Atmospheric Data Model

The Atmospheric data model initiative is establishing a working dialog between ESRI and the atmospheric sciences community regarding data representation issues. This helps serve to address the needs of the atmospheric community for ESRI software development. The management of temporal data and raster data support are two areas of focus with this initiative.

Collaboration with NCAR/UCAR, NASA JPL and Raytheon has helped to identify the need for direct read of CF compliant netCDF data. The functionality is in development for the direct read and write of NetCDF as feature, raster, and tabular data. This will also be useful to perform analysis using standard feature, raster, and table Geoprocessing model builder tools for netCDF data.

The initial task in developing an Atmospheric Data Model is to identify the purpose and scope of the final design. A questionnaire will be used as the basis for a Conceptual Framework Document to shape the design of the Atmospheric data model, for the query, analysis, storage, and display of Atmospheric data in a GIS format. See link to the Atmospheric Special Interest group below.

See the Glossary of Meteorology maintained by the American Meteorological Society containing over 12,000 meteorological terms.

User Forums

Visit the Esri data model discussion forum to share your ideas, thoughts, and questions with other users.

Downloads - Case Studies

These Case Studies are a good starting point to learn about best practices for this discipline. These project examples include sample geodatabases, map documents, and documentation.

- NCAR/UCAR Visualization Demo NCAR/UCAR water vapor avi demo in ArcGlobe - zip format, 22493 kb
- Atmospheric Data Model differences document pdf file - zip format, 1276 kb
- Hurricane Isabel Globe animation avi, and ArcGlobe readme htm document - zip format, 28535 kb
- Atmospheric Data Model Poster .pdf - zip format, 27030 kb

Downloads - Design Templates

The Design Templates are the result of the community-based design process. The general concepts and terms for this discipline are described here. Tools and examples to create a template data model are also included for advanced users.

- Atmospheric Data Model Conceptual Design Documents vsd., .gif, and .pdfs docs for Atmospheric Data Model Conceptual Design - zip format, 13159 kb
- Atmospheric Data Model Workshop 3 ppt files from San Diego AMS Atmospheric Data Model Workshop - zip format, 6647 kb
- UCAR Design template for IHOP XML document, IHOP sample template geodatabase, UML and UML.dtd files - zip format, 608 kb

Downloads - Tools

These tools have been developed together with the data models to provide new ways to leverage each industry specific model. They are designed to work with the data model templates and case studies, and can be used with the model, or with other data sets. These tools can be found on ArcScripts, and are not supported Esri software.

- Working with netCDF in ArcGIS .avi, .doc - zip format, 3842 kb
- NetCDF Tools .dll, .exe, .py, .tbx, and .txt - URL format
- Wind Tools .exe, .py, .tbx, .sln, .suo, .cs, .csproj, .cache, .pdb, and .txt - URL format

User Community

Visit the website for the Atmospheric Special Interest group. We hold annual user group and data model meetings in conjunction with the ESRI User Conference in San Diego and the annual American Meteorological Society meetings.