INTRODUCTION

History

In 2005, the United States Congress established the Columbia Regional Geospatial Service Center System through a federal appropriation. Initially, the System consisted of the Columbia Regional Geospatial Service Center at Stephen F. Austin State University (SFASU) in Nacogdoches and the Regional Geospatial Service Center at the University of Texas at El Paso. The appropriation, championed by Senator Kay Bailey Hutchison, came as recognition of the contributions of SFASU during the recovery effort after the loss of STS 107, the Space Shuttle Columbia. But the origins of the project go back to the 1990s when researchers at SFASU first recognized the disadvantages that rural communities suffered in terms of adopting geospatial technology to address pressing problems. The work that went on quietly in East Texas over the next ten years resulted in development of capabilities that enabled SFA to...
contribute so effectively to the recovery effort (Gehman, 2003).

Relevance

Senator Hutchison challenged the Columbia Center to demonstrate a better way to bring the advantages of geospatial technology to all parts of the state, and in so doing create a model for the nation. During the course of the ensuing five years, the system has done that. Today the Columbia Regional Geospatial Service Center System is comprised of five Centers: the original two in Nacogdoches and El Paso; the Center for Geospatial Technology at Texas Tech University in Lubbock; a facility in the Department for Earth and Space Sciences at Lamar University; and the Center for Earth and Environmental Studies at the Texas A&M International University in Laredo. The System operates in close coordination with The Texas Natural Resources Information System (TNRIS), a state agency mandated to serve the geospatial needs of Texas. In effect, the Columbia Center System extends the reach of TNRIS to all areas of the State.

Mission

The Columbia Regional Geospatial Service Center System provides regional geospatial support for emergency preparedness and response, economic development and resource management. The System serves all interest groups, public and private, by providing cutting edge technology tempered with a pragmatic, bottom-up philosophy. This broad mission allows the System flexibility to discover new ways to apply geospatial technology for the common good. At the same time, the three mission areas give focus to the Systems efforts, while leveraging the work in each mission area to the benefit of the other areas. Put another way, the same geospatial data, applications and training used for emergency preparedness and response can be applied to economic development and natural resource management issues (McDonald et al., 2007).

THE MODEL

The Columbia Regional Geospatial Service Center System Model is comprised of eight principles, each of which defines an important aspect of the successful program. These principles are a combination of fundamental concepts upon which the project is based and pragmatic additions that have developed over the years and refined by experience. These principles are the foundation of the Columbia Regional Geospatial Service Center System (Kroll et al., 2006).

Distributed Centers

The idea for regionally based, distributed centers dates back to very early thinking about the challenge of bringing geospatial technology to rural areas. The problem persists that state and federally based programs often do not have sufficient reach to impact local jurisdictions effectively. An obvious solution is to place resources where they are needed, i.e., locally. This idea became a core concept of the Columbia System model during the Space Shuttle Columbia recovery effort in 2003. It was observed that the farther the search ranged from geospatial resources the more difficult it became to adequately support the effort. As a result, the concept of “Forward Mapping Centers” was developed and successfully deployed during the first critical weeks of the recovery (Blackwell et al., 2003). Today this idea is reflected not only in the regional distribution of the Columbia System Centers, but also in the Geospatial Rapid Response teams being developed by the System.

Regional Specialization

Further, the needs of different areas vary greatly. For example, forestry issues that are prevalent in East Texas hold little interest for the citizens of El Paso. At the same time international issues that dominate life in El Paso are less meaningful in East Texas. Each region has its own concerns that are best addressed by regional centers. In addition, each Center is able to concentrate on
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