

The Framework of GIS in North Dakota

Approved by the GISTC: January 28, 2009

Purpose

This document provides a definition and scope of GIS in North Dakota at the state government level.

Scope

Role of the state agencies: State agencies utilize and develop GIS in support of their unique and mandated business needs and objectives. Agencies as a whole provide a supporting role to the GISTC and to the GIS Hub in developing and sharing their data.

Role of the GIS Hub: The GIS Hub supports state agencies in the development of their GIS and the dissemination of common interest data to other levels of government and the public.

Role of the GISTC: The GIS Technical Committee was established by Executive Order 2001-06. The primary role of the GISTC is to service the GIS Hub and provide a collaborative environment that supports state agencies' GIS. A secondary role is to coordinate among federal, state, tribal, local government and the private sector.

Definitions

Core GIS Hub: An infrastructure comprised of geospatial data storage, data services, and application interfaces. This infrastructure accommodates generic and agency-specific uses. See Figure 1.

Data Storage: Mechanism for storing GIS data. Storage is via Storage Area Network (SAN), direct attached (internal or external, directly attached to a server), or other dedicated storage solution.

Data Services: Method for delivering GIS data, statically (download) or dynamically (streaming). Streaming includes using the Web and connecting to a geospatial database.

Applications: GIS programs, utilities, or other software that consume GIS data services.

General purpose GIS: Data storage, data services, and applications that are applicable to and used by multiple state agencies are sponsored by the GISTC and paid for by the GISTC budget.

State agency-specific GIS: Infrastructure, data storage, data services, and applications which are agency-specific, e.g., used only by that agency and/or internally with another agency, are developed and maintained using the agency's budget.

Guidelines

For agencies already using the GIS Hub and for agencies planning to do so, basic guidelines have been developed to assist in their planning.

Data Storage

For individual agencies, the GIS Hub includes free 50GB storage on dedicated GISTC storage using the shared GISSPEC database paid for by the GISTC budget. Above this limit, the agency pays for storage using their own dedicated storage or one of the ITD storage tiers.

Data Services

The GIS Hub provides a variety of default, standard web services which include but are not limited to ESRI-format and OGC-standard format.

General purpose GIS applications sponsored by the GISTC and agency-specific applications can utilize the GIS Hub's data services at no cost to the agencies within the capabilities of the GIS Hub infrastructure. Communication between agencies and the GISTC is vital so that the potential impact on data services can be evaluated. The GISTC would intend to scale the GIS Hub's data services to match potential needs.

The GIS Hub provides RDBMS/ArcSDE instances containing general purpose and agency-specific GIS data.

If the GIS Hub does not meet the business needs of an agency, the agency has the latitude to develop their own infrastructure.

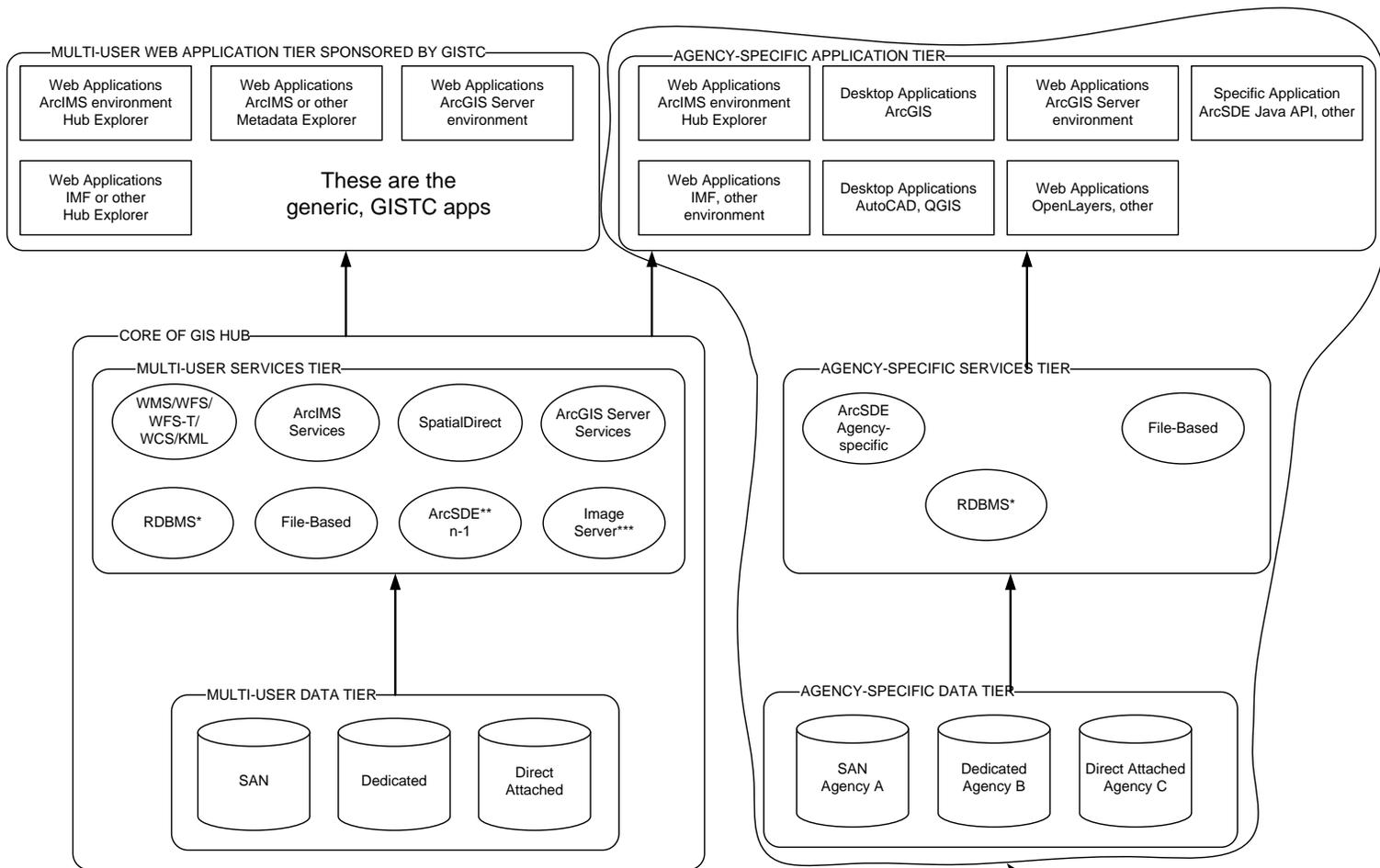
Applications

General purpose GIS applications sponsored by the GISTC are used to allow other levels of government and the public to access GIS Hub data. General purpose GIS applications also serve

as templates and provide a software infrastructure upon which state agencies can build their own applications.

State agencies are responsible for the development, maintenance, and hosting of their applications.

North Dakota GIS Hub Infrastructure Concept
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* e.g., Oracle, MS SQL Server, PostgreSQL;
** e.g., GISP, GISSPEC, GISRAS; *** Possible future purchase

Paid for by agencies

Figure 1. Conceptual organization of the GIS Hub infrastructure