



From Vision to Reality: Making data services useful to water scientists

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The CUAHSI Hydrologic Information System (HIS) is a services-oriented architecture for discovering, downloading, and publishing time-series data using web services and WaterML for data transmission. The development of this system over the past 10 years has been an important technological development and its adoption by many hydrologic services around the water marks an important transition for data sharing in water science.

The CUAHSI Water Data Center has been funded by the US National Science Foundation to serve the water science community (including the disciplines of hydrology, atmospheric science, civil engineering, physical geography, and ecology) with this technology. The challenge is now to translate this technological advance into useful services for scientific research and education. The WDC is examining how scientists search for data. Sampling environment is particularly difficult to describe well. We are proposing to refactor the metadata profile to better describe the sampling environment with a small number of orthogonal terms that each contains a small number of mutually exclusive vocabulary terms. These terms are being tied to known authorities to provide provenance and a SKOS service will be developed to serve these terms. The richness of the metadata description has to be balanced against the effort required by the data publishers to fill in the metadata fields. We are exploring how to lessen the burden by proposing appropriate metadata terms through GIS queries. These features—which consider both the needs of data users and providers and balances the costs and benefits of these efforts—will be required for community adoption of these technologies.