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The CUAHSI System of Systems for Water Data Discovery, Visualization, and Dissemination

Kenneth J. Lippold
Brigham Young University, kjlippold@byu.edu

Daniel Ames
Brigham Young University, dan.ames@byu.edu

Martin Seul
CUAHSI, mseul@cuahsi.org

Brian Cummings
CUAHSI, bcummings@cuahsi.org

Matthew Bayles
Brigham Young University, mmbayles@gmail.com

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The CUAHSI System of Systems for Water Data Discovery, Visualization, and Dissemination

Kenneth J. Lippold[a], Daniel Ames[a], Martin Seul[b], Brian Cummings[b], Matthew Bayles[a]
a. Brigham Young University [civil@byu.edu] b. CUAHSI [commgr@cuahsi.org]

Abstract: The purpose of this research is to facilitate the discovery, visualization, and dissemination of hydrologic data through the use of cloud based web services and applications. The CUAHSI Data Client helps achieve this goal by allowing users to search for and download hydrologic data from various HydroServers around the world. In addition, HydroShare was created to allow hydrologists to publish their data and discover data published by their colleagues. The CUAHSI Data Series Viewer application was created to allow this data to be visualized directly within both the CUAHSI Data Client and HydroShare. Finally, the HydroShare Resource Creator was developed to be a bridge between the two services, allowing data discovered on the CUAHSI Data Client to be published directly onto HydroShare. The combination of these applications and services provides a streamlined experience through which in a few simple steps, users can discover data through the CUAHSI Data Client, publish it as a HydroShare resource using the HydroShare Resource Creator, and easily visualize it using the CUAHSI Data Series Viewer. The use of consistent application programmer interfaces across these systems and the extensive adoption open standards and open source codes serves as an example of how other complex integrated systems can be developed from modular components.

Keywords: Cuahsi; tethys; hydroclient; hydroshare; hydroserver.