LAGIC Technical Services Quarterly Report
July - September 2007

November 5, 2007

Summary:

The Technical Services portion of the LAGIC 2007-2008 contract has progressed at a slower than expected pace during the first quarter.   By September, details regarding contract tasks and deliverables were finalized and submitted by LAGIC Oversight committee for inclusion in the contract. The contract was submitted to both the State and Louisiana State University (LSU) for approval. As of this date, the contract has not been finalized. LAGIC Technical Services currently employs one full time, and two part-time staff.   Additional staff members are anticipated in future quarters. Technical staff members have also participated in a number of online and classroom based training. Additional training is anticipated. A number of technical enhancements to hardware, software and services have been performed.   Details of these enhancements are presented in the provided text.

Administrative & Staff:

1) *LAGIC Contract:*
   The LAGIC Contract has yet to be finalized.   Craig Johnson and Neal Underwood have confirmed that the contract was submitted to both the State and LSU for approval. There has been no indication from either party that it will be rejected.

   According to the LSU School of the Coast & Environment (SC&E), a temporary 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 August, Gunther Sagl joined the Technical Services staff as a part-time Research Associate. Responsibilities include mid-level data management and technical services support for ArcSDE and SQL Server host.

   In August, LAGIC was able to secure the part-time services of Jinwoong Yoo. Jinwoong is a Graduate Assistant from Coastal Studies Institute (CSI) who splits his time between CSI and LAGIC. Jinwoong supports metadata development and distributions services. He also assists Gunther Sagl with various database management tasks.

Job descriptions for the *Systems Administrator* and *GIS Developer* have been approved by LSU and will be posted. LSU-SC&E will serve as the lead contact for the announcements.

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

In July, LAGIC's Technical Manager attended a 3-day training class in San Antonio, TX, *Developing Applications with ArcGIS Server with the Microsoft .Net Framework*.

LAGIC Technical Manager also coordinated and attended an on-site ESRI Instructor lead course, *Introduction to ArcGIS Server*, on August 14-15, 2007. The class was hosted by the Department of Environmental Quality (LDEQ).   Twelve students from LDEQ, LDOTD, LDOA, and LSU attended. The second class, *Developing Applications with ArcGIS Server with the Microsoft .Net Framework*, is scheduled for the end of October, 2007.

Data Management:

1) Upgrades to the LAGIC geospatial data collections and services have begun during the first quarter of this contract.   Updates include:

a. *Database System Upgrades:*
Several hardware and software upgrades were made during Q1 of the LAGIC 2007-08 contract. Additional RAM and a new hard drive were added to the database server. The Operating System (OS) was upgraded from Windows 2000 to Windows 2003, MS SQL Server 2000 was upgraded to SQL Server 2003, and ESRI ArcSDE 9.0 upgraded to 9.2.

b. *DBMS Organization:*
System upgrades permitted consolidation of existing data assets, and provided an opportunity to update the data with content from the 2007 GIS DVD collection.   The data collections include assets from numerous Louisiana spatial data stakeholders.

The data structure 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.

Raster data assets have been collected and should be made available by the end of the second quarter. LAGIC technical staff is currently exploring various storage and distribution techniques to optimize existing IT resources and capabilities.

Data and metadata records are undergoing 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 being prepared for online distribution. Feature data will be exported as ESRI Shapefile format, and will include properly attributed metadata.   These assets will be compressed to ZIP format, and will be made accessible for download from the LAGIC web site data catalog.

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*:
LAGIC technical staff is preparing to upload data into the LouisianaMAP data servers. In order to facilitate the process, OES has provided LAGIC with remote access to the various servers.   After a few delays and technical problems, LAGIC was finally able to connect to the DOA data center computers.   The first of multiple data transfers are expected to begin sometime in October 2007.

OES, Methods, and LAGIC have been coordinating on extending services at the LouisianaMAP. Preliminary meetings have defined initial objectives.   Additional meetings are expected to define specific goals, and establish a timeline of services.

2) *Applications Development:*
The active 2007 hurricane season has provided a unique opportunity to test and hone custom ArcGIS Server applications.   LAGIC has extended the capabilities of its hurricane services with dynamic map services for each of the named storms. Visitors to the LAGIC web site can access these services here: http://lagic.lsu.edu/hurricanes.   Additional customization are underway that will have direct applicability to LouisianaMAP.

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. As time permits, additional tests will be carried out on a virtual environment provided by OES.

LAGIC Technical Support Services:

1) LAGIC technical staff has performed numerous system and services upgrades (see Data Management Section above). Additional upgrades are planned in the coming quarter.

2) LAGIC upgraded its in-house mail server.   The latest edition supports enhanced security, better e-mail management, and Outlook integration.   The e-mail server is used primarily for LAGIC related business, and Council mail distribution lists.

3) LAGIC technical staff has provided hardware support for laptops that will be used during various GNIS Workshops held in October. Additional hardware and network connectivity support is anticipated during the extent of the GNIS contract period.

4) LSU Network policies and upgrades continue to disproportionally occupy staff time. Network policies mandating participation on the LSU Active Directory (LSU-AD) requires time-consuming review and preparation. 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. Finally, changes to the LSU mail servers are anticipated in the coming weeks, and may create delays and transmission errors.

Short-term Outlook:

Orientation of new staff is taking more time than anticipated. In conjunction with contract delays, it will be quite challenging to meet the task objectives outlined in the LAGIC contract.

Work on new and existing geospatial data will continue. Data catalogs will be updated and indexed for use by the online data catalogs maintained at LAGIC (*e.g.* the LAGIC and the LOSCO Data Catalogs). 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 second quarter.

LAGIC technical staff are anticipating a number of approaching outreach opportunities, including GIS Day 2007 (November), GeoInfo 2007 (November), and 2008 RSGIS Workshop (April). Each of these events will provide an opportunity to promote LAGIC's technical services and support capabilities to the State's geospatial data stakeholders.

APPENDIX

Naming Concept - Geodata Framework
Version 1.1 09/30/2007

UTM_LSDI

FGDC (NSDI) **LGISC**

| GEODE Geodetic Control | IMAGE Imagery | ELEVB Elevation & Bathymetry | GOVUN Governmental Units | TRANS Transportation | CADAS Cadastral | HYDRO Hydrography | LULCO Land Use / Land Cover | DEMOG Demographics | INFRA Infrastructure | GEOPH Geophysical | MAPRE Map Reference | BIOLO Biological | CULTU Cultural | ENVIR Environmental | ECONO Economic |

BENCH Benchmarks
CORS_ Continuously Operating Reference Stations

ORTHO Orthophoto
SATEL Satellite Image

TERRE Terrestrial
BATHY Bathymetry

POLIT Political Boundaries
JURIS Jurisdictional Boundaries

ROADS Roads
AIRPO Airports
RAILR Railroads
NAVIG Navigation
PIPEL Pipelines

PARCE Parcels
BUILD Buildings

STREA Stream network

LANDC Land Cover
LEASI Leasing Areas

POLIT Political
SOCIA Social

UTILI Utilities (Sewer, Water, Power)
LEVEE Levees / Flood Control
INDFA Industrial Facilities
WATER Water Wells

GEOLOG Geology
SOILS Soils
OCEAN Oceanography
SHORE Shorelines
GEOMO Geomorphology
CLIMA Climate
ATMOS Atmospheric

QUADI Quad Index
DRGS_ Digital Raster Graphics
GNIS_ GNIS Place Names
LOCAT Location

WILDL Wildlife
FISHE Fishery
VEGET Vegetation
ENDSP Endangered Species

HEALT Health / Epidemiology
PARKS Parks and Recreational
ARCHA Archaeological
HISTO Historical
LEGAL Legal

AIRQU Air Quality
WATQU Water Quality
HAZMA Hazardous Material
INDDI Industrial Discharge
NUCLE Nuclear
MITIG Mitigation and Remediation
SAMPL Sampling

ECODE Economic Development
EMPLO Employment
BUSIN Business and Industry

Example: geophysical features
UTM_LSDI.MAPADMIN.GEOPH_geology_NWRC_1998

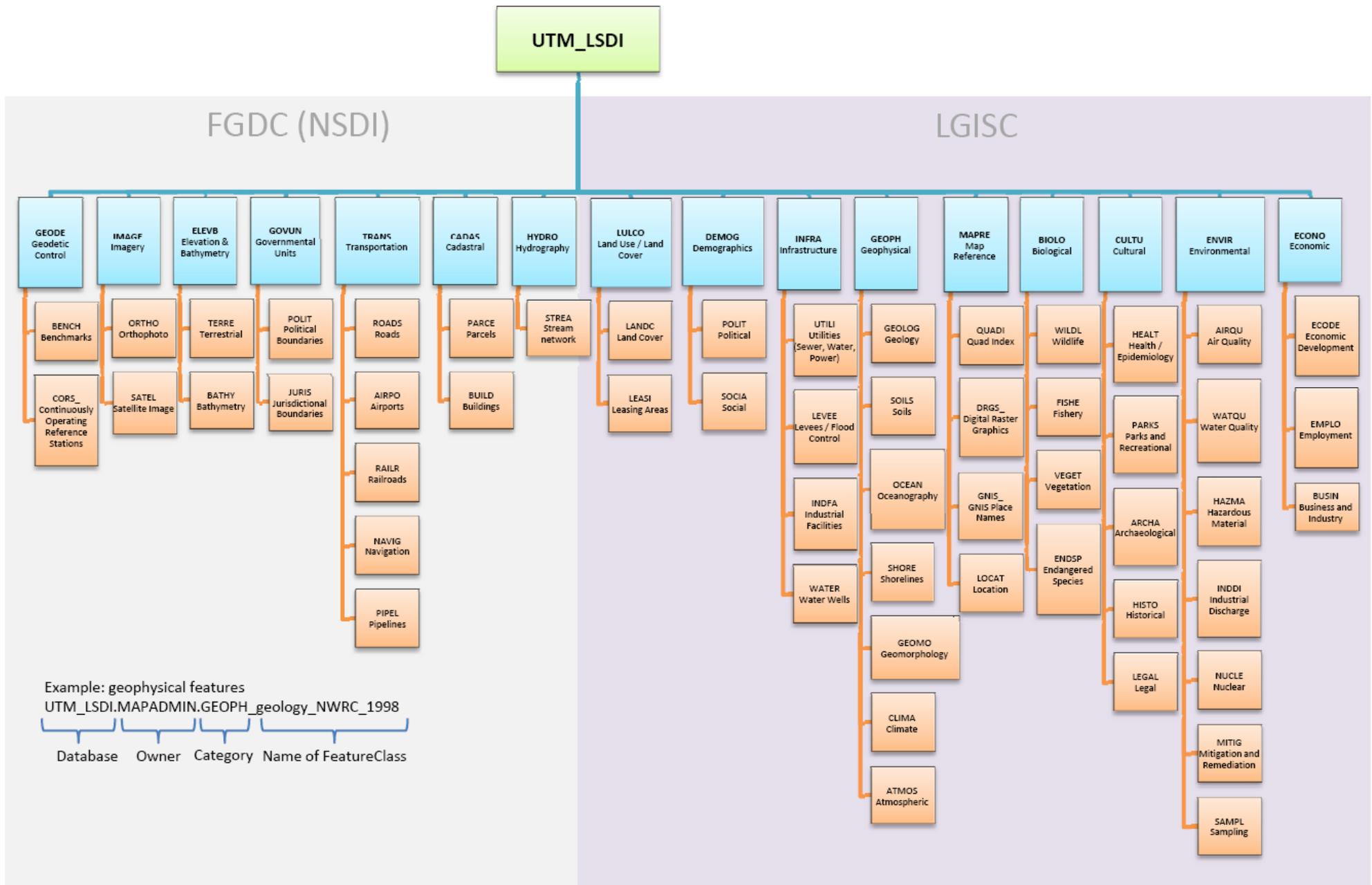Database Owner Category Name of FeatureClass

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