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United States Strategy for a Geospatial Metadata Standard

Background:

In April 1994, President Clinton signed Executive Order 12906 titled "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure (NSDI)." The NSDI is defined as the technology, policies, standards, and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data. The Federal Geographic Data Committee (FGDC) was established in 1994 to oversee the development of the NSDI. Geographic information is critical to the United States to promote economic development, improve our stewardship of natural resources, and protect the environment. Metadata ("information or data about data") is a critical component of the NSDI and the EO12906 called for all US Federal Agencies and its partners to collect metadata using a standard and make that standardized documentation electronically accessible via a Clearinghouse network.

In 1992, the FGDC began the development of a metadata standard and in June 1994, the FGDC endorsed Version 1 of the Content Standard for Digital Geospatial Metadata (CSDGM), FGDC-STD-001. The CSDGM provided a basic framework for metadata development and collection. Significant metadata tool development activities were undertaken in support of the CSDGM. Following the endorsement of FGDC-STD-001, the FGDC held several workshops to assess the successes, limits and failures of the CSDGM. These workshops resulted in the second version of the CSDGM (FGDC-STD-001-1998) being developed and endorsed in April 1998. The 1998 version supersedes Version 1 and corrects or eases implementation problems in Version 1 as well as laid the cornerstone for the development of metadata profiles (more restrictive instantiation of the CSDGM tailored for a specific community) as well as the development of metadata extension (extensions of new classes of metadata above the CSDGM for specific discipline metadata). The CSDGM has been developed in a voluntary, open consensus process following the rules and guidelines of the FGDC Standards Working Group and all reviews of the CSDGM have been open to all US interested parties and organizations. The success of the CSDGM is demonstrated by its adoption (fully and partially) by numerous countries.

The US geospatial user community and private sector have primarily assumed the responsibility for the implementation of the CSDGM. To date, over 40 metadata tools (from standalone text editors to high-end relational data bases integrated within GIS systems) have been developed that enable metadata to be collected and published based on the CSDGM.

The FGDC manages an annual Cooperative Agreements Program (CAP) which subsidizes, via seed money, organizations to institutionalize the NSDI within their

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organizations. Since 1994, the FGDC has spent over \$4,000,000 (US) on the CAP program in support of metadata development and implementation.

Since 1996, the FGDC has proactively worked as a member to the American National Standards Institute (ANSI) accredited National Committee for Information Technology Standards (NCITS) subgroup L1 - GIS Standards committee and as an US member to ISO TC211 19115 Working Group and Editing Committees to harmonize the ISO 19115 Metadata Standard with that of the CSDGM. In 1996, when ISO TC211 issued a call for existing national metadata standards, the US submitted FGDC-STD-001. During the ISO 19115 development, the FGDC has conducted registered reviews of ISO 19115, distributing over 500 copies of ISO 19115 (Committee Drafts) and gathering over 1700 comments from US organizations and individuals.

The FGDC Metadata Program is based on a policy of open, free, public domain, access to all documents and information.

Strategy:

It is the strategy of NCITS L1 that in order to promote the principles of NSDI and the Global Spatial Data Infrastructure (GSDI), the NCITS L1 shall exert positive efforts to harmonize the FGDC CSDGM with and adopt ISO 19115 in order to protect US metadata interests and requirements. Only as a last resource will NCITS L1 adopt or develop a metadata standard that does not conform to ISO 19115. This policy is directed by and consistent with the Office of Management and Budget (OMB) Circular A-119, OMB Circular A-130, "Management of Federal Information Resources", dated 11/28/00, the American National Standards Institute "National Standards Strategy for the United States", dated September 2000, and P.L. 104-113 The National Technology Transfer and Advancement Act.

Implementation:

NCITS L1 will adopt and implement ISO 19115 (in its entirety or as profiles). Profile(s) will be developed using the Standards guidelines and processes of the American National Standards Institute (ANSI) and the FGDC. The FGDC will assume the lead responsibility for coordination of the NCITS L1 adoption, profile development activity, and harmonization with ISO 19115 in the US consistent with NSDI and FGDC policy and regulations.

At a minimum, NCITS L1 plans to develop 2 profiles, (1) a profile that preserves FGDC legacy metadata content and enables FGDC metadata to be migrated to and be compliant with ISO 19115 and (2) one that embraces the full metadata richness of ISO 19115. For both profiles, ANSI technical documents may need to be developed to permit the addition of metadata elements to a profile beyond those identified in ISO 19115. Metadata migration software tools will be developed by NSDI partners and NCITS L1 members that enable legacy CSDGM metadata to be migrated and compliant with Profile #1. NCITS L1 will work closely with the US GIS Vendor community for

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the implementation of the ISO Metadata Standard and any NCITS L1 Profiles. FGDC initial plans call for the adoption of the NCITS L1 Profiles and therefore plan to withdraw FGDC-STD-001-1998. Metadata education and training materials will be developed that embrace the NCITS L1 ISO 19115 profiles. Policy and Regulatory documents will be developed that enforce the implementation of ISO 19115 and any developed Profiles.

Over the next 6-12 months, NCITS L1 plans to adopt ISO 19115 and have approved by ANSI the 2 profiles and have completed any related work. NCITS L1 will also coordinate and work closely with its international neighbors and allies to share common metadata strategies.

References:

Office of Management and Budget Circular A-119, "Federal Participation in the Development and Use of Voluntary Standards", 02/10/98,

Office of Management and Budget Circular A-130, "Management of Federal Information Resources", dated 11/28/00

P.L. 104-113 The National Technology Transfer and Advancement Act.

American National Standards Institute "National Standards Strategy for the United States", dated September 2000.