



## **LAGIC Technical Services Quarterly Report**

October – December 2007

January, 2008

### **Summary:**

During the second quarter of the 2007-2008 contract, five critical geospatial databases were operationalized and made available for in-house analysis and development. These data servers have also provided the foundation for the LouisianaMAP data servers. Additionally, the LAGIC geospatial data catalog is online and serving more than 12GB of data (more than 1000 individual vector and raster datasets) via LAGIC servers.

Currently, the Technical Services staff consists of one full-time and two part-time employees. In early November 2007, LAGIC and LSU coordinated the announcements for a GIS Systems Analyst/Developer and a Network Systems Administrator. These job announcements were published in local and state-wide newspapers. Approximately fourteen applications were received for the GIS analyst (8) and Systems Administrator (6) positions. These applications are being reviewed for follow-up.

Technical staff members have also participated in a number of online and classroom based training. Additional training is anticipated in future quarters. Additionally, LAGIC and members of the GIS Council are coordinating a technical support group for ArcGIS Server development. Finally, a limited number of technical enhancements to hardware, software and services have been performed during this quarter. However, a significant amount of time was spent recovering from network complications. Details of these enhancements and issues are presented in the text provided.

### **Administrative & Staff:**

#### 1) *LAGIC Contract:*

The LAGIC Contract has been finalized and approved by all parties. Craig Johnson and Neal Underwood have confirmed that the contract was submitted to both the State and LSU for approval. According to the LSU School of the Coast & Environment (LSU-SC&E), a budget code has been assigned to LAGIC for the FY07-08.

#### 2) *Staff:*

LAGIC Technical Services currently employs one fulltime, and two part-time staff members. Additional staff are needed, and anticipated.

In October, LAGIC and LSU-SC&E coordinated job announcements for two GIS Coordinators, a GIS Analyst/Developer, and a Network Systems Administrator. LSU-SC&E serves as the lead

contact for the announcements. By the end of November, LAGIC Technical Services had received fourteen (14) applications for the GIS Analyst/Developer (8) and Systems Administrator (6) positions. These applications are being reviewed for follow-up. Interviews and appointments are anticipated during the third-quarter.

3) *Training:*

LAGIC Technical Staff participated in a few, short hands-on training sessions. Most sessions were provided from the ESRI training web site. Training provided necessary introductions to various hardware, software, and data services utilized and/or performed at LAGIC.

In October, LAGIC's Technical Manager coordinated a 3-day training class provided by ESRI, *Developing Applications with ArcGIS Server with the Microsoft .Net Framework*. The class was hosted by the Department of Environmental Quality (LDEQ). Fourteen students from GEC, LDEQ, LDOTD, LDOA, LSU, and Teachmegis.com attended.

As a follow up to this course, LAGIC was asked to help coordinate a GIS Server developer's support group. LAGIC is coordinating this effort with various members of the GIS Council (currently LDOTD, LDEQ, and Lincoln Parish) and other interested parties. Efforts to establish quarterly meetings have begun, with the first meeting expected during the third-quarter.

## **Data Management:**

1) Upgrades to the LAGIC geospatial data collections and services are nearly complete. These updates include:

a. *Database System Upgrades:*

Select hardware and software upgrades were made during Q2 of the LAGIC 2007-08 contract. Additional server upgrades and purchases are anticipated, including increased storage capacity.

b. *DBMS Organization:*

Currently, the DBMS is consists of five (5) critical geospatial data servers: Louisiana Spatial Data Infrastructure (LSDI), US Census Bureau TIGER/Line, LOSCO, Geographic Names Information System (GNIS), and Louisiana Speaks datasets.

The LSDI data structure continues to evolve. Currently, the dataset is organized hierarchically according framework data layer category, feature name, data provider, and year of publication (see Figure 1 in Appendix). In order to accommodate various performance enhancement strategies for online publication, it was necessary to organize the data according to both Geographic and UTM coordinate systems.

All data are securely maintained, and are accessible via policy-based usernames and passwords.

Data and metadata records receive continuous QA/QC for continuity. Additional

changes and edits to the data are made as needed.

c. *File-based Organization:*

Data provided on the ArcSDE Database is available online distribution. Feature data has been exported as ESRI Shapefile format, and include properly attributed metadata.

These assets have been compressed to ZIP format, and are accessible for download from the LAGIC web site data catalog(s):

<http://lagic.lsu.edu/geodata/>

In October, LAGIC received data collected for the Louisiana Speaks recovery program. This data was assessed for metadata and has been added to the data catalog.

In November, the 2007 NAIP raster data (1-meter, true-color photography) provided by the US Dept. of Agriculture was collected for distribution via LAGIC and LouisianaMAP. Due to problems with the compression routine, the data is being assessed for viability in map services. LAGIC technical staff is currently exploring various storage and distribution techniques to optimize existing IT resources and capabilities.

- 2) Upon final QA/QC, LAGIC data assets will be replicated and transferred to the LouisianaMAP data server(s) maintained by the Division of Administration, Office of Electronic Services (OES).

### **Technical Support and Applications Development:**

1) *LouisianaMAP:*

Various data layers have been successfully uploaded to the LouisianaMAP SDE data server. To date, this data includes US Census Bureau's TIGER/Line 2006, LSDI, and other data products. Additional data layers will be added.

In October, development of web mapping applications began with the creation of a Louisiana base map. LAGIC staff has initiated the development of two key LouisianaMAP services using the ArcGIS Server Development environment. However, progress has been limited. Various technical problems had to be resolved, creating a one-month delay.

Currently in the final stages of development, the first map service is based on the LOSCO Marina's database, and will allow users to interact with the map, and obtain details about facilities offering public boat launches. The second map service is based on the Louisiana Geographic Names Service, and allows users to locate and identify key geographic features within Louisiana.

OES, Methods, ESRI, and LAGIC are expected to begin extending services on the LouisianaMAP web site beginning in Q3. Preliminary meetings have defined initial objectives. Additional meetings are expected to define specific goals, and establish a timeline of services.

2) *Applications Development:*

LAGIC technical staff has been exploring the potential of using ESRI Image Server as a means for quickly distributing raster data to data users. Initial tests at LAGIC suggest that there is a measurable performance increase when using the services. The 2007 NAIP photography will soon be deployed by the LAGIC image server, with a demo available in January 2008.

In addition to the services listed above, LAGIC has begun to prepare globe services that present historic maps obtained from the US Library of Congress. These map services will utilize ArcGIS Explorer, Google Earth, and NASA World Wind globe/visualization software. Availability expected soon.

**LAGIC Technical Support Services:**

- 1) LAGIC technical staff continues to maintain geospatial data systems and services. Additional hardware upgrades are planned in the coming quarter.
- 2) LSU Network policies and upgrades continue to disproportionately occupy staff time. Network policies mandating participation on the LSU Active Directory (LSU-AD) requires time-consuming review and preparation.

In early November, a change in network protocols forced LAGIC's primary and secondary Organizational Unit (OU) controllers to lose key internet (WWW, FTP, and SMTP) protocols. The protocol failures also extended to the primary map server. Resolution took approximately two weeks to complete.

Additionally, changes in network security policies have created a number of connectivity issues for computers and servers. Consequently, access to network shares has been inconsistent on occasion. Still further, security protocols that block outside connectivity to the LSU network have had to be resolved in order to assure access to the data servers.

- 3) LAGIC technical staff members continue to support all LAGIC related IT issues and requests.

**Short-term Outlook:**

Network issues continue to challenge LAGIC productivity.

Work on new and existing geospatial data will continue. Data catalogs will be updated and indexed for use by the online data catalogs accessible via the LAGIC Geodata Services web page (<http://lagic.lsu.edu/geodata/>). Services will also be made available to clearinghouses maintained by the Federal Government (e.g. Geodata.gov and the FGDC Metadata clearinghouse).

Additional efforts developing the data and application services at LouisianaMAP are planned for the third quarter.

# Naming Concept - Geodata Framework

## Version 1.1 09/30/2007

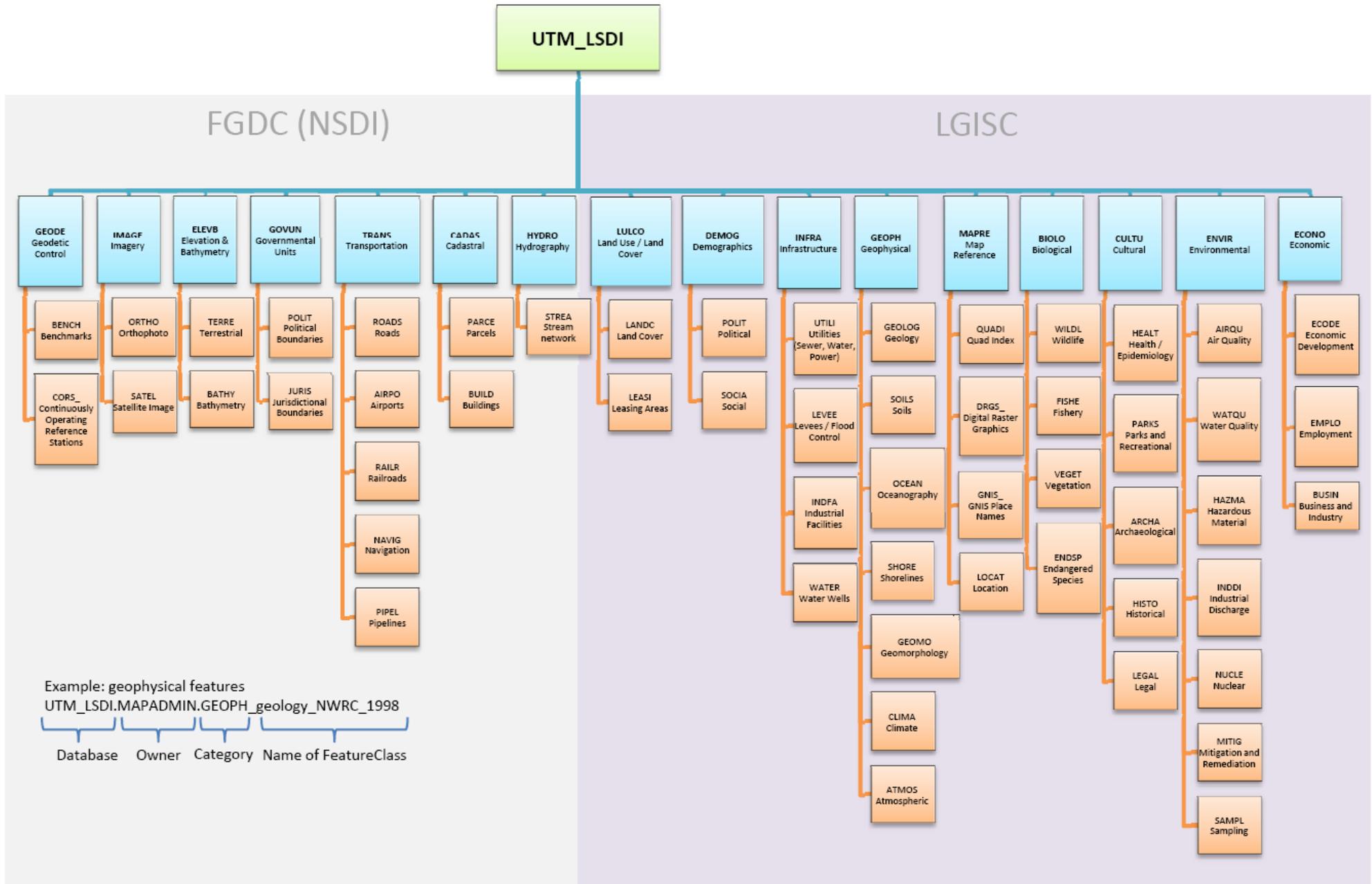


Figure 1: Naming Concept for the Geodata Framework – Gunther Sagl (9/30/07)