DORIS SYSTEM STATUS

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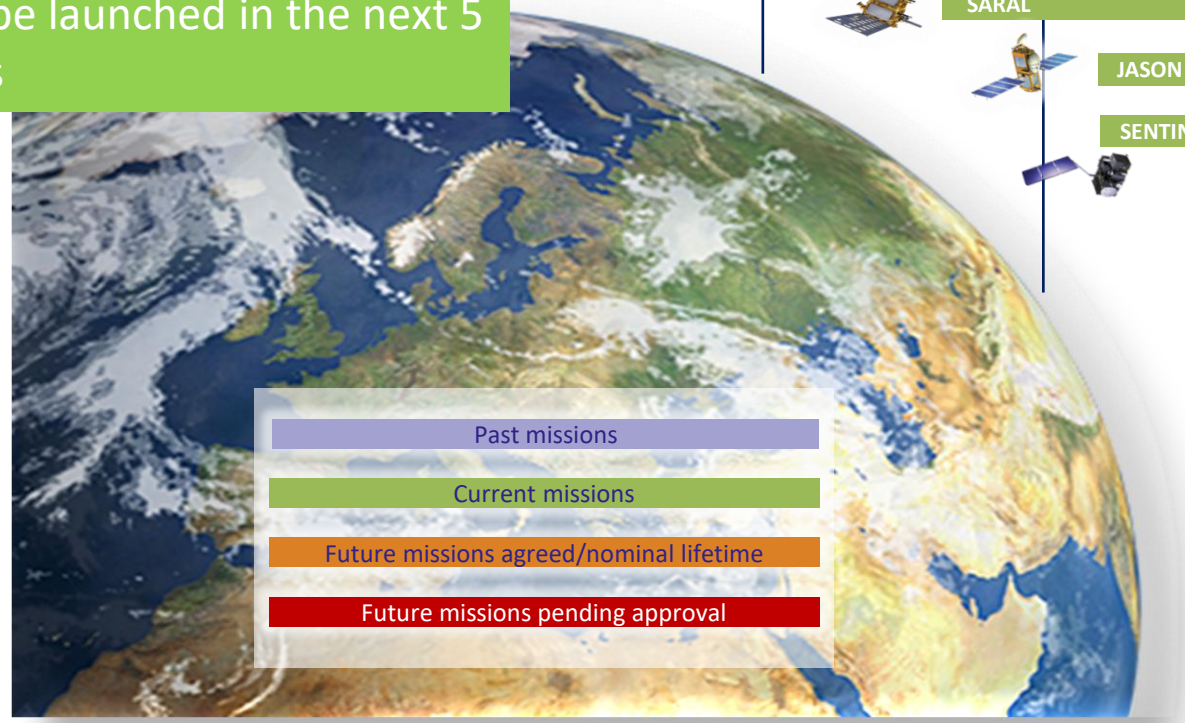
IDS AWG
ATHENS
NOVEMBER 6TH AND 7TH 2025

CONSTELLATION DORIS

Current missions

9 instruments in exploitation

6 to be launched in the next 5 years



Past missions

Current missions

Future missions agreed/nominal lifetime

Future missions pending approval

1990 2000 2010 2015 2020 2025 2030 2035

SPOT 2, SPOT3, SPOT4, SPOT5 — D1 / D2

TOPEX — D1, S, G

JASON 1, JASON 2 — D2 / DX, S, G

ENVISAT — D2, S

HY-2A — DX, S, G

CRYOSAT2 — DX, S

SARAL — DX, S

JASON 3 — DXs, S, G

SENTINEL-3A — DXs, S, G

SENTINEL-3B — DXs, S, G

SENTINEL-3C — DXs, S, G

SENTINEL-3D — DXs, S, G

SENTINEL-3NGT — NEO, S, G

HY-2C — DX, S, G

HY-2D — DX, S, G

HY-2E/F — DX, S, G

HY-2H — DX ou NEO ?

SENTINEL-6 MF — DXs, S, G

~5x HY-6 — NEO, S, G

SENTINEL-6B — DXs, S, G

SENTINEL-6C — DX or NEO, S, G

SWOT — DXs, S, G

SENTINEL-6NG — NEO, S, G

GENESIS — DXs, S, G, V

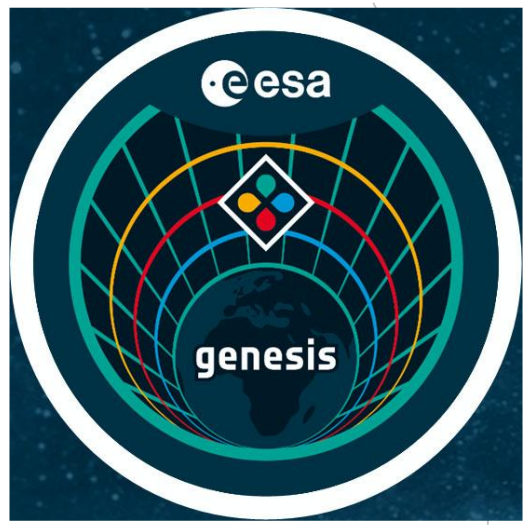
On board instruments:

D1, D2, DX, DXs, NEO (in development): DORIS/versions, **S**:SLR, **G**:GNSS

FUTURE MISSIONS

GENESIS

- ✓ ESA Scientific Geodesy mission, launch on 2028
- ✓ 4 Geodetic technics onboard : VLBI, SLR, GNSS and DORIS
- ✓ Main goal : improvement of the ITRF accuracy



DORIS/GENESIS

DGXX-SEV model

CNES is in charge of :

- Procurement of DORIS instrument adapted for the mission (altitude 6000km), without USO
- Procurement of DORIS products Level 1 (RINEX)
- Tests in the CNES DORIS laboratory to best anticipate the performances

Schedule : Contract with ESA April 8th 2025

Contract with Thales-DMS and Thales-Cobham : October 2025

PDR DORIS System September 30th 2025

CDR DORIS System 2026

DORIS Delivery 2027

Genesis Working Group 4 : Next meeting on November 19th

FUTURE MISSIONS

Sentinel6C

Data continuity with Jason/Sentinel6A&B
Same organization as Sentinel6A&B : Airbus DS GmBh prime contractor
Launch around 2030

DORIS remains TBC on board

Sentinel3 NG Topo

2 satellites for ESA Copernicus Program
Strong heritage from SWOT altimeter
2 DORIS instruments : 1 supplied by CNES, 1 supplied by ESA -> organization TBC
Launch around 2032

Technical argument
Programmatic argument

Sentinel6 NG

DORIS is considered for the mission, but the support from the scientific community remains more than ever required

Chinese Altimetry Missions

NSOAS confirmed its altimetry projects with **New Generation satellites HY-6**
First satellite : HY-6A in 2027, then 5 or 6 satellites by 2035

THE NEW DORIS RECEIVER : DORIS NEO

✓ 5th generation of DORIS receiver
- Technological breakthrough : Software Design Radio (SDR) architecture ⇒ scalability
- Modularity : redundant model, or single-chain model
- Same functionalities, same performances

✓ Schedule with Thalès-DMS:

Phase B : december 2023 to october 2025

PDR : October 6th 2025 ⇒ ongoing conclusions

Phases C/D : approved and budgeted on DIODE, EGSE and receiver
- Kick-off planned in 2026
- New design validated with an Electrical Model (EM)
- First FM in 2028 (TBC with Thalès-DMS)

✓ DORIS NEO : high priority for Scientific Foresight Seminar, and Programming Seminar

STUDIES ONGOING

- R&T radiations on USO (Ultra-Stable Oscillator) :

Objective : define the pre-irradiation level to obtain USO more robust against the space radiations

✓ Last measurement campaign to evaluate the annealing effect : done in 2025

✓ Activities are achieved

➔ Final presentation and conclusion : planned beginning 2026

➔ Recommendations for DORIS NEO USO from DORIS team

- R&T Twin DORIS-GNSS receiver

Stand-by situation on 2024

➔ study to be reconsidered seeing as its technical interest

➔ Diversify industrial partners

➔ Expand the scope of DORIS applications

- New design for the board antenna

Activity under consideration with a main objective of reducing size and mass

CONCLUSION – KEY POINTS

- ✓ Nice constellation for the next few years
- ✓ New missions to be supported
- ✓ A « challenging » mission : GENESIS
- ✓ Development on going for the new generation of the receiver

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THANK YOU FOR YOUR ATTENTION

DORIS

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