








IDS REPORT 2014.04

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GGOS Bureau of Networks and Communications

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April 30, 2014

Outline

1. **Satellite Constellation Status.**
2. **Network Status.**
3. **IDS Analysis Summary.**
4. **Future IDS meetings.**

DORIS Constellation Status - Current Missions (5)

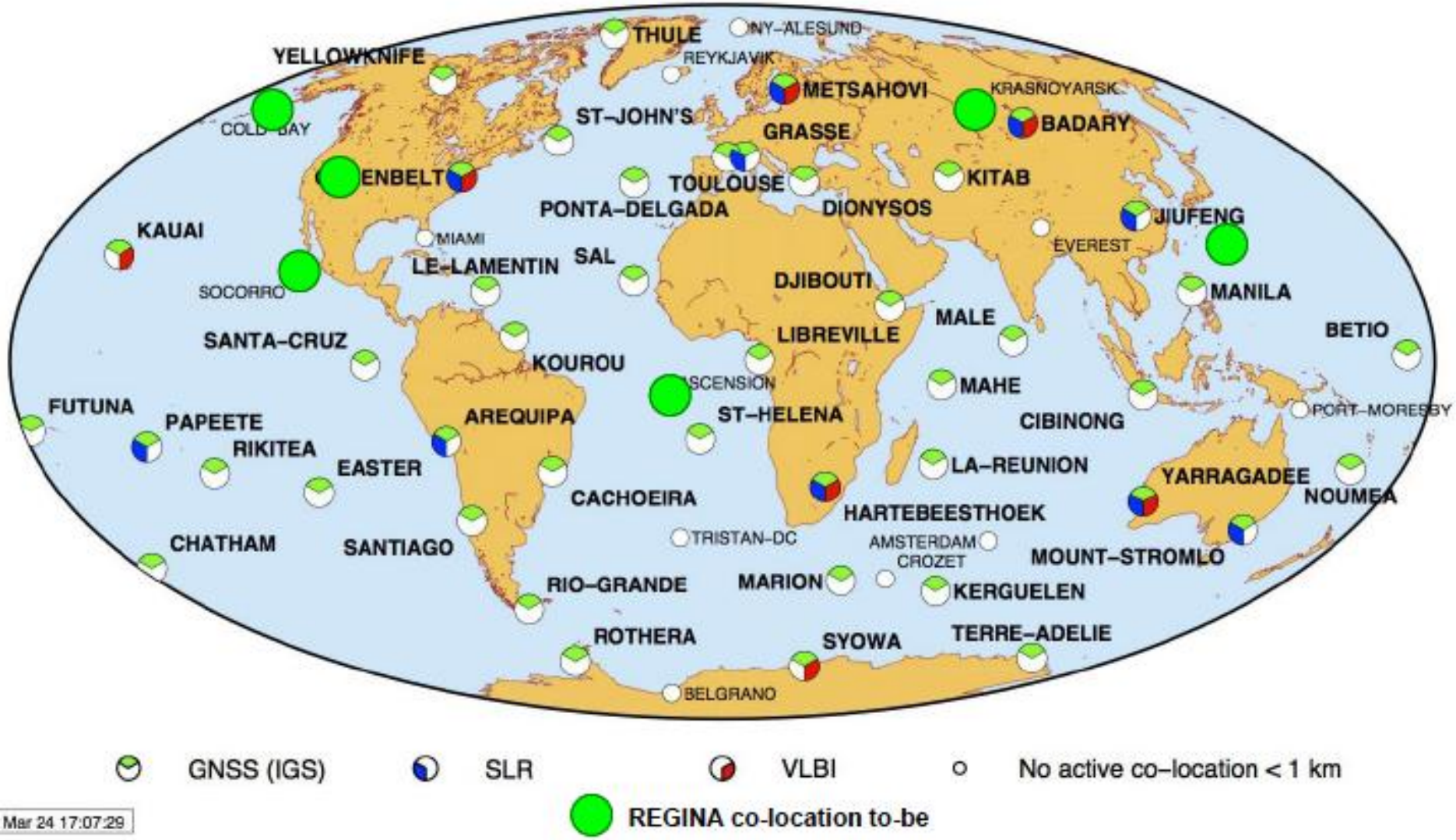
Satellite	Agencies	Altitude (km)	Inclin.	Dates
DGXX Receiver (7 channels)				
Jason-2	NASA/CNES/EUMETSAT/NOAA	1336	66°	June 2008 → 2017
Cryosat-2	ESA	717	92°	April 2010 → 2017
HY-2A	CNSA, NSOAS	960	99°	August 2011 → 2014
SARAL	ISRO, CNES	800	98.5°	Feb. 2013 →
DGM Receiver (2 channels)				
SPOT-5	CNES	830	98°	May 2002 → ~May 2015.

- **SPOT-4: Decommissioned, June 2013. (**launched 1998**)**
- **Jason-1: End of mission, July 2013. (**launched Dec. 2001**).**

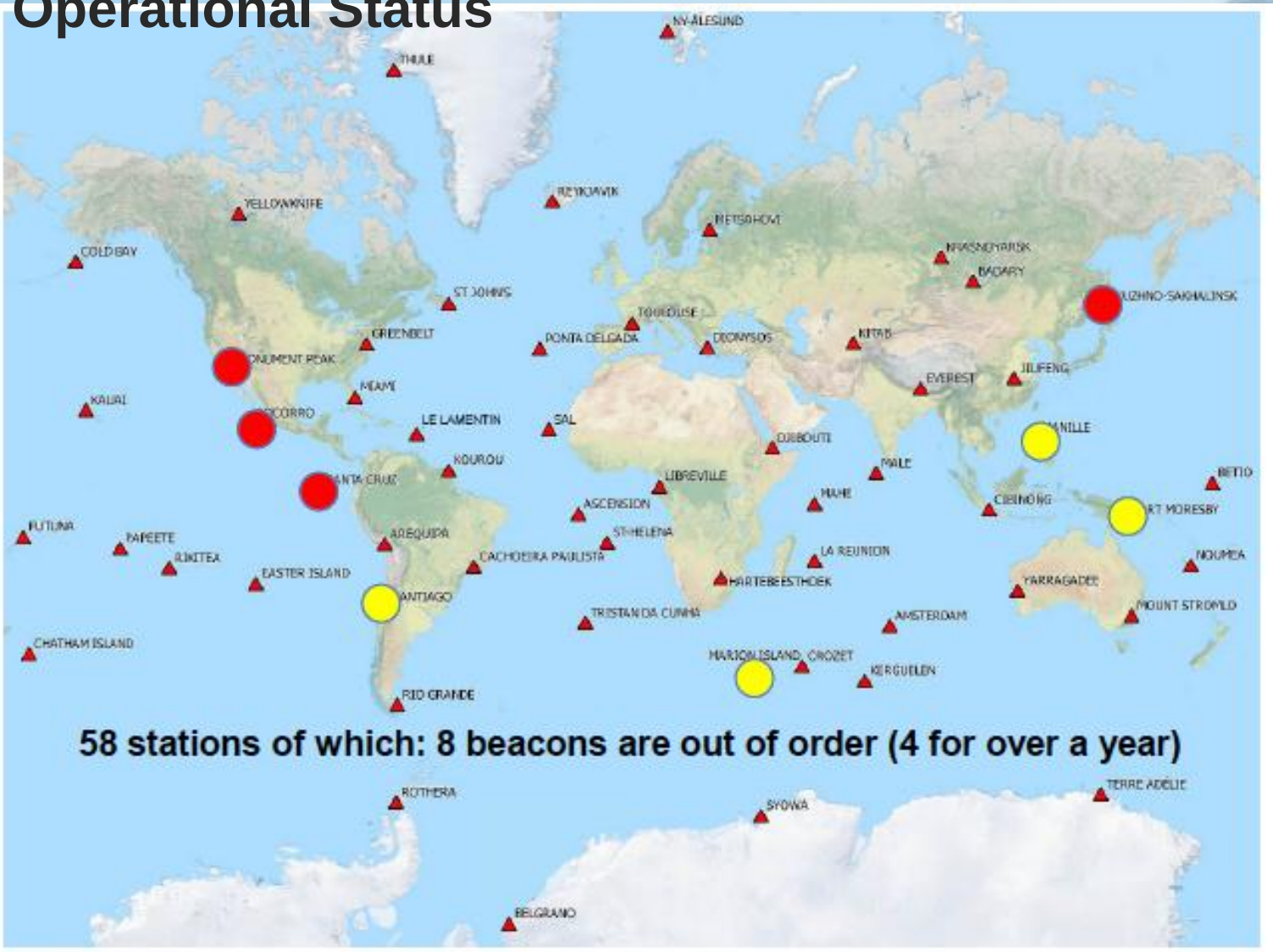
DORIS Constellation Status - Future Missions

Satellite	Agencies	Altitude (km)	Inclin.	Dates
DGXX Receiver (7 channels)				
Sentinel-3A, Sentinel-3B	ESA	814	98.6°	2015, 2017
Jason-3	NASA/CNES/EUMETSAT/NOAA	1336	66°	2015 → 2020
HY-2B, C, D	CNSA,	960	99°	2014, 2016, 2018 (3 yrs)
Jason-CS A,B	EUMETSAT/NOAA	1336	66°	2019, 2025
SWOT	NASA/CNES	970	78°	2020

Current DORIS tracking network (April 2014)



Network Operational Status



<u>Out of order for over a year</u>:

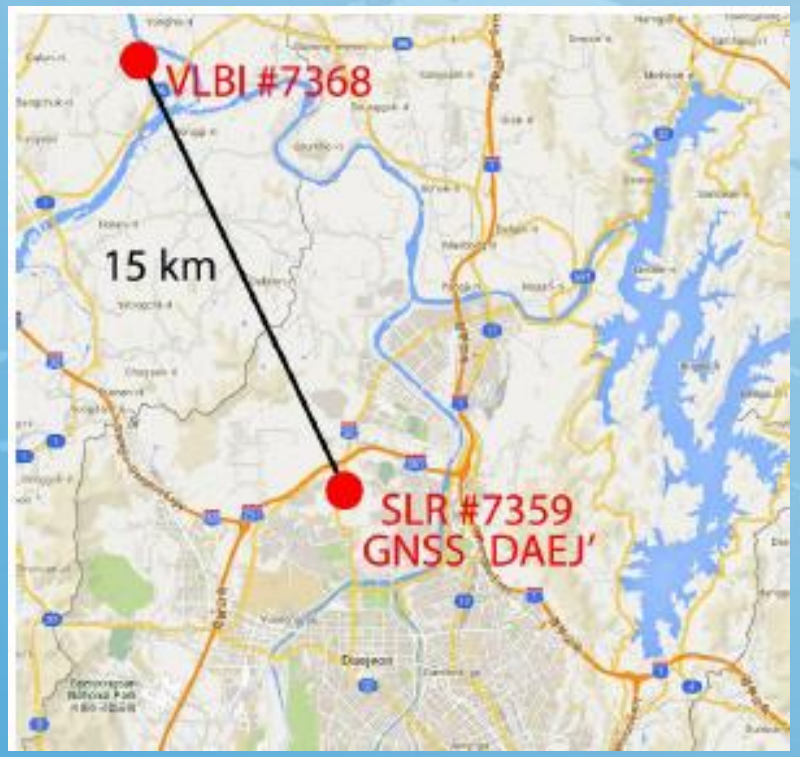
→**Santa Cruz** *(06/2009)*; **Soccoro** *(10/2009)*;

→**Monument Peak** *(02/2010);* **Yuzno-Sakhalinsk** *(11/2005)* **– Both these stations will not be reinstated, but replaced with alternate stations.**

Network evolution

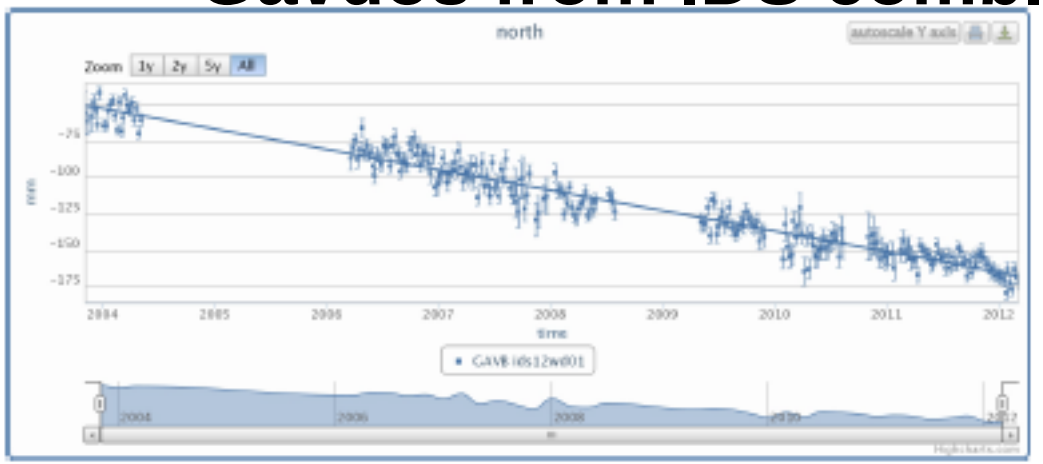
- **SHORT TERM (Next 6 MONTHS):**
  - **Chatham, NZ**: re-location 18km SE (co-location with new GNSS station).
  - **Kitab, UZ**: major renovation (station re-location to get better visibility).
  - **Socorro, Mex.**: major renovation (station re-location to get better visibility).
- **LONGER TERM:**
  - **Goldstone, CA**: new station in place of Monument Peak.
  - **Miami, FL**: definitive shutdown (interference with mobile-TV relays).
  - **Managua, Nicaragua:** new station in place of Miami.
  - **Chichijima & Hokkaïdo, JA**: new stations waiting for frequency clearance.
  - **Easter Island (Chile).** Relocate to near IGS station, ISPA**.**
  - **Port-Moresby, PNG**: site to be closed. New location in Australia? Weipa or Katherine.
  - **Santiago**: site to be closed. Move to San Juan, Argentina?

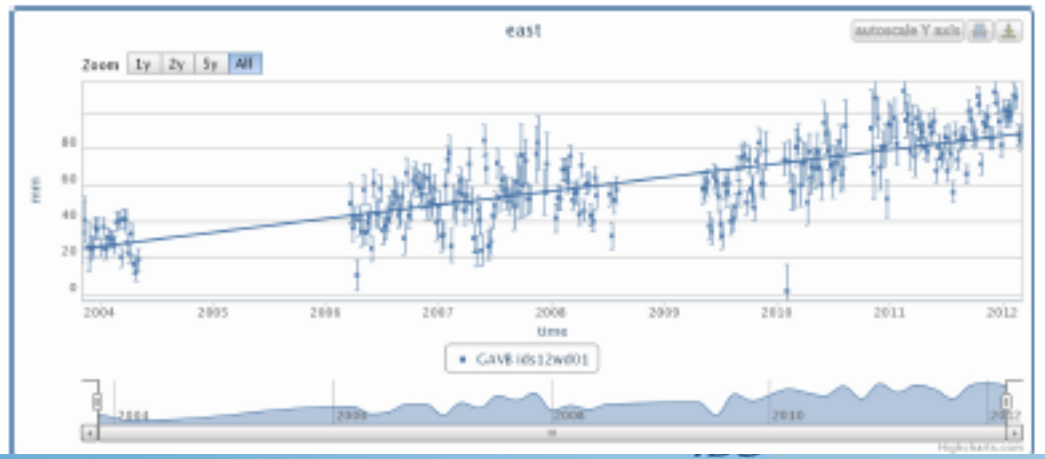
- **IDS projects:**
  - **Sejong, Korea**: Removed from consideration. Not a true 4 technique site.
  - **Guam, US**: Planning underway for new station, near IGS site.
  - **Gavdos, Greece**: IDS GB agrees to decommission site, due to poor performance (No data since 2012?).
  - **Wettzell:** IDS GB agrees to beacon deployment (new 4 technique site)



S. Korea Geodetic sites

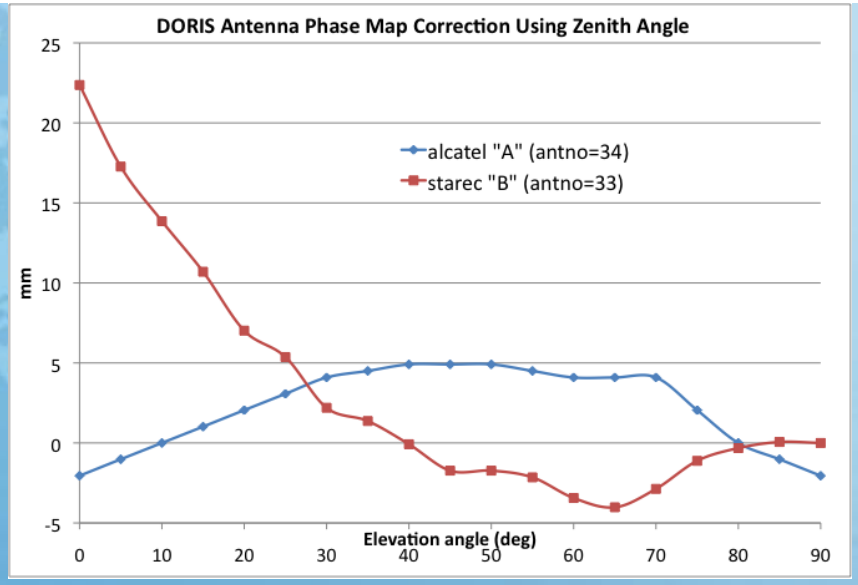
Gavdos from IDS comb.





DORIS Ground Antenna Characterization (1/2)

- **Updated Starec antenna phase law provided by CNES to DORIS Analysis Centers for use in ITRF2013; Separate phase law provided for Alcatel antenna.**
- **Starec antenna phase variations were measured in anechoic chamber by CNES – following request of IDS GB & the IERS.**
- **5/6 ACs have successfully implemented the phase law in their software (**as of April 2014**), and their implementation was validated.**

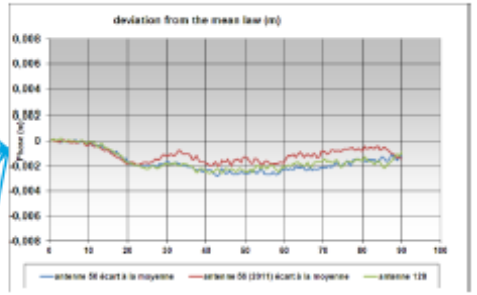


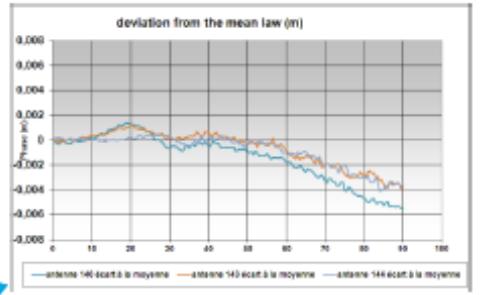
DORIS Ground Antenna Characterization (2/2)

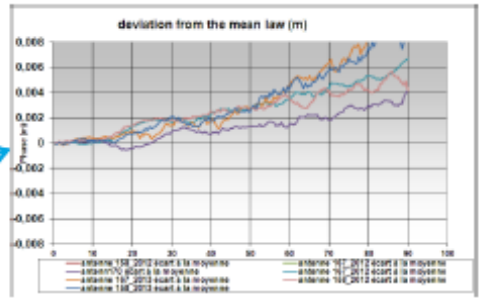
Antenna dispersion

- Antennas characterized at CNES compact antenna test range (CATR)
- In parallel, a set of antennas dismantled
  - Distance between 2GHz radiating element bottom and mounting flange (TCMA)

Batch	Antenna	TCMA (mm)
Starec	26	715
	50	715
	56	716
Juin 2000	61	710,5
Dec 2000 (64 80 82 85-> 134)	88	712
	90	712
	103	712
	118	713
	127	715
	128	
2006 (135-> 156)	140	
	143	
	144	
	149	714,5
	156	720
2012 (157 -> 170)	158	
	167	
	170	713







- Distance corresponding to the mean law provided via antex files : 716mm
- Dispersion wrt this distance : -6mm /+4mm for old antennas (SN < 171)
- **Future antennas : distance guaranted at 716 ±1mm (from SN 171)**

(from Cédric Tourain, DORIS AWG Meeting, March 2014)

Analysis Update

1. **Six active DORIS analysis centers (ESA, GOP, GSC IGN, INA, LCA). GFZ requested status of Associate Analysis Center. After examination of ToR, ToR will need to be modified to allow for AACs.**

2. **DORIS ACs routinely submit SINEX solutions each quarter (e.g. 3/30, 6/30, 9/30, 12/30) which are now processed by IDS Combination Center.**

3. **ITRF2013: Contributions of Analysis Centers for ITRF2013 have been validated. As of April 27, 2014, all ACs have completed their submissions.**

4. **ITRF2013: IDS CC has prepared a V0 IDS combination;V0 = those AC contributions available ~4/15/2014. A V1 IDS Combination will be prepared after the EGU. A final V2 IDS Combination will be prepared to implement any last fixes.**

5. **Analysis Working Group meetings in Washington DC (**October 2013**), Paris (**March 2014). **DORIS Special Issue Planned (Adv. Space Research).** Proposed co-editors (F. Lemoine and EJO Schrama). Follow-on to special issue in Adv. Space Res (2010).

7. **IDS Workshop, scheduled for Konstanz, Germany, in conjunction with Ocean Surface Topography Science Team meeting (October 27-31, 2014)**

Next IDS Meetings

IDS Workshop, (*in tandem with OSTST, Konstanz, Germany***) October 27-28 2014.**

IDW AWG, early 2015. Location TBD. One major topic will be assuring that all AC's can process DORIS/RINEX data, as for Jason-3, Sentinel3A, - data only available in that format.

http://ids-doris.org