

Sample management in JAMSTEC: Cooperation-based management of diverse samples

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JAMSTEC^{*1} publicly distributes samples and data obtained by JAMSTEC-AORI^{*2}-JURCAOS^{*3} Cooperative Research Cruises [1], as well as those by JAMSTEC private/open-call cruises, through online database (DB) websites, for additional uses with research/educational purposes. These online DBs are, from a long-term perspective, under a process of reorganization and integration: Public-level information systems for rock and sediment core samples were integrated into DARWIN DB [1] in FY2017. As for marine biological samples, whose information has been mainly distributed through “Marine Biological Sample DB [3], a part of information is already shared with DARWIN to utilize its search/map functions.

DB integration is in progress for not only public-level but also management-level information system, which are operated by sample holders responsible for storage of physical samples. In FY2018, JSDB (JAMSTEC Sample Management Database) is installed for the management of JAMSTEC rock, sediment core and biological samples, and actual data was transferred into this new system in FY2019. For rock and sediment core samples, information forwarding from management-level system (JSDB) to public-level system (DARWIN) is planned to be established in the near future.

JSDB consists of data tables for sample metadata information for onboard sampling activities, sample archive information for status and storage of physical samples, associate data information for various data obtained for samples, literature information for published documents, sample distribution information for service logs for sample requests. User authorization includes group setting, enabling individual sample holders outside Data Management Office to read, create and modify the information in an appropriate manner, although the DB is only accessible from inside JAMSTEC because of security reasons. Associate data information is supposed to include various data types, such as photos/images, text-based descriptions, spread-sheets and URLs etc., and open/close status control and group-setting are available for individual entries. Information for research proposals/projects or other data management issues, which should be associated with multiple samples, can also be managed as associated data information. For the future possibility of involvement with IGSN, sample metadata entries and their vocabulary are reorganized to follow the IGSN Descriptive Metadata [4], as much as possible.

Peoples involved in sample and data management tend to spend much effort for dealing with unusual conditions/situations which are not originally expected. Robustness is important for design/operation of information systems, because lack of flexibility and too much complexity of information systems are frequent causes of such kind of problems.

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[1] AORI website for Cooperative Research: <https://www.aori.u-tokyo.ac.jp/coop/>

[2] JAMSTEC DARWIN website: <http://www.godac.jamstec.go.jp/darwin/>

[3] JAMSTEC Marine Biological Sample Database: <http://www.godac.jamstec.go.jp/bio-sample/>

[4] SESAR website; <https://www.geosamples.org/metadata>

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