

DORIS Software : Processing and management of Sound Velocity Profiles for echosounding applications



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Context

Recent improvements in the performance of acoustic systems for hydrography and oceanography require today a high degree of accuracy in processing and managing sound velocity profiles (SVP). Current physical sensors for this purpose are usually sufficient for today's needs and are not addressed here. The SVP processing software tools available today and used currently for acquisition and post-processing, may result from developments by academic teams, operational services, or industry companies specialized either in sonar manufacturing or in software development; obviously these various products correspond to different requirements. There is certainly today a need for a unified tool fulfilling both operational and scientific needs, joining a rigorously scientific methodology with a user-friendly approach, proposing a number of functionalities for both at-sea acquisition and in-lab processing, and compatible with the greatest number of physical sensors and acoustic systems.

Starting from this context analysis, Ifremer and SHOM have designed and developed such a SVP-processing software suite, according to their current operational and scientific needs, and based on their previous experiences in the fields of ocean physics, underwater acoustics, and software development for oceanography. Developed in the context of an academic and institutes partnership, *DORIS* is proposed today as an answer to the expectations of both operational and scientific teams.

General presentation

DORIS was designed as a part of an on-board configuration for at-sea operations; however it is usable as well in a data post-processing environment. Its general workflow articulates around five main functionalities (Figure 1):



Figure 1: General structure of the *DORIS* workflow

DORIS is available as a freeware, directly downloadable as a trial version excluding the export of the processed profile. The full version, including all available functionalities, is provided under a free-of-charge concession of the software license. The source codes are not included in the delivery, and remain property of Ifremer and SHOM.