Abstract

Maps provide information to researchers, as each map represents the environment from the perspective of the creator, at a set point in time. Libraries act as sources of information for researchers and can provide resources for users to locate, request, and receive maps. However, each library has differing capacities for users to access maps, and that capacity can even differ within the same organization. The United States (U.S.) Marine Corps is an example of an organization that has libraries with differing levels of accessibility for users accessing maps. At this time, remote users do not have access to hard, or paper maps, in the Library of the Marine Corps located in Quantico, Virginia. Therefore the aim of this thesis is to design an innovative process for remote users to access hard maps from the Library of the Marine Corps using digital components. To design a suitable process and spatial database, this project focuses on how users currently search and access hard maps and digital components from the Library of the Marine Corps, what the metadata standards for geospatial data and cartography currently consist of, common access capabilities of other libraries, and current practices for scanning, georeferencing, and extracting vector features from hard maps. A detailed entity-relationship model illustrates an efficient spatial database that can accompany the process, revealing the relationships between different spatial objects involved in users locating, requesting, and receiving digitized versions of hard maps and associated digital components from the Library of the Marine Corps. Finally, this project evaluates the spatial database and process for integrity and suitability for the Library of the Marine Corps. Other libraries housing important historical as well as current collections of hard maps could use the results of this research.