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Agenda

Local to National Perspectives

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**Guidelines for the development of the National Geospatial Information
Infrastructure (case of Tunisia)**

Background

The rapid development of technology in general and of geographic information systems in particular led to an increasing need to collect, store and share digital spatial data.

The necessity of sharing data is realized due to the high costs of and the time required for collecting data. The need to assist economic projects with fast, reliable, up-to-date geospatial data has become a **challenge** for the geoinformation producers and a heavy duty for decisions makers. .

Besides institutional problems, technical difficulties also deter data sharing. To overcome such problems and to accommodate the need for sharing data, reduce data production redundancy, save time and money, the **creation** of a National Geospatial Information Infrastructure **NGII** becomes a an **urgent solution** for countries.

The NGII is defined as the technology, policies, standards and human resources necessary to acquire, process, store, distribute and improve utilization of geospatial data.

The NGII has as main objective to help organizations in both public and private sectors to **share and use** geospatial information **more effectively** for improved **multi-level decision making** support and to serve as a system with **integration capabilities** in both **horizontal** (across environmental management sectors) and **vertical** (across management hierarchies) **directions**.

A step towards the development of the GII on a national level first is the implementation of a **distributed networked concept** that connect geospatial data producers, managers and users to the centralized data warehouse.

From the basic components of the GDII we can mention:

- **The metadata** (a guide to the casual and novice user' question "How do I know what to ask for?" with a synoptic view on what is available on their area of interest, where the information is, how current it is etc.
- **The computer network**, the web servers that provide a "front-door" for users to browse, search and access information on line.

- **The standards** to better produce, use and share data.

Those issues are just parts of the 3 components (institutional, technical and economic) to be considered by the NGII:

- **Institutional aspects:** refer to policies, standards¹, security, measures, legal regulation, and resources.
- **Technical aspects :** relate more specifically to acquisition, exploitation and dissemination of geospatial information.
- **Economic aspects :** refer to the economic mechanism, strategies and cost/benefit models to support the financing of the NGI.

Tunisian NGII case

1. Strategic issues

Tunisia is one of those countries that are facing problems of **heterogeneous data, isolated geographic information systems, and their associate databases**, with a lot of **redundancy** in one area and a **lack of relevant** data in another, and with the **inconsistency in the quality** of collected information. **Seeking solutions** for them has become a **challenge**.

A **National Program for Geomatics** as medium-and long-term approach for the planning and coordination of geospatial information in Tunisia was then set up in cooperation with the Canadian Government since 2000.

This program also known (**GEONAT**) aimed to **contribute to the promotion** of the mapping infrastructure in Tunisia, to meet the growing needs in **digital, reliable and updated** geospatial information and **support national decision-making** about national projects including those for the sustainable development.

The program provided the geomatic sector in Tunisia with considerable support in terms of advanced trainings, technical assistance and expertise in the field of GISs, remote sensing and geospatial information management at large.

For different reasons, GEONAT has been put on hold for some time but was brought forward

and the reflection about creating an **NGII** In Tunisia was empowered by the adoption in May 2009 of the **Law 24 restructuring the institutional organization** of the national geomatics sector through the National Centre for Mapping and Remote Sensing .

2. Operational plan for the implementation of the NGII

- **Analysis of the current situation and findings:** Through questionnaires sent to the producers/users of geoinformation,
- **Periodic meetings between the ministries and private sectors working with the geoinformation data :** to define the needs in geospatial information with respect to priorities, emergencies and data precision and scales.
- **Definition of the components of the NGII.**
- **Study of the strategic guidelines** that allow the optimum development of geomatics in Tunisia and identify the promising perspectives that offer geomatics activities in all applications related to land management.

3. Findings about the actual geomatics situation

From the questionnaires feedback, it was concluded:

- Redundant data
- Lack of coordination between the various stakeholders
- Lack of centralization of the sectoral databases
- Lack of a common reference base
- Lack of using common standards
- Lack of interoperability between the thematic GISs of the governmental institutions
- Etc...

4. Components of the NGI

The NGII contains 4 databases :

- An ortho-photo database.
- A topographic database with high accuracy for urban areas and a lower accuracy for the remaining areas.
- An address database which provides data mainly for geolocation and tracking.
- A land database that mainly provides plots, and cadastral boundaries (to be developed in cooperation with the National Office of Topography and Cadastre).

5. The strategic guidelines/aspects of the NGII

Three aspects need to be addressed while setting up the NGII which are the institutional, technical and economic aspects.

3 commissions (Technical, Economic and Legal) were created to define the above mentioned aspects framework of the NGII in terms of perceptions, components, standards, accuracy, specifications, human and logistic resources, responsibilities, priorities and contributions.

6. The way forward

A national seminar is planned during February 2015 to present the findings of the committees work and to assess them by either stakeholders or the other participants in order to better adjust the project objectives with respect to the national geospatial information needs.