International DORIS Service (IDS)

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Chair of the Governing Board: Guilhem Moreaux (France)
Central Bureau Director: Laurent Soudarin (France)

IDS website - https://ids-doris.org/

1 Overview

The current report presents the different activities held by all the components of the International DORIS Service (IDS) for the period from the middle of 2023 to the middle of 2025. The main achievements of the IDS over this period are:

1. renewal of several positions within the Governing Board and election of a new Chairperson
2. creation of two Working Groups: "Integrated Clock Correction Strategies for DORIS" and "NRT Ionospheric Applications"
3. IDS involvement in the GENESIS mission project
4. dissemination of the DORIS data of the new mission SWOT
5. dissemination of DORIS NRT data for all the operating missions
6. realization of DPOD2020 second version including post seismic deformation and seasonal corrections
7. organization of the IDS Workshop on September 4 and 5, 2024
8. contributions to a DORIS special issue in ASR
9. IDS website fully updated
10. publication of IDS newsletter #11

During the period of this report, the International DORIS Service had its 20th anniversary.

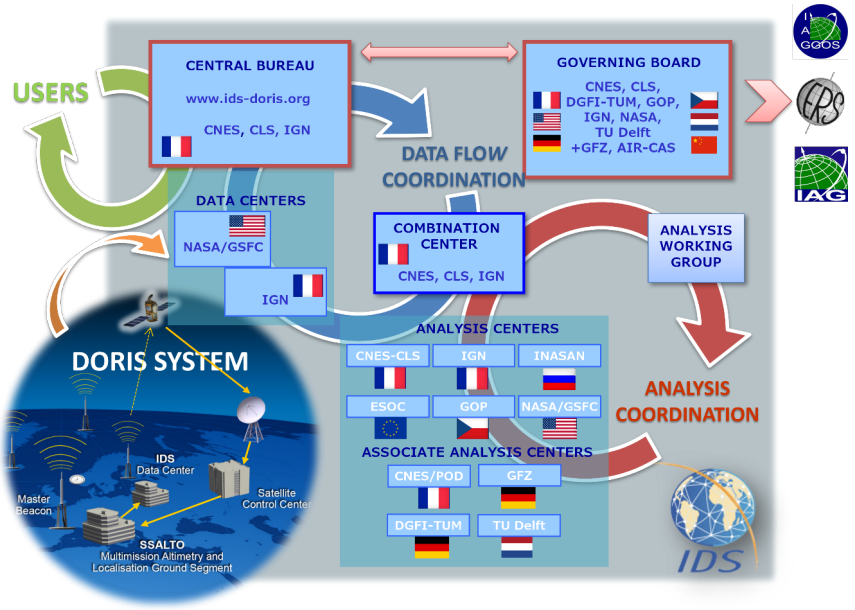

Fig. 1. IDS organization structure

2 Structure

The IDS organization is very similar to the other IAG Services. The service accomplishes its mission through the following components:

- Satellites carrying a DORIS receiver
- Network of tracking stations
- Data Centers
- Analysis centers, Associate Analysis Centers and Analysis Coordinator
- Combination Center
- Working Groups
- Central Bureau
- Governing Board

3 Activities

3.1 DORIS system

DORIS satellites

As described in Fig. 2, there have been nine DORIS instruments in operation since the launch of Swot in December 2022. All use the new 7-channel DGXX-S DORIS on-board receiver. These satellites are operating at five different altitudes, from about 700 km to 1336 km, and in four orbit planes: 66° mainly for the oceanic altimetry missions, 78° for SWOT, and 92° and 98° for the polar orbits.

Satellite	Start	End	Space Agency	Type
SPOT-2	31-MAR-1990 04-NOV-1992	04-JUL-1990 15-JUL-2009	CNES	Remote sensing
TOPEX/Poseidon	25-SEP-1992	01-NOV-2004	NASA/CNES	Altimetry
SPOT-3	01-FEB-1994	09-NOV-1996	CNES	Remote sensing
SPOT-4	01-MAY-1998	24-JUN-2013	CNES	Remote sensing
JASON -1	15-JAN-2002	21-JUN-2013	NASA/CNES	Altimetry
SPOT-5	11-JUN-2002	1-DEC-2015	CNES	Remote sensing
ENVISAT	13-JUN-2002	08-APR-2012	ESA	Altimetry, Environment
JASON -2	12-JUL-2008	10-OCT-2019	NASA/CNES	Altimetry
CRYOSAT-2	30-MAY-2010	PRESENT	ESA	Altimetry, ice caps
HY-2A	1-OCT-2011	14-SEP-2020	CNSA, NSOAS	Altimetry
SARAL/ALTIKA	14-MAR-2013	PRESENT	CNES/ISRO	Altimetry
JASON-3	19-JAN-2016	PRESENT	NASA/CNES/ NOAA/Eumetsat	Altimetry
SENTINEL-3A	23-FEB-2016	PRESENT	GMES/ESA	Altimetry
SENTINEL-3B	25-APR-2018	PRESENT	GMES/ESA	Altimetry
HY-2C	21-SEP-2020	PRESENT	CNSA, NSOAS	Altimetry
SENTINEL-6A	21-NOV-2020	PRESENT	NASA/CNES/ NOAA/Eumetsat/ ESA	Altimetry
HY-2D	19-MAY-2021	PRESENT	CNSA, NSOAS	Altimetry
SWOT	16-DEC-2022	PRESENT	NASA/CNES/ CSA/UKSA	Altimetry

Fig. 2. DORIS data available at IDS data centers, as of June 2025

In the next few years, more DORIS satellites are planned: (near-term) Sentinel-6B, HY-2E, HY-2F and Sentinel-3C, (mid-term) Sentinel-3D, Genesis; (long-term potential missions) Sentinel-6C, HY-2H, Sentinel-3 NG Topo, Sentinel-6 NG.

Fig. 3 offers a comprehensive overview of the DORIS constellation's evolution, tracing its history from the launch of SPOT-2 in 1990 to the present day. Since 2002, five or more DORIS satellites have been available to IDS users, which is a key requirement for the precision of the geodetic products.

DORIS network

General status and operation

DORIS has a globally distributed network of 61 permanent stations dedicated for precise orbit determination and altimetry with four master beacons (Papeete, Hartebeesthoek, Kourou, Toulouse), one time beacon (Terre Adélie), and two experimental beacons for scientific purposes (Wettzell and Gavdos). Three new sites were added over the reporting period:

- Hanga Roa (Easter Island, Chile)

- Gavdos Island (Crete, Greece) (DORIS is back there after a first occupation from 2003 to 2014)
- Ulaanbaatar (Mongolia)

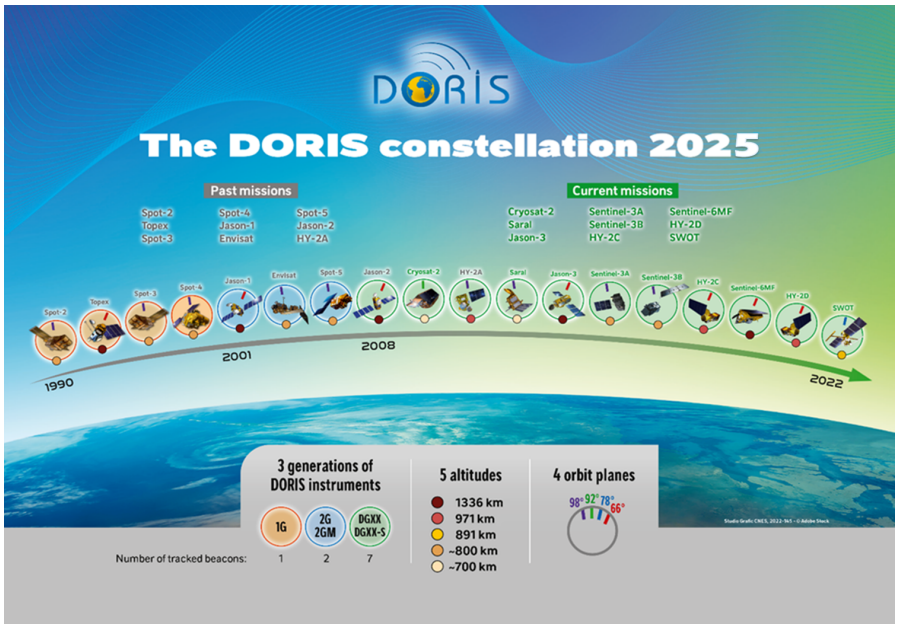

Fig. 3. DORIS satellite constellation, as of June 2025

The map of the DORIS network slightly changed with the new stations. See Fig. 4. The network's main events during this 2-year period were the following:

- 2023: Installation of new DORIS site in Hanga Roa (Easter Island, Chile)
- 2023: Reconnaissance at Ulaanbaatar (Mongolia) with a view to installing new station
- 2023: Installation of new DORIS site in Gavdos Island (Crete, Greece)
- 2023: Reconnaissance at Kanpur (India) with a view to installing new station
- 2023: Major renovation at Rikitea (French Polynesia)
- 2024: Antenna replacement in Malé (Maldives)
- 2024: Installation in a new DORIS site in Ulaanbaatar (Mongolia)
- 2024: Reconnaissance and RFI Survey in Papenoo (French Polynesia)
- 2024: Station renovation at Everest (Nepal)
- 2024: B4G installing in Papeete (French Polynesia)
- 2024: Antenna replacement in Owenga (Chatham Island, New Zealand)
- 2025: B4G installing in Terre Adélie (Antarctica)
- 2025: B4G installing in Belgrano (Antarctica)
- 2025: Station renovation at Le Lamentin (French West Indies)
- 2025: Antenna replacement in Kerguelen Islands (French Southern and Antarctic Lands)

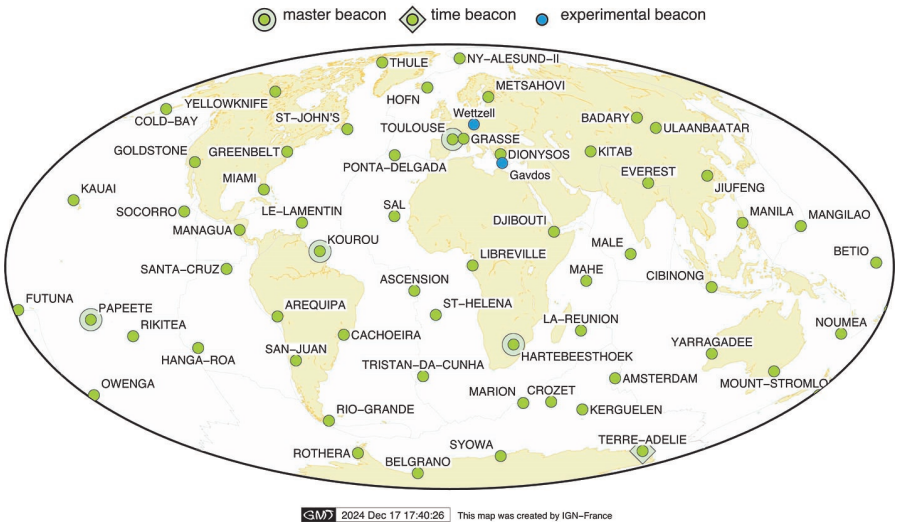

Fig. 4. The DORIS permanent network

4 IDS organization

Like the other IAG Services, an IDS Governing Board (GB), helped by a Central Bureau (CB), organizes the activities done by the Analysis Centers (AC), the Data Centers (DC), and the Combination Center (CC).

4.1 Governing Board

The GB consists of eleven voting members and several nonvoting members. The voting membership of the GB is composed of 5 members elected by the IDS Associates, and 6 appointed members. The elected members have staggered four-year terms, with elections every two years. The Analysis Centers' representative, the Data Centers' representative, and one Member-at-Large are elected during the first two-year election. The Analysis Coordinator and the other Member-at-Large are elected in the second two-year election. Over the period covered by this report, in accordance with the Terms of Reference of the IDS, the membership of the GB was then partially renewed in January 2025 (see Fig. 5).

The members who were elected or appointed for the term 2025-2028 are:

- Hugues Capdeville (CLS, France) as Analysis Center Representative,
- Anna Kelley (NASA/GSFC, USA) as Data Center Representative,
- Maria Tsakiri (NTUA, Greece) as Member-at-Large,
- Cécile Manfredi (CNES, France), appointed by CNES as the DORIS system representative,
- Jérôme Saunier (IGN, France), reappointed by IGN as the Network representative,
- Mathis Bloßfeld (DGFI-TUM, Germany), appointed by IERS as its representative.

The new Governing Board has elected Guilhem Moreaux as the Chairperson of the IDS Governing Board for 2025-2028.

Position	Term	Status	Name	Affiliation	Country
Analysis coordinator	**2023-2026**	Elected	**Petr Štěpánek**	Geodetic Observatory Pecný	Czech Republic
Data Centers' representative	**2025-2028**	Elected	**Anna Kelley**	NASA/GSFC	USA
Analysis Centers' representative	**2025-2028**	Elected	**Hugues Capdeville**	CLS	France
Member at large	**2023-2026**	Elected	**Laura Sanchez**	DGFI-TUM	Germany
Member at large	**2025-2028**	Elected	**Maria Tsakiri**	National Technical University of Athens	Greece
Director of the Central Bureau	Since 2003	Appointed	**Laurent Soudarin**	CLS	France
Combination Center representative	Since 2013	Appointed	**Guilhem Moreaux (chair 2025-2028)**	CLS	France
Network representative	**2025-2028**	Appointed	**Jérôme Saunier**	IGN	France
DORIS system representative	**2025-2028**	Appointed	**Cécile Manfredi**	CNES	France
IAG representative	**2023-2027**	Appointed	**Ernst Schrama**	TU Delft	Netherlands
IERS representative	**2025-2028**	Appointed	**Mathis Bloßfeld**	DGFI-TUM	Germany
Chair of WG "Integrated Clock Correction Strategies for DORIS"	**Since June 2024**	Ex-officio (non voting member)	**Patrick Schreiner**	GFZ	Germany
Chair of WG "NRT ionospheric applications"	**Since Nov. 2024**	Ex-officio (non voting member)	**Ningbo Wang**	AIR-CAS	China

Fig. 5. Composition of the IDS Governing Board from January 2025

The Governing Board met five times since mid-2023, twice in person at the AWG meeting in November 2023 and at the IDS Workshop in September 2024, three times remotely.

The IDS GB sincerely thanks the previous members Patrick Michael, Karine Le Bail and Tonie van Dam. We would also like to express our gratitude to Frank Lemoine for having served the IDS GB since 2005 as Analysis Coordinator then Analysis Centers' representative and for representing the IDS to external organizations as GB Chairperson for the last 8 years.

Note that Karine Le Bail (Chalmers University of Technology, Sweden) is no longer a member of the GB but she remains the IDS representative to GGOS Directing Board.

4.2 Working Groups

The IDS Governing Board has set up two new working groups (WG) in 2024:

- The "Integrated Clock Correction Strategies for DORIS" WG is led by Patrick Schreiner (GFZ, Germany) and aims to address the behavior of DORIS clocks, exploiting DORIS clock co-locations in space and on ground. The goal is to derive methods to better model the behavior of DORIS USO and reduce a source of systematic error in the DORIS technique.
- The "NRT ionospheric applications" WG, led by Ningbo Wang (AIR/CAS, China), is the continuation of the "NRT data". Its aim is to advance the use of Near-Real Time (NRT) DORIS data for ionospheric research applications.

Both chairpersons, Patick Schreiner and Ningbo Wang, are non-voting members of the IDS Governing Board.

More information can be found at https://ids-doris.org/ids/organization/working-groups.html.

4.3 Involvement in ESA Genesis project

IDS fully supports this project and together with CNES experts, is involved in the Genesis Science Exploitation Team. Several IDS members are part of the Working Group DORIS (WG 4) chaired by Guilhem Moreaux.

4.4 IDS 20th anniversary

The IDS was implemented in 2003 under the umbrella of the International Association of Geodesy (IAG). On 1 July 2023, the IDS turned 20. To celebrate this anniversary, a special event was organized in Berlin on the occasion of the general assembly of the International Union of Geodesy and Geophysics (IUGG; 11-20 July 2023, https://www.iugg2023berlin.org/). A second celebration was held with the IDS community in Saint-Mandé, France, in November 2023. As an introduction to the AWG meeting, representatives from CNES and IGN praised the active role played by IDS in improving and promoting the DORIS system.

4.5 DORIS Special Issue

A fourth special issue on DORIS (after 2006, 2010, and 2016) was published in 2023 in Advances in Space Research (Elsevier) dedicated to new advances in terms of measurement techniques and applications. Ernst Schrama and Denise Dettmering are the Guest Editors. There are eight papers covering the DORIS ground network and equipment, precise orbit determination, DORIS contributions to references frames, in particular to ITRF2020, and the application to ionospheric modelling and validation. The special issue appears in Volume 72, Issue 1 of the journal. The reference is:
New Results from DORIS for Science and Society, E.J.O. Schrama and D. Dettmering (Eds.), ADVANCES IN SPACE RESEARCH, 72(1):1-128 (1 July 2023)
https://www.sciencedirect.com/journal/advances-in-space-research/vol/72/issue/1.

4.6 IDS Workshop 2024, Montpellier

The IDS Workshop 20024 took place in Montpellier as sessions of the "30 Years of Progress in Radar Altimetry" Symposium. The CB took part in drawing up the program for the Workshop and presented the latest IDS news. Abstracts with DOI and presentations are available on the IDS website at https://ids-doris.org/resources/presentations/ids-meetings.html#ids-workshop-2024.

4.7 Central Bureau

The Central Bureau, funded by CNES and hosted at CLS, is the executive arm of the Governing Board and as such is responsible for the general management of the IDS consistent with the directives, policies and priorities set by the Governing Board. It brings its support to the IDS components and operates the information system.

The Central Bureau participated in the organization of the AWG meetings (see 3.1). It documented the Governing Board meetings held on these occasions. The Minutes of the GB meetings are available on the website at https://ids-doris.org/resources/ids-documents/minutes-ids-gb-meetings.html#minutes.

Website https://ids-doris.org

A new version of the website was launched in May 2025. The aim is to make the website clearer for users. A new template has been implemented, while retaining the site's signature graphic identity. The information provided by the site has been structured into six sections, compared with four in the previous version: IDS, Network & Stations, Missions & System, Data & Products, User corner, Resources. We have chosen to limit the tree structure to three levels (Section > Level 1 > Level2). The first page of each section gives a description of its content. Besides the structure defined by the menus, several ways to find the information are proposed: alternative menu on the home page (Discover IDS, Discover DORIS, DORIS system monitoring), list of the documentation with classification according to five categories (Outreach, DORIS system components, IDS information system, Publications and presentations, Documents), content classification of the User Corner by user type (beginner, competent, expert). This site version offers some new features (satellite tracks and stations visibilities maps, convertor of calendar days to CNES or NASA julian days and vice versa, list of variables observed by DORIS). URL redirects have been set up from previous site version's pages to pages of the new site.

In the future, new evolutions will be performed: rewriting and moving from Aviso the page «the DORIS technique», organizing the landing pages for documents and products, linking the Essential Geodetic Variables to products and applications, improving access to sitelogs.

See what has changed under https://ids-doris.org/documents/2025-IDSwebsiteV3.pdf.

Newsletter

Launched in April 2016, the IDS Newsletter aims to provide regular information on the DORIS system and the life of IDS to a wide audience, from the host agencies to the other sister services. The issues are distributed via email to the subscribers to the DORISmail and several identified managers and decision-makers. They are also available from the IDS website (https://ids-doris.org/resources/ids-publications/newsletter.html).

IDS published issue # 11 in December 2024: https://ids-doris.org/documents/newsletters/IDS-Newsletter11.pdf.

Data dissemination

The Central Bureau works with the SSALTO multi-mission ground segment and the IDS Data Centers (at IGN and the NASA CDDIS) to coordinate the data and products archiving and the dissemination of the related information.

- SWOT
  Data, metadata, and documentation of the missions SWOT were put online the IDS data and information sites as they become available.
- NRT data
  Since mid-2024, both NRT observation and orbit data have been routinely provided by CNES with latencies of less than three hours for six low earth orbit (LEO) satellites—Jason-3, Saral, Sentinel-3A, Sentinel-3B, Sentinel-6A, and SWOT. These datasets are distributed via the IGN archive (ftp://doris.ign.fr/), ensuring their accessibility for the WG "NRT ionospheric applications" and their use for relevant ionospheric applications. NRT datasets for Cryosat-2, HY-2C and HY-2D are currently being completed. All this data will also be made available to CDDIS.

4.8 Data Centers

Two data centers currently support the archiving and distribution of data for the IDS:

- Crustal Dynamics Data Information System (CDDIS), funded by NASA and located in Greenbelt, Maryland USA,
- Institut National de l'Information Géographique et Forestière (IGN) in Marne-la-Vallée France.

Both institutions have archived DORIS data since the launch of TOPEX/Poseidon in 1992.

IDS data and products are transmitted from their sources to the IDS data centers. DORIS data are downloaded from the satellite at the DORIS control and processing center, SSALTO (Segment Sol multi-missions d'ALTimétrie, d'Orbitographie et de localisation précise) in Toulouse, France. After validation, SSALTO transmits the data to the IDS data centers. IDS analysis centers, as well as other users, retrieve these data files from the data centers and produce products, which in turn are transmitted to the IDS data centers.

Since mid-2019, CNES has been regularly checking SSALTO deliveries of DORIS data and products at both Data Centers. This routine maintenance is carried out to ensure the integrity of SSALTO data and products (orbits, RINEX, quaternions...) made available to users.

CDDIS Data Center

The NASA CDDIS Data Center stopped providing anonymous ftp services as of 1 November 2020. All users are now requested to use more secure access protocols such as https or ftp-ssl, and a NASA Earthdata login as a method of access to the CDDIS archive. Instructions and example links are available here: https://www.earthdata.nasa.gov/centers/cddis-daac/archive-access.

As of the end of 2024 the CDDIS has dedicated 168 GB of disk space to the archive of DORIS data (103 GB: 61%), products (40 GB: 24%), and information (25 GB: 15%). During the year 2024 users downloaded 953,967 files of DORIS data totaling 2,410 GB (GB: 90%; files: 57%); 674,804 files of DORIS products, totaling 230 GB (GB: 9%; files: 40%); and 47,248 files of DORIS ancillary totaling 34 GB (GB: 1%; files: 3%). Of the files downloaded 380,822, totaling 228 GB, were downloaded through FTP (GB: 9%, files: 23%); while 1,295,197 files, totaling 2,446 GB, were downloaded through HTTPS (GB: 9%, files: 77%).

IGN Data Center

The IGN Data Center offers:

- FTP deposit server for data and analysis centers uploads, requiring special authentication
- Free FTP anonymous access to observations data and products
- Internet link: ftp://doris.ign.fr

An identical infrastructure and configuration had been set up at ENSG (IGN School) to ensure continuity of service thanks to independent access (ftp://doris.ensg.eu) but this backup site has been experiencing maintenance difficulties for several years. It was definitively discontinued in 2025.

At the end of 2024, the IGN Data Center was providing users with 195 Go of DORIS-IDS data, products, metadata and information. In 2024, regarding IDS section, the number of visits to the data center is stable compared to previous years, reaching 5129 visits, with 388 Go (2 643 726 files) of DORIS data downloaded by the users.

4.9 Analysis Centers and Analysis Coordination

The IDS covers six Analysis Centers (AC) and four Associate Analysis Centers (AAC) who use eight different software packages, as summarized in Fig. 6. Some analysis centers perform POD analyses of DORIS satellites on a routine basis using other geodetic techniques (SLR and GNSS).

Name	Center	Location	Contact	Software	Multi-technique
ESA	**AC**	Germany	Michiel Otten	NAPEOS	SLR, GNSS
GOP (Geodetic Observatory Pecny)	**AC**	Czech Republic	Petr Stepanek	Bernese	
GRG (CNES/CLS aka GRGS)	**AC**	France	Hugues Capdeville	GINS	SLR, GNSS
GSC (NASA/GSFC)	**AC**	USA	Frank Lemoine	GEODYN	SLR
IGN	**AC**	France	Pascal Willis	GIPSY	
INA (Inasan)	**AC**	Russia	Sergei Kuzin	GIPSY/ own development	
CNES/POD	**AAC**	France	Alexandre Couhert	Zoom	SLR, GNSS
GFZ	**AAC**	Germany	Rolf Koenig	EPOS-OC	SLR, GNSS
TU Delft	**AAC**	Netherlands	Ernst Schrama	GEODYN	SLR
DGFI-TUM	**AAC**	Germany	Mathis Bloßfeld, Sergei Rudenko	DOGS	SLR

Fig. 6. Summary of IDS Analysis Centers (AC) and Associate Analysis Centers (AAC)

Analysis Working Group (AWG) meetings

The groups involved in analyzing DORIS data -ACs, AACs and partner groups- are members of the Analysis Working Group (AWG). The AWG meetings organized by the Analysis Coordination are devoted to the data analysis and investigation of the ACs and AACs. Two AWG meetings were held in 2023. One was held online on April 18. A hybrid meeting with most of participants on site followed on November 28 and 29 in Saint-Mandé (France). In 2024, the AWG met online on June 6, and in 2025 on March 24.

In 2023, topics included CryoSat-2 orbit determination, CNES/GRGS time variable gravity field models, POD of Jason-3, CryoSat-2 and Sentinel satellites, impact of 2-per-revolution harmonics, ionosphere, concept of DORIS on Galileo and the monthly gravity field generation using DORIS and SLR.

In 2024, the Centers reported on the status of DORIS data processing, system upgrades, and their involvement in the upcoming ITRF2020-u2024 update. DGFI-TUM and GFZ highlighted ongoing tasks related to orbit modeling and station position validation. The Combination emphasized the quality control and assessment methods used to ensure consistent and accurate contributions toward the updated ITRF2020-u2024 solution. A key topic was the evaluation of individual contributions to the combined IDS solution and the cross-center consistency of the results from the various ACs and AACs. Technical advancements were also discussed, including the processing of data from the SWOT satellite and methodological changes in handling CryoSat-2 measurements. These developments reflect a broader move toward more standardized and interoperable data formats across geodetic missions.

In 2025, the main topics were the analysis of the IDS AC contributions to the ITRF2020-u2024 update, and the processing of SWOT satellite's DORIS measurements.

More details and presentation files are available on the IDS website at
https://ids-doris.org/resources/presentations/ids-meetings.html#ids-awg-04-2023
https://ids-doris.org/resources/presentations/ids-meetings.html#ids-awg-11-2023
https://ids-doris.org/resources/presentations/ids-meetings.html#ids-awg-06-2024
https://ids-doris.org/resources/presentations/ids-meetings.html#ids-awg-03-2025

Analysis Centers

Over the reporting period, five ACs (ESA, GSC, GRG, GOP, and IGN) are fully engaged in the generation of operational solutions. The IGN center has restarted routine solution delivery in 2023 after the retirement of its long-time responsible Pascal Willis. The new team (Samuel Nahmani, Arnaud Pollet) is very active and worked hardly on a return to operational status. The INA center is developing a new software package and is focusing on getting reliable multi-satellite solutions.

Among the AACs, GFZ and DGFI-TUM contribute to specific DORIS-related tasks, and GFZ is currently under evaluation for a potential upgrade to full AC status. The CNES AAC continues to contribute POD solutions.

In 2023 a processing of data 2020.0-2023.0 has been performed to generate a DORIS contribution to ITRF2020 extension. In 2024, data covering the period 2023.0–2024.0 were processed to support the IDS contribution to the new ITRF2020 extension.

4.10 Combination Center

The IDS Combination Center (CC) performs the routine evaluation and combination of the solutions of the IDS Analysis Centers.

In 2023, the CC also computed the second version of the DORIS extension of the ITRF2020 for Precise Orbit Determination (DPOD2020). That second version includes estimation of periodic signals (annual and semi-annual) as well as post-seismic corrections from the DORIS observations at Socorro Island.

In 2024, a third version of the DPOD2020 is computed and the seasonal corrections deduced from this version are evaluated with respect to the surface displacement time series from some of the atmospheric, hydrologic and non-tidal ocean loading models available by the IERS Global Geophysical Fluids Center (GGFC).

In 2025, in parallel to the routine delivery of the IDS weekly combined solution and its associated products (coordinate time series of the DORIS stations, EOP time series), the IDS Combination Center will realize the DORIS contribution to the second yearly update of the ITRF2020. The IDS CC also plans to contribute to the IERS Technical Note on the evaluation of the ITRF2020 and to proceed to the DORIS evaluation the ITRF2020-u2023

solution (first ITRF2020 update). Finally, the IDS CC will compute a fourth version of the DPOD2020 aligned onto the ITRF2020-u2023 solution.

5 IDS meetings and publications

5.1 Meetings

IDS organizes two types of meetings:

- IDS Workshops (every two years), opened to a large public and related to scientific aspects or applications of the DORIS systems.
- Analysis Working Group Meetings (AWG) (when needed), more focused on technical issues, and usually attended by representatives of Analysis Centers.

Fig. 7 gives the list of the meetings held over the reporting period. All the presentations at these meetings are made available by the Central Bureau on the IDS website at https://ids-doris.org/resources/presentations/ids-meetings.html.

Meeting	Location	Country	Dates
DORIS AWG Meeting	Saint-Mandé	France	28-29 November 2023
DORIS AWG Meeting	online		6 June 2024
IDS Workshop	Montpellier	France	4-5 September 2024
DORIS AWG Meeting	online		24 March 2025

Fig. 7. IDS Meetings and events (2023-2025)

5.2 Publications

During the reported period, IDS published the following activity reports:

- International DORIS Service Activity report 2022, Laurent Soudarin and Arnaud Sellé (Eds), 115 pages, 2024.
  https://doi.org/10.24400/312072/i02-2024.001
- International DORIS Service Activity report 2023, Laurent Soudarin and Claude Boniface (Eds), 130 pages, 2024.
  https://doi.org/10.24400/312072/i02-2024.002

5.3 Peer-reviewed publications related to DORIS

A full list of articles related to DORIS published in international peer-reviewed journals since 1985 is available on the IDS website at https://ids-doris.org/resources/articles/doris-bibliography.html. The following list compiles the articles published from 2023.

References

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