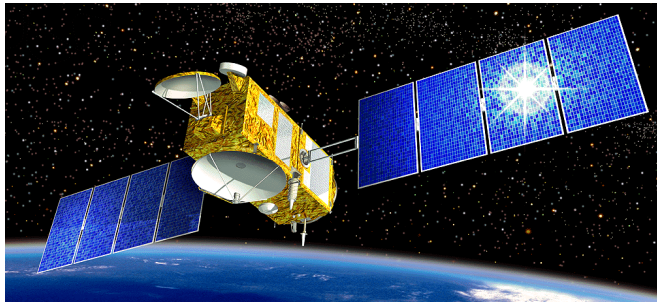




CENTRE NATIONAL D'ÉTUDES SPATIALES



GDR Reprocessing Status and Plans



**CNES, NASA,
NOAA, EUMETSAT**

*From all 4 MSEs
Cristina (EUM),
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F. Bignalet-Cazalet (CNES)

Ocean Surface Topography Science Team Meeting (OSTST)

**19-23 October, 2020
Virtual meeting**





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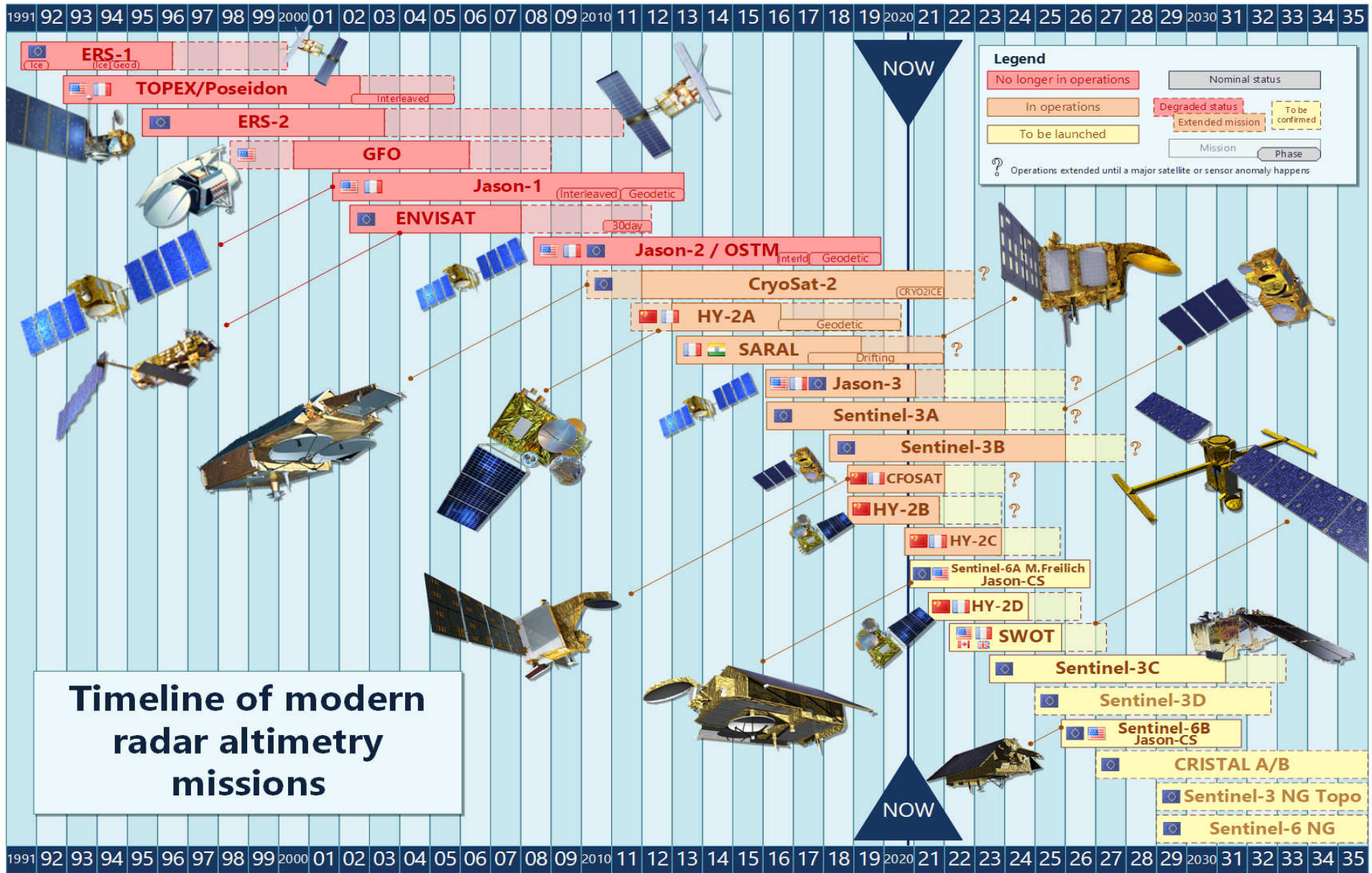


Mission standard Status



- **Currently 8 flying altimeters, with a quite homogenous processing baseline (thanks to coordination between agencies) and with an overall very good data quality.**
- **28 years of past data (since Topex-ERS1) to continue improving data quality.**
- **Sentinel-6-MF/J-CS to come within few days. Using GDR-F standard**
- **SWOT nadir will use the same baseline and product format**
- **All splinters summary requiring reprocessing of past data and more frequent updates.**
- **Thus a busy period with different project constraints (staff and funding)**





Timeline of modern radar altimetry missions



- SARAL has switch to operational GDR-F⁽⁻⁾ in January 2020
- Saral GDR-F reprocessing campaign is on-going and nearly finished :
 - Years 2014 to 2018 are already released on AVISO
 - Years 2013, 2019, 2020 to come before end of the year
- Standard (-) not fully inline with S6 (naming nomenclature, some aux data, no adaptive retracking) but very close.
- About 70 evolutions have been included in this version, including orbit POE-F

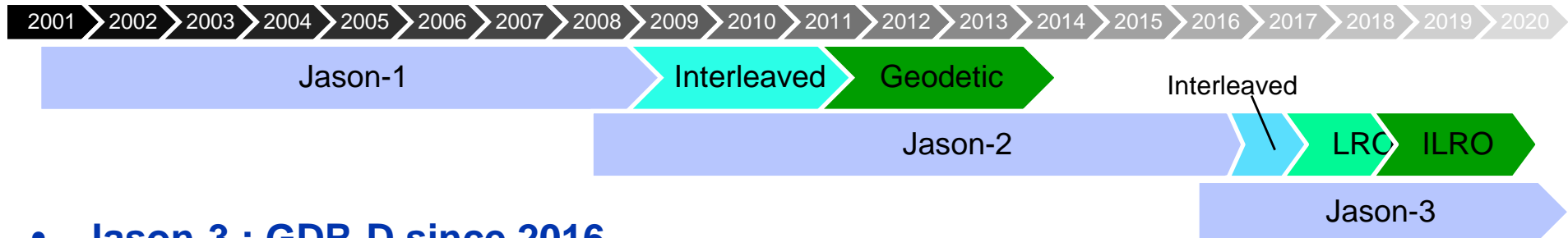
Major evolutions

New fields	Updated fields
3-Parameter SSB (SWH, wind and swell)	Retracking accounting for the actual altimeter antenna aperture
Wet & dry tropospheric correction based on 3D ECMWF fields	Updated altimeter calibration schemes (CAL2 normalization, CAL1 not corrected by CAL2, updated gains values)
Atmospheric correction derived from ECMWF fields	New Radiometer processing algorithms
New geophysical correction : E. Zaron internal tide model	Updated geophysical correction : FES2014 & GOT4.10 ocean tide models S. Desai pole tide with new IERS linear mean pole 2018 Mean Dynamic Topography model EGM 2008 geoid model
Platform mispointing angles Etc ...	Netcdf v4 product format Etc ...



from OSTST 2019 Jettou et al.





- **Jason-3 : GDR-D since 2016**

- Operational switch in GDR-F standard next week (29 Oct 2020) before S6/JCS launch as recommended by OSTST 2019
- Reprocessing campaign starts Nov 2020 and shall end Apr 2021
- See (Bignalet-Cazalet et al., Ostst 2020) for details : harmonization with S6 standard

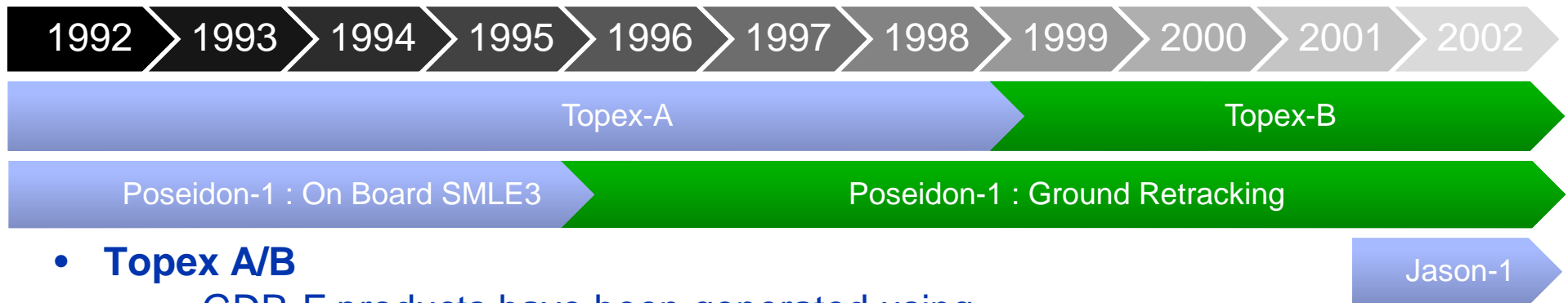
- **Jason-2 : GDR-D since March 2013**

- GDR-F Reprocessing campaign starts after Jason-3 and shall end Dec 2021

- **Jason-1 : GDR-E since April 2016**

- with some caveats on the dry tropo correction when approaching the coast
- GDR-F Reprocessing campaign after Jason-2 (if funded, potential funding by Copernicus like J3 & S6 for climate objective)





- **Topex A/B**

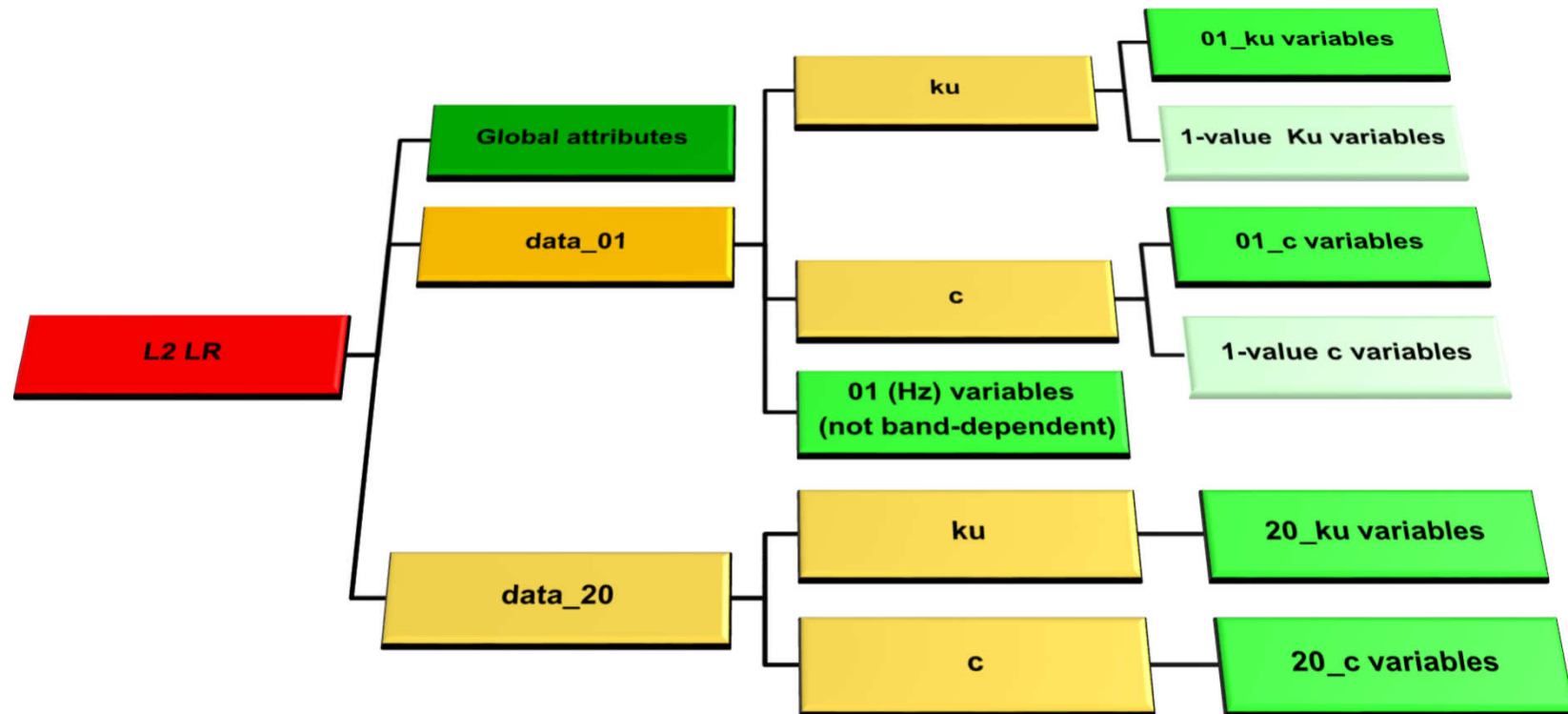
- GDR-F products have been generated using
 - ground retracking (Desjonquieres, 2019),
 - ITRF14 orbit solutions (GSFC and CNES),
 - GDR-F geophysical models (CNES).
- Ongoing cal/val being performed by JPL (See Talpe et al., Ostst 2020 for details) and CNES
- Expected release early 2021

- **Poseidon 1**

- GDR-F products in progress using
 - ground retracking >1995 (Thibaut, 2017),
 - SMLE3 < 1995 (when Waveforms not available)
 - ITRF14 orbit solutions (GSFC and CNES),
 - GDR-F geophysical models (CNES)
- Expected release early 2021



- GDR-F standard has **no backward compatibility** with GDR-D, due to variables renaming and the use of NetCDF groups.



From R. Scharroo OSTST 2019



- Jason-3 GDR-F update is the highest priority and has to be implemented in operations before Jason-CS launch. Jason-3 product format and variables names will be aligned to JCS one's

-> OK

- Saral complete reprocessing of the mission by mid next year

-> more than half mission already released; complete mission within next weeks

- Topex GDR-F to be completed in 2020

-> shall be OK early 2021

- It would be important to update Jason-1 to GDR-F standard.

-> Possible after Jason-2 (if founded)

- Tools to convert from new to current product format shall be made available to all.

-> Double standard production during 2 months after operational switch for Jason-3



- **After Jason-3 GDR-F operational switch next week, the reprocessing campaign is the highest priority**
- **Fulfill Topex/Poseidon GDR-F release**
- **Jason-2 GDR-F reprocessing campaign shall be engaged just after Jason-3 one, and finished end 2021**
- **If possible, prepare Jason-1 reprocessing to GDR-F standard**
- **Follow Sentinel-6 E1 phase and anticipate futur needs for GDR-G...**

