DORIS system status and future missions

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DORIS

IDS

Today 5 satellites contribute to IDS

- SARAL/ ALTIKA CNES/ISRO): 800km, 98.5° February 2013 → 2018 (DGXX+LRA)
- HY2-A (CNSA, NSOAS): 960km, 99° August 2011 →TBD (DGXX+LRA+GPS)
- CRYOSAT-2 (ESA): 717 km, 92° April 2010 → mid 2017 (DGXX + LRA)
- JASON2 (NASA/CNES): 1336 km, 66° June 2008 → 2017 (DGXX+LRA+GPS)
- SPOT5 (CNES): 830 km, 98° May 2002 → August 2015 (DGM)

  - from April to August 2015 :Take 5 mission (ESA): to prepare image processing chains of the future mission Sentinel-2 (GMES project). On a new orbit (2.5 km lower)

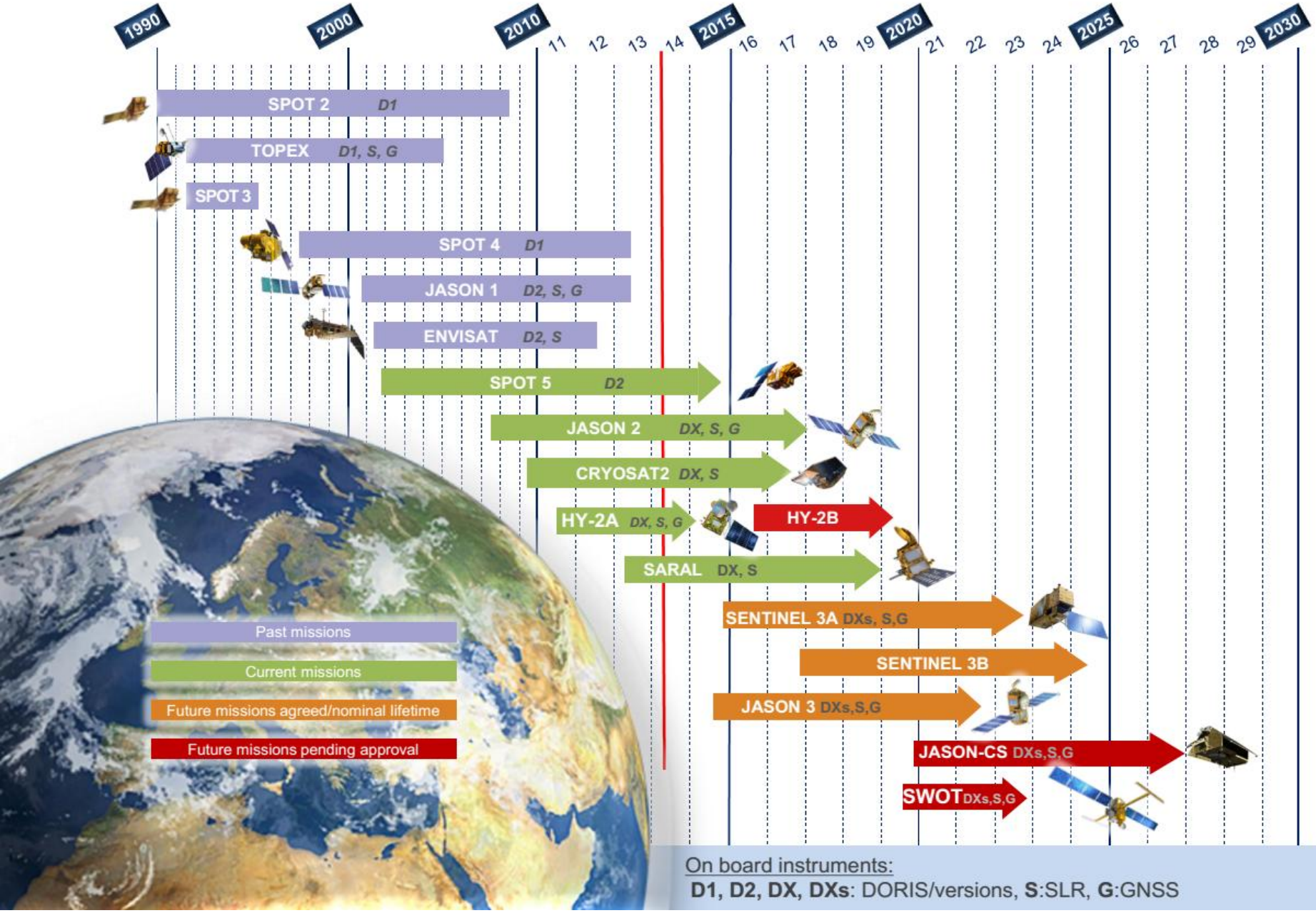
  - Plan to use of the navigator ”DIODE” to monitor the satellite de-orbiting

At least 6 Future missions

- **To be launched soon :**
  - JASON-3 (Eumetsat/NOAA/NASA/CNES) : 1336 km, 66° — **March 2015** (5 years)
  - SENTINEL3A (GMES) : 814km, 98.6° — **end 2015** (7.5 years + 5)
  - SENTINEL3B : — **2018**
- **Missions pending approval :**
  - JASON-CS A (Eumetsat/NOAA) : 1336 km, 66° — **end 2020** (7 years)
  - JASON-CS B — **2022** (7 years)
  - SWOT (NASA/CNES) : 970km, 78° — **post 2020** (3 years)
- Others possible Missions
  - HY2B, C, D — **????** (3 years)
  - SENTINEL 3C & 3D — **????** (7.5 years + 5)

NB: DORIS DATA: only RINEX format for the future missions

DORIS CONSTELLATION (October 2014)



On board instruments:

D1, D2, DX, DXs: DORIS/versions, **S**:SLR, **G**:GNSS

Reminder

✦The instruments currently under development for Sentinel3A, 3B and Jason3 are from generation “DGXX-S”

- ✓ same functions as DGXX instruments
- ✓ new processor (LEON) allowing new processing capacities on board
  - Improvement of real time orbit determination (toward centimetric accuracy)
  - Earth pole determination (< 1 mas)
  - beacons frequency estimation (< 10E-12)
  - …
- ✓ will also fly on board Jason-CS and SWOT satellites

What's up coming soon

✦4th generation beacons

- ✓ maintain in operational conditions of the Network until at least 2025
- ✓ study started
- ✓ development 2014 – 2016
- ✓ deployment from 2017

✦*DORIS pole product*

- ✓ Goal : take benefit of new DGXX-S telemetry to provide pole coordinates as a SSALTO product
- ✓ 2015 :
  - ✓ study based on results from ground DIODE computation of DGXX data
  - ✓ Product specification
- ✓ 2016 :
  - ✓ Processing chain implementation
  - ✓ Product official dissemination