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Importance of policies and legal instruments for the building of spatial data infrastructures in the Americas

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PC-IDEA

ORIGIN

Recommendation that emanated from the Sixth United Nations Regional Cartographic Conference for the Americas - New York, 1997. The creation of PC-IDEA was agreed upon by 21 countries of the Americas in a meeting held in Bogota – Colombia, on the 29th of February of 2000.

OBJECTIVE

To promote the development of national spatial data infrastructures in the Americas.

The regional infrastructure initiative must be aligned with the national initiatives.

THE COMMITTEE´S MEMBER COUNTRIES

Argentina	Belize	Bolivia	Brasil
Canada	Chile	Colombia	Costa Rica
Cuba	Ecuador	El Salvador	United States
Guatemala	Guyana	Honduras	Jamaica
Mexico	Nicaragua	Panama	Paraguay
Peru	Dominican Republic	Uruguay	Venezuela

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SDI Definitions

The Geospatial Data Infrastructure for the Americas is the collection of fundamental geospatial data, the standards that enable their integration, the mechanisms that facilitate access to and use of these data, the policies and principles that ensure their compatibility among the PC-IDEA´s member countries.

PC-IDEA

“Collection of integrated technologies, policies, mechanisms and procedures for coordination and monitoring, standards and agreements, necessary to regulate the production, storage, access, sharing, dissemination and use of geospatial data from the federal, state, districtal and municipal levels.”

Presidential Decree 6666/08 (Brasil)

The term “Spatial Data Infrastructure” (SDI) is often used to denote the relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data.

The SDI provides a basis for spatial data discovery, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general.

SDI Cookbook – Version 2.0 (GSDI)

Timeline for some national and continental SDI´s

2008	INDE / Brasil
2006	IEDG / Ecuador, NSDI / USA – revised
2004	IDEMEX / Mexico, SNIT/ Chile
2003	INSPIRE/ Europe, IDERC / Cuba
2002	IDEE / Spain
2001	CGDI / Canada, ANZLIC / Australia and New Zealand
2000	ICDE / Colombia
1996	NSDI / USA
1995	SNIG / Portugal

Questions to address

- What is the current status of America´s SDI initiatives ?
- Which countries have a Legal Milestone, which ones don´t and how have their SDI developments been affected by that ?
- Is the availability of a Legal Milestone essential for the success of a SDI implementation ?
- What key issues should be addressed by a Legal Milestone that can make the difference on behalf of a successful SDI implementation ?

Questionnaire based Survey

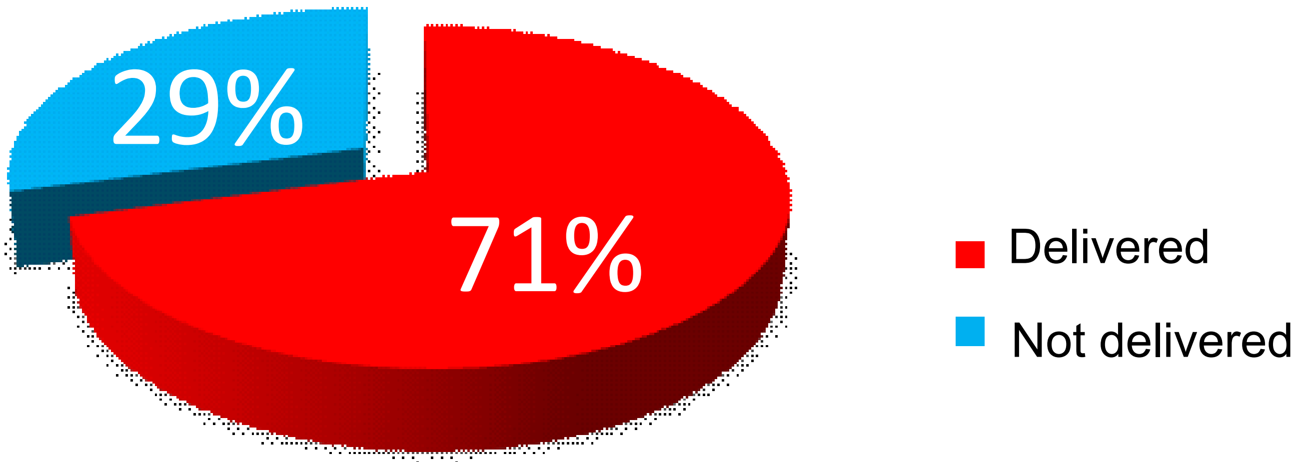
Designed and applied by PC-IDEA, started on Aug 2008, with the objective of assessing the current status of the Spatial Data Infrastructures (SDI) of the PC-IDEA´s member countries; the goal is to improve the development of the national SDI´s.

Survey structure

Questionnaire Sections

- Organization
- Geospatial Data
- Legal Framework
- Budgeting
- Standardization
- Vision and Challenges

Questionnaires



Of the 24 PC-IDEA´s member countries, the following 17 have responded to the survey:

1. Argentina
2. Belize
3. Bolivia
4. Brasil
5. Canada
6. Chile
7. Colombia
8. Costa Rica
9. Cuba
10. Ecuador
11. El Salvador
12. Guatemala
13. Guyana
14. Jamaica
15. Mexico
16. Panama
17. Uruguay

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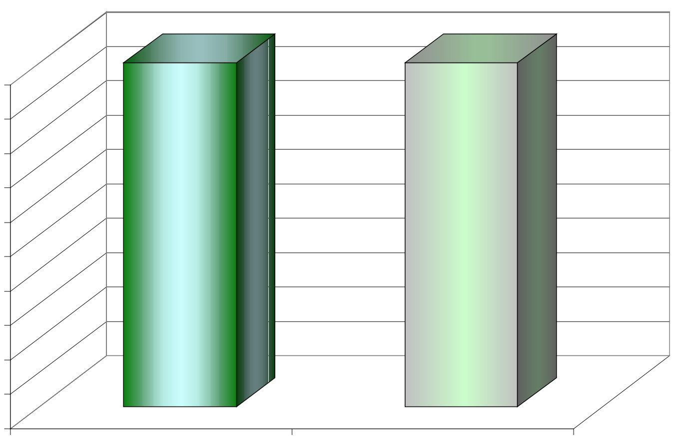
Which countries have a SDI specific legal milestone?



Country	Have SDI? (Y/N)	SDI	Legal Framework	Institution Management
Argentina	N			Comitê exectivo, Técnico e de Representantes
Belize	N			Departmento de Levantamentos de terras
Bolivia	N			
Brasil	Y	INDE	2008	CONCAR/CINDE
Canadá	Y	CGDI		CCOG - Conselho Canadense de Geomática
Chile	Y	SNIT	2006	SNIT
Colômbia	Y	ICDE	2000	IGAC
Costa Rica	N	INDG		IGN
Cuba	Y	IDERC (GEOCUBA)	2003	CIDERC
Ecuador	Y	IEDG	2006	CONAGE SENPLADES
El Salvador	N			IGCN / CNR
Estados Unidos *	Y	NSDI	1994 e 2004	FGDC
Guatemala	Y	SNIG	2001	IGN e SEGEPLAN
Guyana	Y			
Honduras *	N			
Jamaica	Y	NSDMD	1992	NSDMD
México	Y	IDEMEX	2006	INEGI
Nicaragua *	N			INETER
Panamá	N			IGNTG
Paraguay *	N			
Perú *	Y	IDEP	2003 e 2007	
República Dominicana *	N			
Uruguay	S		2008	CAHSIG
Venezuela *	N			

* - neither replied to the PC-IDEA questionnaire, information searched on the internet (Estados Unidos, Honduras, Nicaragua, Paraguay, Perú, República Dominicana e Venezuela)

Country	Metadata Standarts	Data Standarts	Quality Control	Agreements Partinerships
Argentina	Y	Y	Y	N
Belize	Y	N	Y	
Bolivia	Y		Y	Y
Brasil	Y	Y	Y	Y
Canadá	Y	Y	Y	Y
Chile	Y	Y	Y	Y
Colômbia	Y	Y	Y	Y
Costa Rica	N	N	Y	Y
Cuba	Y	Y	Y	Y
Ecuador	Y	Y	Y	Y
El Salvador			Y	Y
USA	Y	Y	Y	Y
Guatemala	Y	Y	Y	Y
Guyana	N		Y	
Honduras				
Jamaica	Y	Y		Y
México	Y	Y	Y	Y
Nicaragua				
Panamá		Y	Y	Y
Paraguay				
Perú				
Rep Dom				
Uruguay	Y	Y		Y
Venezuela				

Which countries have SDI standards and services?

Which countries have capacity building and communication plans?

Country	Trainnig Plan	Communication Plan
Argentina	N	N
Belize	N	N
Bolivia	Y	N
Brasil	Y	Y
Canadá	Y	Y
Chile	Y	Y
Colômbia	Y	Y
Costa Rica	Y	N
Cuba	Y	Y
Ecuador	Y	
El Salvador	Y	
Estados Unidos	Y	Y
Guatemala	Y	N
Guyana	Y	N
Honduras		
Jamaica	Y	N
México	Y	
Nicaragua		
Panamá		
Paraguay		
Perú		
República Dominicana		
Uruguay	Y	Y
Venezuela		

Assessing the SDI development level

	Country	SDI	Metadata	Data	Quality Control	Agreements Partinerships	Trainning	Communication	Budget	Index	Development index of INDE
COUNTRIES WITH LEGAL FRAMEWORK	Brasil	INDE	Y	Y	Y	Y	Y	Y	Y	88,5%	55,8%
	Chile	SNIT	Y	Y	Y	Y	Y	Y	Y		
	Colômbia	ICDE	Y	Y	Y	Y	Y	Y	Y		
	Cuba	IDERC	Y	Y	Y	Y	Y	Y	Y		
	Ecuador	IEDG	Y	Y	Y	Y	Y		N		
	USA *	NSDI	Y	Y	Y	Y	Y	Y	Y		
	Guatemala	SNIG	Y	Y	Y	Y	Y	N	N		
	Guyana	-	N		Y		Y	N	N		
	Jamaica	NSDM	Y	Y		Y	Y	N	Y		
	México	IDEMEX	Y	Y	Y	Y	Y		N		
	Perú *	IDEP									
	Uruguay		Y	Y		Y	Y	Y	N		
COUNTRIES WITHOUT LEGAL FRAMEWORK	Argentina	-	Y	Y	Y	N	N	N	Y	68,3%	25,2%
	Belize	-	Y	N	Y		N	N	Y		
	Bolivia	-	Y		Y	Y	Y	N	N		
	Canadá	CGDI	Y	Y	Y	Y	Y	Y	Y		
	Costa Rica	INDG	N	N	Y	Y	Y	N	N		
	El Salvador	-			Y	Y	Y		N		
	Honduras *	-									
	Nicaragua *	-									
	Panamá	-		Y	Y	Y			Y		
	Paraguay *	-									
	Rep. Dom. *	-									
	Venezuela *	-									

* - neither replied to the PC-IDEA questionnaire, information searched on the internet
(Estados Unidos, Honduras, Nicaragua, Paraguay, Perú, República Dominicana e Venezuela)

Questions to address

√ What is the current status of America´s SDI initiatives ?

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What key issues should be addressed by a Legal Milestone that can make the difference on behalf of a successful SDI implementation ?

- Definitions
- Roles and responsibilities of the various actors
  - Steering and management entities
  - Rules and standards
- Sharing of geospatial data and metadata: duty or recommendation?
- Budgeting source(s)
- Deadlines for making data, metadata and services available
- Statement of the need for a SDI implementation plan

INDE´s Definitions

(According to Brazil´s Presidential Decree 6666/08)

I - Geospatial data or information (GI)

II - Geospatial metadata

III - National Spatial Data Infrastructure - INDE

IV - Brazilian Directory of Geospatial Data - DBDG

V - Brazilian Portal of Geospatial Data – “SIG Brasil”

VI - Official geospatial data

VII - Data protected by confidentiality legislation

Roles and responsibilities of the various actors (Brazil´s INDE)

- **Federal actors -** GI producers and maintainers: data sharing is mandatory for these

- **IBGE * -** administrates the DBDG; builds, launches, operatee and mantains the SIG Brasil portal; disseminates the procedures for electronic access to the distributed data and metadata warehouses, and for the use of the related services; applies for and manages the INDE´s budget

- **CONCAR ** -** homologates standards and specifications for both the INDE and the National Cartographic System; defines the directives for the DBDG´s implementation; ensures that the DBDG will comply with the Interoperability Standards of e-Government adopted by the Brazilian government; promotes the development of software solutions based on open source code, freely distributed; coordinates the implementation of the DBDG according to the ACTION PLAN for the INDE´s implementation

- **Ministry of Planning, Budgeting and Administration –** formalizes the partnerships and agreements for GI sharing

* **IBGE** is the ***Brazilian Institute of Geography and Statistics***

** **CONCAR** is the ***National Commission of Cartography***

Sharing of geospatial data and metadata: duty or recommendation?

The sharing and dissemination of geospatial data and their metadata is mandatory for all of the federal government´s branches and entities, but voluntary for the public institutions and those of the state, municipal and districtal levels.

Budgeting request and management

IBGE has the duty to apply to the Ministry of Planning, Budgeting and Administration, the request for financial resources in support of the INDE´s implementation and maintenance.

CONCAR has been assigned the duty of

...submitting to the Ministry of Planning, Budgeting and Administration, within 180 days from the Decree´s publication, an ACTION PLAN to guide the INDE´s implementation.

Deadlines for making data, metadata and services available

The INDE´s Action Plan must address the following issues:

- The deadline for the full implementation of the DBDG and the SIG Brasil geoportal
- The deadline for CONCAR to homologate standards and specifications for geospatial metadata
- The deadline for the GI producers and maintainers of the government´s federal sector to make their GI asset´s metadata available to CONCAR, and to store these metadata in their respective servers (for publication through the SIG Brasil geoportal)
- The deadline for the beginning of publication of geospatial metadata, and for the SIG Brasil geoportal to start offering its related services (for data discovery and access)
- The rules for the publication, through the INDE, of metadata concerning new projects or the acquisition of geospatial data
- An estimation of the **financial resources** required for the INDE´s implementation, based on the assessment of IBGE, **including the DBDG and the SIG Brasil needs**, the **development of standards**, **dissemination** of the INDE´s enterprise, **capacity building** and the **promotion of partnerships** with governmental organizations of all levels

Statement of the need for a SDI implementation plan

- Key issues such as
  - roles and functions of the various actors
  - implementation deadlines
  - cost estimates
  - technical recommendations on data and metadata
  - rules, standards and protocols to ensure data and services interoperability
  - organizational and managerial aspects
  - capacity building plan
  - communication plan, etc.

can and should be properly addressed through a SDI Implementation Plan

Conclusions

- The availability of a Legal Milestone is essential for the success of a SDI implementation
- It is recommendable that the Legal Milestone addresses the following points
  - ❑ Definitions
  - ❑ Roles and responsibilities of the various actors
    - ✓ Steering and management entities
    - ✓ Rules and standards
  - ❑ Sharing of geospatial data and metadata: duty or recommendation?
  - ❑ Budgeting request and management
  - ❑ Deadlines for making data, metadata and services available
  - ❑ Statement of the need for a SDI implementation plan