IDS Terms of Reference

Accepted by the IAG Executive Committee at the XXIIIth IUGG General Assembly, Sapporo, Japan, July 1, 2003

Introduction

DORIS (Doppler Orbit determination and Radiopositioning Integrated on Satellite) has been developed by the Centre National d'Etudes Spatiales (CNES) in conjunction with the Institut Géographique National (IGN) and the Groupe de Recherche de Géodesie Spatiale (GRGS).

A proof of concept for the International DORIS Service (IDS) was conducted through a Pilot phase until the establishment of the International DORIS Experiment in 1999 by the International Association of Geodesy (IAG). The IDS has begun formally on July 1, 2003 after the IAG official approval at the IUGG General Assembly in Sapporo. The IDS is an IAG Service and operates in close cooperation with the International Earth rotation and Reference frames Service (IERS).

The IDS mission

The primary objective of the IDS is to provide a service to support, through DORIS data and data products, geodetic and geophysical research activities.

The IDS collects, archives and distributes DORIS observation data sets of sufficient accuracy to satisfy the objectives of a wide range of applications and experimentations. From these data sets the following products are derived:

- Coordinates and velocities of the IDS tracking stations
- Geocenter and scale of the Terrestrial Reference Frame
- Ionospheric information
- High accuracy ephemerides of DORIS satellites
- Earth rotation parameters

The accuracies of these products are sufficient to support current scientific objectives including:

- Realization of global accessibility to and the improvement of the International Terrestrial Reference Frame (ITRF)
- Monitoring deformations of the solid earth
- Monitoring crustal deformation at tide gauges
- Monitoring variations in the hydrosphere (sea level, ice-sheets, etc.)
- Orbit determination for scientific satellites
- Ionosphere monitoring

The IDS organization

The IDS accomplishes its mission through the following components:

- Satellites carrying a DORIS receiver
- Network of tracking stations
- Data Centers
- Analysis Centers Analysis Coordinator
- Working Groups
- Central Bureau
- Governing Board

Satellites carrying a DORIS receiver

In July 2003, DORIS data are provided by CNES (SPOT-2, SPOT-3, SPOT-4, SPOT-5, TOPEX/Poseidon, Jason) and the European Space Agency (Envisat). Additional DORIS satellites, such as Cryosat, Jason-2 and Pleïades constellation are also foreseen.

Network of Tracking Stations

The IDS network is composed of DORIS permanent tracking stations located at several host institutions and maintained by the IGN (56 in total in July 2003).

The network can also include additional DORIS stations observing during specific campaigns of scientific interest and selected by the Station Selection Working Group.

Data Centers

The Data Centers are in direct contact with the CNES, which provides the DORIS data. They archive the DORIS data as well as any ancillary information required to process these data.

Analysis Centers and Analysis Coordinator

The Analysis Centers are committed to provide at least one of the above IDS products on a regular basis. Their expertise in DORIS data analysis is a key factor of the product accuracy.

The Analysis Coordinator assists the Analysis Centers. The Analysis Coordinator monitors the Analysis Centers activities to ensure that the IDS objectives are carried out.

Specific expectations include quality control, performance evaluation, and continued development of appropriate analysis standards. The Analysis Coordinator, with the assistance of the Central Bureau, is also responsible for the appropriate combination of the Analysis Centers products into a single set of products.

Through the existing reciprocity agreement between IDS and IERS, the Analysis Coordinator serves as the DORIS Technique Center representative for IERS, and as such, subject to Governing Board approval, is a member of the IERS Directing Board (together with another person selected by the IDS Governing Board). In turn, the IERS Directing Board designates a representative to the IDS Governing Board. This arrangement ensures full cooperation between the two services.

Working Groups

IDS Working Groups provide expertise on particular topics related to the IDS components or aims at the development of particular IDS product(s) or service(s) relying on the IDS infrastructure.

All Working Groups are created and dismissed by the IDS Governing Board on the approval of the Working Group's charter, which must include a mandate, a schedule, and a chairman.

The Chairpersons of the Working Groups are non-voting members of the IDS Governing Board (see below).

Central Bureau

The Central Bureau (CB) is the executive arm of the IDS 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.

In this role the CB, within available resources, coordinates IDS activities, facilitates communications, maintains documentation, and organizes reports, meetings and workshops.

The CB actively coordinates with the Working Groups and committees and ensures the compatibility of IDS and IERS by interfacing with the IERS. The CB acts as the outreach office and promotes use of IDS data and products, maintaining and expanding the visibility of the IDS. To accomplish these tasks the CB works closely with the independent Analysis Coordinator described above.

The CB supports the Analysis Coordinator in combining the various Analysis Centers products and providing him with all information necessary to validate the final combined products.

The CB operates the information system for the IDS and produces the IDS Annual Reports and directory. The CB coordinates the publication of other documents required for the satisfactory planning and day-to-day operation of the Service, including standards and specifications regarding the performance, functionality and configuration requirements of all elements of the Service.

Although the Chairperson of the Governing Board is the official representative of the IDS to external organizations, the CB, consonant with the directives established by the Governing Board, is responsible for the day-to-day liaison with such organizations.

The long term function of IDS is assured through redundancy and emergency contingency for all of its components except for the CB. For this reason the performance of the Central Bureau is to be formally reviewed by the GB at least every five years. On these occasions the Central Bureau will either reconfirm its commitment to the IDS for the next period of five years or announce the termination of operations after a transition phase of at least one year. The GB will formally approve the Central Bureau's proposal, or, alternatively issue a Call for Proposal for a new IDS Central Bureau to take over responsibilities after the transition phase.

In summary, the Central Bureau performs primarily a long-term coordination role to ensure that IDS participants contribute to the Service in a consistent and continuous manner and adhere to IDS standards.

Governing Board

The principal roles of the Governing Board (GB) are to set policy and to exercise broad oversight of all IDS functions and components. It also controls general activities of the Service, including restructuring, that would be appropriate to maintain efficiency and reliability, while taking full advantage of the advances in technology and theory.

The Governing Board (GB) consists of nine voting members and a number of non-voting members. They are distributed as follows:

Elected by IDS Associates (see below):

Analysis Centers' representative: 1
Data centers' representative: 1

Elected by the Governing Board:

Analysis Coordinator: 1
Network's representative: 1
Members at large: 2

Appointed members

Director of the Central Bureau: 1
Representative of the IERS: 1
IAG representative: 1

Total voting members 9

The Working Group chairpersons are GB members with voice but without vote.

The appointed members are considered ex officio and are not subject to institutional restrictions. The elected six persons must be members of different organizations. All six candidates have staggered four-year terms, which are renewable twice. The GB membership should be properly balanced with regard to supporting organizations as well as geographically.

For the first two of the above positions representing components of the IDS, the nominating committee conducts the elections. The nominating committee consists of three members, the chair of which is appointed by the Chair of the GB and who is a member of the GB not currently up for re-election. The nominating committee presents to the Associate Members, for each position to be filled, a list of at least two candidates for election. The election will be by the number of votes received by the Associate Members. In the case of a tie the election is by the members of the Governing Board.

For the next four elected positions, four weeks prior to the election by the Governing Board, the Central Bureau presents its candidate(s) to the Governing Board. Based on the reactions of the GB members, or on the outcome of the elected positions, the CB may present a revised list at the GB meeting where the election of the new Board members takes place.

In case of a resignation from the Board, after consulting with the appropriate IDS components, the CB will nominate replacement candidates for election by the GB. The replacement will serve until the end of the term of the resigned Board member.

The Chairperson is one of the members of the GB elected by the Board for a term of four years with the possibility of reelection for one additional term. The Chairperson does not vote, except in case of a tie. He/she is the official representative of IDS to external organizations.

The IAG and IERS representatives are appointed respectively by the IAG Bureau and by IERS Governing Board for a maximum of two four-year terms.

Members of the GB become IAG Fellows with the appropriate rights and privileges after an initial two- year period.

Most GB decisions are to be made by consensus or by a simple majority vote of the members present, provided that there is a quorum consisting of at least six members of the GB. In case of lack of a quorum the voting is by e-mail. Changes in the IDS Terms of Reference and Chairperson of the GB can only be made by a 2/3 majority of the members of the GB, i.e., by six or more votes.

The Board shall meet at least annually and at such other times as shall be considered appropriate by the Chairperson or at the request of three members. The Central Bureau provides the secretariat of the GB.

Associate Members

Associate Members are persons representing organizations, that participate in any of the IDS components. The Central Bureau maintains the list of Associate Members, which is revised annually and is subject to the approval of the Governing Board. The starting list of the IDS Associate Members is a subset of the complete distribution list of the DORISMails.

Associate Members vote for the incoming members of the GB (except for those nominated by the CB). The list of Associate Members eligible for voting in the elections must be approved by the GB at least three months prior to the election process. For the purposes of the election current and former GB members are also considered Associate Members.

IDS Associate Members are considered IAG Affiliates with the appropriate rights and privileges.