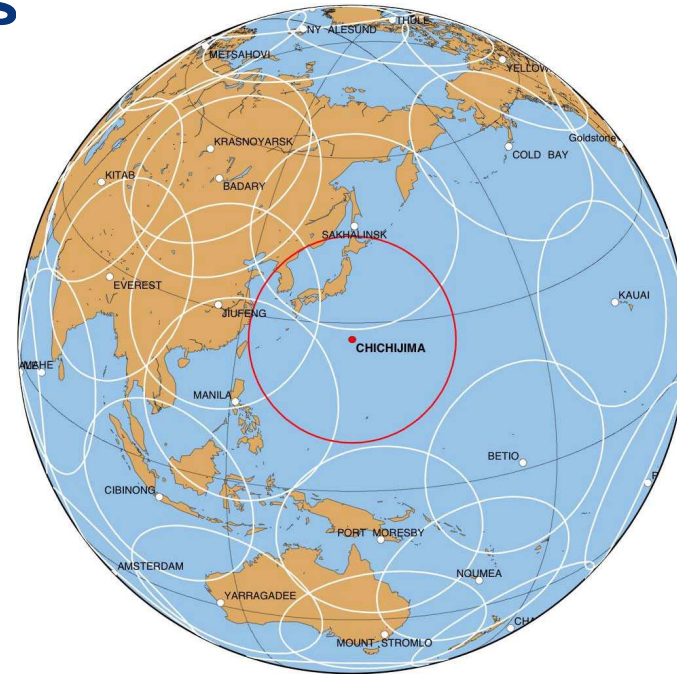


New DORIS stations



■ Chichijima :

- ◆ Installation plan in progress with CNES Tokyo and JAXA



- ◆ New site to replace Yuzhno-Sakhalinsk :
Nord Hokkaido
contact established by IGN

13/10/2011

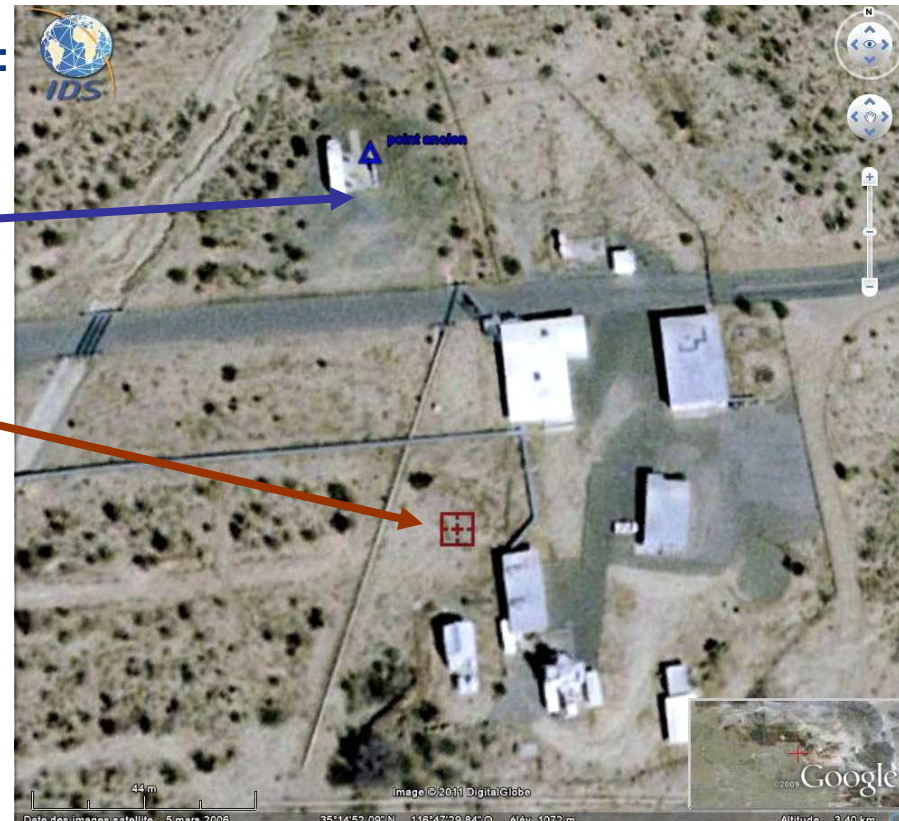
- ◆ Dossier in progress, pending approval by NASA HQ

- ◆ 2 possible locations (CNES visit in October):

- ◆ old DORIS localization

- ◆ or near the NASA building

- ◆ Both are equivalent





DORIS stations in US



- Meeting on 2011/11/04 with V. Scott Galbraith (GSFC Spectrum Manager) about concerns emanating from both the TV-mobile community and NASA HQ about the DORIS beacons in the US, in particular Miami and Greenbelt.
 - Strong advise to move the DORIS beacon at Miami to another site (less exposed to potential interference with mobile TV broadcasters and relays)
 - A telecon will be planned in January between GSFC and CNES
- For the moment, the DORIS at GGAO is not affected
- Cold-Bay and Kauai seem not to be at issue



DORIS/VLBI compatibility



■ Current colocations DORIS/VLBI:

Greenbelt:	237m	VLBI 2010
Yarragadee:	130m	VLBI 2010 planned → DORIS will be moved
Badary:	50m	VLBI 2010 planned in 2014
Kauai:	200m	VLBI 2010 planned
Ny Alesund:	> 1km	VLBI 2010 planned in 2017
Metsahovi:	> 1k m	VLBI 2010 planned in 2015

■ Study in progress at GGAO: (no news since August 2011)

- ◆ Technical discussions undertaken to further define the tests
 - ◆ definition of the mask acceptable for the DORIS station
 - ◆ Definition of the noise induced by the multipath acceptable for DORIS
- ◆ A new antenna is sent to Greenbelt for renovation purpose, it can be used for the tests.



DORIS ground antennas calibration study



- **Measurements and analysis of the position of the 2Ghz Center of phase.**
 - Calibration test performed on 7 STAREC antennas (3 new, 4 old from 2 different lots)
 - First results presented in DORIS performance group (September):

A common offset wrt the reference position (given by the manufacturer) is observed: around -17mm on the vertical axis
 - The analysis report should be available in December

DORIS NETWORK STATUS

December 2011



prepared by Jérôme Saunier
Institut Géographique National



Operational status



**56 stations of which: 9 beacons are out of order (6 for over a year)
Ageing network and beacon stockout**

Network last events

2011	Station	Event
November	HBK	Visit (REGINA station upgrade)
October	Mahé Metsahovi <i>Manille</i>	Beacon 3.2 installing, reconnaissance with a view to move Reconnaissance with a view to colocate with GNSS + SLR+VLBI <i>Beacon replacement</i>
September	Yuzno-Sakhalinsk	Abandoned for good, removed from the network. Wildcard: Hokkaïdo
August	Rikitea Futuna	Equipment replacement, local tie survey Reconnaissance (preliminaries before renovation)
July	Nouméa <i>Easter</i>	Renovation (antenna raising and equipment replacement) <i>Beacon replacement</i>

Planning

Short run:

- Tristan da Cunha: Major renovation (equipment, antenna moving...)
- Kerguelen: local tie survey (new GNSS station)
- Futuna: Major renovation (equipment, shelter, antenna raising...)
- Greenbelt: Renovation (shelter replacement, antenna raising)
- Goldstone: Reconnaissance (new station in place of Monument Peak)
- Socorro: Major renovation (equipment, antenna moving...)

Later:

- Jiufeng: renovation, local tie survey (new GNSS station)
- Chichijima: new station
- Hokkaido: new station (in place of Yuzno-Sakhalinsk)
- Kitab: Major renovation
- Easter: Major renovation

New IDS stations

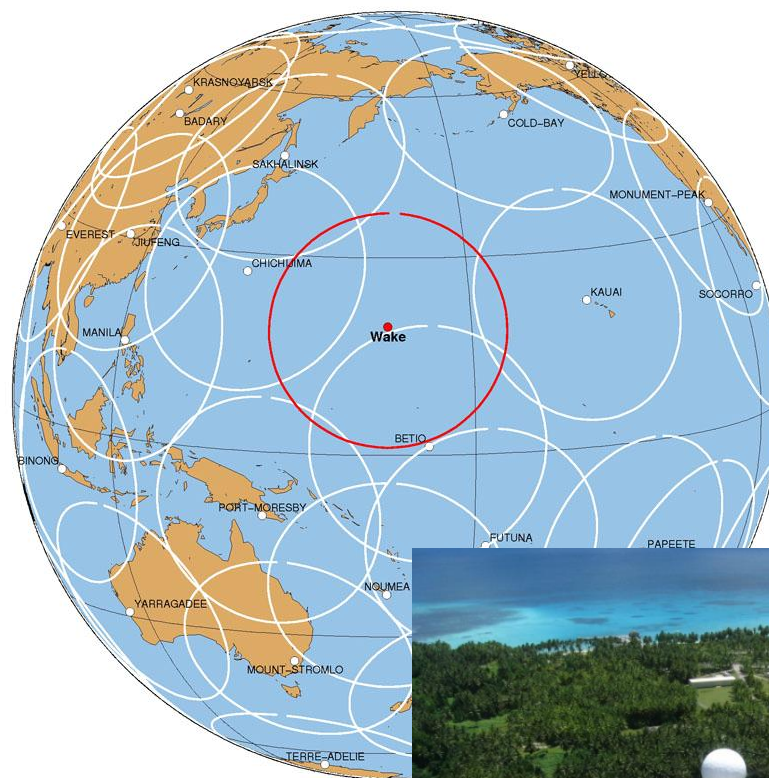
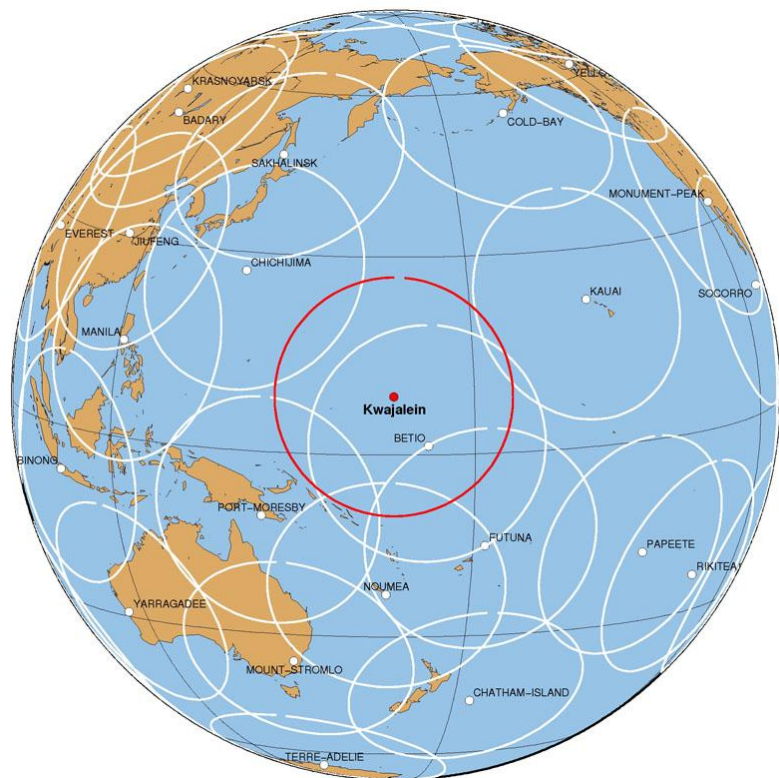
Under negotiation:

- **Korea: KASI gave their approval. Co-location with GNSS + SLR + VLBI (under way)**
- **Marshall islands: target = Wake island. A chance of successful conclusion...**
- **West Indies (Antilles): first contact with Météo France, Martinique.**

Lying dormant:

- **Riyadh: frequency clearance missing**
- **Tamanrasset: reconnaissance carried out (01-2009). INCT agreement needed.**

Marshall Islands



Wake island best located

West Indies



**Host agency: Météo-France close to the airport
Co-location with IGS station « LMMF »**

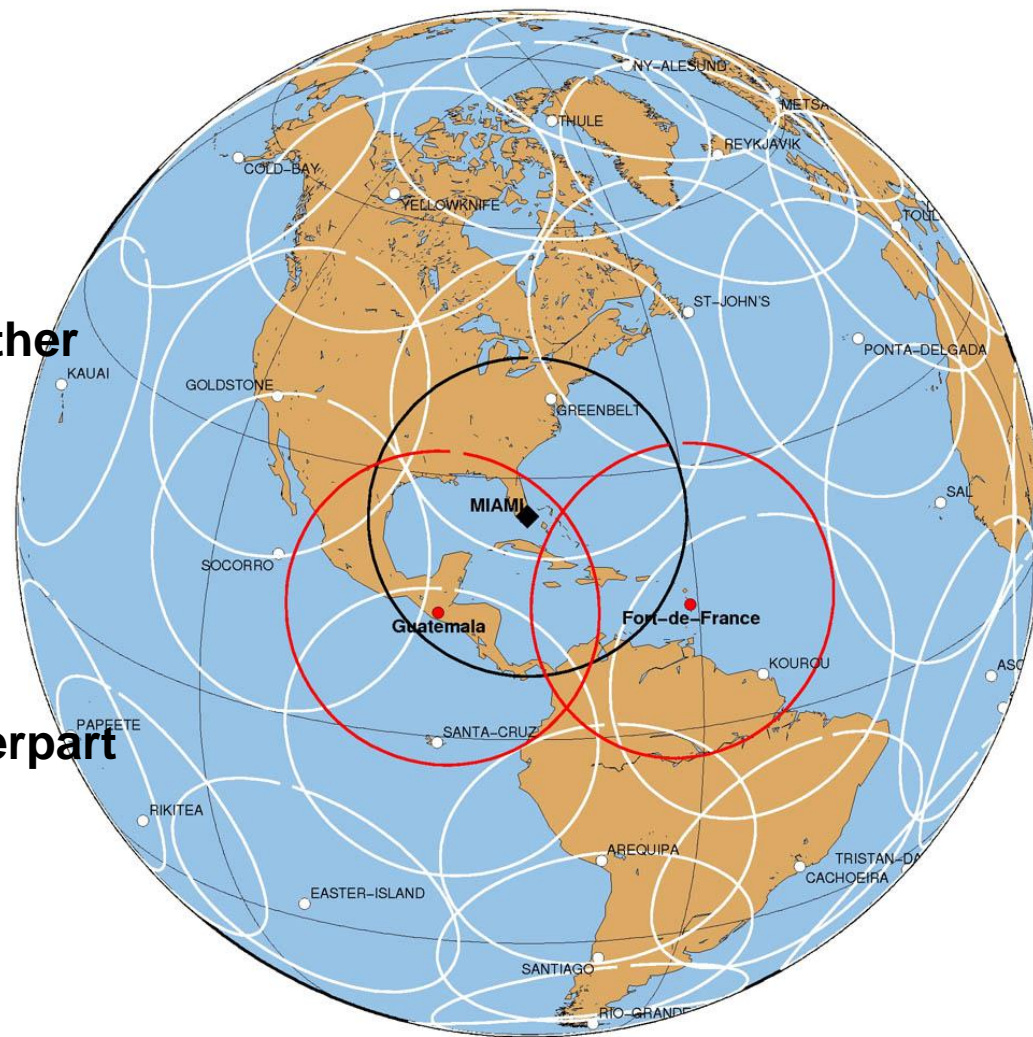
- **Warning from Frank (November 7th 2011)**

- **Move the DORIS station at Miami to another place in Florida (not as simple as that)**

- **Install 2 others complementary stations instead Miami:**

- Fort-de-France: already planned

- Guatemala: host agency = IGN counterpart
+ GNSS co-location (IGS « GUAT »)



Network

DORIS stations co-located with other IERS techniques (VLBI, SLR or GNSS)

