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The International DORIS Service: new challenges

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The International DORIS Service (IDS) had its 20th anniversary in 2023 and is now looking forward to new challenges.

Over a 30-year period, between 1990 and 2020, the DORIS constellation contributing to the IDS has totaled nine satellites with lifetimes ranging from 3 to 19 years (with the lifetime of SPOT-2, at 19 years, being a record). Since the launch of the SWOT mission in December 2022, nine satellites have been in simultaneous operation and are supplying DORIS data to the IDS. This large number of missions is a challenge for the Analysis Centers, which must integrate them into their processing, taking into account each mission's special characteristics (w.r.t shape, altitude, attitude law). New missions are expected from 2025 including Sentinel-3C & 3D, Sentinel-6B & 6C, HY-2E & 2F, GENESIS. In addition, the DORIS system continues to evolve. The ground network is growing while providing a high level of service, 4G beacons are gradually replacing those of the previous generation, and a new more powerful DORIS instrument is under study.

New groups have approached IDS in recent years, bringing new processing capabilities, or wishing to become involved in DORIS processing in the medium term. These new strengths are also opening up new applications. Since 2021, DORIS data from the Jason-3 mission have been made available to IDS with a delay of less than three hours. This has enabled the IDS Working Group "NRT data" to demonstrate the value of these data for validating existing GNSS-based ionosphere models. In 2024, NRT DORIS data will be made available for additional missions (Sentinel-3A, Sentinel-3B, Sentinel-6A, Saral...). A new established IDS Working Group will focus on using these data for further ionospheric modelling applications.

In this presentation, we provide information on DORIS system developments and upcoming missions. We also present the recent achievements made by IDS and its components, and the future plans for the service.