

# The Mexican Case

First implementation: the FGDC *de facto* standard



# What is the FGDC?

- Federal Geographic Data Committee (FGDC)
- The FGDC promotes the coordinated development, use, sharing and dissemination of geographical data.
- The FGDC is composed by the representation of several of federal agencies, the Congress Library and the NASA.
- The Interior Department is in charge of the Committee.
- The FGDC's sub-committees works in themes related with data categorization.
- They also establish and implements standards for the data content, quality an transfer.



# What is the FGDC?

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- The FGDC's sub-committees promotes the information sharing and data transfer and they organize the geographical data acquaint to reduce the duplicated efforts.
- The Working groups are established to deal with questions that transcend the data categorization.



# Development of the standard

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- The FGDC starts the work about the standard on July 1992, through a geospatial metadata forum.
- The participants of the forum agreed in the need for a standard for the information content about the geospatial data.
- The Committee developed a preliminary version of the standard, it was internally revised and offered for the public revision from October 1992 to April 1993.
- Several comments were collected from the public opinion so the FGDC Standards Workgroup revised the preliminary version.
- The preliminary version was then returned for a big revision and test on July 1993.



# Development of the standard

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- More advanced preliminary versions were offered for revision and test on January and march 1994.
- The FGDC approved the first version of the standard on June 8<sup>th</sup> 1994.
- Posterior that, some changes for the metadata standard were proposed, this changes were about user defined profiles and extensions, nd some modifications to the production rules to facilitate its implementation, emerging the second version of the standard on June 1998.



# FGDC standard

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- The standard specifies the metadata content for a digital geospatial data set.
- The purpose of the standard is to give common terminology and definitions for metadata related concepts.
- The metadata are data about content, quality, condition and other features of the data. The main usages for the metadata are:
  - To protect the organization internal inversion of geospatial data.
  - To offer information about the data acquaint through catalogs and clearinghouses (metadata distribution centers).
  - To provide information necessary to process and interpret data obtained through a transfer from an external source.

# What includes the standard?

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- The information included in the standard was selected based on four roles played by metadata:
  - 1. Availability: data required to determine whether data sets exist for a specific geographic location.
  - 2. Adaptability: data required to determine whether a data set covers or meets the specific needs of the user.
  - 3. Access: data required to acquire a specific set of data
  - 4. Transfer: data required to process and use a data set

# Limits of the Standard

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- It does not specify the means to organize information in a computer system.
- Nor the means by which information is transmitted, communicated or presented to the user.



# Structure of the standard

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- The standard is organized into a hierarchy of data elements and composite elements that define the information content of the metadata to document a set of digital geospatial data.
- The starting point is the "metadata" (section 0)
- In turn, the section 0 contains 7 main sections
- They are also the 3 supporting sections, which are complemented by the main sections.
- Each section consists of its name and definition



# Structure of the standard

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- Also, similar to sections, each element and compound data element is formed by name and definition.
- The data element, unlike the composite member can have different data types.
- Data types include: text, integer, real, date, time, coordinates, internet address, file name, etc.
- In turn, each data type has a range of possible values
- Of the seven sections, 2 are mandatory and 5 are mandatory if applicable



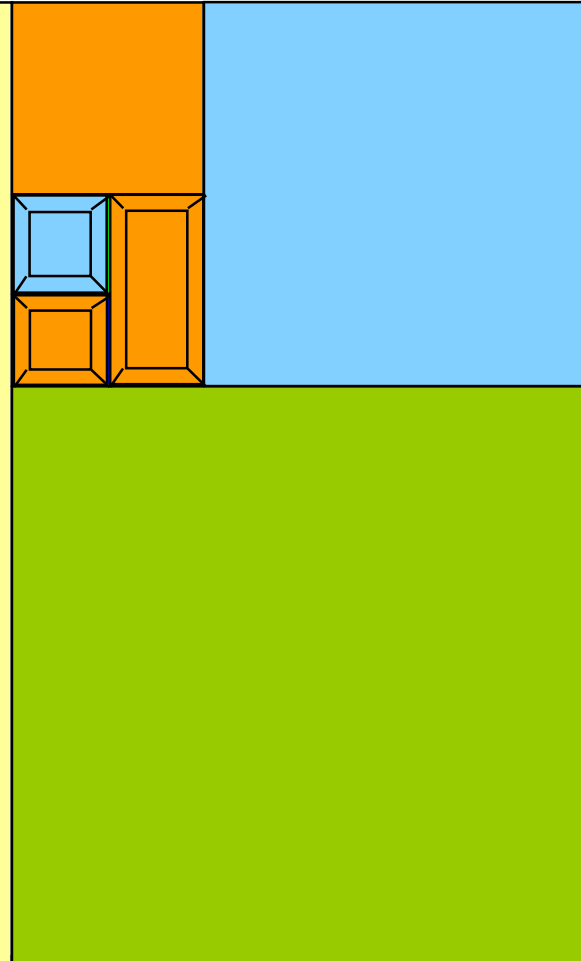
# Structure of the standard

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- Also, both the composite elements, such as data elements may be mandatory, mandatory if applicable and may be optional.
- Thus, the FGDC standard, has production rules for metadata
- The rules imply an order, a logical sequence and the relationship between the different elements to document the geographic data according to the standard.

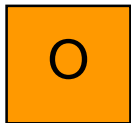
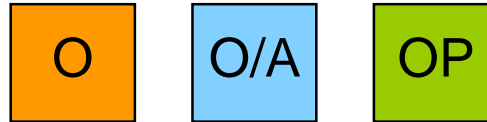
# Structure of the standard

## Content of the Standard for Geospatial Metadata

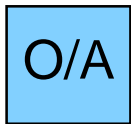


# Structure of the standard

Rules definitions:



Mandatory elements must be provided. If there are not known information for a mandatory information element should note "unknown".



Mandatory-if-applicable elements must be provided if the data set exhibits the defined characteristics.



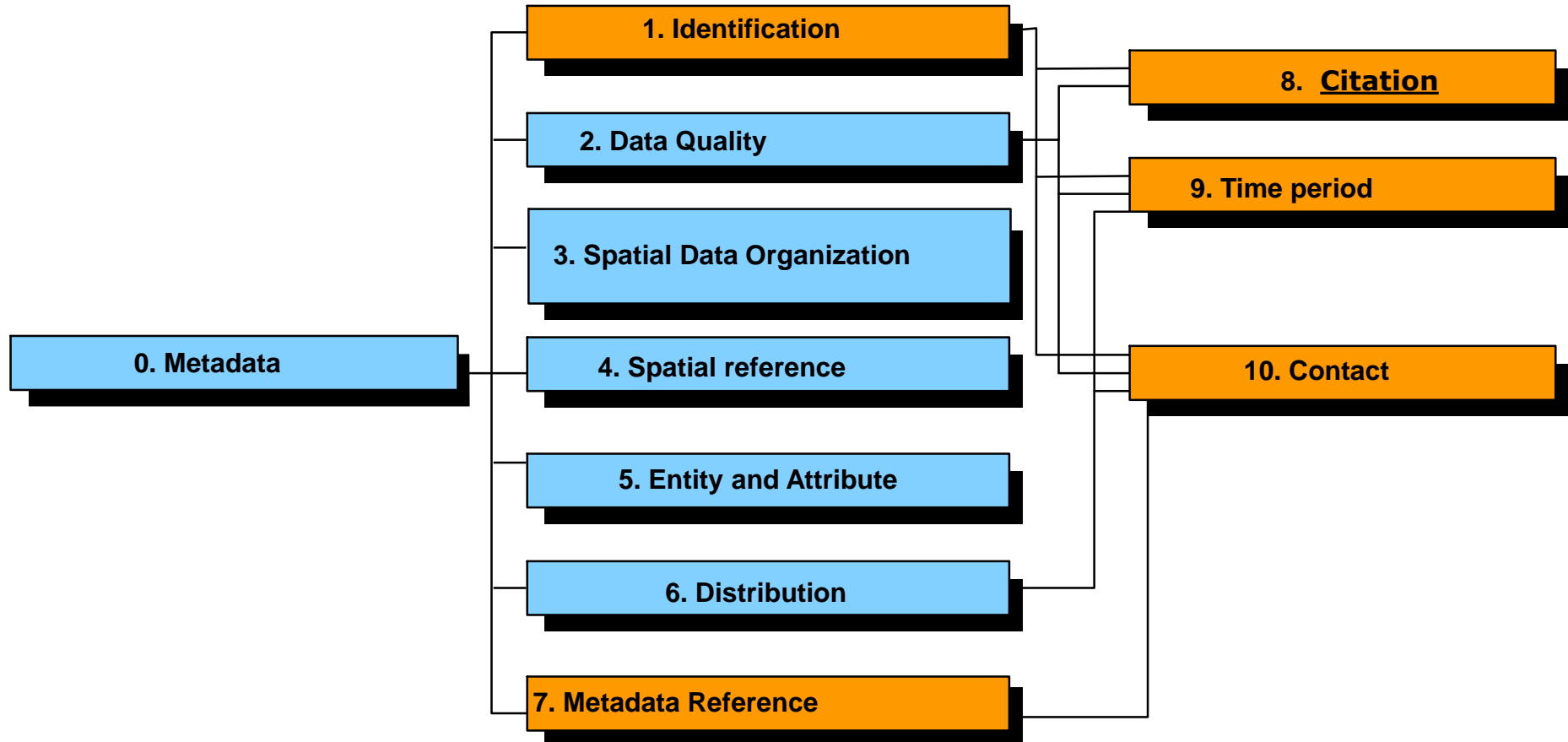
Optional items will be provided at the discretion of the metadata producer.

# Structure of the standard

<----- Metadata ----->

<----- Main sections ----->

<----- Support Sections ----->

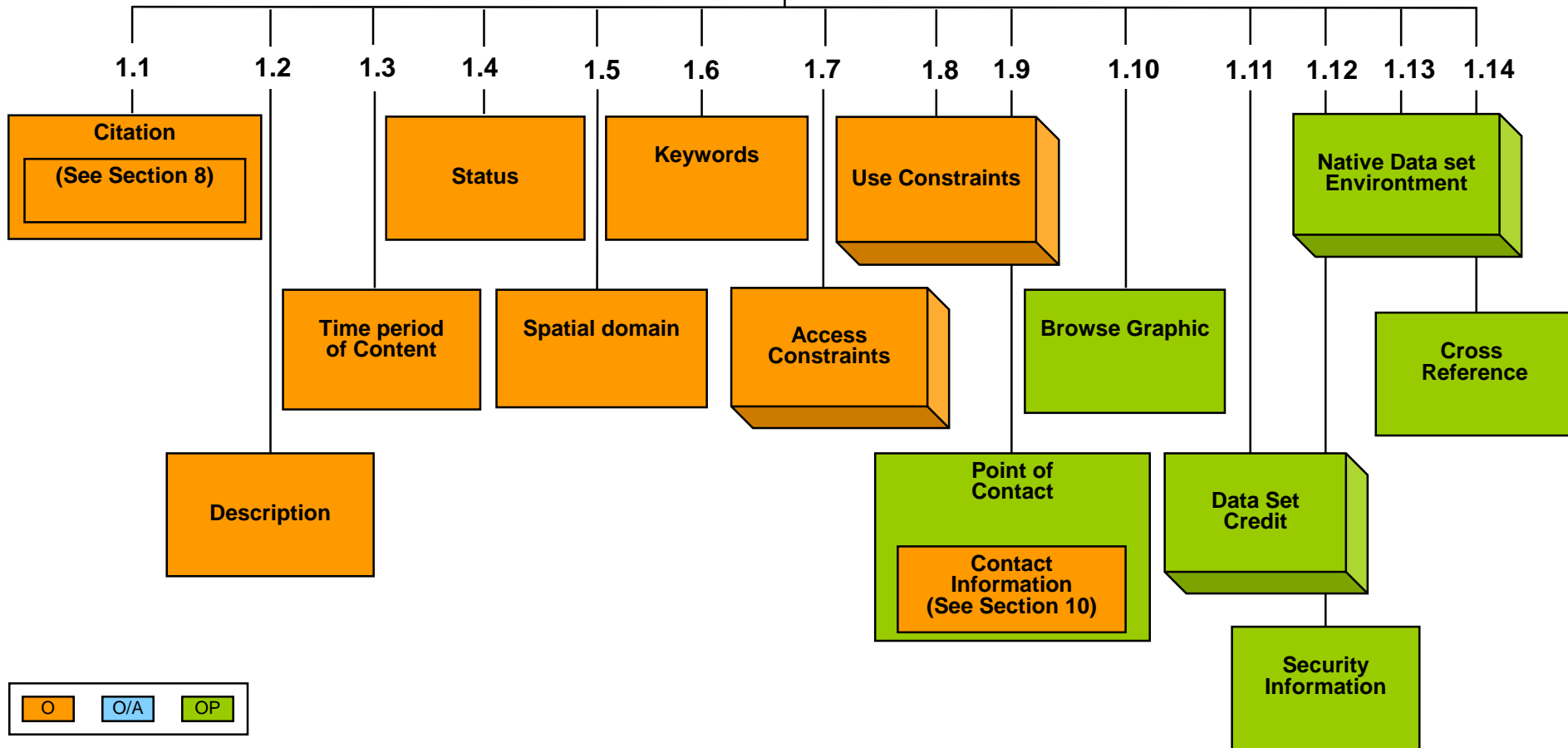


# Structure of the standard

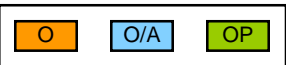
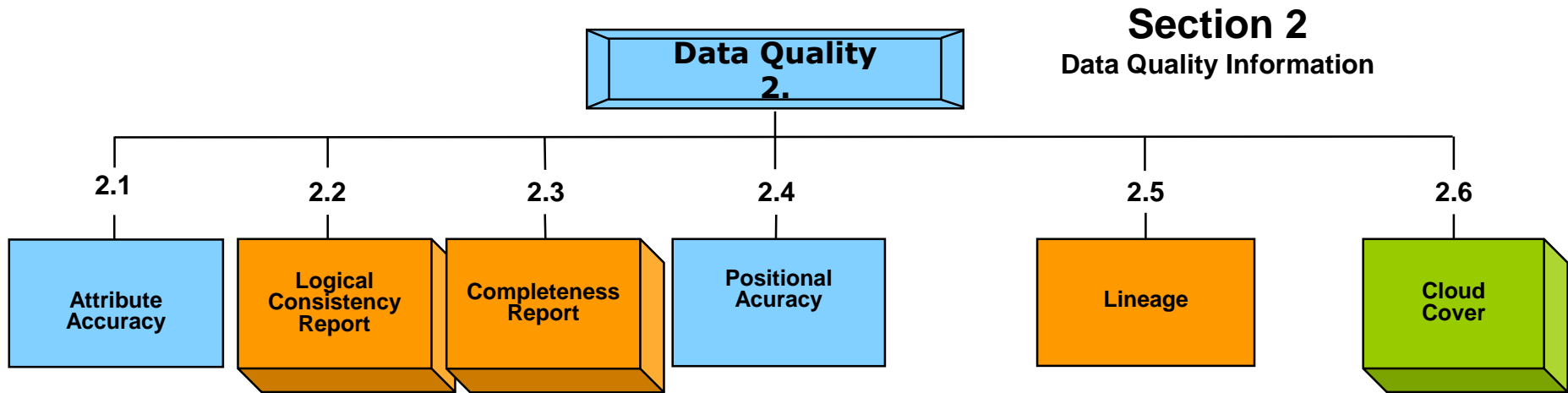
Main Sections:

## Identification 1.

Section 1  
Id Information



# Structure of the standard

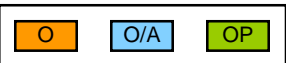
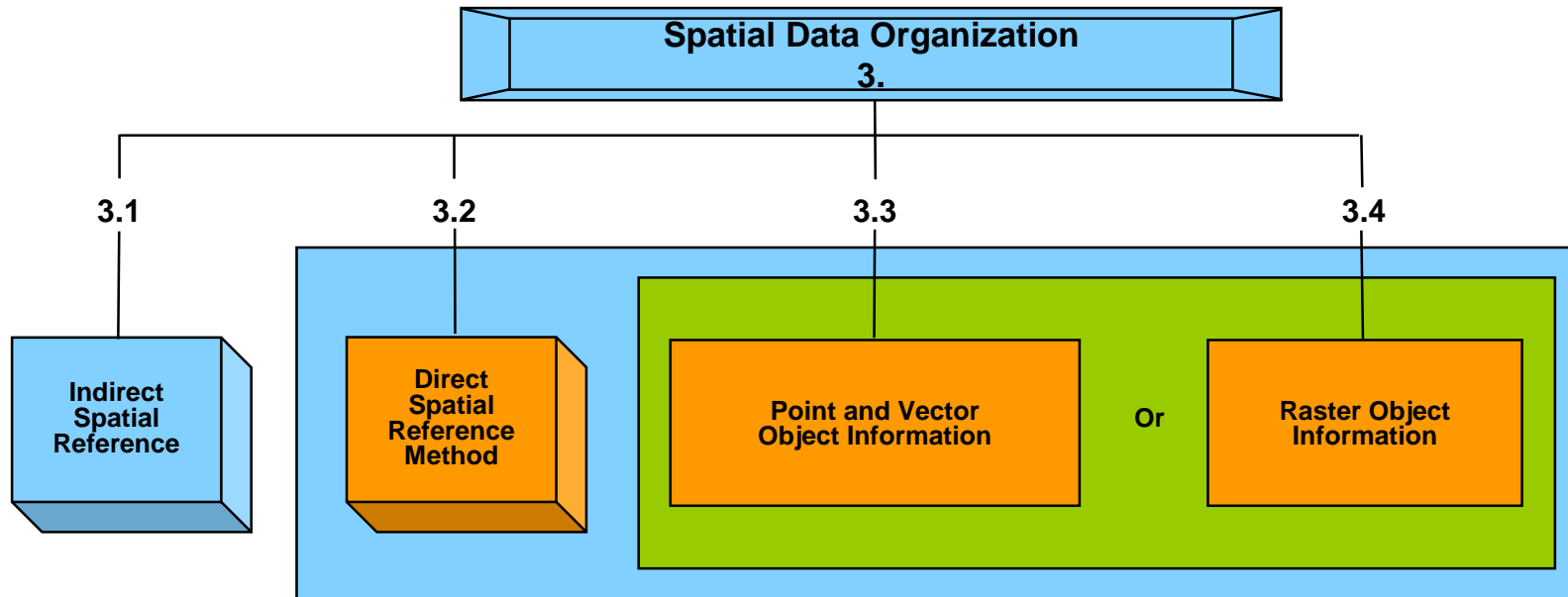




# Structure of the standard

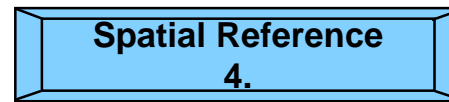
## Section 3

### Spatial Data Organization Information



# Structure of the standard

Mine Sections:



## Section 4 Spatial Reference Information

4.1

4.2

### Horizontal Coordinate System Definition

Geographic

Or

Planar

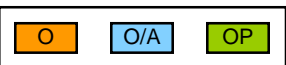
Or

Local  
Planar

Geodesic Model

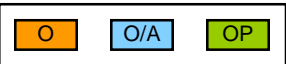
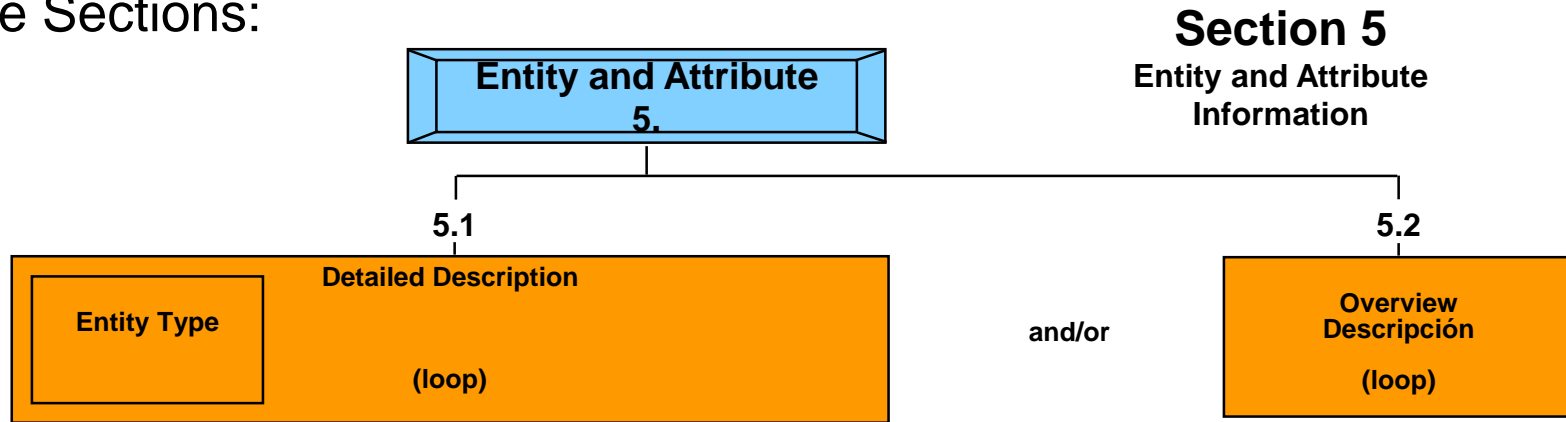
Vertical  
Coordinate  
System  
Definition

System  
Depths  
Definition



# Structure of the standard

Mine Sections:



# Structure of the standard

Mine Sections:

## Distribution 6.

## Section 6 Distribution Information

6.1                      6.2                      6.3                      6.4                      6.5                      6.6                      6.7

**Distributor**

Contact Information  
(see Section 10)

Resource Description

Distribution Liability

Standard Order Process  
(loop)

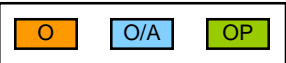
(loop)

Custom Order Process

Technical Prerequisites

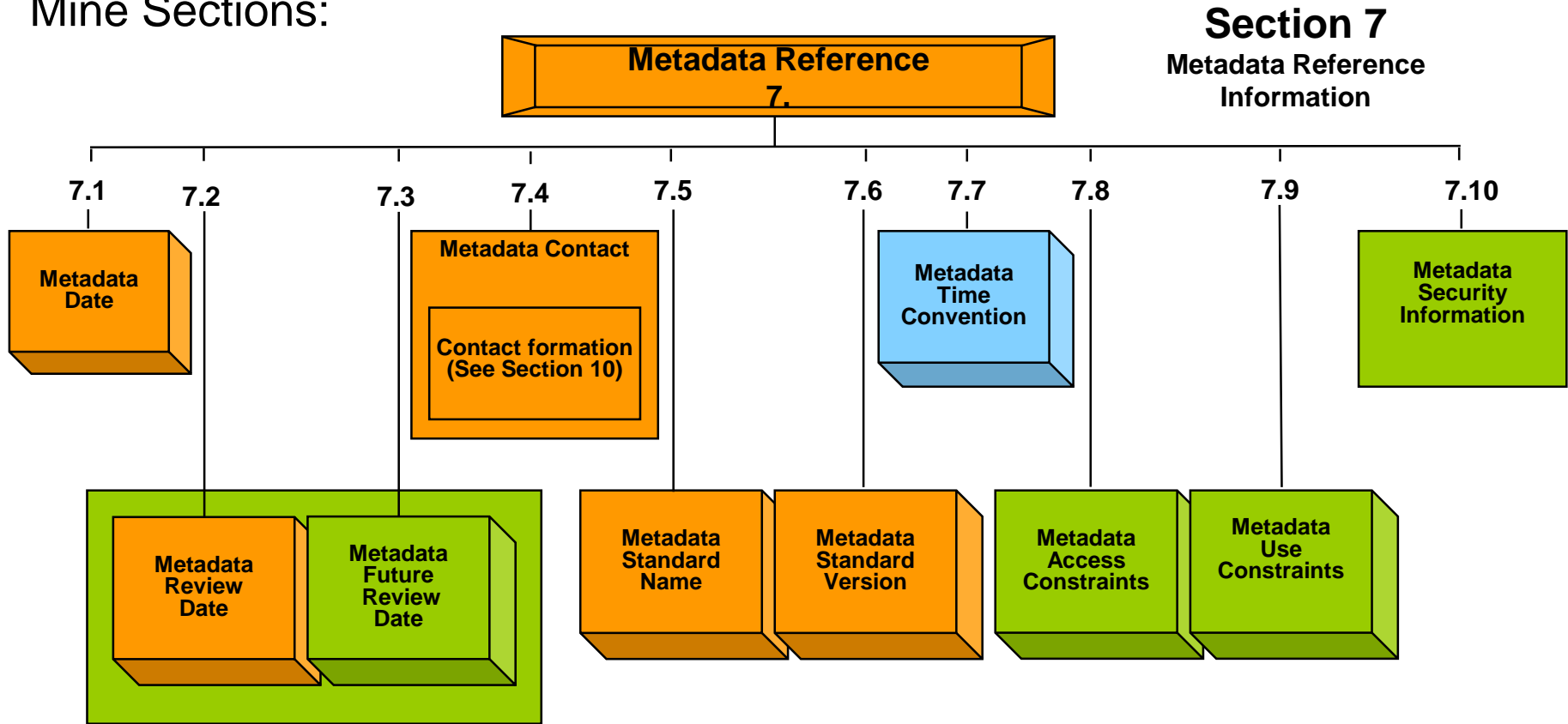
Available Time Period

Available Time Period information  
(see Section 9)



# Structure of the standard

Mine Sections:



# Structure of the standard

Support Sections:

## Section 8

Citation  
Information

Citation Information  
8.

## Section 9

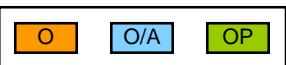
Time Period Information

Time Period Information  
9.

## Section 10

Contact Information

Contact Information  
10.



# INEGI adoption



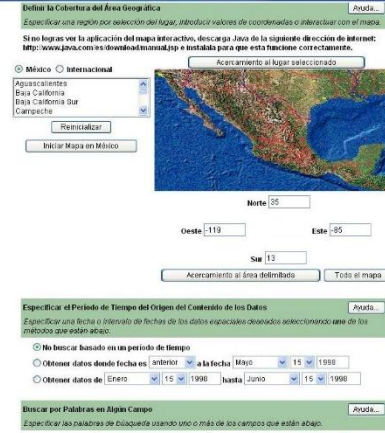
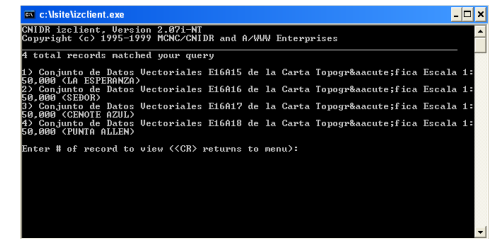
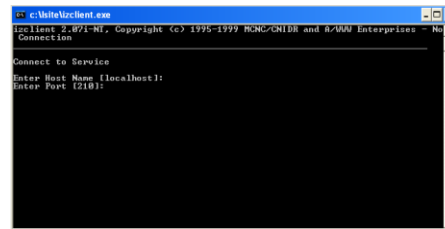
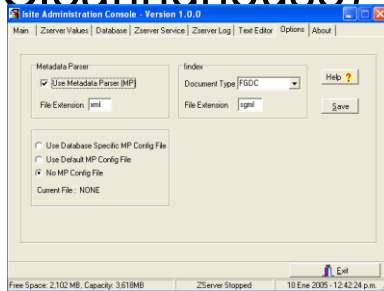
- In August 1999, the INEGI participates in the metadata and clearinghouse workshop held at the Geological Survey (USGS) in agreement with the Pan-American Institute of Geography and History (IPGH).

- Also, in September-October 1999, the INEGI participates in the metadata workshop the Brazilian Institute of Geography and Statistics (IBGE) gave.



# INEGI adoption

From October to December 1999 talks, courses and workshops were held, and a node and a metadata finder was implemented (Metadata Clearinghouse)





# INEGI adoption



In November 1999, the INEGI gave a workshop at the National Geographic Institute of the Salvador



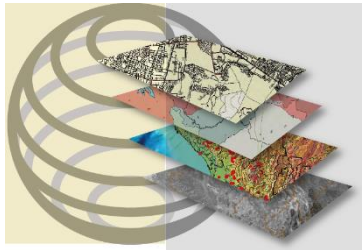
# INEGI adoption

- In December 1999 the INEGI began working with the producing areas of the Institute to collect geographic information. files were used in doc format, the Corpsmet system was used to capture metadata, which also validated under the FGDC, the mp executable exported them to various formats (txt, sgml and html).
- From 2000 to 2010 several programs were developed in foxpro and perl to generate metadata massively from the auxiliary text files that produce the producing areas.

```

C:\Corpsmet195MET>mp -t csidf.txt -h csidf.html -s csidf.sgml sidf2 1.txt
No errors
C:\Corpsmet195MET>dir
El volumen de la unidad C no tiene etiqueta
El numero de serie del volumen es 1E8E-15D8
Directorio de C:\Corpsmet195MET

        <DIR>          23/10/98   1.30p
        <DIR>          23/10/98   1.30p
SIDF2  MET             8.47k   23/10/98   4.11p  SIDF2.met
ENS       ERE          94.70k   24/06/97   8.50k  ens.exe
MP        ERE         161.75k   24/06/97   8.25k  mp.exe
SIDF2   INF          13.99k   23/10/98   5.59k  sidf2.inf
SIDF2   LO            0         23/10/98   5.59k  sidf2.lo
SIDF2  1 FER           9.82k   23/10/98   5.59k  sidf2.1 fer
CSIDF  1 TEX           9.82k   23/10/98   6.82k  csidf.1 tex
CSIDF  1 SDM           8.68k   23/10/98   6.82k  csidf.1 sdm
CSIDF  1 HW          11.89k   23/10/98   6.82k  csidf.1 hw
        2 archivo(s)          316.82k
        2 directorio(s)      70,549,504 bytes libres
C:\Corpsmet195MET>
  
```



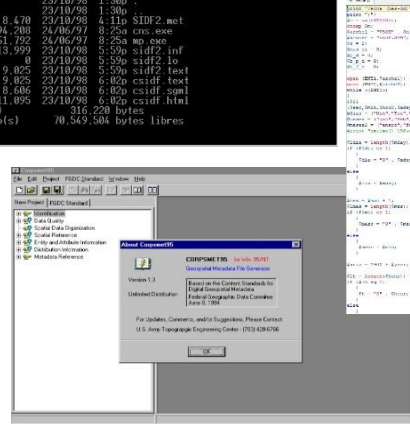
FORMATO PARA CAPTURA DE METADATOS

**Metadatos:**

TITULO DEL PRODUCTO: \_\_\_\_\_  
 AUTORIA: \_\_\_\_\_  
 FECHA: \_\_\_\_\_  
 ESCALA: \_\_\_\_\_  
 COORDENADAS: \_\_\_\_\_  
 SISTEMA DE REFERENCIA: \_\_\_\_\_  
 SISTEMA DE PROYECCION: \_\_\_\_\_  
 SISTEMA DE UNIDADES: \_\_\_\_\_  
 DESCRIPCION: \_\_\_\_\_  
 PALABRAS CLAVES: \_\_\_\_\_  
 TEMAS: \_\_\_\_\_  
 METADATOS GENERADOS POR: \_\_\_\_\_  
 FECHA DE GENERACION: \_\_\_\_\_

**ESTADO DE LA CAPTURA:**

ESTADO	FECHA	USUARIO
...	...	...

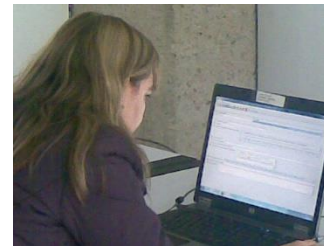
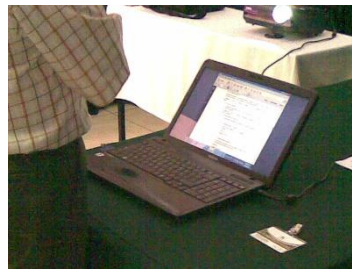
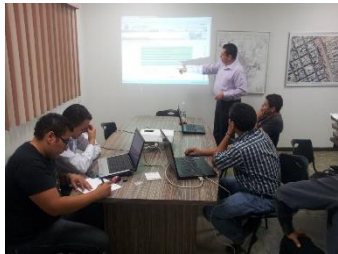


Association of Caribbean States  
 Asociación de Estados del Caribe  
 Association des Etats de la Caraïbe



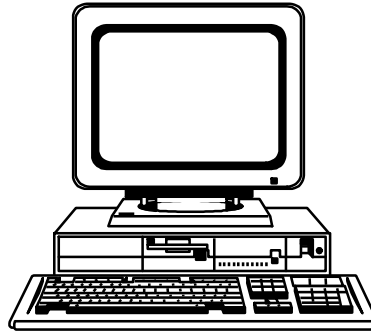
# INEGI adoption

- During the period 2000-2010 lectures, courses and workshops metadata and Distribution Centers Metadata were given to government agencies, state and municipal governments, universities and private companies.



# INEGI adoption

- In 2000, the INEGI FGDC search engine node was implemented



- In 2004 the Institute generate metadata with Spanish elements names, which led to raise another node in INEGI.

Conjunto de Datos Vectoriales F13D19 de la Carta Topográfica Escala 1:50,000 (AGUASCALIENTES)

Metadatos:

Metadatos en español

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Información de identificación

Crea:

Edición:

Actualización:

Publicación:

Palabras clave:

Resumen:

Atributos:

Referencias:

Publicación:



Association of Caribbean States  
Asociación de Estados del Caribe  
Association des Etats de la Caraïbe



# INEGI adoption

- From 2000 to 2004 Metadata nodes were installed in the Secretariat of Environment and Natural Resources (SEMARNAT), National Centre of Disaster Prevention (CENAPRED), governments of Tabasco and Guanajuato in the Mexican Geological Survey (SGM), and in the Institute of Information territorial State of Jalisco (ITEJ).



# INEGI adoption

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- In early 2011 began the migration of the FGDC metadata format to the Technical Standard for the development of geographic metadata (NTM) of SNIEG concluding such migration in mid-year.
- In 2012, the Metadata Center Distribution FGDC was disabled



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