

→ **25 YEARS OF PROGRESS**
IN RADAR ALTIMETRY SYMPOSIUM

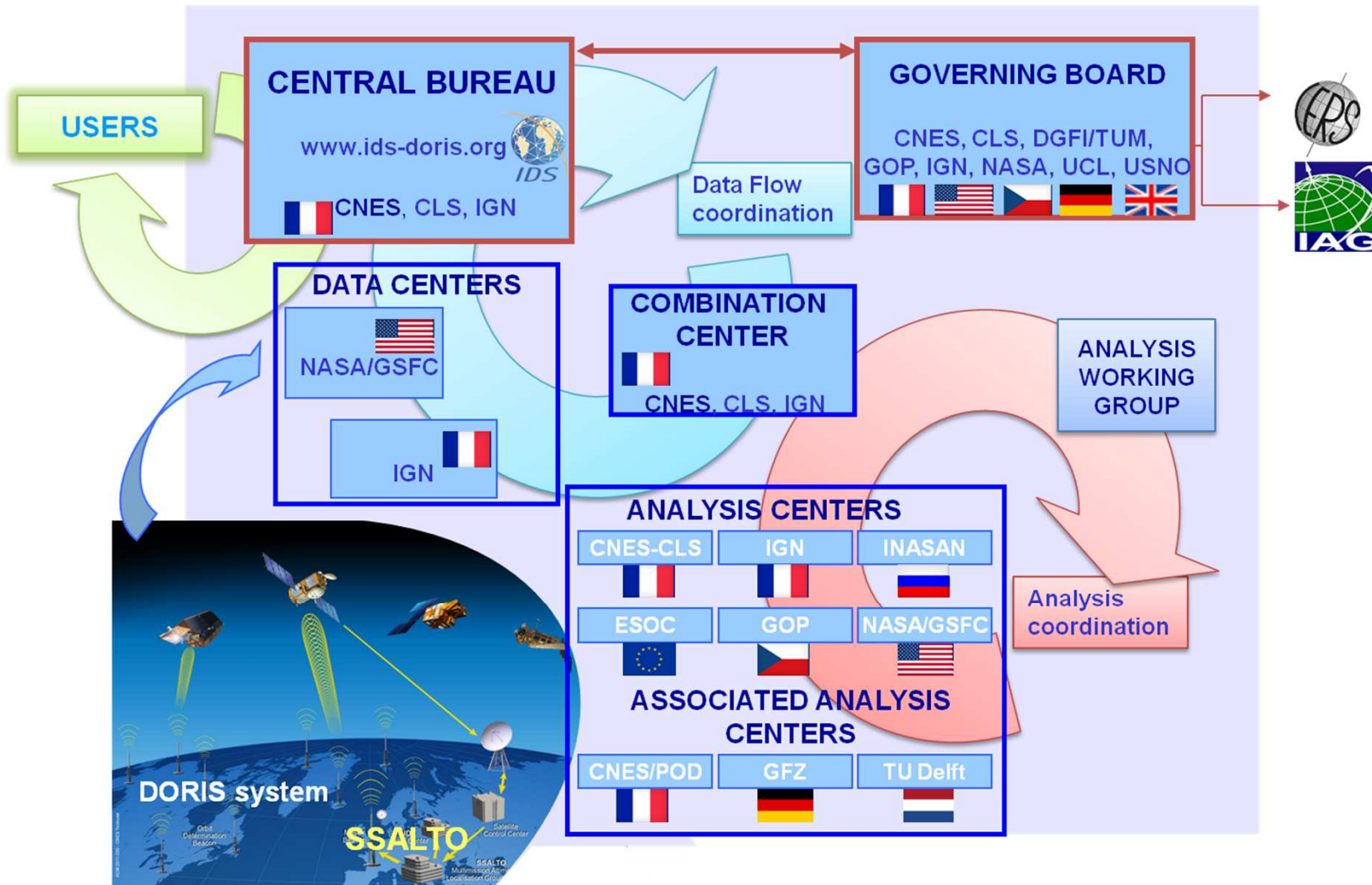
IDS WORKSHOP

24–29 September 2018
Ponta Delgada, São Miguel Island
Azores Archipelago, Portugal



**The International
DORIS Service:
status report**

Laurent Soudarin (CLS, France),
Pascale Ferrage (CNES, France)



+ WG « Near real time data » (chair: D. Dettmering, DGFI/TUM)
Objective: delivery of NRT DORIS data for assimilation in ionospheric models



Elections



2 positions to be renewed within the Governing Board for 2019-2022:

Analysis coordinator (currently a tandem: Hugues Capdeville & Jean-Michel Lemoine)

Member-at-large (currently Marek Ziebart)

Calendar

- July: election announcement (DORISmail + other mailing lists of IAG Services)
- September – October : call for candidates
 - IDS Associates propose candidates
 - The nominating committee will collect the nominations, contact the potential candidates, check the applications and ensure that at least two candidates are proposed for each position.
- November: vote by the IDS Associates
- January 2019: start of 4-yr term for the two new elected members

→ For further information, contact Hugues, Jean-Michel, Marek or IDS central bureau who will redirect.

After 15 years of activity, the IDS organized its first retreat on June 13 and 14 in the Southwest of France.

- ❑ 20 participants from and outside IDS
- ❑ Five subjects of special interest addressed:
 - ✓ possible evolution of the DORIS technology
 - ✓ Precise Orbit Determination
 - ✓ interest in ionospheric-tropospheric derived products
 - ✓ DORIS geocenter and pole estimations
 - ✓ IDS scientific goals and organization

Next steps:

- preliminary version of the IDS strategic plan
- consultation with the DORIS system stakeholders
- strategic plan with medium and long term actions



7 satellites in orbit, all equipped with a DGXX receiver, able to track up 7 stations simultaneously

Dissemination of **Sentinel-3B** files started on July

(Doris data, POE orbits, macromodel, history files: mass, CoM, manoeuver, attitude)

Satellite	Pre-processed data (doris2.2)	Raw data (RINEX/DORIS)
Jason-2	X	X
Cryosat-2	X	X
HY-2A	X	X
Saral	X	X
Jason-3	-	X
Sentinel-3A	-	X
Sentinel-3B	-	X

Find links on IDS web : **IDS > Data & Products > Data structure and formats**



Data: POE-F standards



New **POE-F** orbit standards

See CNES's presentation in OSTST/POD session on Thursday

- CNES will apply this upgrade to:

Jason-3, from cycle 95 (POE delivered in October)

then Sentinel-3A, Sentinel-3B, Saral in 2018; other missions in 2019

- POE orbit files in sp3c format from CNES (SSALTO)

The corresponding version for POE-F will be numbered **20**

Directory: /pub/doris/products/ssa/<sss>/

Filename: ssa <sss>**20**.bXXDDD.eYYYYE.DG_.sp3.LLL.Z

<sss> = ja3, s3a, s3b, ...



Recent products from IDS combination center



Cumulative solution

- long-term DORIS position and velocity cumulative solution
- obtained from the stacking of the weekly solution files and then aligned to the current ITRF
- a piecewise linear (position+velocity) model is used to describe the station motion
- Current version: Cumulative solution, version #2, October 2017: **ids17d02**
+ residuals (pdf file + webservice)

DPOD2014

- DORIS extension of the ITRF for Precise Orbit Determination
- Contains positions and velocities of all the DORIS tracking stations, including brand new stations not already analyzed by the IDS Analysis Centers
- Current version: DPOD2014, version #2 , October 2017: **dpod2014_02**

See dedicated pages on IDS web: [Analysis coordination](#) > [Combination Center](#)



IDS Reports



IDS Annual report 2017 issued on July 2018

- Content:

- About IDS

- DORIS system

- User service

- Analysis Activities

- + Appendix



- Distribution by postal mail to Host Agencies and stakeholders
- Available on IDS web site

IDS > Reports & Mails > Governing Board # Activity Reports

https://ids-doris.org/documents/report/IDS_Report_2017.pdf





IDS Newsletter



IDS Newsletter # 5 issued on September 2018

- Content:

DORIS stations in Polar Regions

+ focus on Rothera on the Antarctic Peninsula

+ the host agency in short: British Antarctic Survey

DORIS on Sentinel-3B

Jason-2, 10 years in orbit

IDS meetings: IDS retreat, AWG meeting

IDS life

- Distribution by email

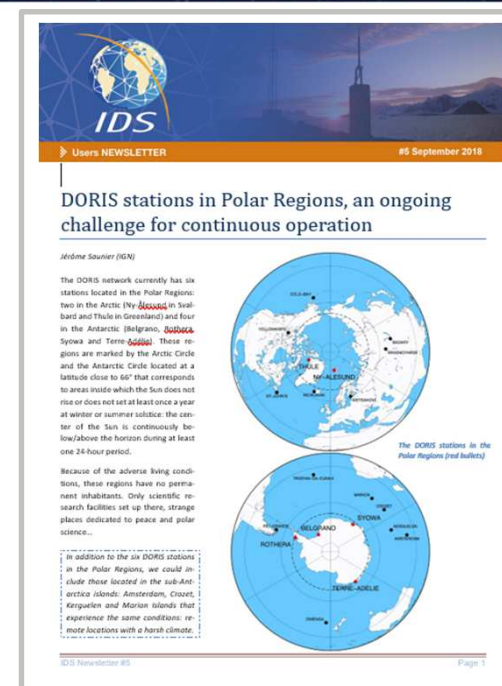
- Available on IDS web site

IDS > Reports & Mails > Newsletter

<https://ids-doris.org/images/documents/newsletters/IDS-Newsletter5.pdf>

- Subscription:

email ids.central.bureau@ids-doris.org with subject "Subscribe Newsletter".





Webservice



<https://ids-doris.org/webservice>

The IDS Web service provides tools to browse time series of DORIS-related products.

- 5 plottools
- 1 network viewer



Station position

Station position differences at observation epochs relative to a reference position (North, East and Up trended time series).

Combination parameters

Combination parameters i.e. outputs of the IDS Combination Center analysis (WRMS of station position residuals, scale and translation parameters, number of stations used in the analysis).

Earth Orientation Parameters

Earth Orientation Parameters from the IDS Combination Center analysis (Xp, Yp, LOD).

Orbit residuals

Orbit residuals and amount of station measurements from CNES Precise Orbit Ephemeris processing (RMS of post-fit orbit residuals, total and validated number of DORIS measurements per arc).

Position residuals

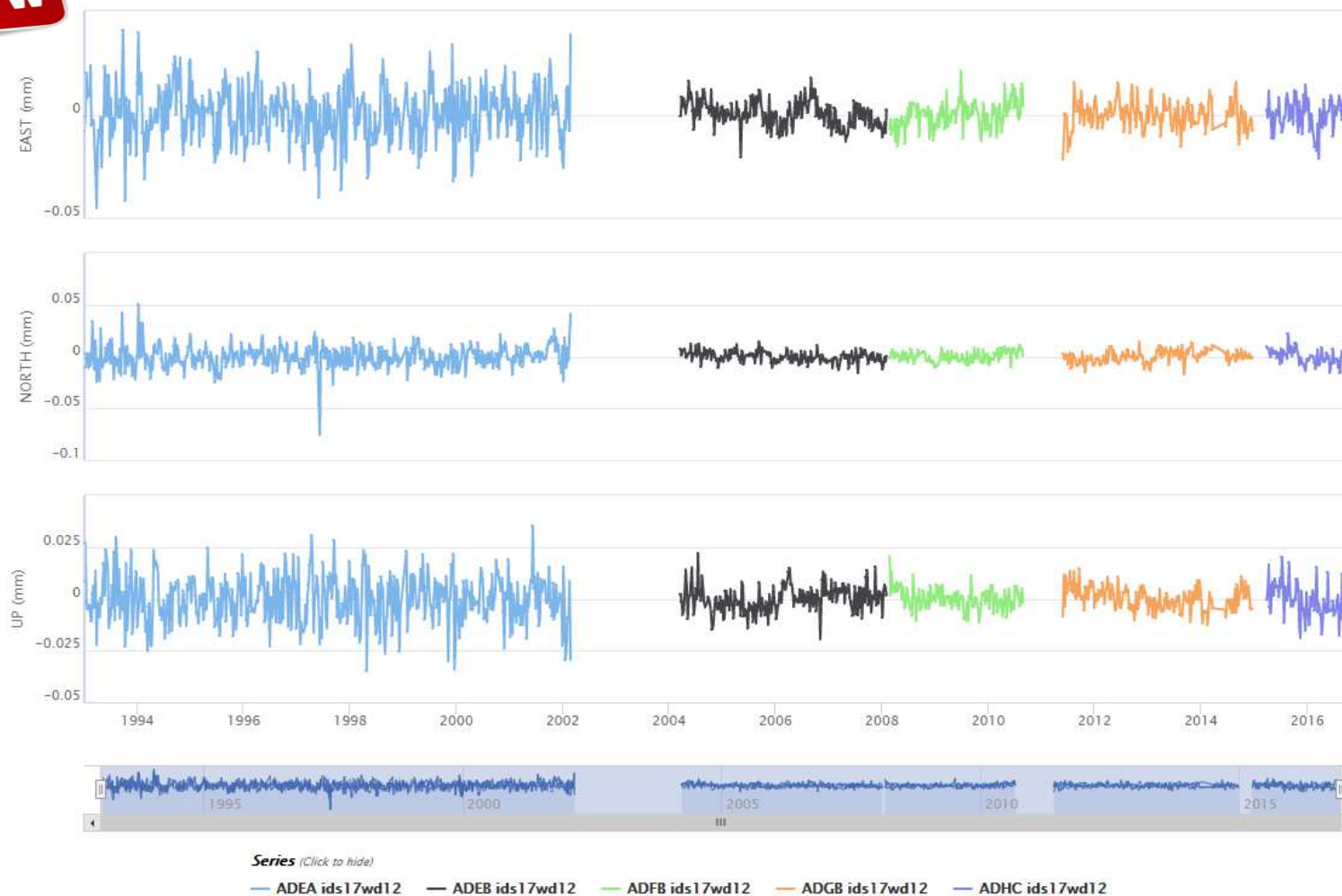
Position residuals of the cumulative solution from the IDS Combination Center analysis (North, East, Up).

Network viewer

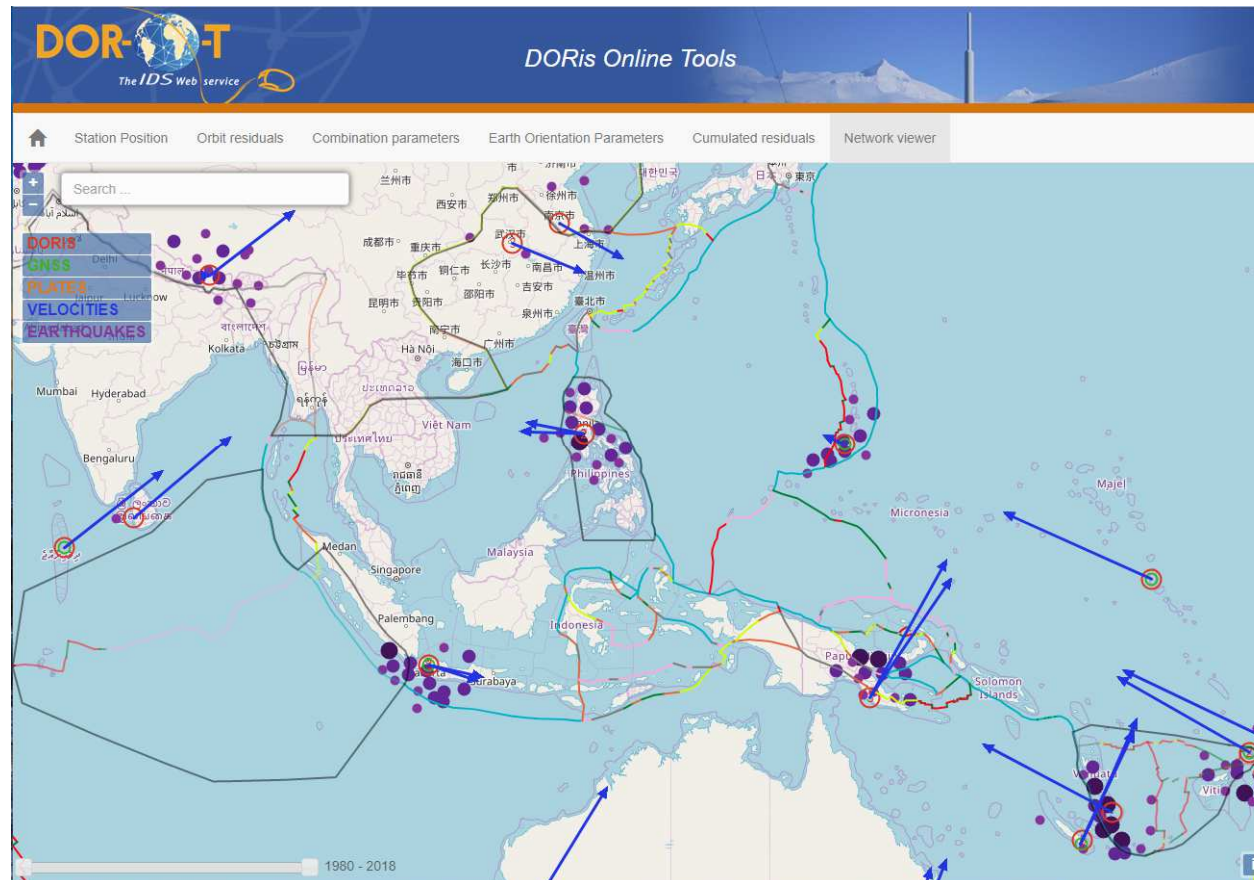
A network viewer to select sites.

You can display: **DORIS sites** since network deployment start; **IGS sites colocated** with DORIS; **Plate boundaries** from Bird, 2003; **Velocity vectors** from DPOD2014 solution; **Earthquakes** with a magnitude ≥ 5 around DORIS stations (USGS source)

You can access to the **DORIS combined time series** from the IDS Combination Center and **GNSS combined time series at colocated sites** from the IGS TRF Combination Center.



NEU position residuals of the IDS cumulative solution



DORIS: DORIS sites since network deployment start

GNSS: IGS sites colocated with DORIS

PLATES: Plate boundaries from Bird, 2003

VELOCITIES: Velocity vectors from DPOD2014 solution

EARTHQUAKES: Earthquakes with a magnitude ≥ 6
around DORIS stations (USGS source)





From the network viewer

EVEREST - NEPAL



Site logs
EVEB20130129.LOG (current, see below)
EVEB20120202.LOG
EVEB20081212.LOG
EVEB20070707.LOG
EVEB20070101.LOG
EVEB20050707.LOG
EVEB20040507.LOG

Plots
Time series of coordinates
CNES POD MOE statistics
CNES POD POE statistics



Site news

Doris mails
No 0790 ITRF2008-DPOD2008 coordinates for all DORIS

Local events

Date	Acronym	Information provided
2015/05/12	EVEB	Earthquake of magnitude:6.3 distance:73km
2015/05/12	EVEB	Earthquake of magnitude:7.4 distance:66km
2015/04/26	EVEB	Earthquake of magnitude:6.7 distance:85km
2015/04/25	EVEB	Earthquake of magnitude:6.6 distance:193km
2015/04/24	EVEB	Earthquake of magnitude:7.0 distance:90km

EVEREST DORIS site description form

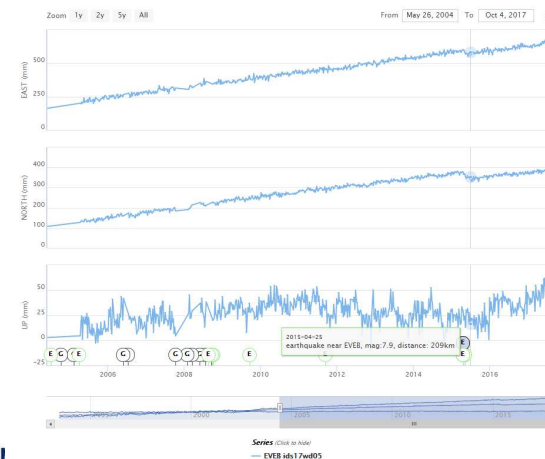
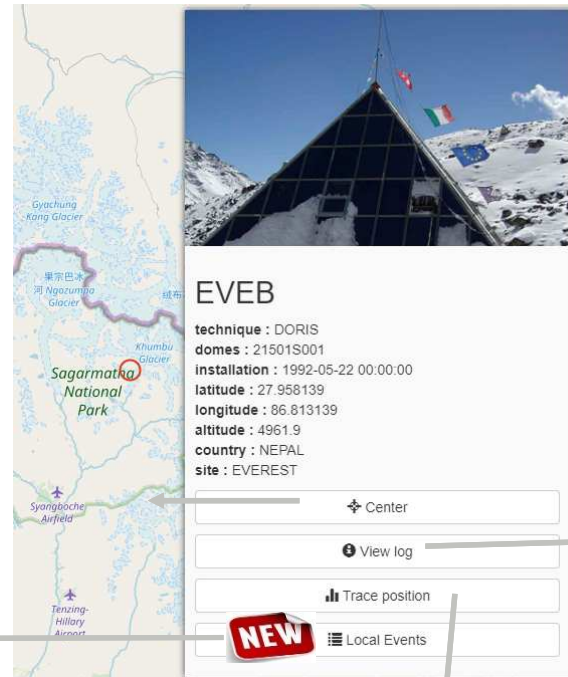
0. Form

Prepared by : SIMB (DORIS installation and maintenance department)
Date prepared : 29/01/2013
Report type : UPDATE

1. Site location information

Site name : EVEREST
Site DORIS number : 21501
Host agency : EV-K2-CNR Committee
City : Near the Everest base camp
State or province :
Country : NEPAL
Tectonic plate : EURA
Geological information :

NEW Local Events	
Date	1993/03/20
Information	Earthquake of magnitude:6.2 distance:134km
Date	2002/03/16
Information	discontinuity in position
Date	2004/07/11
Information	Earthquake of magnitude:6.2 distance:430km
Date	2004/10/13
Information	Lack of data START
Date	2005/02/14
Information	Lack of data END



→ 25 YEARS OF PROGRESS IN RADAR ALTI

September 2018 | Ponta Delgada, São Miguel Island | AZORES Archipelago, Portugal



Evolutions of the Webservice



Main new features 2018

- ❑ Network viewer
 - ✓ Plate boundaries (Bird, 2003)
 - ✓ Horizontal velocity vectors (DPOD2014 solution)
 - ✓ Earthquake around DORIS stations with mag. ≥ 6 (USGS)
 - ✓ List of local events

- ❑ New plottool for position residuals

Next evolutions

- ✓ Vertical velocity vectors (DPOD2014 solution)
- ✓ Velocity values displayed on mouse-over
- ✓ Statistics update for displayed points for all the plottools
- ✓ Additional data: Pos./Vel. discontinuities, number of satellites

All the presentations of the Workshop will be available on IDS web:

[IDS > Reports & Mails > Meeting presentations > IDS Workshop 2018](#)

DORIS data and IDS products are available free

