

IMPLEMENTING THE OPENGIS SPECIFICATIONS INTO A NATIONAL FRAMEWORK OF GEOGRAPHICAL INFORMATION SYSTEM.

María Elena Díaz Aguirre

GEOCUBA Researching and Consulting.

Calle 4 # 304 e/ 3ra y 3ra A., Miramar, Playa. La Habana 11300, Cuba.

Fax: (537) 24 28 69 E-mail: geocuba@geocuba.get.cma.net

Emerging international standards around the world seek the purpose of achieving interoperability among Geographical Information in distributed environments. The Open GIS Consortium, Inc. (OGC) is a non-for-profit organization dedicated to open systems geoprocessing and its mission is aimed to reach *“the full integration of geospatial data and geoprocessing resources into mainstream computing and the widespread use of interoperable geoprocessing software and geospatial data products throughout the information infrastructure”*.

The Computer Division of GEOCUBA has been working a few years ago in developing of own software to acquire, manage, analysis and represent geographical data, and more recently, it has included new international technology of geodata and geoprocessing standards. This paper describes an implementation of OGC OpenGIS Simple Features Specifications for OLE/COM into an open and scalable component-based software. It was built in C++ Builder and Delphi, with DirectX for support graphic programming and Interbase and SQL-Server as DataBase Management Systems.

A Conceptual Model Oriented to Object was designed and, as a result of it, a structure called Geographic Information Base (GIB) following a hierarchic tree approach to model structure from Simple to Highly Complex Organizations was also built. Although the differences in interfaces, there is an interesting likelihood between our GIB approach and the OpenGIS Specification for CORBA in respect to the basic objects of both models (Feature Type, Feature Collections, Feature, FeaturePropertyIterator, PropertyDefIterator, FeatureIterator and QueryableFeatureIterator).

ActiveX components to allow the access, manage and representing of GIB were developed, as well as the Geometry and Spatial References Components under OpenGIS specifications.

As a result of the implementation of OpenGIS Specifications it is possible to have available an interoperable and open Geographical Information System Platform of Components to easy integration each others to create tailored GIS oriented to national projects applied to multiple proposes (telecommunication, electricity, etc). Therefore it is will contribute to support the creation of the Cuban Spatial Data Infrastructure.