



IDS REPORT 2019

IERS Directing Board Meeting

Vienna, AUSTRIA

April 7, 2019

DORIS



IDS IERS members:
Hugues Capdeville (CLS)
Petr Stepanek (GOP)
Jérôme Saunier (IGN)

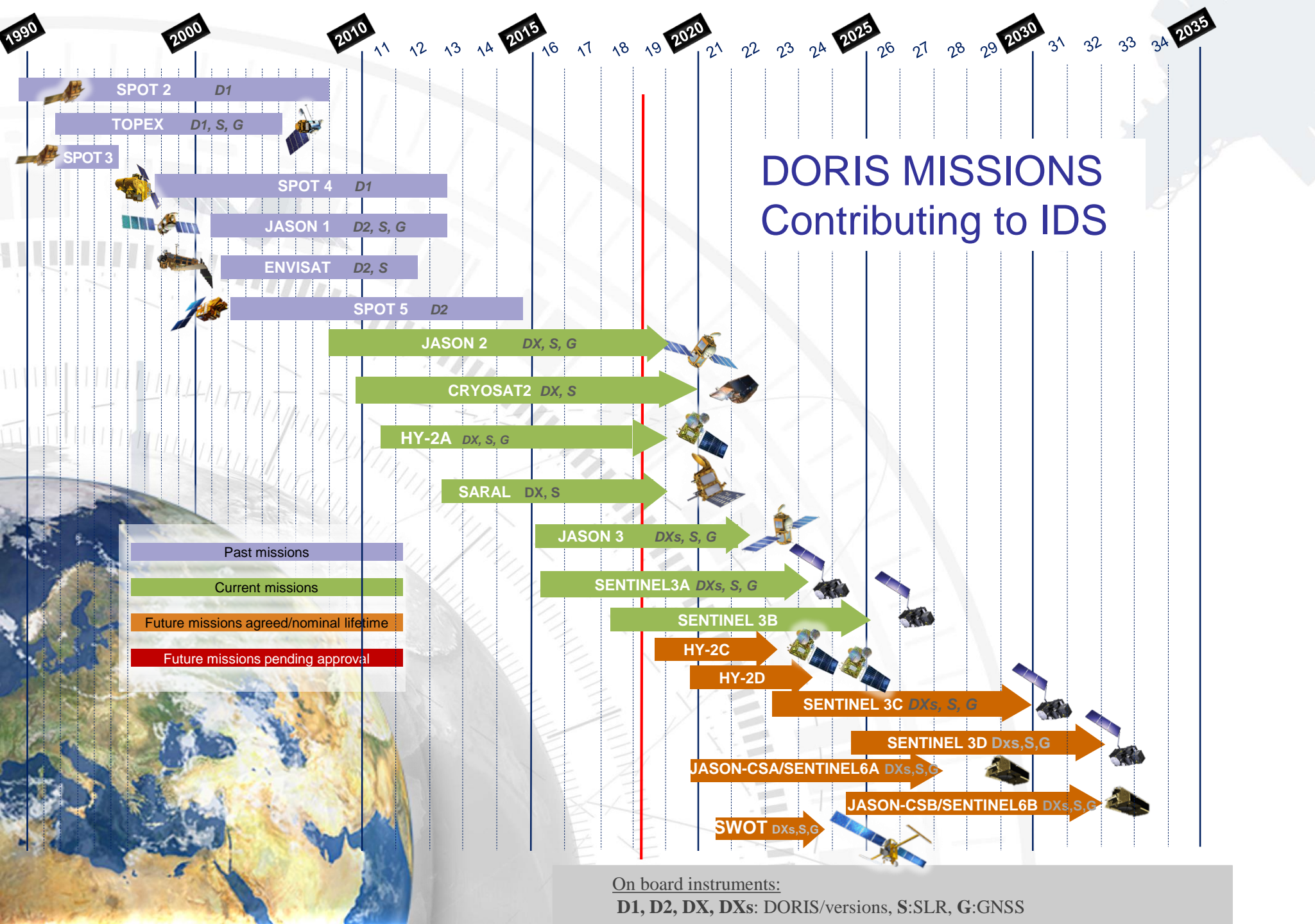
Guilhem Moreaux (CLS)
Pascale Ferrage (CNES)

DORIS Constellation Status - Current Missions (7)

Satellite	Sponsors	Alt. (km)	Inc. (°)	Dates	SLR,,GNSS
Sentinel-3B	ESA/Copernicus	814	98.65	4/25/18 – 2025+	S, G
Sentinel-3A	ESA/Copernicus	814	98.65	02/2016 – 2023+	S, G
Jason-3	NASA/CNES/NOAA/EUMETSAT	1336	66.0	1/17/16–2021+	S, G
SARAL	CNES/ISRO	800	98.5	03/2013 – 2018+	S
HY-2A	CNSA/NSOAS	960	99.0	11/2011 – 2018+	S, (G)
Cryosat2	ESA	717	92.0	06/2010 – 2019	S
Jason-2	NASA/CNES/NOAA/EUMETSAT	1336	66.0	07/2008 – 2019 +	S, G

DORIS Constellation Status - Future Missions (7 confirmed)

Satellite	Sponsors	Alt. (km)	Inc. (°)	Dates	SLR,GNSS
Sentinel-3C, 3D	ESA/Copernicus	814	98.65	2023, 2025 + 5 yrs	S, G
HY-2C, 2D	CNSA/NSOAS	960	66	2019, 2020 + 3 yrs	S, (G)
Jason-CSA+ CSB	ESA/Copernicus/EUMETSAT/ NOAA/NASA/CNES	1336	66.0	2020, 2025 + 7 yrs	S, G
SWOT	NASA/CNES	970	78	After 2021 + 3 yrs	S, G
MOBIL	Proposal to ESA, gravimetry, geodesy	LEO-HEO	TBD	After 2028	S,G, + VLBI



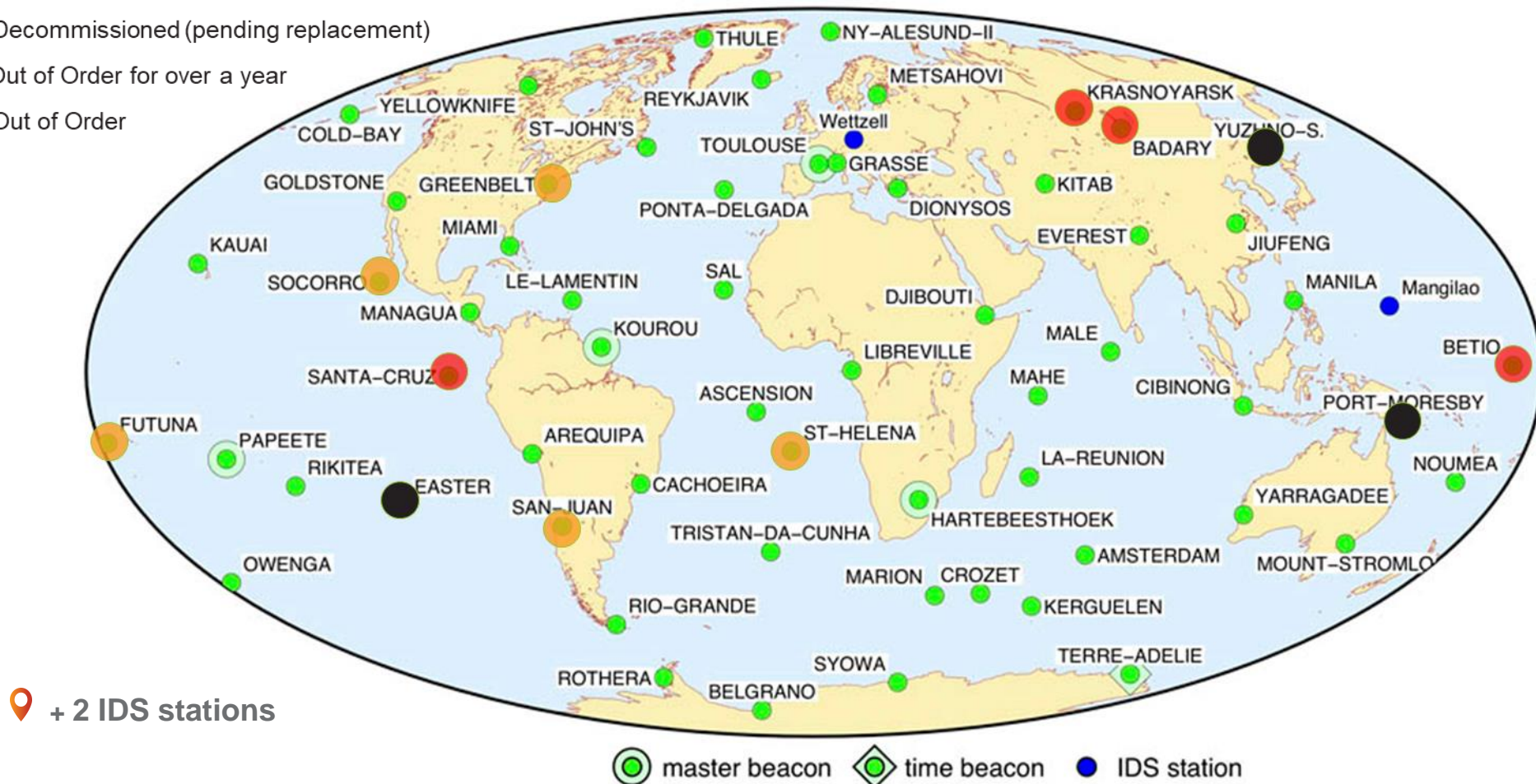
Network Operational Status

60 permanent stations of which: 9 beacons are out of order and 3 decommissioned

● Decommissioned (pending replacement)

● Out of Order for over a year

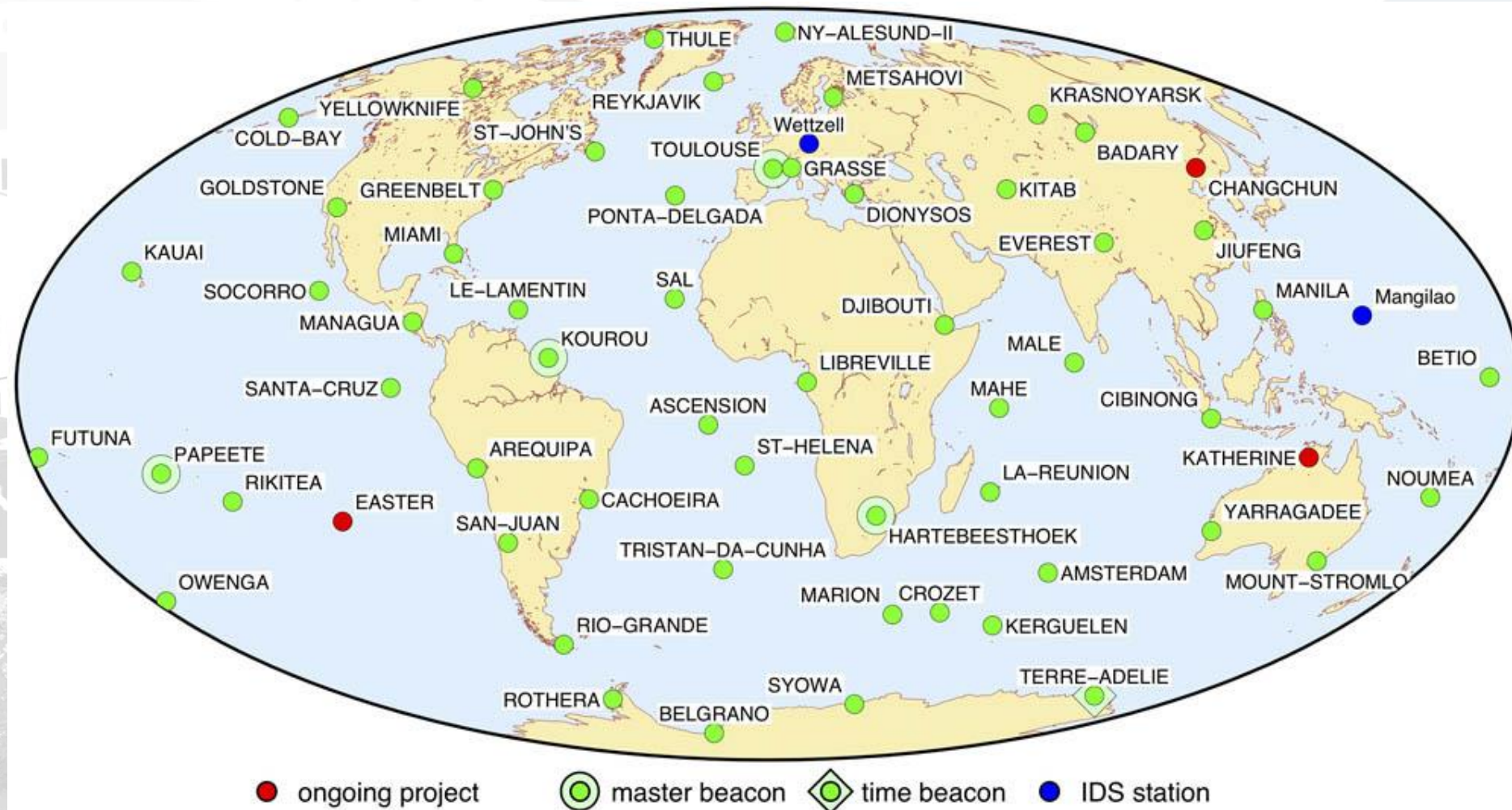
● Out of Order



48 co-locations out of 59 DORIS sites

All tie vectors between DORIS and other techniques at co-located sites are available in the maintained file: ftp://ftp.ids-doris.org/pub/ids/stations/DORIS_ext_ties.txt

Network Evolution



2 stations pending replacement: Yuzhno-Sakhalinsk, Russia; Port-Moresby, Papua New Guinea;
3 ongoing projects (in order of progress): Changchun (China); Easter (Chile); Katherine (Australia)

IDS reprocessing preparation for the next ITRF

☐ Adopt and evaluate the new standards/models recommended by IERS

- *Implement new linear mean pole model*
- *Implement HF (diurnal-subdiurnal) tidal EOP model recommended by IERS after evaluation by the IERS working group leaded by J. Gipson*
- *Adopt Time-Variable Gravity (TVG) model based on GRACE data + GOCE data + SLR data coherent with new mean pole convention ($C(2,1)$ / $S(2,1)$ coefficients)
new EIGEN-GRGS.RL04.MEAN-FIELD is available for download:
<https://grace.obs-mip.fr/variable-models-grace-lageos/mean-fields/release-04/>*
- *Ocean tide model: FES2014-c soon available on AVISO website*
- *Others models/standards from IERS?*

☐ Implement RINEX DORIS processing (crucial topic to take into account the DORIS data of the last satellites Jason-3, Sentinel-3A and Sentinel-3B)

- *Necessary to use the same format for the same satellite*

☐ Modelling improvement

- *Attempt to mitigate the non-conservative force model error on satellites (draconitic signals):
use quaternions when available, SRP coefficients and macromodels*

☐ South Atlantic Anomaly compensation

-> mitigate the SAA effect on DORIS USOs for Spot-5 and Jason series

☐ Scale, elevation cut off and data downweighting

- *For all IDS ACs: adopt the same elevation cut-off and downweighting law for low elevation data?*

IDS processing schedule proposal for the next ITRF

□ Preparation of individual ACs

- *Analysis Coordinators will send to ACs a roadmap to follow in preparation to the next ITRF reprocessing.*

From April to the next AWG scheduled end Sept. 2019, ACs will work on the 5 topics presented on the previous slide.

During the first day of the AWG: presentation and discussion on the tests done by ACs and the CC.

During the second day: final definition of the IDS processing configuration.

After this AWG: ACs could start the IDS reprocessing for the ITRF.

□ IDS reprocessing

- *We could divide the IDS reprocessing in 4 periods:
[1992-2001],+sp5+env+ja1 [2002-2008], +ja2[2008-2015],+ ja3+s3a+s3b[2016-2020]*
- *ACs could start their reprocessing end 2019 by the first period [1992-2001]*
- *IDS Combination Center could start its combination of the first period at the beginning of the year 2020.*
- *IDS ACs could continue at the beginning of year 2020 their reprocessing with the second period and provide their solution to IDS CC, ...*
- *IDS CC propose to deliver to IERS the final sinex (until 2020) in February-March 2020.*

Passing of Richard Biancale



The IDS and the space geodetic community are infinitely saddened to have lost their dear colleague and friend Richard Biancale.

(tribute to Richard in the IDS newsletter#6)

IDS Meetings in 2019:

- IDS AWG: 4 April, 2019 @ DGFI, Munich (Deutschland).

- Next IDS AWG 30-Sept.-01 Octb., 2019 @CNES, Paris (TBC)

IDS Newsletter:

- Latest issue is Issue #6 (February 2019)
 - The synergy of SLR and DORIS as geodetic techniques (F. Lemoine et al)
 - The Azores: a key location occupied by DORIS for three decades (J. Saunier et al)
 - The host agency in short (R. TF. Marques, CIVISA)
 - Tribute to Richard Biancale
 - IDS life

Issues available at:

<https://ids-doris.org/ids/reports-mails/newsletter.html>

IDS Elections:

Two positions renewed within the Governing Board for the term, 2019-2022:

- **Analysis Coordinator:**

New tandem: Hugues Capdeville (CLS, France) & Petr Stepanek (GOP, Czech Republic)

- **Member-at-large:**

Claudio Abbondanza (NASA,US) succeeds to Marek Ziebart (UCL, GB)



<http://ids-doris.org>