

## Generic Model Data Format

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**Abstract:** The Engineering Research and Development Center of the U. S. Army Corps of Engineers (USACE-ERDC) is conducting a seven-year research and development program entitled the System-Wide Water Resources Program (SWWRP). A primary goal of SWWRP is to analyze the response of an entire system through interdisciplinary modeling. Interdisciplinary modeling requires linking hydrologic, hydraulic, geohydrologic, water quality, vegetation, land use, and habitat assessment computational models. In the past, many of these models were developed for project purposes and therefore do not share common input and output data formats. Furthermore, SWWRP is tasked with supporting multiple platforms that range from single PCs to massively parallel super computers. In an effort to create a unifying data transfer mechanism the USACE-ERDC is developing an underlying data format. This data format, Generic Model Data Format (XMDF), allows for a common representation of multi-dimensional grid, mesh, and cross-sectional time-varying data. The XMDF data framework is based on the HDF5 file format and libraries. XMDF also supports georeferencing. This allows the development of spatial interpolation routines that can apply to a wide variety of data and data formats. A number of computational models have been or are in the process of being converted to read and write the XMDF standard. This paper describes the XMDF standard and presents an implementation of XMDF within the distributed hydrologic program GSSHA.