

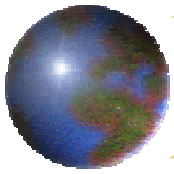
TOWARDS THE MEXICAN NATIONAL SPATIAL DATA INFRASTRUCTURE

A contribution to GSDI6

Budapest, 16-19 September, 2002

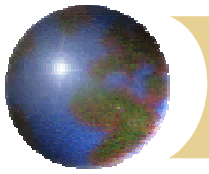
Francisco A. Hansen Albites

INEGI-MEXICO



SDI CONCEPT:

- **SPATIAL:** defined in a space reference system
- **DATA:** geographic, economic, social, scientific, etc.
- **INFRASTRUCTURE:** basic frame of any system or organization.
- **SPATIAL DATA INFRASTRUCTURE:** basic frame of a system integrated by geospatial data

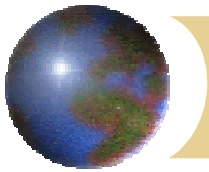


BACKGROUND

The SDI concept is not new in Mexico. Our Law on Statistical and Geographic Information (1980) defines the National Geographic Information System (NGIS) as the:

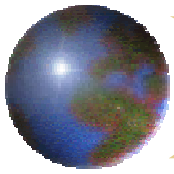
Data set produced by public institutions, organized under a predetermined conceptual structure permitting to show the situation and interdependence of economic, demographic and social phenomena and their relationship with the physical medium and the territorial space.

The SDI concept is embedded in this definition, at least in the two first lines. Also shows a strong link with the NGIS.



MORE ON BACKGROUND

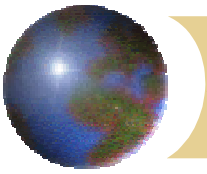
- **6th UNRCCA, 1997, New York, resolutions 3 and 4, calling for the establishment of regional and national infrastructures in the Americas.**
- **Meeting of UN delegates and experts in Aguascalientes, México (1998), to instrument on the above.**
- **Establishment of the PC IDEA, Bogota, Colombia, 2000**
- **7th UNRCCA, and 2nd PC IDEA meeting, 2001, New York, reinforcing ideas.**
- **GSDI5 Conference and 3rd PC IDEA Meeting in Cartagena, Colombia, 2001.**
- **Mexico, through INEGI, has been present in most of these events**



FORERUNNERS OF OUR SDI

✿ **GLOBALIZATION**

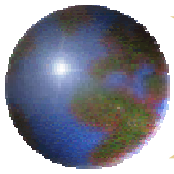
✿ **AGENDA 21**



GLOBALIZATION

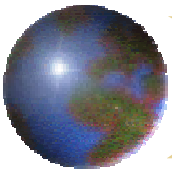
● **SET OF PHENOMENA OCCURRING
WITHOUT REGARD TO
ADMINISTRATIVE OR POLITICAL
BORDERS**

- **GLOBALIZATION OF ECONOMIES**
- **GLOBALIZATION OF COMMUNICATIONS**
- **GLOBALIZATION OF INFORMATION**
- **GLOBALIZATION OF GEOSPATIAL
INFORMATION**



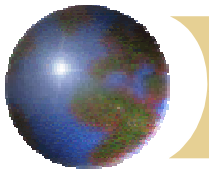
GLOBALIZATION AND TECHNOLOGICAL CHANGE

- ADVANCED COMPUTER SYSTEMS
- REMOTE SENSING
- GPS AND GEOGRAPHIC REFERENCE SYSTEMS
- CAC, GDB AND GDBMS
- GIS, INTERNET
- SDI's



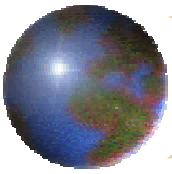
SOME EFFECTS:

- ❖ **GEOSPATIAL INFORMATION MORE FRIENDLY AND ACCESSIBLE**
- ❖ **DEMOCRATIZATION OF CARTOGRAPHY AND GEOGRAPHIC INFORMATION**
- ❖ **NEW TERMS AND CONCEPTS**
- ❖ **INCREASING ROLE OF THE PRIVATE SECTOR**



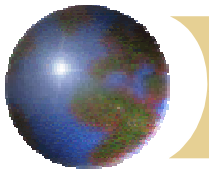
PROBLEMS OF GLOBALIZATION IN MEXICO

- **Water availability**
- **Soils degradation**
- **Environmental deterioration**
- **Biodiversity loss**
- **Climatic change**
- **Natural disasters**
- **Population growth**
- **Integration of transportation means**
- **Transbordering energy sources**



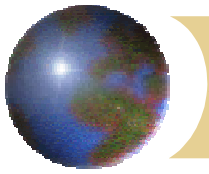
AGENDA 21

- ❖ Recall Agenda 21 and the recent Johannesburg Summit on sustainable development.
- ❖ Ecological and territorial planning and management are the concern of several national institutions.
- ❖ Included in our National Development Plan 2001-2006



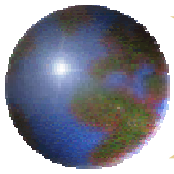
ROLE OF GEOSPATIAL INFORMATION

INCREASING INFLUENCE OF GEOSPATIAL
INFORMATION IN MEXICO FOR DECISION
TAKING PROCESSES TO DEAL WITH
NATIONAL PROBLEMS, MAINLY
DEMOGRAPHIC AND ENVIRONMENTAL,
INCLUDING PROPER MANAGEMENT OF
NATURAL RESOURCES



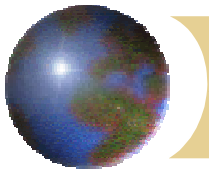
NEED OF GEOSPATIAL DATA IN MEXICO FOR:

- FORMULATION OF POLICIES
- ALLOCATION OF RESOURCES
- MANAGEMENT OF NATURAL RESOURCES
- PUBLIC SECURITY
- SUPPORT TO A WIDE VARIETY OF REGULATIONS
- NATIONAL PLANNING
- OVERALL UNDERSTANDING AND KNOWLEDGE OF THE PHYSICAL, ECONOMIC AND HUMAN GEOGRAPHY OF THE COUNTRY



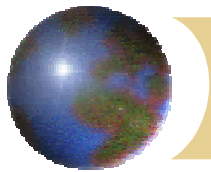
REMARKS

- **MEXICO, AS EVERY COUNTRY, MUST EXERT ACTIONS TO REACH THE OBJECTIVES OF AGENDA 21**
- **IN THE GLOBAL CONTEXT, INTERNATIONAL COOPERATION IS REQUIRED.**
- **INCREASING EVIDENCE OF THE ROLE OF GEOSPATIAL INFORMATION ON DEVELOPMENT SCHEMES**
- **CLEAR NECESSITY TO COUNT ON RELIABLE GEOSPATIAL INFORMATION**



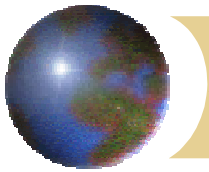
GEOGRAPHIC ACTIVITY IN MEXICO

- ❖ **Former production of large volume of analogical data...**
- ❖ **Several official organizations involved**
- ❖ **Recent digital approach (last 10 years)**
- ❖ **Updating and conversion from analogical to digital underway**
- ❖ **Towards data bases development in several organizations**



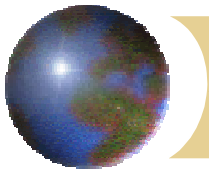
DIAGNOSTICS

- ❖ **Lack of integration in proper schemes of utilization**
- ❖ **Inexistent formal body of geospatial information for knowledge**
- ❖ **There is not an effective integration with statistical information**
- ❖ **Deficiency on geospatial information management systems**
- ❖ **Information is hardly known and not shared**
- ❖ **Access difficulties**
- ❖ **Unknown data quality, not standarized**
- ❖ **Information very much dispersed**
- ❖ **Increasing budgetary cuts**



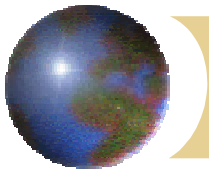
AT THIS TIME...

- ❖ **More attention being paid to management of geospatial information**
- ❖ **Increasing notion on the need to share**
- ❖ **General agreement on the need to organize efforts.**
- ❖ **Acceptance on the need of a national coordinating body (INEGI)**
- ❖ **INEGI is entitled by Law to coordinate and standarize**



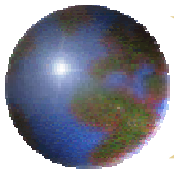
DETECTED NEEDS

- ❖ TO KNOW WHERE THE DATA IS
- ❖ TO DEFINE AND STANDARDIZE IT
- ❖ TO SHARE GEOSPATIAL DATA
- ❖ TO FACILITATE DISCOVERY, ACCESS AND TRANSFERENCE
- ❖ TO HAVE EFFECTIVE LINKS AMONG PRODUCERS AND USERS
- ❖ TO RATIONALIZE DATA PRODUCTION
- ❖ TO HANDLE IT EFFICIENTLY



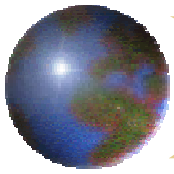
INCLUSION IN THE e-MEXICO PROJECT

- ❖ e-Mexico project, currently in development as a initiative of the Federal Government
- ❖ Interest in developing the information society
- ❖ Strong social tendency
- ❖ Includes e-Government and other components
- ❖ Aimed to be an agent of change and to reduce the digital breach in mexico
- ❖ Strongly linked to the recent Law on Transparency and Access to the Information



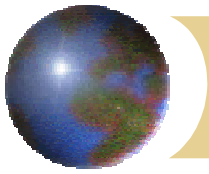
MORE ON e-MEXICO

- ❖ An idea we are working on: to develop and include g-government in the context of e-Mexico and e-Government, meaning geography-government
- ❖ This, aimed to include a strong geographic component in the context of e-Mexico
- ❖ Adherence of our SDI to e-Mexico opens interesting perspectives as far as its scope and future operation.



SOME KEY CHARACTERISTICS

- ✿ OUR SDI TO COMPRISE DIFFERENT ACTORS
- ✿ NO VISIBLE HEADS, BUT...
- ✿ A CENTRAL COORDINATING BODY (INEGI)
- ✿ DEVELOP A STRONG BOND AMONG ACTORS
- ✿ WILL TO COOPERATE AND SHARE DATA
- ✿ A SET OF DISTRIBUTED DATA BASES



COVERAGES

- ☐ INSTITUTIONAL

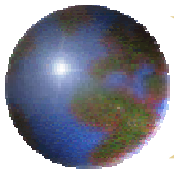
 - ☐ LOCAL

 - ☐ NATIONAL

 - ☐ REGIONAL

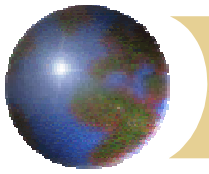
 - ☐ GLOBAL

Addition of institutional SDIs, which can be integrated in the level of large producing organizations, as background to local and national infrastructures



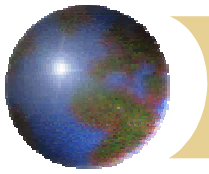
THEORETICALLY:

- ❖ NATIONAL AND LOCAL SDIs, AS INTEGRATED BY NATIONAL GEOSPATIAL INFORMATION BODIES
- ❖ REGIONAL, AS INTEGRATED BY NATIONAL SDIs
- ❖ GLOBAL, AS INTEGRATED BY REGIONAL SDIs



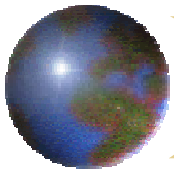
A PRACTICAL APPROACH

- EFFORTS TO ACHIEVE THE GLOBAL SDI WHILE PROMOTING DEVELOPMENT OF LOCAL, NATIONAL AND REGIONAL ONES
- EXAMPLE OF GLOBAL MAP INITIATIVE
(Mexico has already contributed to Global Map)
- Here is where the FROM GLOBAL TO LOCAL takes significance:



SOME ISSUES ABOUT FROM GLOBAL TO LOCAL

- **Significant progress attained through concepts as developed in the global context**
- **Establishment of strategical concepts useful for local and national SDI development**
- **Setting practical issues for local and national conception and development (i.e., the Cookbook)**
- **Key issues for local and national SDIs are considered in the global context, giving unity to local and national initiatives (framework, metadata, clearinghouse, common standards...)**



LOOKING AT OTHER'S EXPERIENCES

- ✦ **FIRST AUSTRALIAN SDI (1986)**

- ✦ **PCGIAP**

- ✦ **EUROGI**

- ✦ **GSDI**

- ✦ **FGDC**

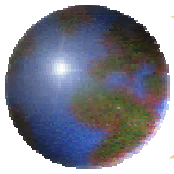
- ✦ **NSDI**

- ✦ **CGDI**

- ✦ **ICDE**

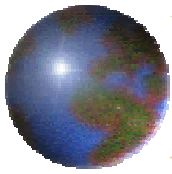
- ✦ **PC IDEA**

- ✦ **AND OTHERS IN L.A. AND WORLDWIDE**



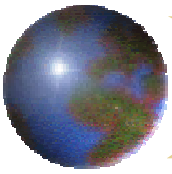
CONDITIONS FOR IMPLEMENTATION

- ❖ **HARD WORK TO ACHIEVE CONVICTION AND MOTIVATION**
- ❖ **OVERALL RECOGNITION OF SDI IMPORTANCE AND NECESSITY**
- ❖ **A DECIDED POLITICAL WILL TO PROCEED AND ASSUME COMMITMENTS**
- ❖ **STRONG EFFORT TO CAME TO TERMS OF AGREEMENT AMONG ACTORS**
- ❖ **PAY CAREFUL ATTENTION TO TECHNICAL, ADMINISTRATIVE, LEGAL AND FINANCIAL ASPECTS**



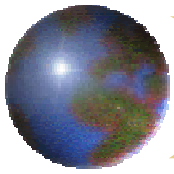
PROGRESS TO DATE

- ❖ **Strong institutional interest (INEGI) in the national SDI (IDEMEX) implementation.**
- ❖ **Institutional organization towards the IDEMEX. INEGI has already defined its contribution in the context of the Institutional SDI.**
- ❖ **Metadata development according to FGDC standards is underway**
- ❖ **Establishment of an already operable clearinghouse node at INEGI.**
- ❖ **Development of a clearinghouse gateway to include other organizations.**
- ❖ **Underway, plan to affiliate Mexico to ISO TC/211 through INEGI to cover for standards.**
- ❖ **Participation in Working Groups of PC IDEA (Fundamental Data and Standards).**



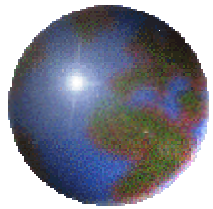
IMMEDIATE PERSPECTIVE

- **There is interest in some important official institutions already approached with the idea**
- **By the last week of October we are organizing a National Geospatial Information 2002 Convention in Mexico City. Emphasis will be put on the IDEMEX constitution and other important associated issues. Looking forward to develop partnerships, obtain agreements and possible commitments**



CONCLUDING REMARKS

- **We have tried in this paper to characterize, justify and give content to our SDI.**
- **We are motivated by the need to contribute to the solution of the several national problems where the best geospatial data and information must be used.**
- **Ours is a technological and administrative imperative regarding the optimal use of geospatial data and information in Mexico.**
- **We are trying to develop our IDEMEX in the global context, as an strategic and practical way to achieve such goal.**



THANK YOU VERY MUCH

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