

Management of information about water resources: Brazilian experience

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The Brazilian National Water Agency (ANA), responsible for the National Water Resources Information System (SNIRH), has the responsibility to organize, deploy, and manage information about water resources in Brazil. Among many information related to water, the drainage basin appears as the central element of connection within the hydrographic network.

The development of systems of SNIRH considered the hydrographic basis as an integral part of the various systems developed by ANA, often incorporated the features of drainage basin into the code of these systems, however, the updating and improvement of cartography was being held without the systems begin to consume it in the same way thus, the updating of cartography required a huge effort to be incorporated in systems. In 2012 we began the construction of a corporative platform using ArcGIS technology to allow systems begin to consume the information in the form of geographical services.

This corporate platform were implemented using ArcGIS Server and Portal for ArcGIS as key products for integration and systematization of information, like this a new scenario has been made available for the upgrade and integration of systems with the hydrographic and cartographic information, as well as integrated finalistic systems each other. From this point, all systems started to use the same version of the same data delivered by ArcGIS Server through services.

The ArcGIS technology allowed SNIRH Portal made available the basic cartographic products required for the integration of information about Brazilian water resources. Currently maps are available through custom applications within the Portal for ArcGIS using WebAppBuilder and 38 maps are published grouped into 10 classes of information, enabling direct consultation databases and details about different spatial areas.

In addition to the geographical services, a suite with ArcGIS JavaScript enabled to view map information in finalistic systems directly on implemented interfaces, as well as check geographical consistency in the coordinates that will be recorded.

Another important advance is available in the form of geographical service that allows query about the domain, the responsibility of authorization, on use of water resources. This query currently is considering five different classes of information to establish the responsibility of authorization and supervision for water resources users in Brazil.

Also was tailored a query interface with ArcGIS Java Script along with a geocode service, that allowed integrated query about water resources information on the geocoded hydrographic network. This interface, through the services, show, for example, the distance between any point on the hydrographic network to the estuary. Finally, we are working with the technology to provide new services that integrate different business processes automated systems using spatial technology as the main for calculating the impacts of the use on water resources in the national hydrographic network.

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