



Following INSPIRE

*Anna Lleopart, Blanca Baella,
Dolors Barrot, Maria Pla*

INSPIRE - Geospatial World Forum 2015
Lisboa, May 2015



Content

Content

- Introduction
- New requirements on the data models
- Overview of ICGC production workflow
- Conclusions

Introduction

Introduction

- ICGC is adapting the services and products to the customer needs.

Factors:

- Current technology allows managing large amounts of spatial data.
- There is a significant increase of:
 - Amount and diversity of users
 - Channels to access geographic information
- INSPIRE deployment is challenging national mapping agencies

We take it as an opportunity to modernise our products.

Introduction

Goals:

- To change the updating policies:
 - from dataset or mapsheet criteria ...
 - **...to themes, layers of information or a buffer around the area where there are changes.**

Introduction

Goals:

- In data acquisition or downloading ...

...to offer to the user the chance of defining:

- **The type of data updating delivery (complete current dataset, incremental, historical)**
- The thematic subsets
- The area of interest

Introduction

- What are the implications for the topographic databases?
 - Improvement of existing data models, taking into account the INSPIRE data specifications.
 - Redefinition of the production environment and workflow.

New requirements on the data models

New requirements on the data models

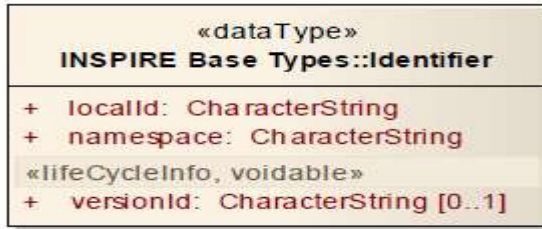
- To achieve the goals, it has been added:
 - an object identifier
 - temporal information
 - metadata at object level

Object ID

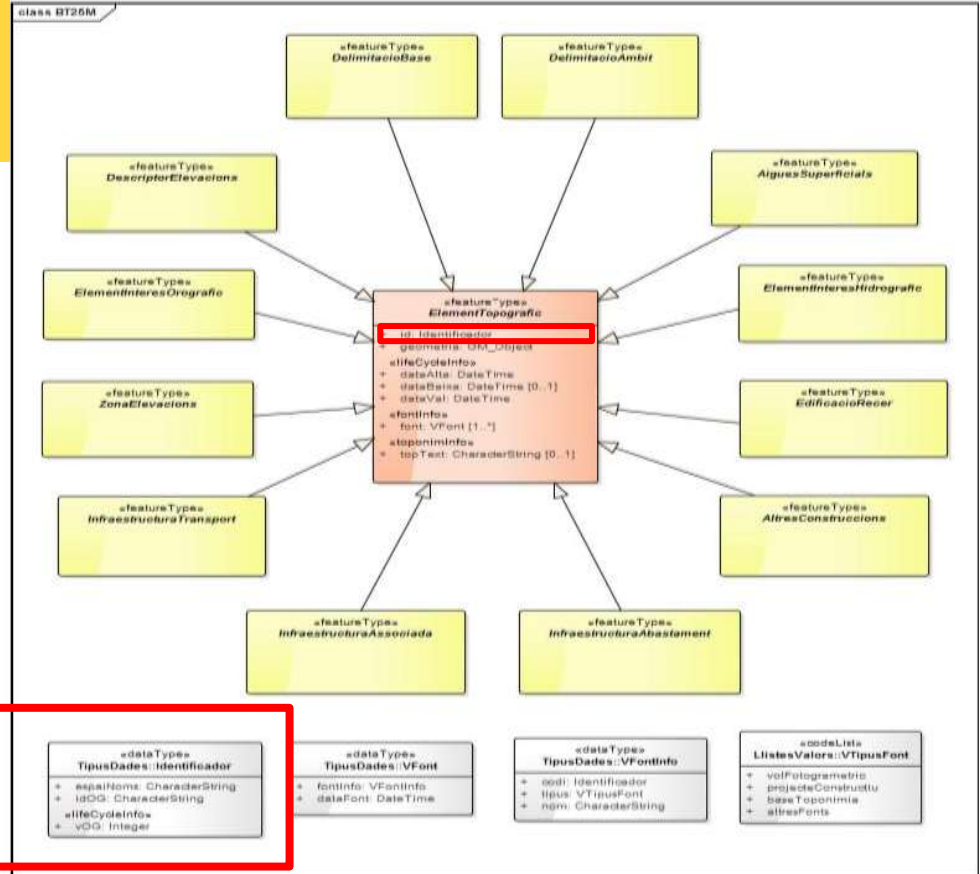
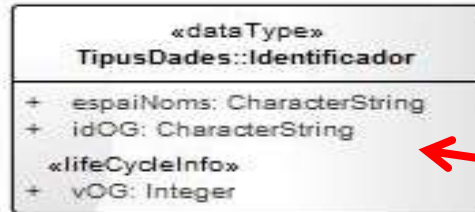
- The object identifier is the external identifier
 - Unique within its scope of definition
 - identifiers are not reused.
 - Persistent
 - the object identifier has to remain unchanged forever.
 - May be used by external applications to reference it.

IGCG databases ID

INSPIRE



IGCG

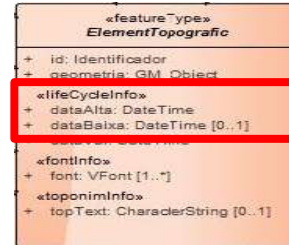


Temporal information

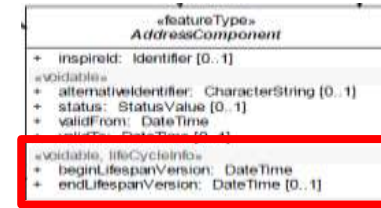
- Set of properties of a feature that describe the temporal characteristics of a version of the feature or the changes between versions [INSPIRE Generic Conceptual Model v3.3]
- If features in a database are updated individually then life-cycle information should be attached to feature instances.

ICGC temporal information

ICGC



INSPIRE



- Life-cycle information:
 - specifies the lifespan of a version in the spatial data set itself
 - Begin lifespan version (dataAlta)
 - End lifespan version (dataBaixa)
- Should not be confused with the temporal characteristics of the real-world phenomenon described by the geographic object.

ICGC temporal information

- Validation date (dataVal)

- It is the date of last time that the spatial object was validated in the data set
- Changes of the validation date do not necessarily increment the version number.



Metadata

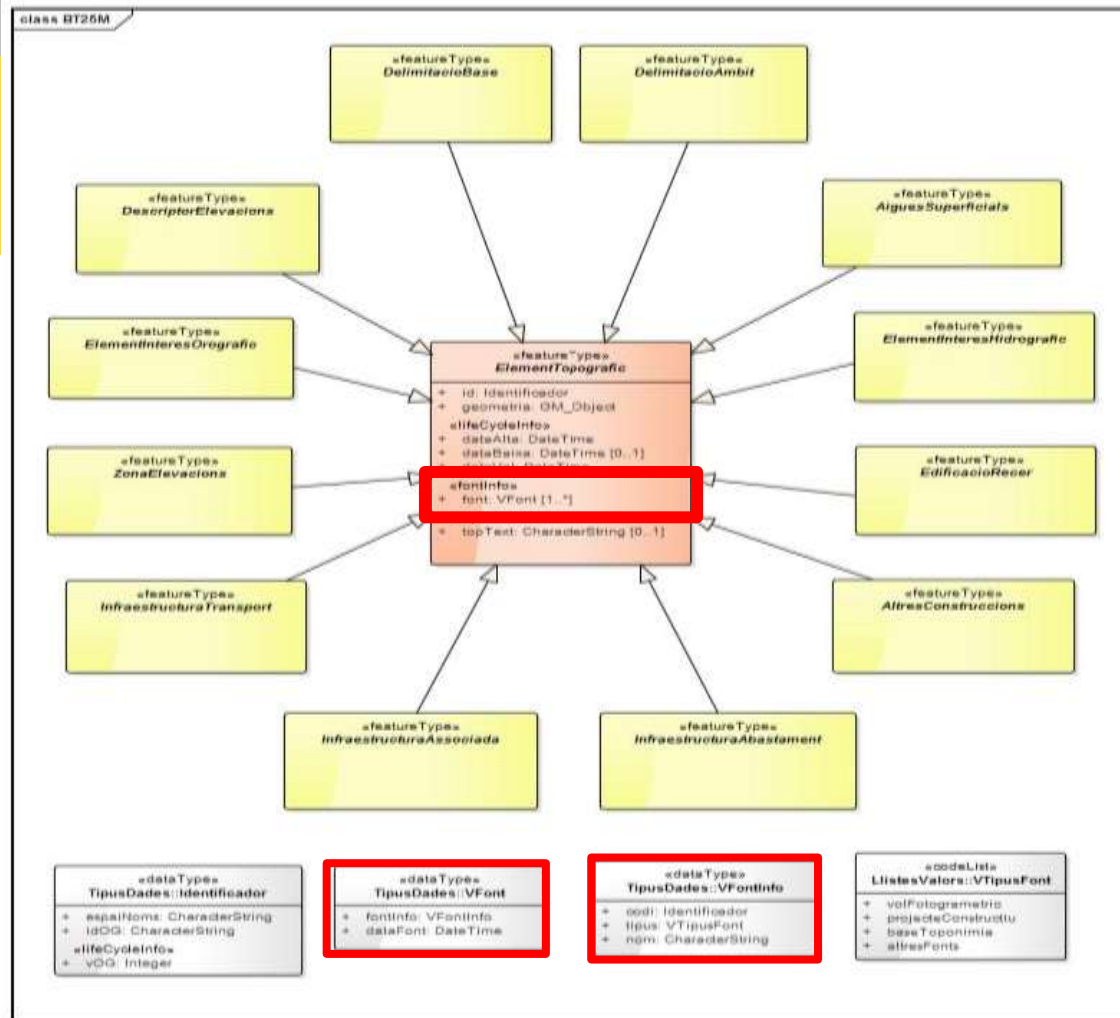
- According to ISO 19115, metadata are attached at different levels:
 - Database
 - **Feature type and instance**
 - Attribute type and instance

If metadata values do not change, they are aggregated at higher level.

Metadata Feature level

- Features in the database are updated individually:

→ metadata information must be attached to the feature instances.



Metadata



- Data sources (*font*) : metadara about sources used to capture, update or verify the spatial object:
 - Source information (*fontInfo*):
 - Identifier (*codi*): code to identify the source data
 - Type (*tipus*): kind of source (photogrammetric flight, project, field survey, gazetteer...)
 - Name (*nom*): source name
 - Date (*dataFont*): date of source

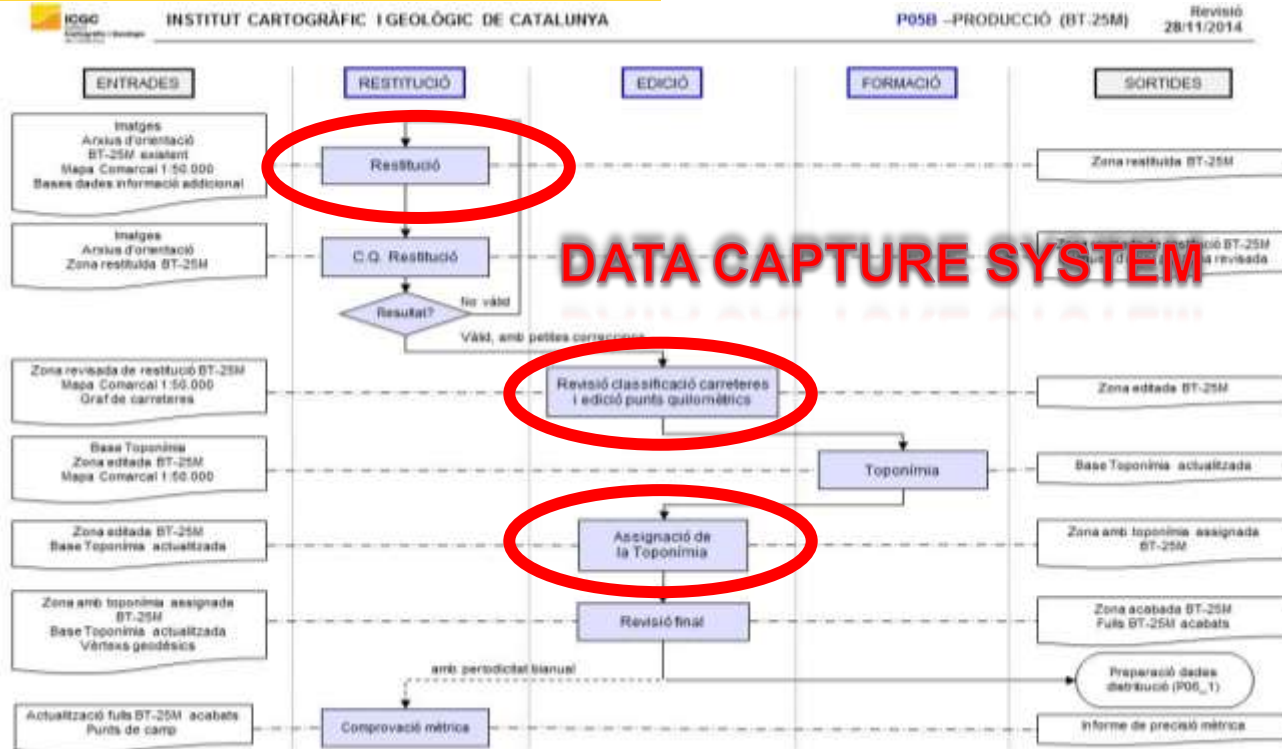


Allows building/updating automatically some metadata elements (lineage, temporal extension) at database level.

Overview of ICGC production workflow

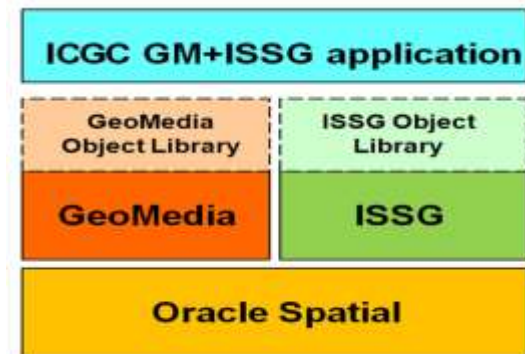
For topographic
databases

Overview of ICGC production workflow for topographic DB



ICGC data capture system

- The ICGC digitizing tools are included in a complete 3D data production system.
- Based on:
 - Commercial software: Oracle Spatial as DBMS, Geomedia as base GIS and ISSG as photogrammetric software.
 - An application developed by ICGC.



ICGC data capture system

- The system provides solutions for the photogrammetric data capture workflow ensuring efficiency and the quality of the digitized product:
 - Extending the functionalities of Geomedia and ISSG
 - Ensuring the most ergonomic and complete visualization mode
 - **Managing the specific characteristics of the data model (object ID, temporal information, metadata)**

ICGC digitizing tools

object ID management



bt25mv20t.edifici_servei Properties

General Attributes

Name	Value
IDO	00000004000339
IDP	1
IDT	6
DATA_ALTA	10/14/2013 11:07:04 AM
DATA_BAIXA	
DATA_VOL	5/1/2013 12:00:00 AM
TOP_ID	56748965
TOP_TEXT	Cal Batlle
TOP_DATA	10/25/2013 11:07:04 AM
DATA_REV	10/30/2013 11:07:04 AM
ESTAT_ED	cas genèric
ORIENT_ED	

Close

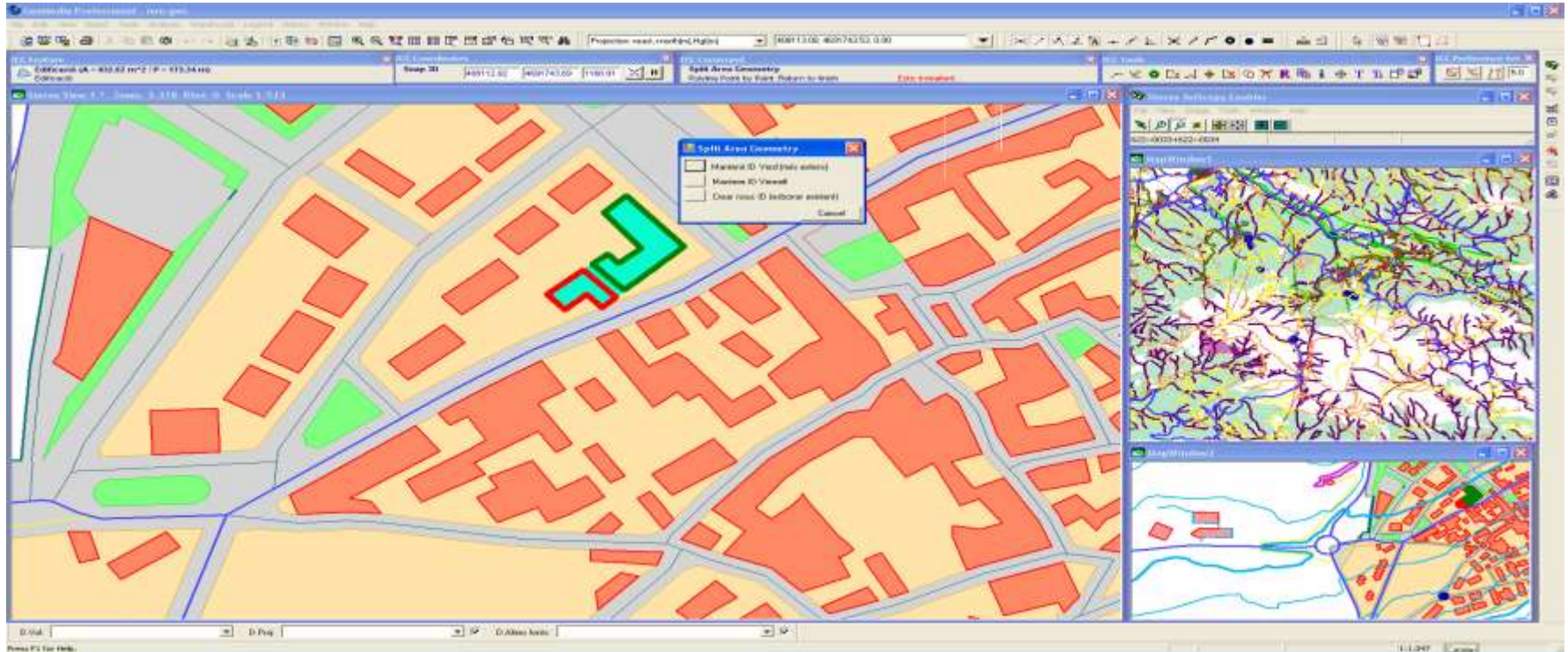
ICGC digitizing tools

object ID management



ICGC digitizing tools

object ID management



ICGC digitation tools

Temporal information management



bt25mv20t.edifici_servei Properties

General Attributes

Name	Value
IDG	237
IDO	00000004000339
IDR	1
IDT	0
DATA_ALTA	10/14/2013 11:07:04 AM
DATA_Baixa	
DATA_VOL	07/12/2013 12:00:00 AM
TOP_ID	56748965
TOP_TEXT	Cal Batlle
TOP_DATA	10/25/2013 11:07:04 AM
DATA_REV	10/30/2013 11:07:04 AM
ESTAT_EDI	cas genèric
ORIENT_EDI	

Close

ICGC digitation tools

Temporal information management



bt25mv20t.edifici_servei Properties

General Attributes

Name	Value
IDG	237
IDO	00000004000339
IDR	1
IDT	6
DATA_ALTA	10/14/2013 11:07:04 AM
DATA_BAIXA	
DATA_VOL	5/1/2013 12:00:00 AM
TOP_ID	56748965
TOP_TEXT	Cal Batlle
DATA_VAL	10/30/2013 11:07:04 AM
DATA_VAL2	5/1/2013 12:00:00 AM
ORIENT_EDI	

Close

ICGC digitation tools

Metadata at instance level management



bt25mv20t.edifici_servei Properties

General Attributes

Name	Value
IDG	237
IDO	00000004000339
IDR	1
IDT	6
DATA_ALTA	10/14/2013 11:07:04 AM
DATA_VOL	5/1/2013 12:00:00 AM
TOP_DATA	10/25/2013 11:07:04 AM
ESTAT_ED	cas genèric
ORIENT_ED	

Close

Conclusions

Conclusions

The management and maintenance of datasets with data models incorporating:

- identifiers
- life cycle information
- metadata at object level


Requires an advanced working environment that:

- ensures the proper management of geometries and attributes
- optimizes de compilation and updating process.

**Thank you for your
attention!**

**Institut Cartogràfic i Geològic
de Catalunya**

Parc de Montjuïc,
E-08038 Barcelona

 41°22'12" N, 2°09'20" E (ETRS89)

 www.icgc.cat

 icgc@icgc.cat

twitter.com/ICGCat

facebook.com/ICGCat

Tel. (+34) 93 567 15 00

Fax (+34) 93 567 15 67

