



ICGC automatic generalization: transport, buildings, hydrography

Àrea de Bases
October 2018

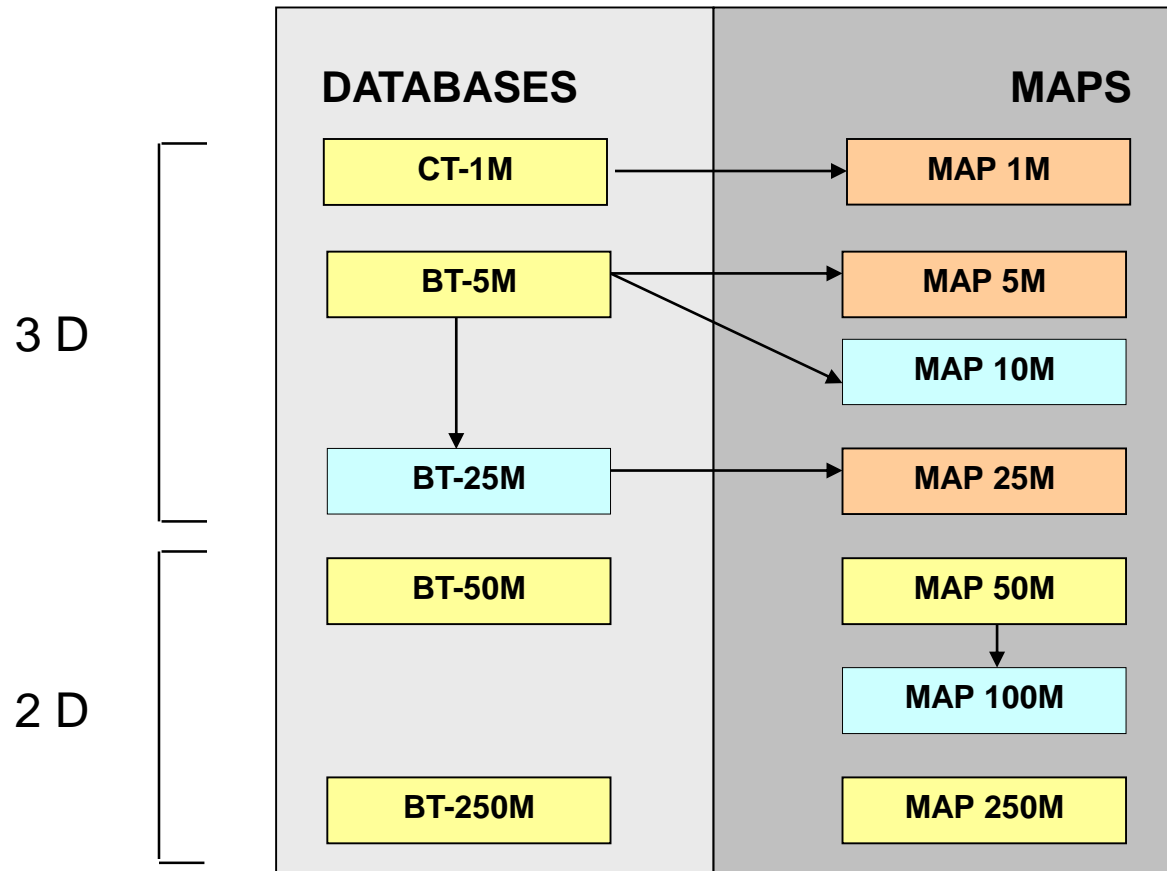


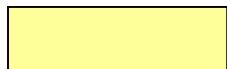
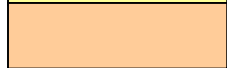

ICGC
Institut
Cartogràfic i Geològic
de Catalunya



Generalitat
de Catalunya

ICGC topographic databases



-  Products compiled
-  Products derived automatically, without manual editing
-  Products derived applying generalization

The master topographic database BT-5M

Data sources:

Photogrammetric data capture (DMC)

Additional data from other DBs (map names)

3 D

Accuracy:

1m X,Y / 1,5m H

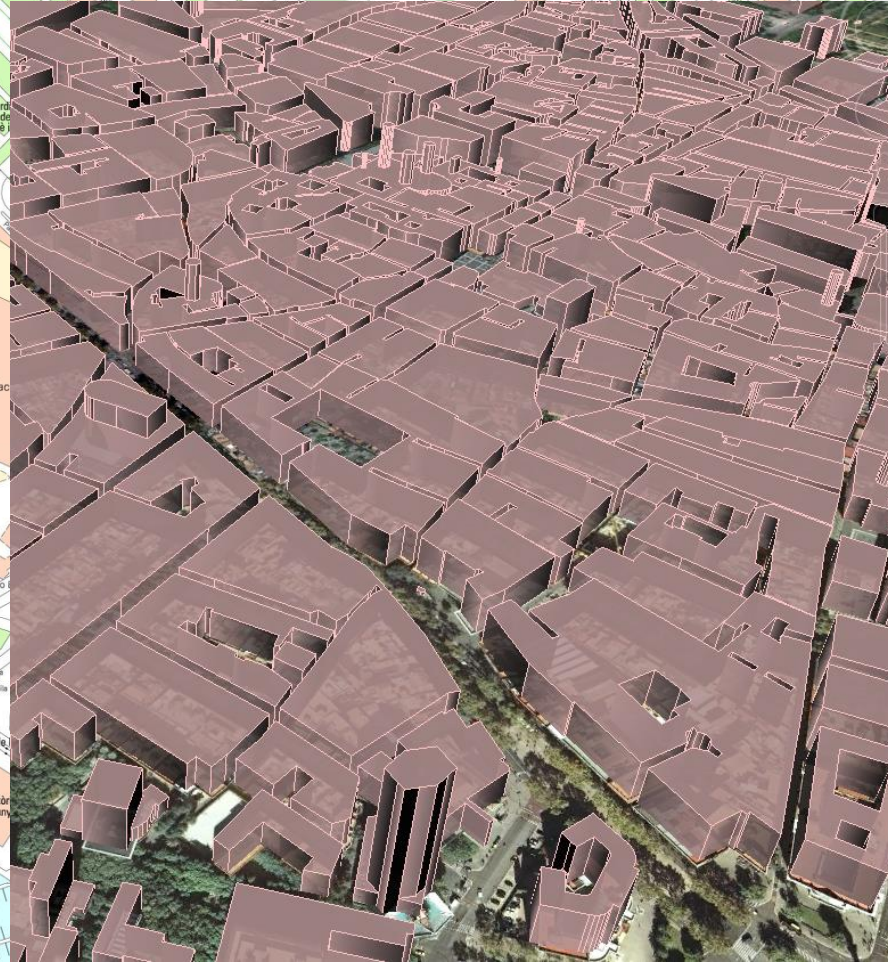
Covering Catalunya:

32.000 km2

Updating cycle:

5 years over all the country

More frequently over the most dynamic areas



User requirements

- Huge demand of updated information
- Homogeneous information across all the levels of detail
- High pressure to obtain a wide range of derived products for visualization and other applications in internet and mobile devices



Goals to achieve:

- Provide data updated frequently
- Provide homogeneous data across all the LODs
- Provide a wide range of derived products for visualization and other applications in internet and mobile devices

User requirements

- Huge demand of updated information
- Homogeneous information across all the levels of detail
- High precision and accuracy of the data products for visualization on internet and mobile devices

Implementation of a

fully automatic generalization workflow

from the master topographic database for obtaining

the **different LOD data**

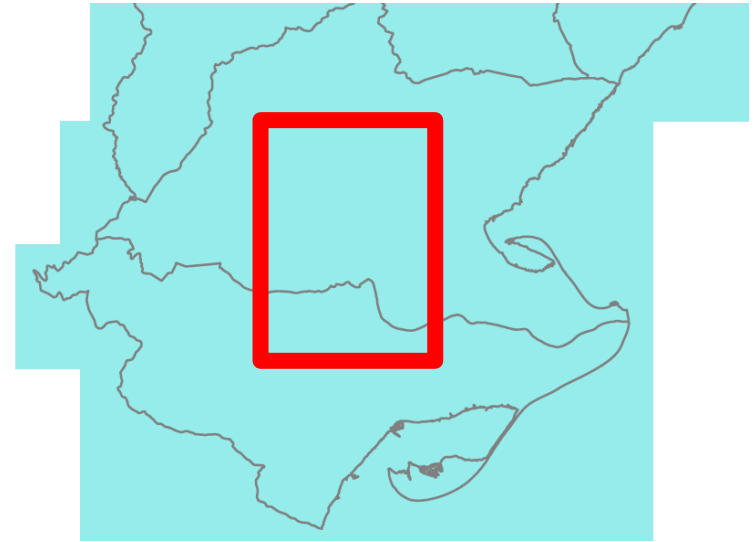
- Provide a wide range of data products for visualization and other applications in internet and mobile devices
- Provide a wide range of derived products for visualization and other applications in internet and mobile devices

Current status of generalization system

- The new workflow is not yet automated, in development
- Software used:
 - ArcGIS, FME, own applications.
 - Processes in Python. More powerful and efficient than Model Builder.
 - Model Builder only for testing.
 - On premise.
- The goal is to obtain:
 - Data
 - Products

Test area

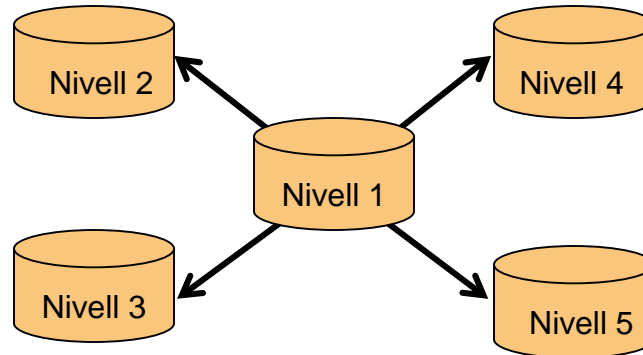
- Area: aprox. 50.000 hes
- Layers:
 - Transportation network
 - Buildings
 - Hydrographic network
- Detail: 5 levels



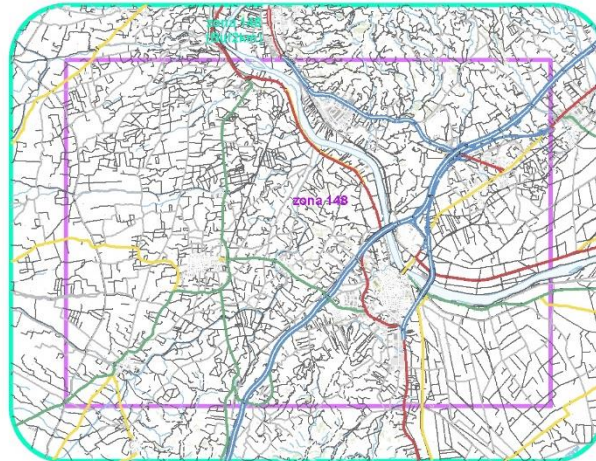
1	2	3	4	5
1: 1 890 (0,5m/pix*)	1: 3 780 (1m/pix*)	1: 7 559 (2m/pix*)	1: 15 118 (4m/pix*)	1: 30 236 (8m/pix*)

Methodology

- Mainly *star* generalization



- Partitions: buffer around **2 kilometres** to the area to be processed



Methodology

- Continuous symbology between the diferents levels of detail



Automatic generalization challenges

■ **Source data:**

- Richer data to facilitate the processes and improve the results

■ **Software:**

- Requirements list elaborated for the WG
- Initiated using ArcGIS desktop. Now migrating to ArcGIS Pro:
 - Better results
 - Taking advantage of the tools to migrate Python processes

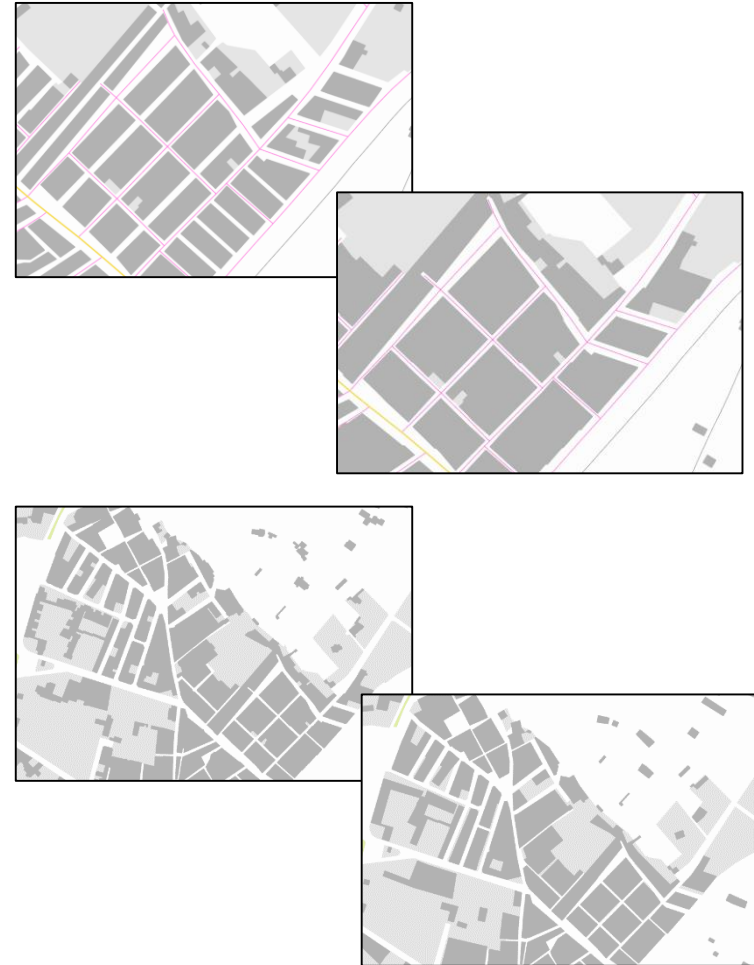
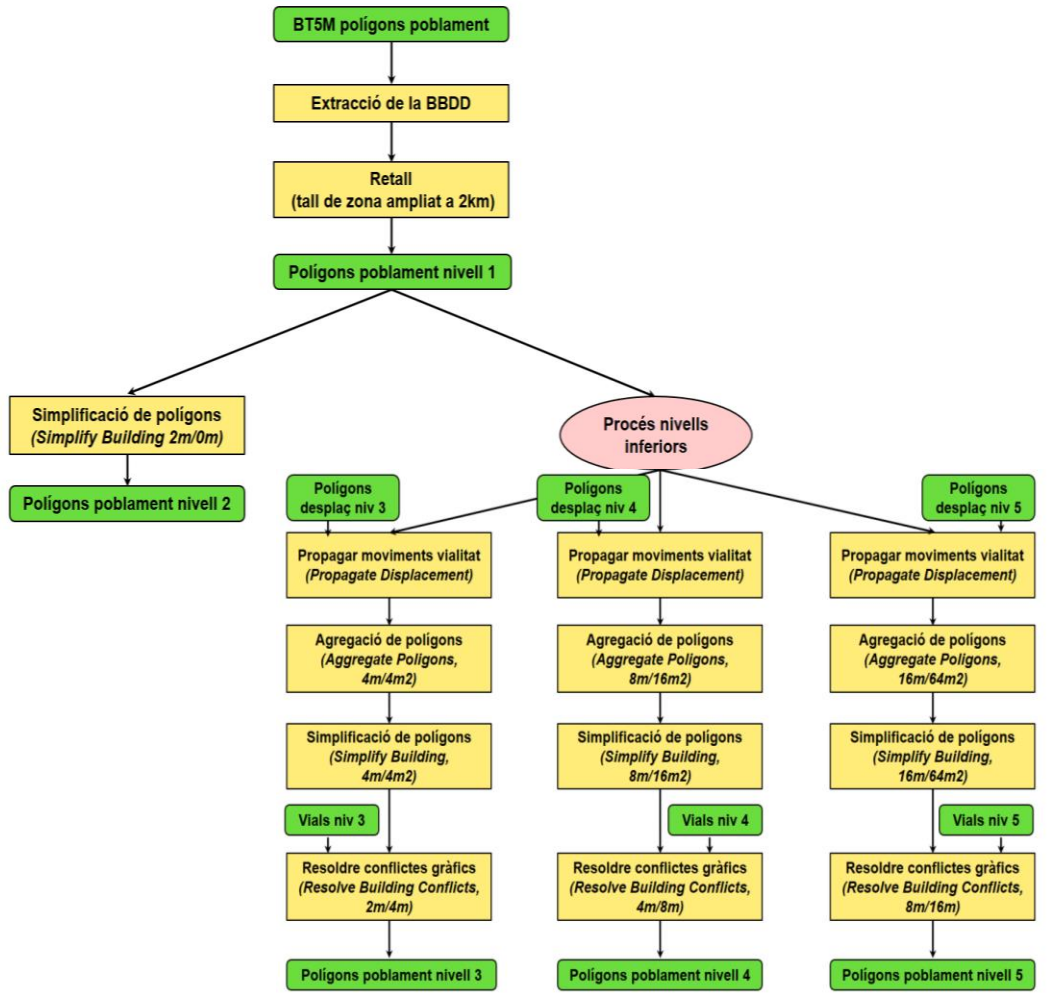
■ **Product specifications:**

- New design more adapted to the current needs

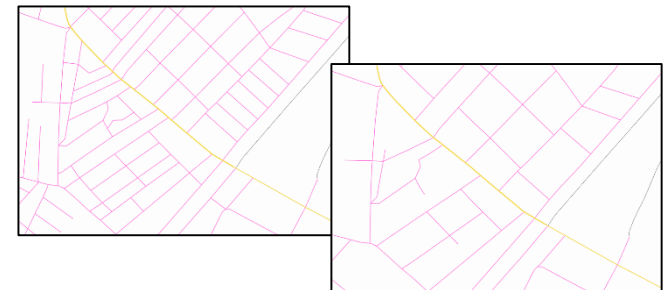
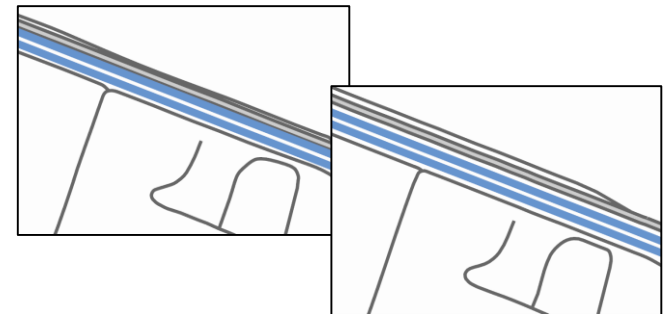
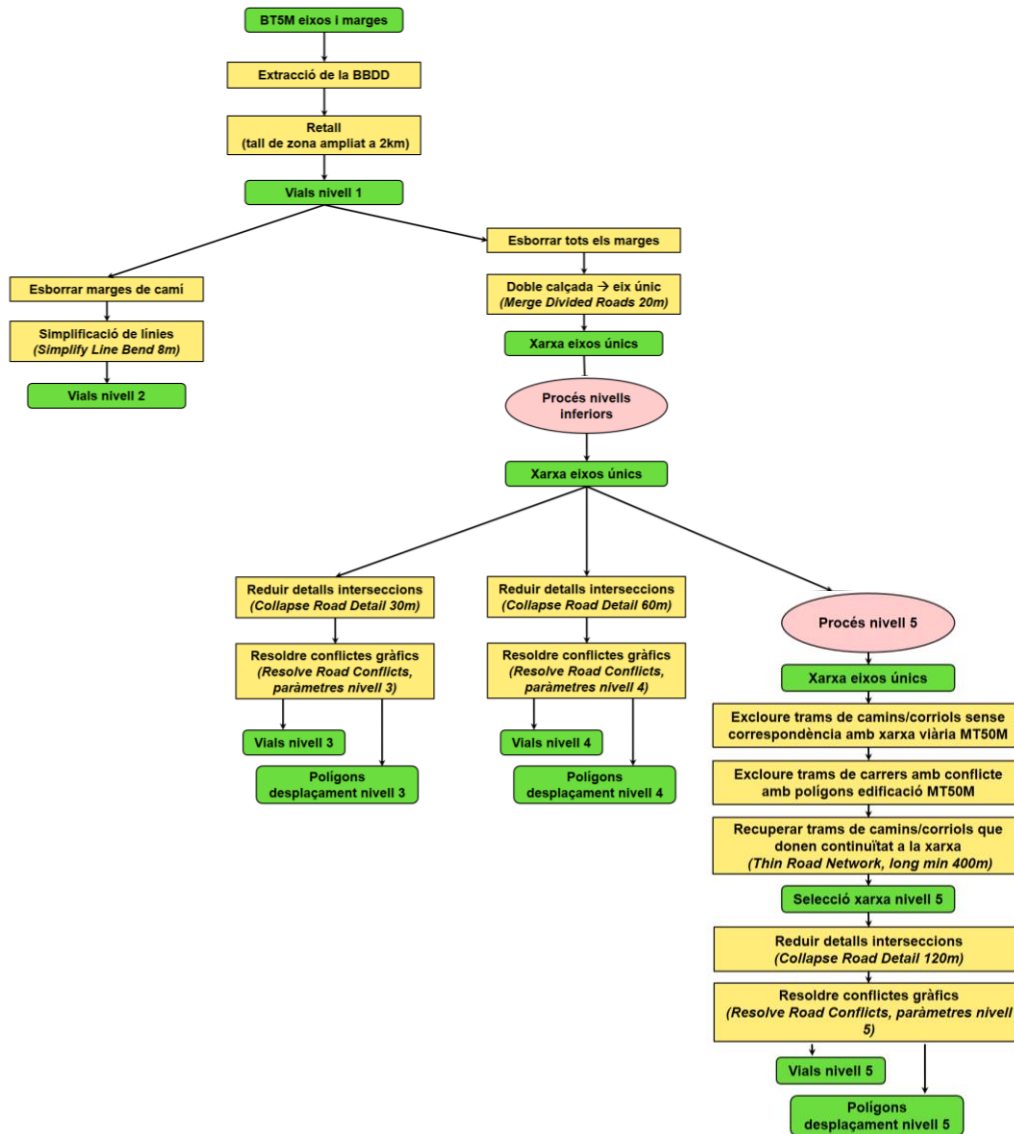
■ **Quality:**

- Limitations due to the tools and the data

Examples

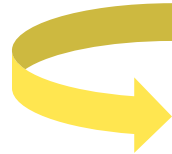


Examples



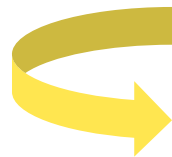
Support

- How can Esri better support you?



List of requirements

- What are your expectations of the Working Group?



Share information with other ESRI users

Prioritize the ESRI support tasks

Thank you!

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