



IDS REPORT 2011

IERS Directing Board Meeting #52

Technical University, Vienna, AUSTRIA

April 3, 2011



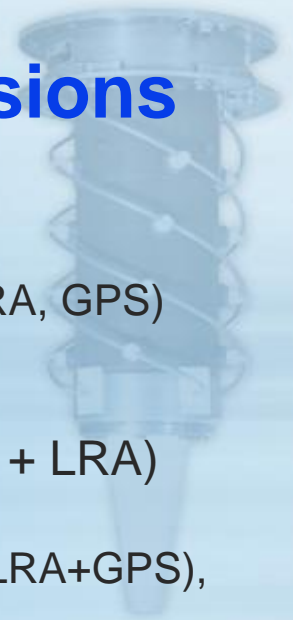
Outline

- 1. Satellite Constellation Status.**
- 2. Network Status.**
- 3. DORIS/VLBI compatibility.**
- 4. Analysis Activity**
- 5. IDS events**

DORIS Constellation Status - Current Missions

- **CRYOSAT-2** (ESA): 717 km, 92° April 8, 2010 → end 2013, (DGXX + LRA)
- **JASON-2** (CNES/NASA): 1336 km, 66° June 2008 → end 2013, (DGXX+LRA+GPS)
- **ENVISAT** (ESA): 800 km, 98.5° March 2002 → 2013, (D2GM + LRA)
(Oct 2010: orbit change: altitude reduction -17.4 km)
- **SPOT5** (CNES): 830 km, 98° May 2002 → 2015 (D2GM only)
- **JASON-1** (CNES/NASA) 1336 km, 66° Dec 2001 → 2012 (D2G+LRA+GPS)
- **SPOT4** (CNES): 830 km, 98° March 98 → 2012

DORIS Constellation Status - Future Missions

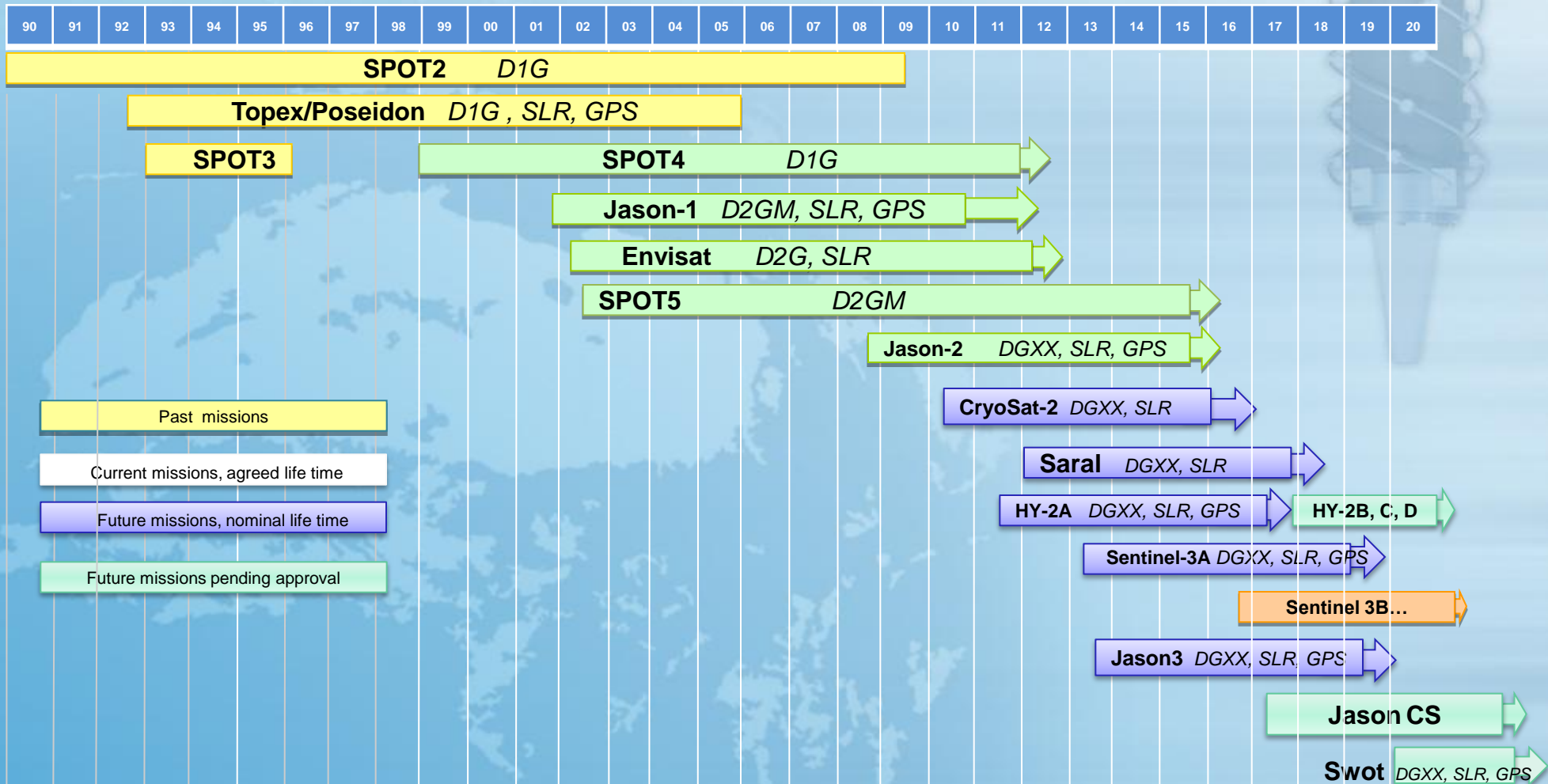


- **HY2A (CNSA)** : 963km, 99.3° July 2011, (3 years), (DGXX+LRA, GPS)
... then HY2B, 2C, 2D...
- **SARAL/ALTI-KA (ISRO)** : 800km, 98.5° End 2011, (5 years), (DGXX + LRA)
- **SENTINEL3A (GMES)** : 814km, 98.6° April 2013, (7 years), (DGXX+LRA+GPS),
■ **Sentinel 3B:** 2017
- **JASON-3 (Eumetsat/NOAA/CNES)** : 1336 km, 66° summer 2013 (DGXX+LRA+GPS),
- **JASON-CS* (Eumetsat/ESA/CNES)** : 1336 km, 66° 2017
- **SWOT* (NASA/CNES)** : 970km, 78° 2020 (DGXX+LRA+GPS),

(*) on board DORIS pending approval

+ **GRASP (JPL)? 1300-2000km, 102-105°, 2016-2017 (DGXX+LRA+GPS+VLBI)**

DORIS CONSTELLATION SUMMARY



Network: last events (Oct. 2010 – March 2011)

- **October: New station at Cold Bay (AK)**
- **October: Taking down at Fairbanks (AK)**
- **December: Reconnaissance with a view to install a station at Chichijima (Japan)**
- **January: Equipment upgrading at Reykjavik**
- **January: Local tie survey after new GNSS station installation at Papeete**
- **February: Equipment upgrading at Terre Adelie**
- **February: Equipment upgrading, antenna raising, local tie survey at Rothera**
- **February: Renovation, local tie survey (new GNSS station) at Kourou**
- **March: Reconnaissance for major renovation at Socorro**

Network: future events

Soon:

- **Tristan Da Cunha: major renovation (equipment, antenna moving...)**
- **Futuna: major renovation (shelter, compliance with standard configuration)**
- **Socorro: major renovation (equipment, antenna moving...)**
- **Greenbelt: renovation (shelter, compliance with standard configuration)**
- **Nouméa: antenna raising**
- **Mahe: test beacon 3.2 model**
- **Goldstone: reconnaissance (new station in place of Monument Peak)**

Later:

- **Kitab, Easter Island: major renovations**
- **Riyad, Tamanrasset: new stations, very slow progress**
- **Chichijima: new station, site to be chosen**

DORIS/VLBI compatibility

- **Plan experiment to determine degree of interference and come up with plan or formula for how DORIS might be “safely” co-located at VLBI locations:** *Action item from both the IDS and IVS Governing Boards*

- **DORIS/VLBI compatibility status**
 - **current VLBI → no interference with DORIS**
<http://ivscc.gsfc.nasa.gov/publications/gm2010/ilin.pdf>

 - **VLBI2010: Hyastack study (C. Beaudoin) → risk of interference**
 - Distance required: **500m** between DORIS and VLBI antennas
 - To find a solution (small building?) to reduce the DORIS signal towards VLBI without creating multipath.
 - Study to be continued

Analysis activity



Analysis Centers:

- ACs submit 3 months of weekly SINEX solution, every 3 months, with a 3-month delay (e.g.: end of March 2011, sinex for Oct-Dec 2010 have been delivered)
- Same standards as for IDS-3 (DORIS solution for ITRF2008)
- Solutions without and/or with Jason-2 (Jason-2 stabilizes Tz)

Combination Center (*G. Moreaux, L. Soudarin - CLS*)

- Routine combination process:
 - Evaluation of all AC SINEX series
 - Weekly combination
 - Evaluation of the combination
- Status of the routine combination
 - First version of combination from begin of 2009 to middle of 2010
 - Needs some functional improvements
 - Some utilities have still to be developed (ex: generation of a delivery report)

Analysis activity

IDS 2010 analysis campaign

- **Single satellite (Envisat, Jason-2, Spot2, Spot4 and Spot5) solutions over 2009 from IDS Analysis Centers (ESA, GAU, GOP, GSC, IGN and LCA)**
- **Objectives: contribution of each satellite on geocentre and scale, discrepancies between ACs (see G. Moreaux's presentation on Thursday 7, G2.1)**

DPOD2008 (WG chaired by P. Willis)

- Extension set of ITRF2008 to include new stations**
- Work in progress**

IDS events

Last event:

**IDS workshop and Analysis Working Group meeting, Oct. 2010,
Lisbonne, Portugal**

Next event:

Analysis Working Group meeting, May 23-24 2011, Paris, France



<http://ids-doris.org>



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