

Development of Information System Infrastructure for Efficient Data Publication in JAMSTEC

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The Japan Agency for Marine-Earth Science and Technology (JAMSTEC) archives and publishes large amounts of observation data and sample information obtained by cruise and dive surveys on a lot of database systems optimized depending on property of them. Therefore, efficient development and operation of the database systems are an important task in JAMSTEC.

One of the efforts against this task is development of common infrastructure system. Normally, every database system individually needs to be implemented all basic functions required for data publication. That causes an increase in system development cost and a decrease in efficiency of system operation. Furthermore, users of every database system are individually required to register user information, etc. That causes a decrease in convenience of users. In order to prevent these problems, JAMSTEC operates common infrastructure system implemented the basic functions required by every database system. The functions of this system are as follows.

- Access management

This system is implemented the centralized control function of publication of the database sites and access communication from the Internet.

- User registration and authentication

This system is implemented the function of user registration and single sign-on user authentication.

- Form creation and management

This system is implemented the function of creation and management of the customizable form for inquiry and data usage request, etc.

- Web map service

This system is able to provide the web map data for data visualization in every database site. Map data is selectable for every database site.

- Portal page

This system provides the portal page of the database sites “GODAC Data Site NUUNKUI” (<http://www.godac.jamstec.go.jp/jmedia/portal/e/>).

Furthermore, we optimize system position and network architecture. Data volume, publication method, and work location of data management staffs are different for every database system. Therefore, the database systems dispersedly install at Global Oceanographic Data Center (GODAC) in Okinawa prefecture and Yokohama Institute for Earth Sciences in Kanagawa prefecture depending on these conditions. Although the both institutes are distant, these are connected by high speed network using Science Information Network 5 (SINET5). In addition, network areas for data publication in both institutes are virtually constructed as a single network area. Therefore, these efforts contribute efficient data management and stable data publication.

In summary, a development of common infrastructure system and an optimization of system position and network architecture contribute an efficient operation of the database systems and an increase in

convenience of users. As a result of that, it is expected that the utilization of data published in JAMSTEC is promoted.

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