



CNES/CLS Analysis Center (LCA) Status Report

L. Soudarin¹, H. Capdeville¹, J.-M. Lemoine², P. Schaeffer¹

¹ CLS, Collecte Localisation Satellites, Ramonville, France

² CNES, Toulouse, France

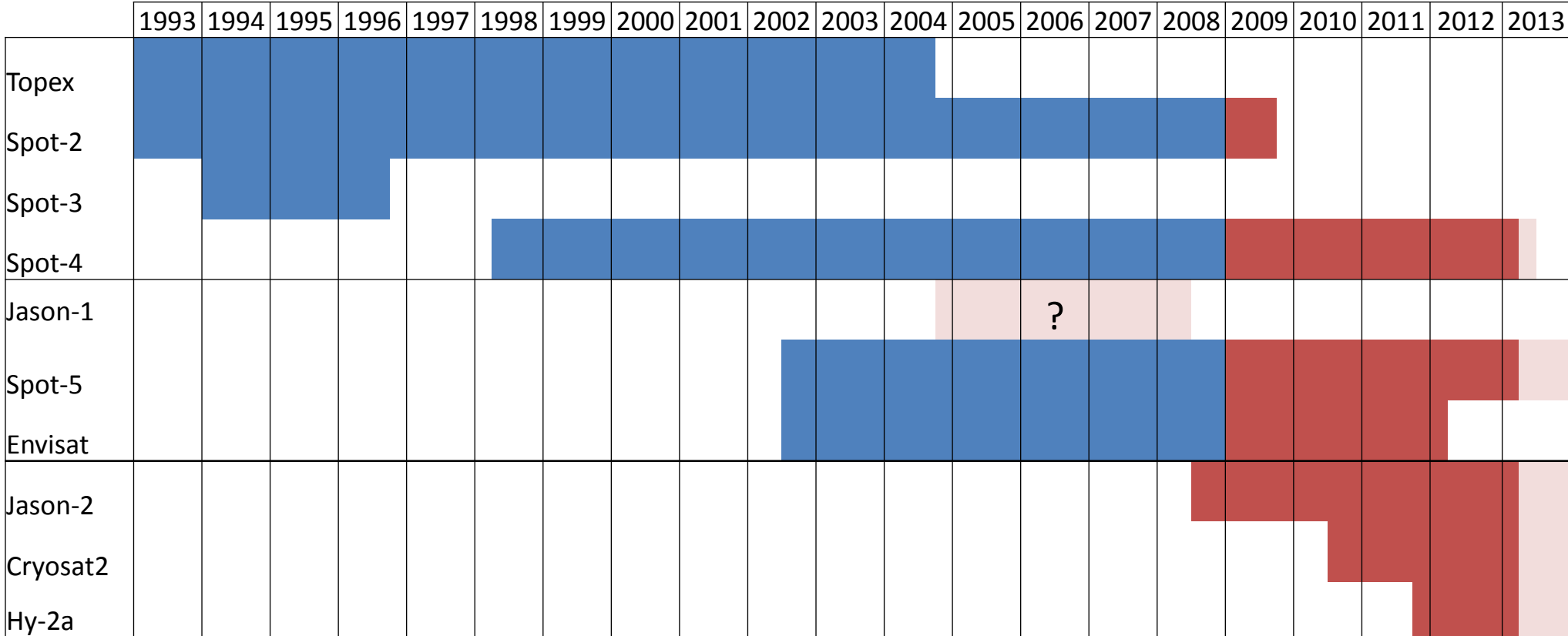


Overview

1. Data we plan to process.
2. Summary of changes wrt. ITRF2008 submissions.
3. Processing status, and time to reprocess entire series.
4. Any open questions or issues of concern.

Data we plan to process

ITRF 2013 →
 ITRF2008 →



- latest version of DORIS 1B files (redeliveries for ENV in 2012, JA2 and CS2 in 2011, SP4 1998 in 2010)
- no data of 1992
- proposition (see HC's presentation): Jason-1 (back-up chain) 2004/11 (end TOP) → 2008/07 (start JA2)

Summary of changes wrt. ITRF2008 submissions

From IDS-3 strategy to current processing (wd30/wd32)

The GINS 11.2d1 version we used includes:

- revised attitude laws for TOPEX/JASON-1/JASON-2, Envisat and Cryosat-2
- fixed bug related to the frequency bias
- new macro-model tuned by GRGS for Jason-2
- phase wind-up effect implemented in GINS and used in the data processing

Changes with respect to the previous processing set up for the IDS-3 realization:

- DPOD2008 as a priori instead of DPOD2005
- IERS EOP series aligned on ITRF2008
- GMF/GPT tropospheric model instead of zenith delay derived from ECMWF meteorological model and Guo&Langley mapping function
- EIGEN-6S gravity model with C20 corrections instead of EIGEN-GL04S

Summary of changes wrt. ITRF2008 submissions

Evolutions of current processing

From week #1652 (2011/09/04)

- ITRF2005 → ITRF2008 for oceaning loading
- Correction of Jason-1 macromodel (direction normal to surfaces)

From week #1673 (2012/01/29)

- GINS 11.2d1 → GINS 12.1d1
- Switch to Non-Rotating Origin (conventions 2010)

From week #1677 (2012/02/26)

- Envisat: DORIS phase wind-up correction removed
- HY-2A: SRP 0.85 → 1.13
- SRP: add tight constrains for POS/EOP solutions (instead of only for POD)

Summary of changes wrt. ITRF2008 submissions

From current processing to processing for ITRF2013

Switch to GINS latest version 13.1

Update standards according to GRGS proposal (see after): To Be Discussed

Apply STAREC antenna phase law?

Revise dynamic parameters, HY-2A in particular

Proposed standards for ITRF2013

based on the list of common standards for the GRGS ACs (DORIS, GNSS, SLR, VLBI) for submission of combined multi-technique SINEXs

Gravitational forces:

Geopotential: EIGEN-6S2 (see JML's presentation)

Third body: JPL DE421 (*IERS conventions 2010*)

Ocean tides: FES2012

Atmospheric gravity: 3hr ERA-interim / ECMWF up to degree 50

(Atmospheric tides: none; considered through the ECMWF atmospheric data)

Non tidal oceanic gravity: TUGO R12 up to degree 50

Non gravitational forces:

Atmospheric drag: DTM 2012

Geometry:

Troposphere: + one gradient per station in North & East directions

Ocean loading: FES2012

Tidal atmospheric loading: S1/S2 Ray&Ponte (*IERS conventions 2010, ITRF2013 recom.*)

Processing status, time to reprocess entire series

- New standards to test: april-may
- Reprocessing start: June

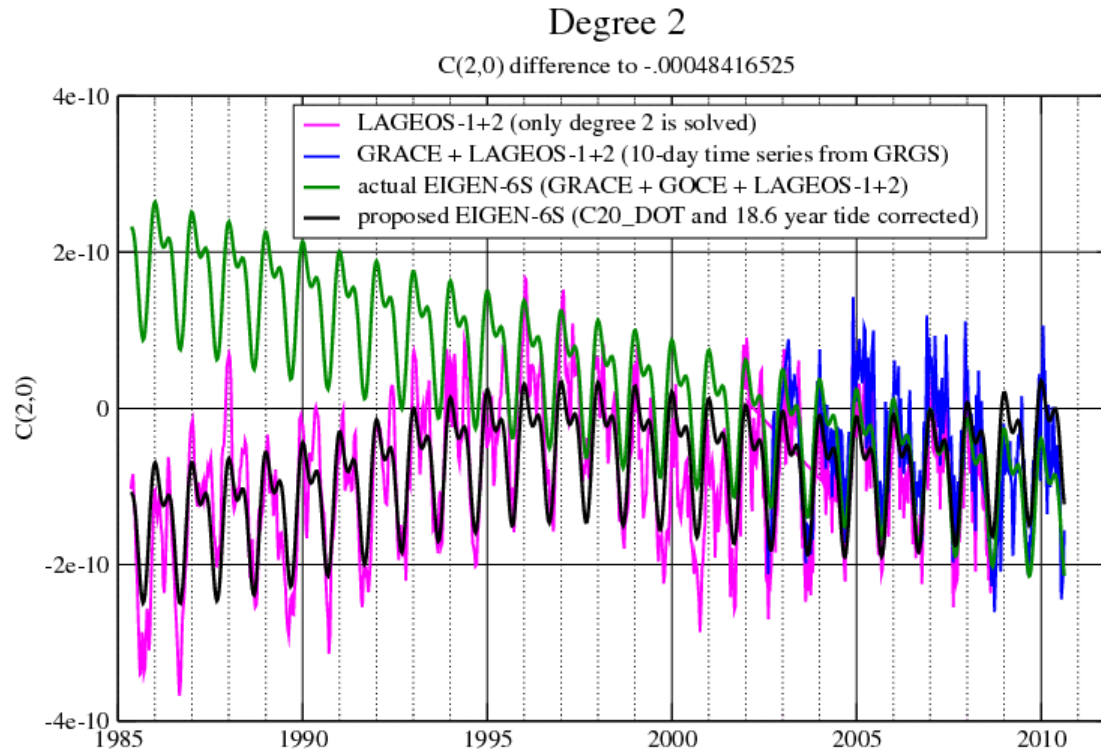
- Data processing run on Linux (GINS: one 3.5-day arc ~5 mn)
- Estimated time (POD, NEQ stacking, validation): 2-3 months

Open questions or issues of concern

- POD: DORIS-only or DORIS/SLR for concerned satellites?
- Phase law for STAREC antennas?
- HY-2A?

BACK SLIDES

Correction of EIGEN-6 C20



EIGEN-6

Current Value

New Value

	Current Value	New Value
2 0	$-4.8416529982000E-04$	$-4.8416529995630E-04$
2 0 DOT	$-1.2605993970900E-11$	$3.1827100000000E-12$

Correction to be applied to the 18.6 year tide, in terms of Delta_C20:

$$\Delta_{C20} = a1 \cdot \sin(2 \cdot \arccos(-1) \cdot (t-2005)/18.6129) + a2 \cdot \cos(2 \cdot \arccos(-1) \cdot (t-2005)/18.6129)$$

with: $a1 = -9.01895e-12$ $a2 = -3.47674e-11$