

Small statistical units in Spain: Enumeration Districts, Nomenclátor and Grid

National Statistical Institute (INE)

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Index:

1. Spanish system of small statistical units.
2. Challenges for “drawing” the Nomenclátor: road map and methodology.
3. Grid statistics in Spain: pilot test for bottom-up results.
4. Final comments: limits and synergies of different approaches.

1. Systems of small statistical units (I)

Two separate systems of units below municipality (covering all surface area of any municipality):

System 1. Enumeration Districts (younger).

The *field-work* (or de logistic) approach.

Used for production census and surveys.

System 2. Nomenclátor (classical).

The geo-historical and morphological approach.

Made for publish small area statistics.

1. Systems of small statistical units (II)

System 1. Enumeration Districts: the *field-work* approach.

- Equal population criteria: census work packages, voting in an electoral day.
- 36.000 units.
- Two levels: Districts (Distritos) / Sections (Secciones).
- No unit's names (only numerical units code).

Use for representing the geography of any phenomena:

- Advantages: equal population size.
- Disadvantages: treatment of empty areas.

1. Systems of small statistical units (III) Enumeration Districts

No problems in the center of towns or metropolitan areas

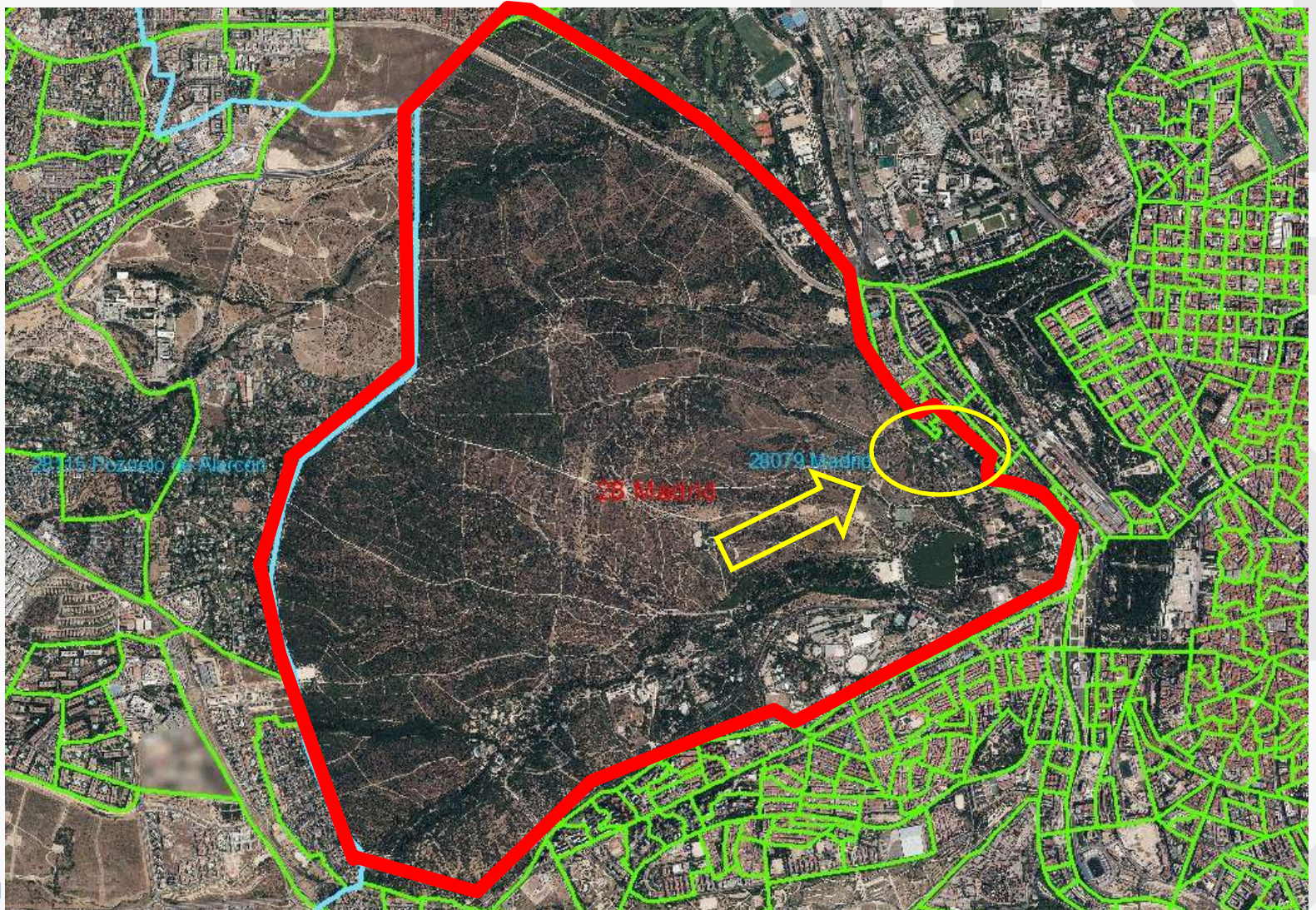
Barcelona



Madrid

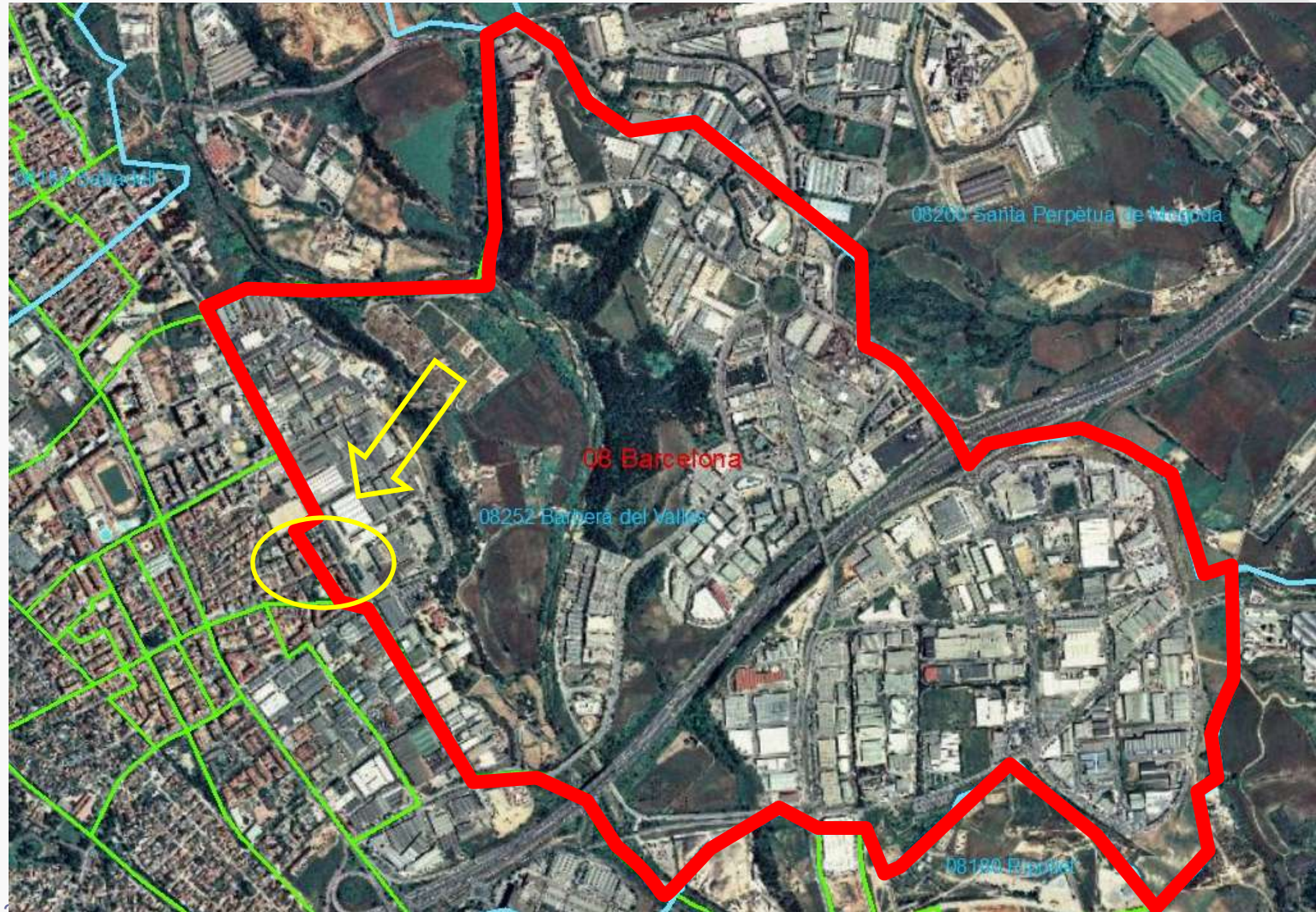
1. Systems of small statistical units (IV) Enumeration Districts

Enumeration district with a big green area



1. Systems of small statistical units (V) Enumeration Districts

Enumeration district with a big industrial area



1. Systems of small statistical units (VI) Enumeration Districts

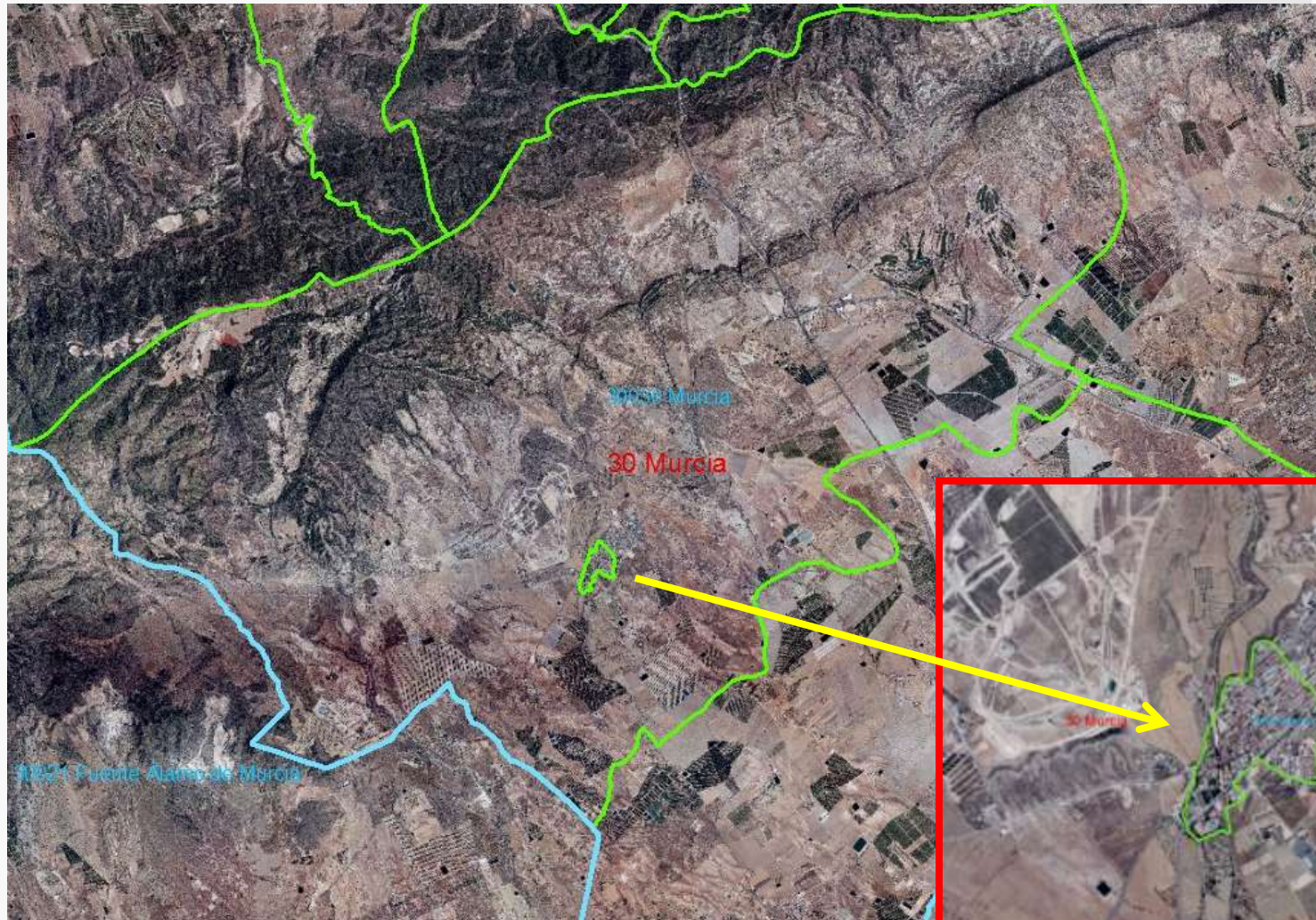
Many ways of ascribe empty areas in rural inland

A) All for one unit

Similar population
very different
density.

Different impact in
thematic maps

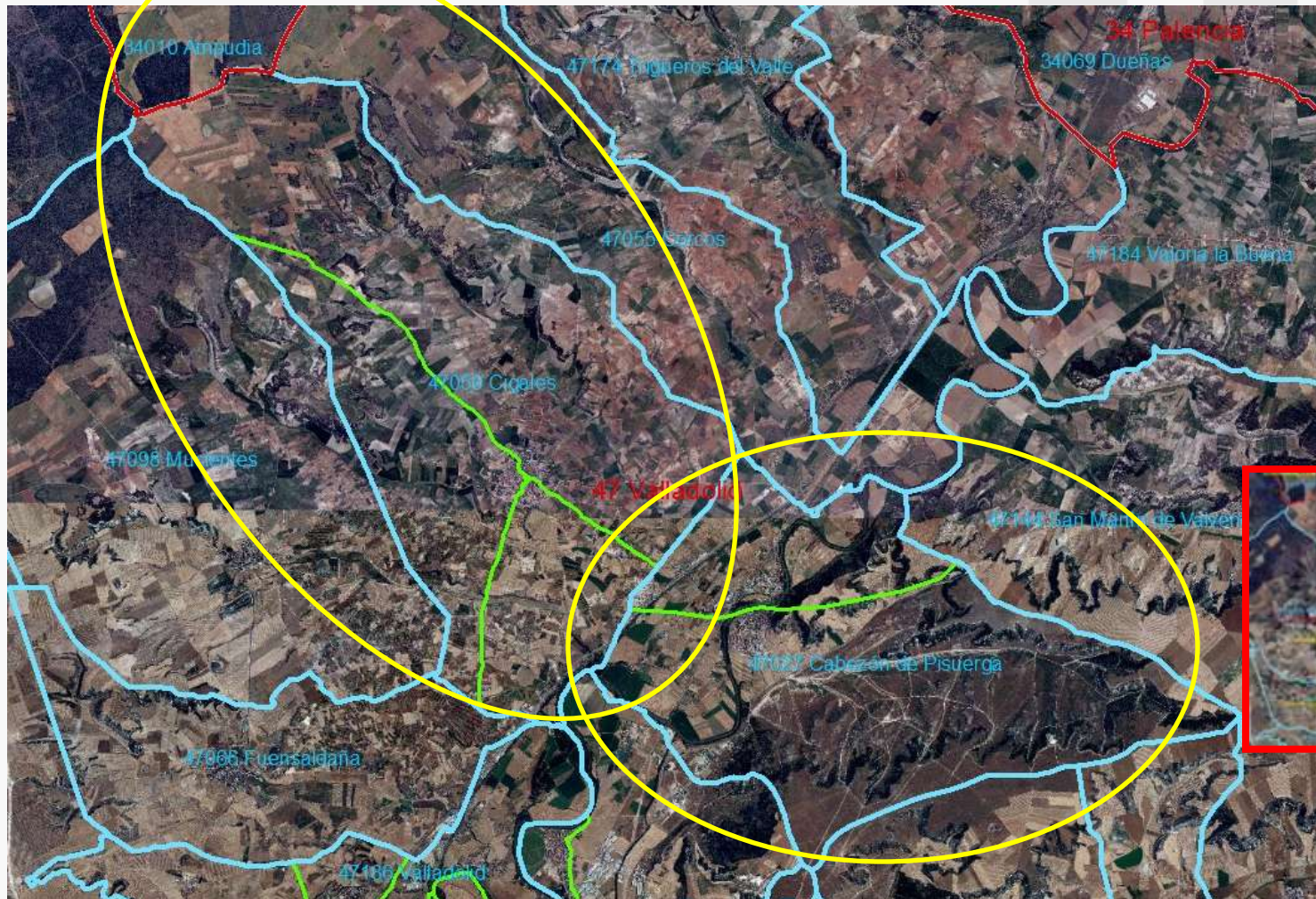
Murcia



1. Systems of small statistical units (VII) Enumeration Districts

Many ways of ascribe empty areas in rural inland

B) Shared by segments



Similar population density according divided empty areas.

Impact in thematic maps related to share of empty areas

Cigales and Cabezón de Pisuerga (Valladolid)

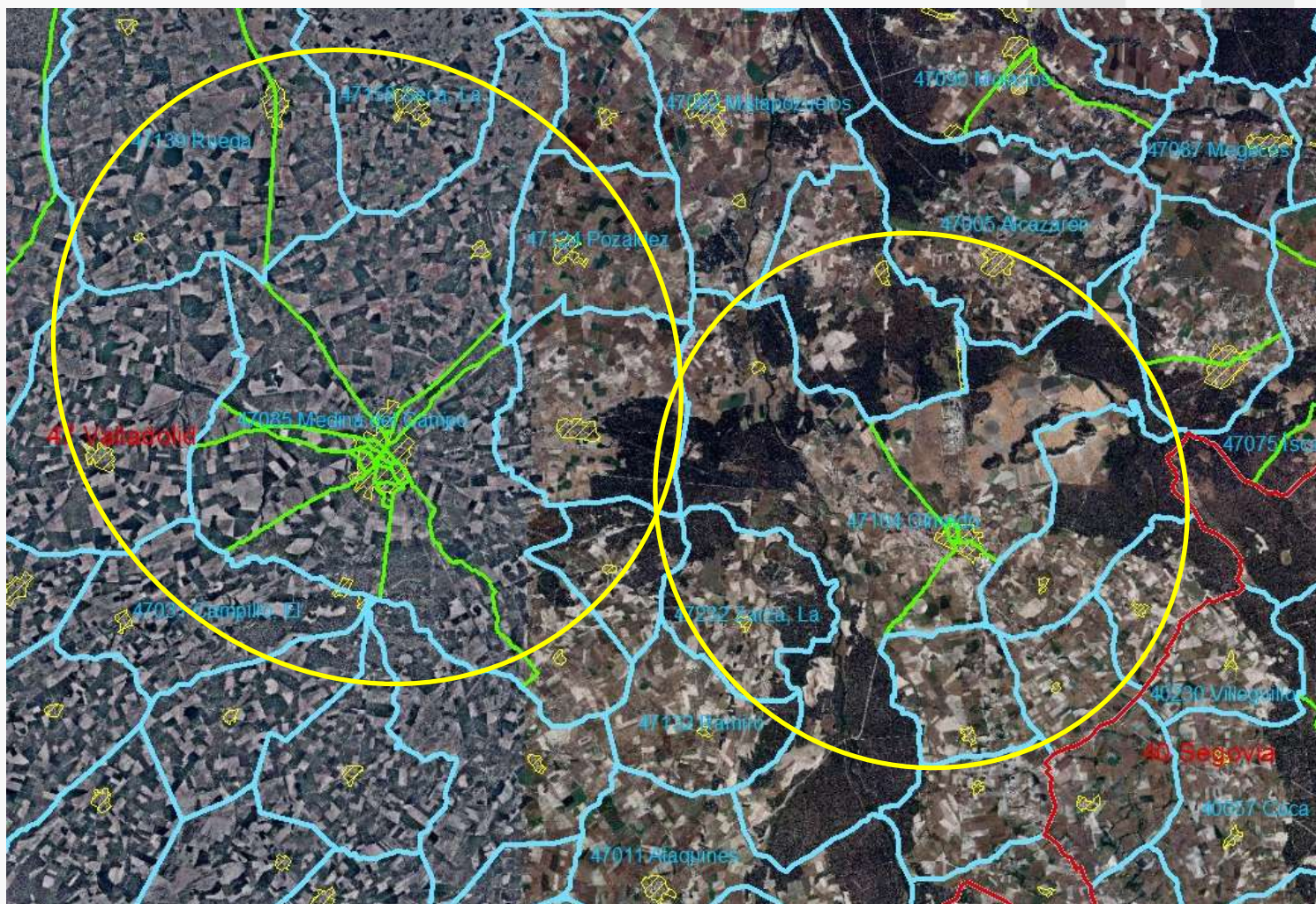
EFGS 2012 Nomenclator-Grid Spain 20121024_Prague

Blue line: municipalities. **Green line:** Enumeration Districts

1. Systems of small statistical units (VIII) Enumeration Districts

Many ways of ascribe empty areas in rural inland

C) Mixed:
circular and
segment



Impact in thematic
maps related to
share of empty
areas

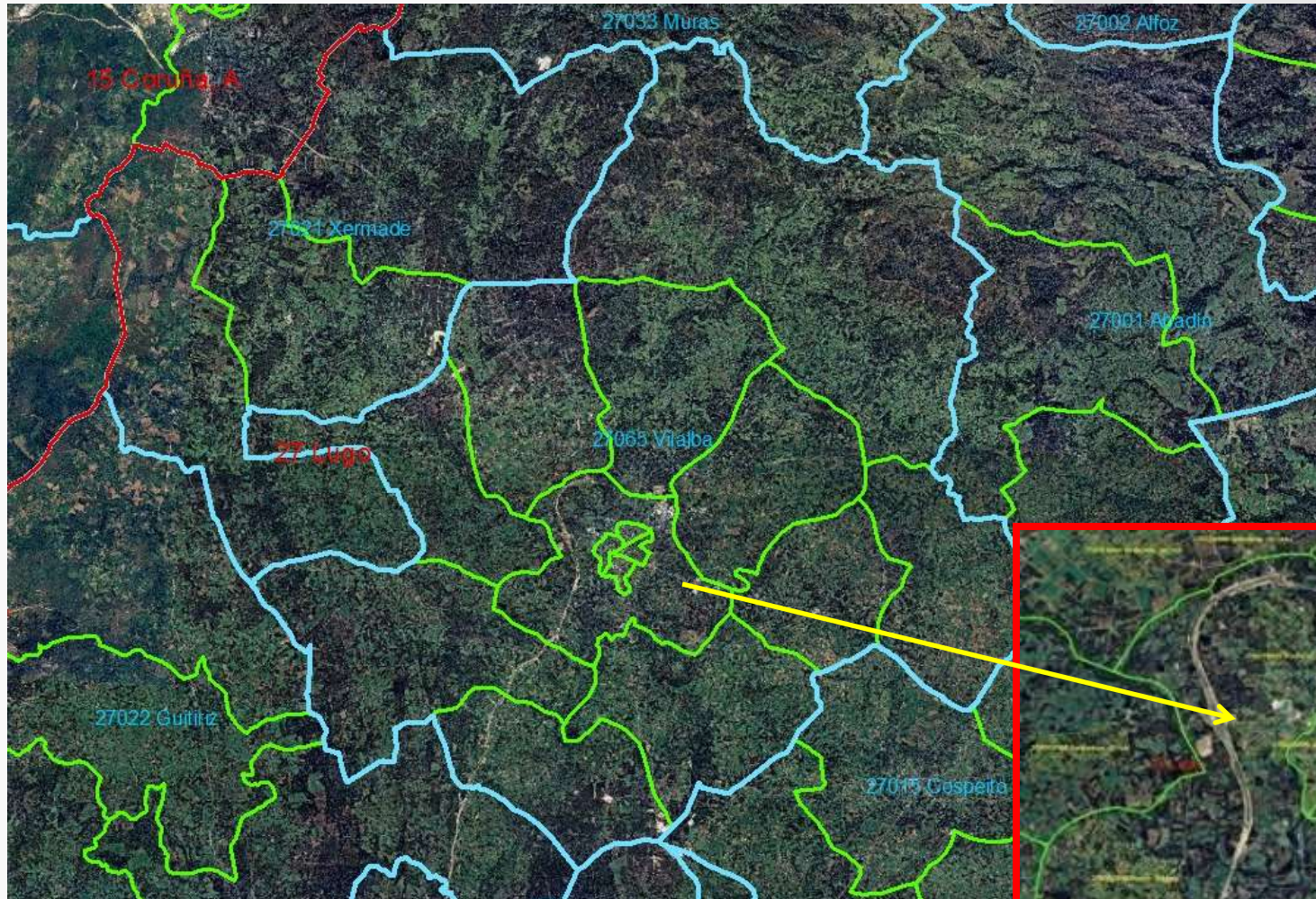
Blue line: municipalities. **Green line:** Enumeration Districts

Medina del
Campo and
Olmedo
(Valladolid)

1. Systems of small statistical units (IX) Enumeration Districts

Many ways of ascribe empty areas in rural inland

D) Complex territories (1)



Impact in thematic maps related to share of empty areas

Villalba (Lugo)

1. Systems of small statistical units (X) Enumeration Districts

Many ways of ascribe empty areas in rural inland

D) Complex territories (2)



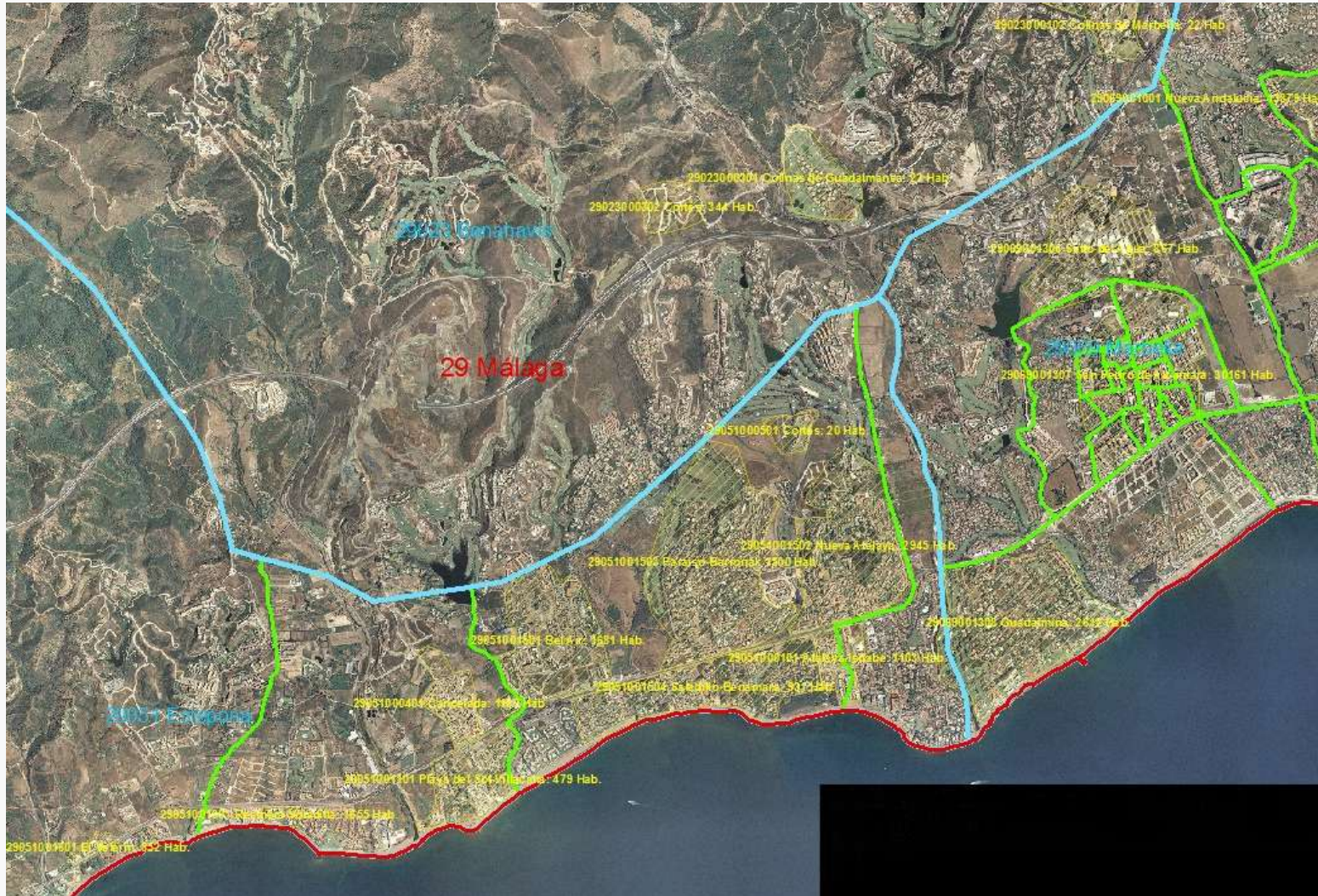
Blue line: municipalities. **Green line:** Enumeration Districts

Xinzo de
Limia
(Ourense) ¹²

1. Systems of small statistical units (XI) Enumeration Districts

Many ways of ascribe empty areas in rural inland

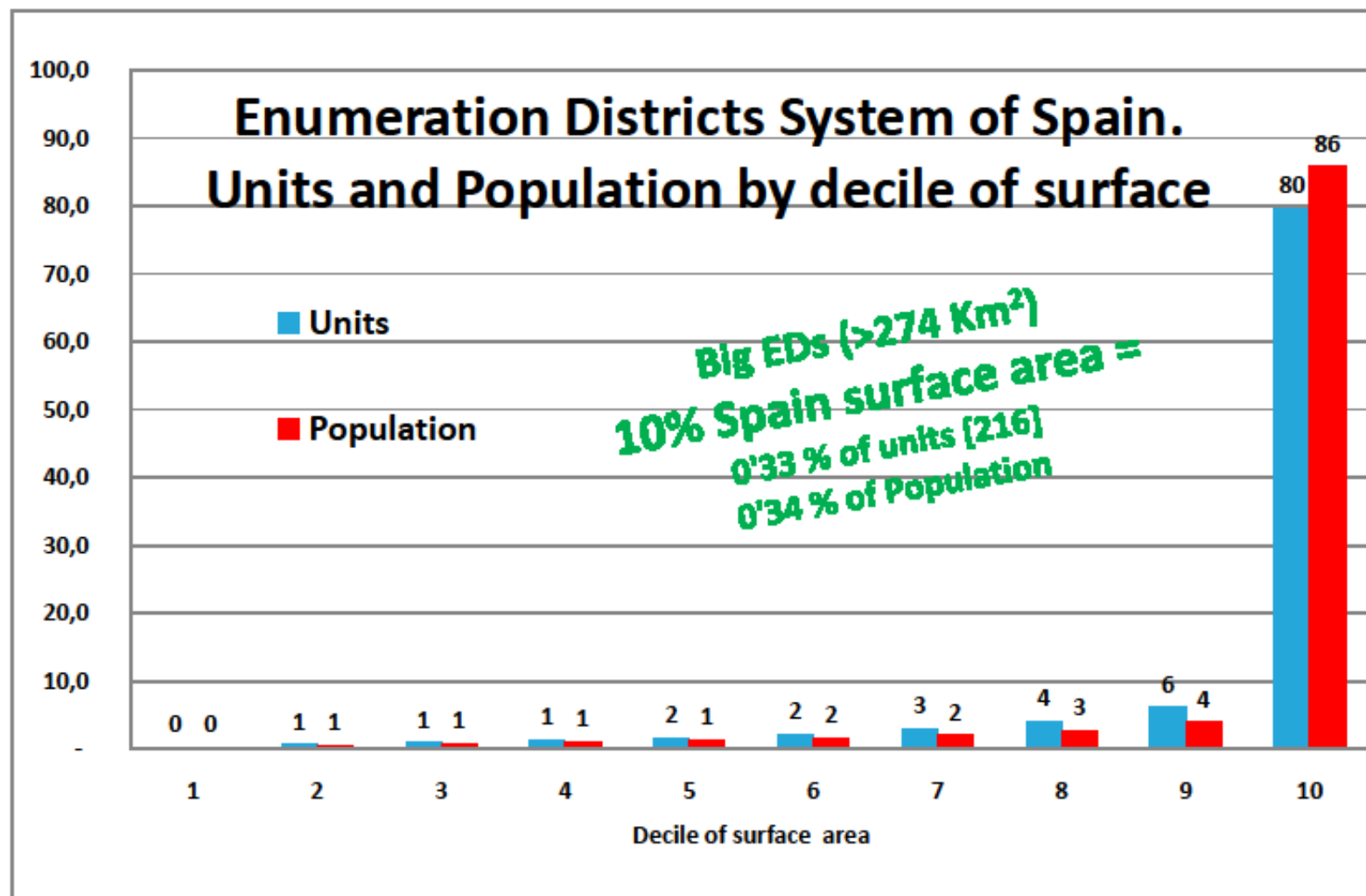
D) Complex territories (3)



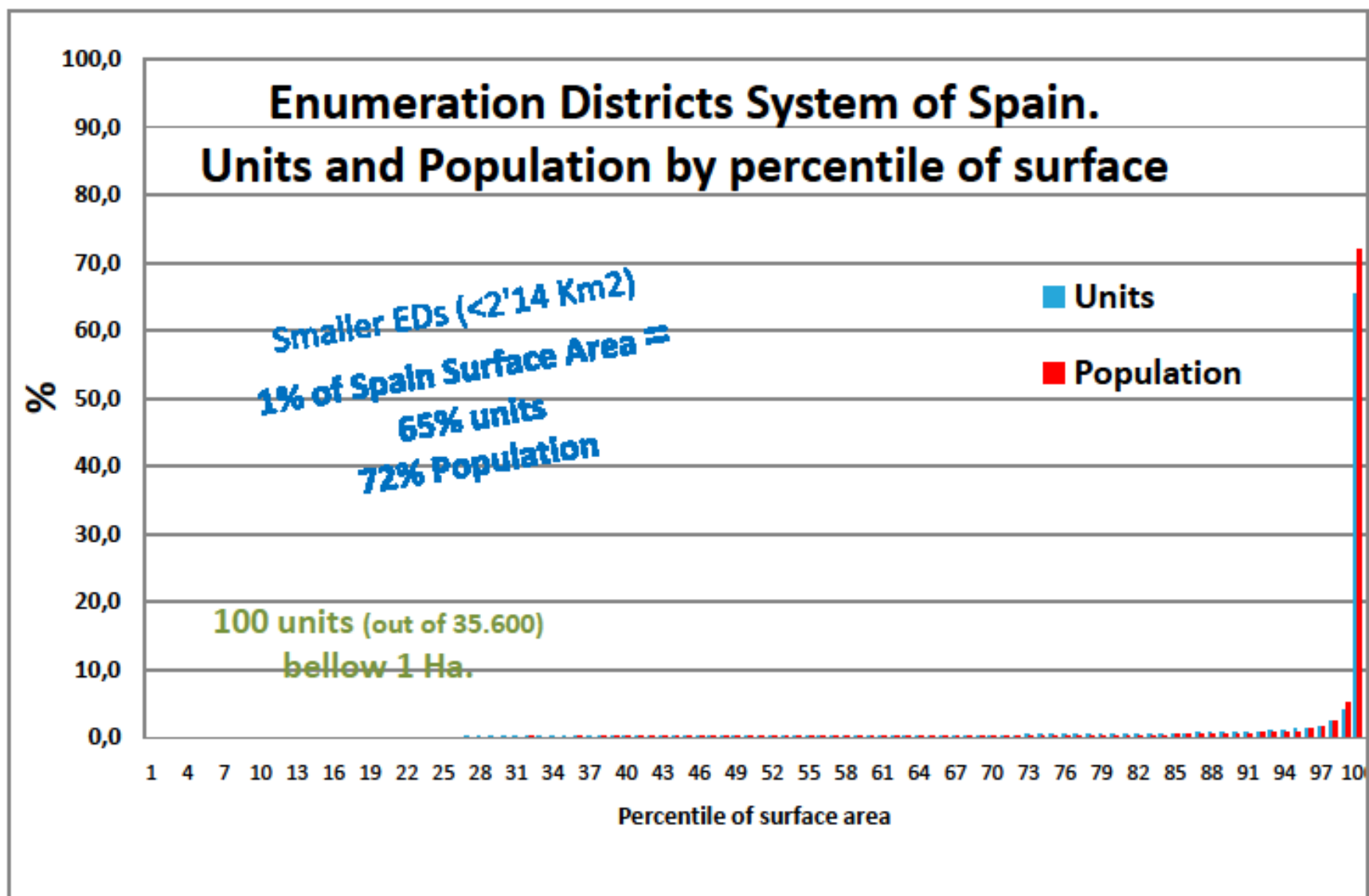
Estepona /
Marbella
(Málaga)

Blue line: municipalities. **Green line:** Enumeration Districts

1. Systems of small statistical units (XII) Enumeration Districts



1. Systems of small statistical units (XIII) Enumeration Districts



1. Systems of small statistical units (XIV)

System 2. Nomenclátor: the geo-historical and morphological approach.

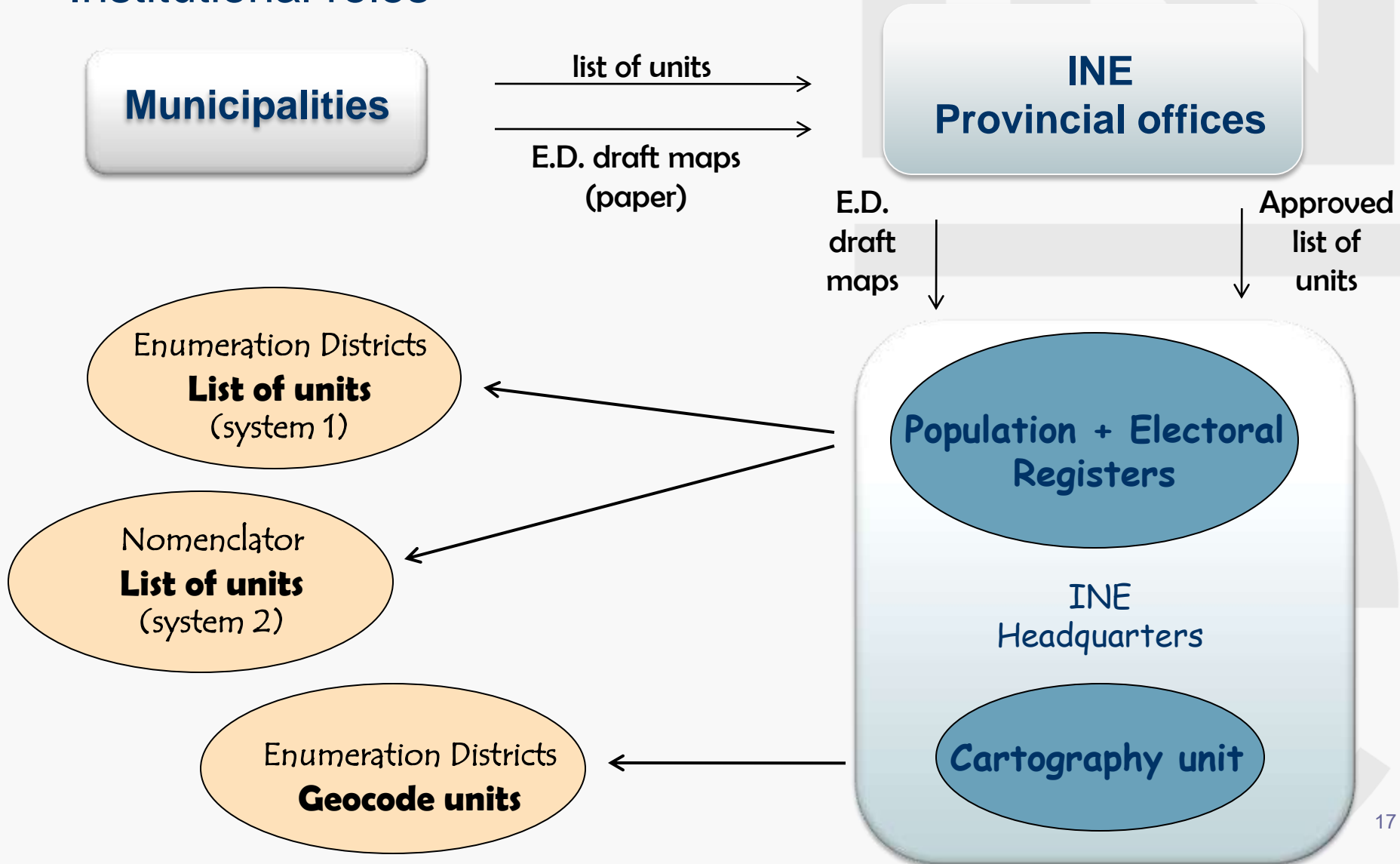
- Always identified by names.
- 104.000 units (half of them in Galicia + Asturias).
- Three levels: Parishes (*Entidades Colectivas*) [optional] / Entities (*Entidades Singulares*) Nucleus [urban morphological continuum] (*Núcleos*).

Use for representing the geography of any phenomena:

- Nucleus fit the areas of population and economic activities.
- Disadvantages: different population size, unknown geographical limits.

1. Systems of small statistical units (XV)

Institutional roles



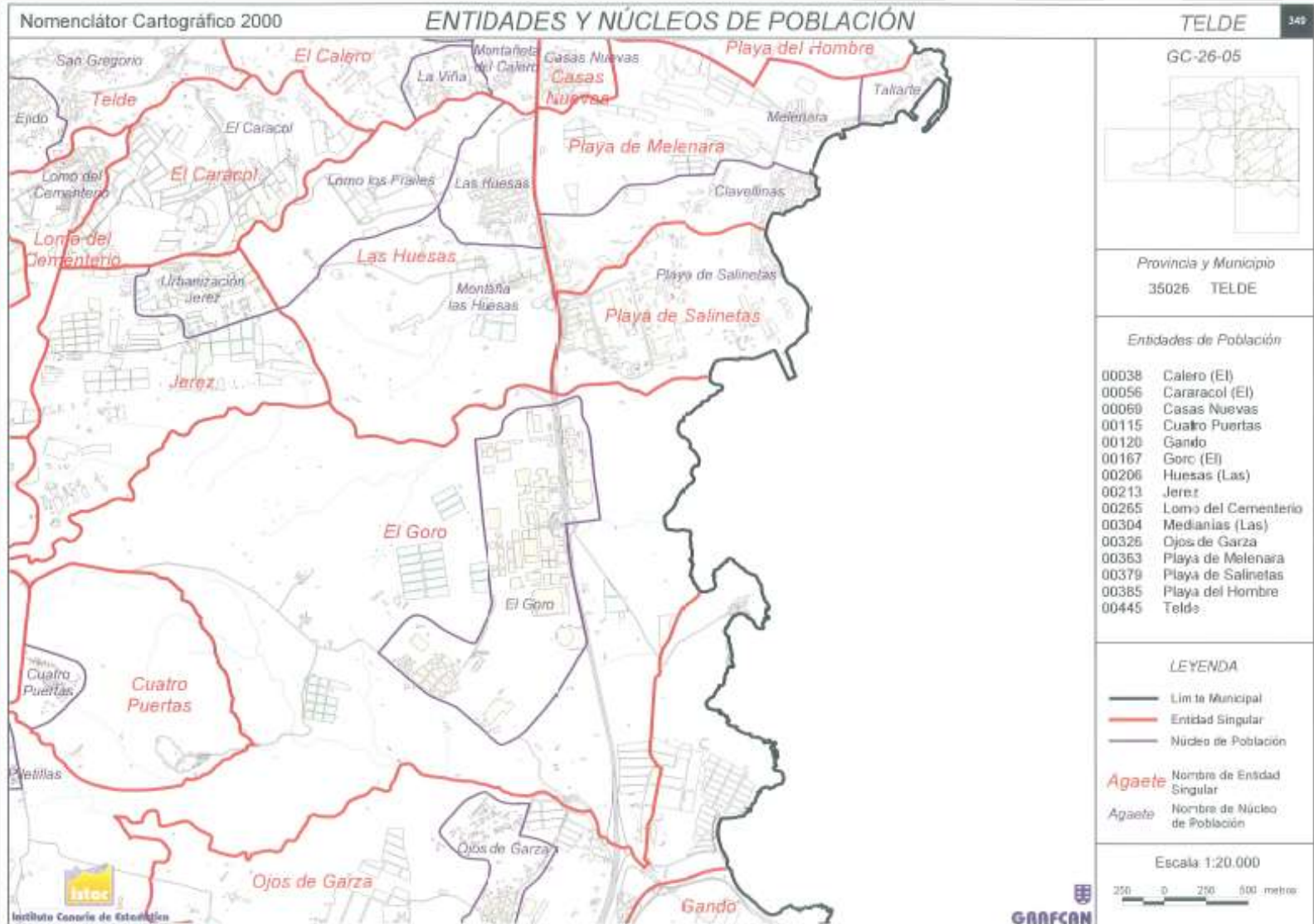
1. Systems of small statistical units (XVI)

Statistics linked with small units (draft overview)

<i>Main statistical activities</i>	<i>Enumeration Districts</i>	<i>Nomenclátor</i>
Population Register	Yes	Yes
Electoral Register	Yes	Yes
Population Census	Yes	Yes
Business Register	-	-
Agrarian Census	-	-
Labour Force Survey	Yes	-
Income and Living Conditions	Yes	-
Industrial Survey	-	-
Services Survey	-	-

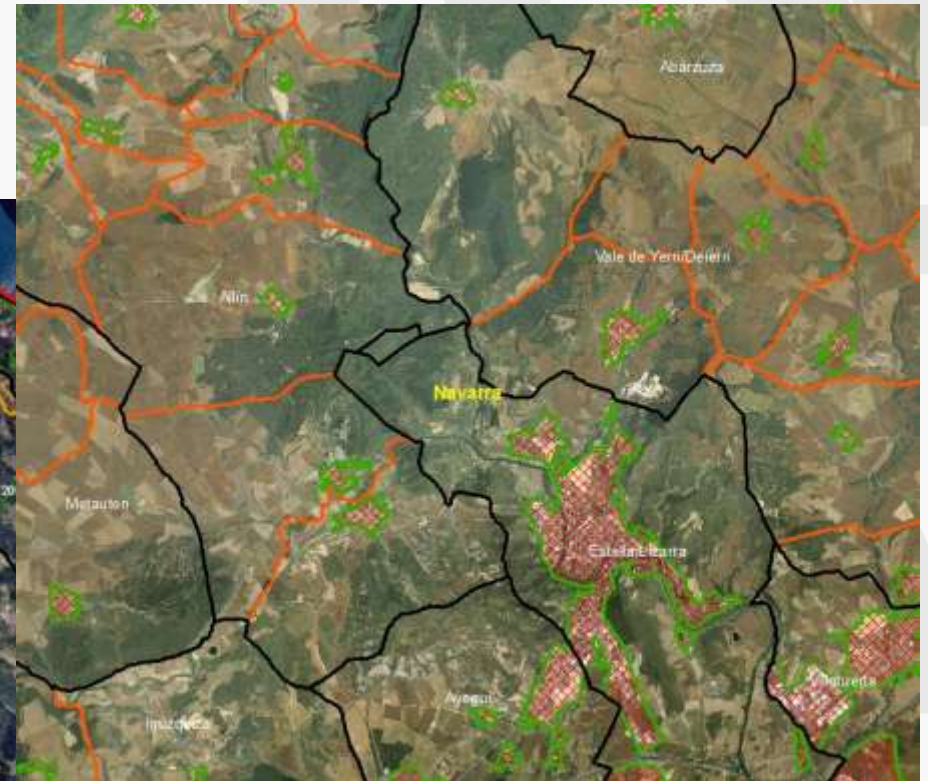
2. Challenges for drawing *Nomenclátor* (II)

Published works: Canarias [Canary Islands] (2000 [2001])



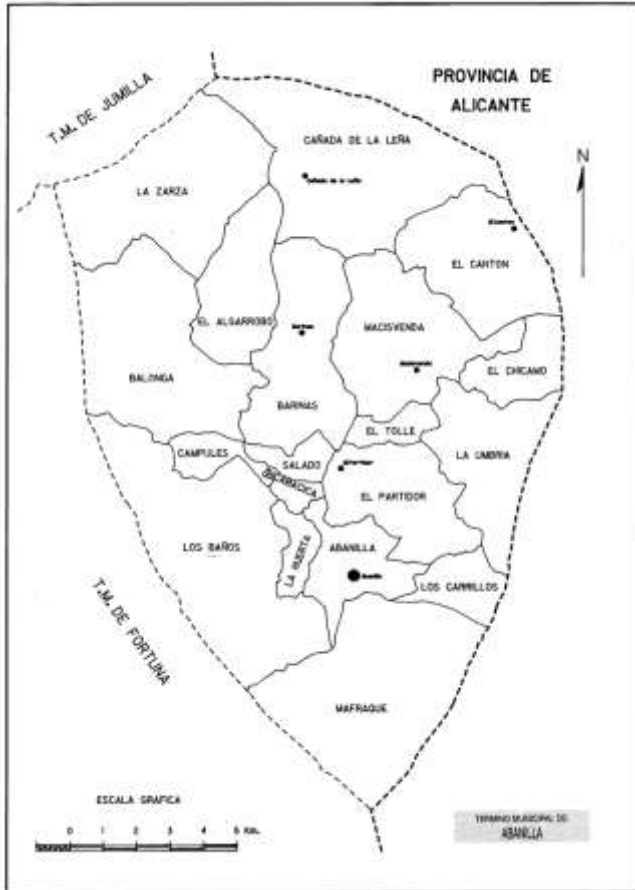
2. Challenges for drawing *Nomenclátor* (III)

Not published works: País Vasco [Basque Country] and Navarra [Navarre] .



2. Challenges for drawing *Nomenclátor* (IV)

Partial works: Galicia, Murcia and others



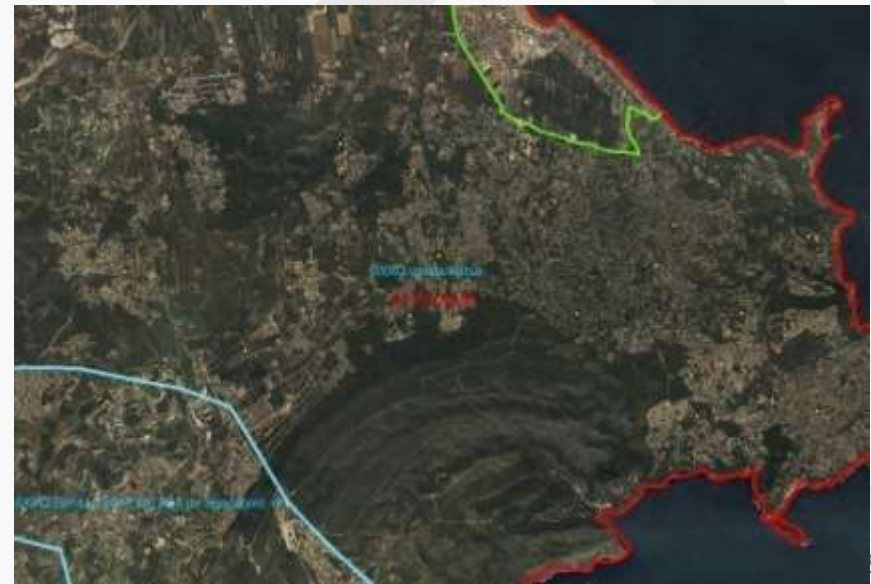
Abanillas (Murcia) [1991]



Lugo [2004]

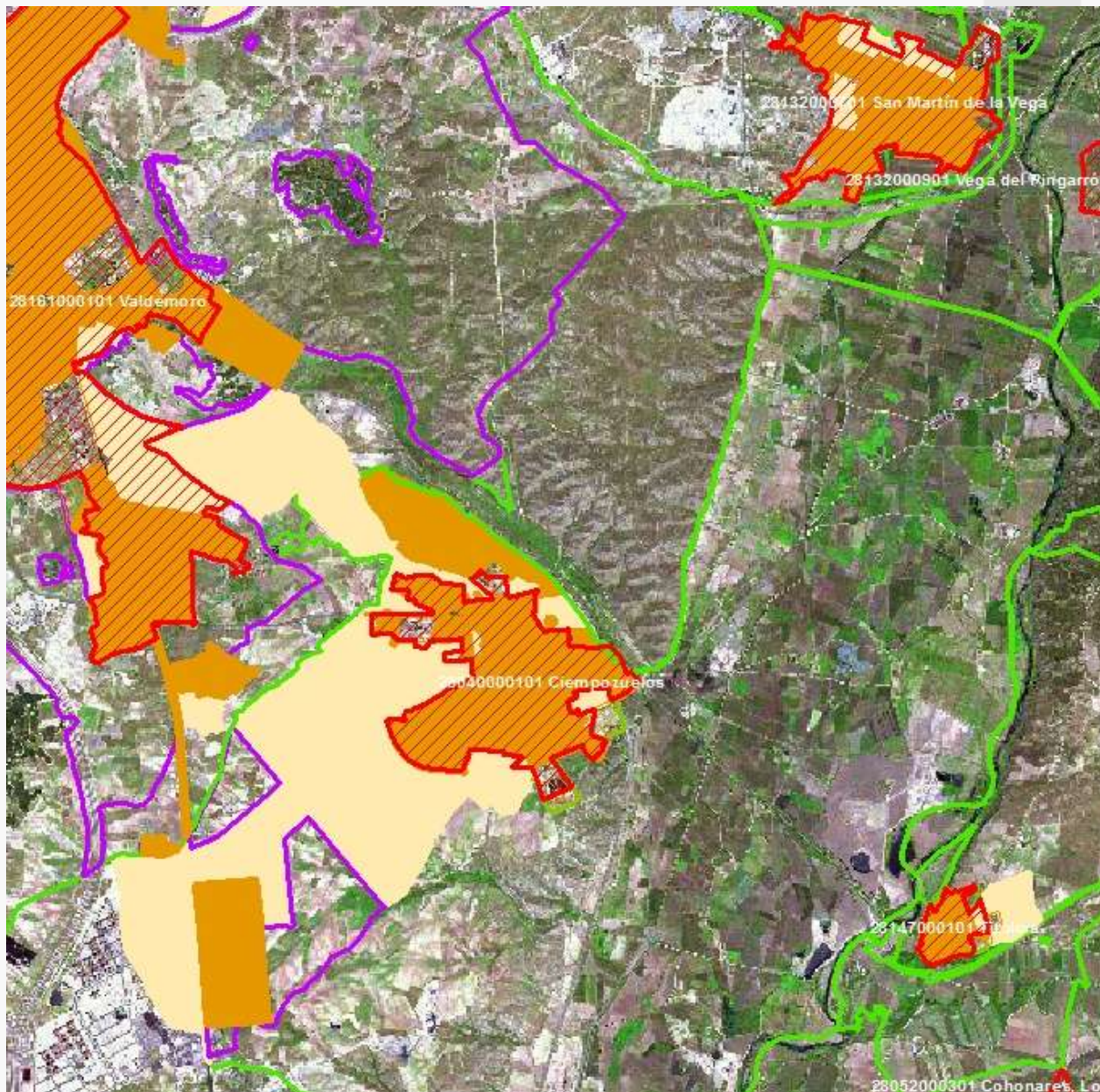
2. Challenges for drawing *Nomenclátor* (V)

Overlapping and linked information's: Geo-referenced place names: Map Agencies of Spain (IGN and Regional Agencies)



Jerez de la Frontera (Cádiz), Moratalla (Murcia)
and Jávea/Xabia (Alicante)

2. Challenges for drawing *Nomenclátor* (VI)



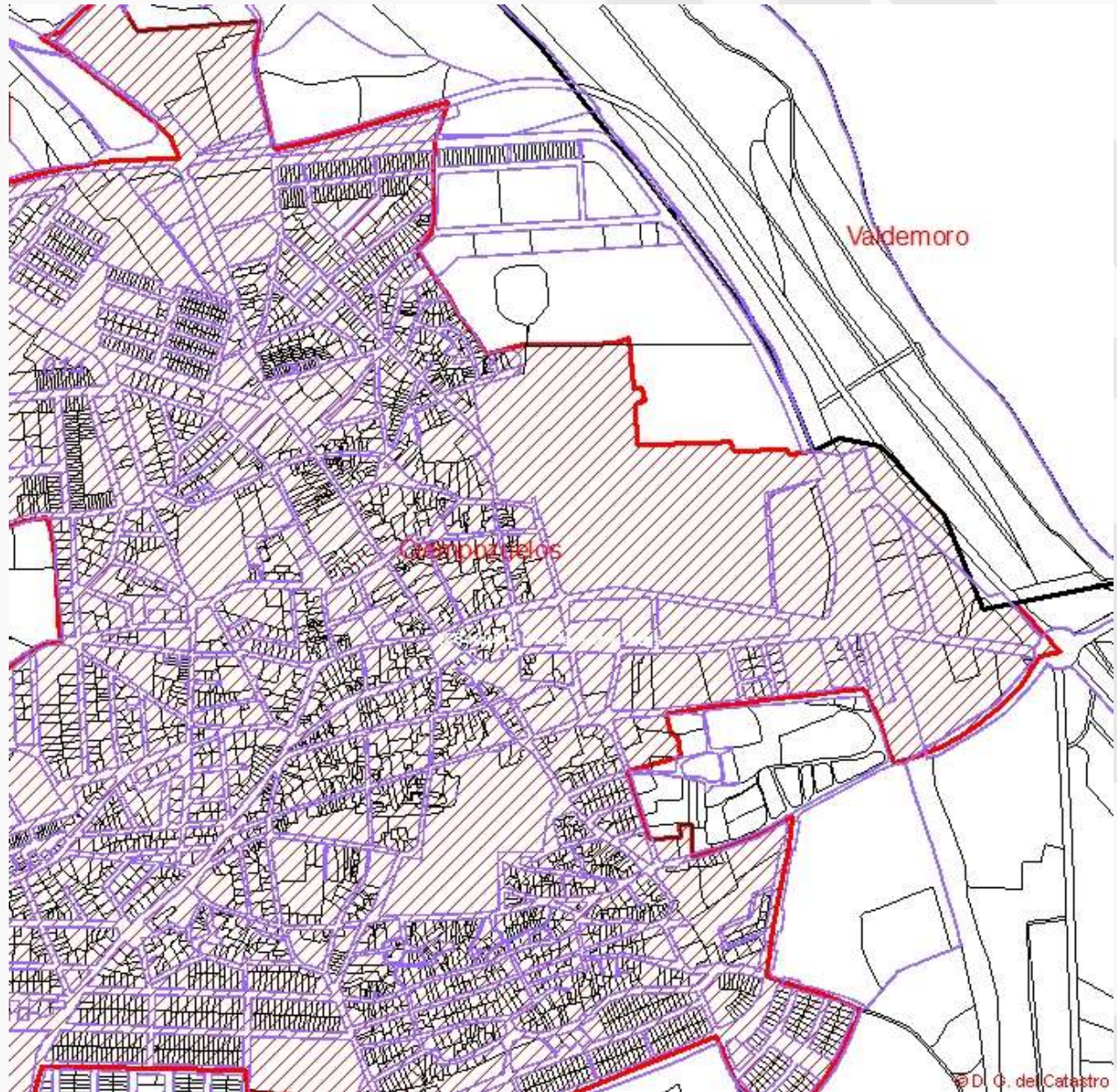
Overlapping
and linked
information's
: town
planning
zones

System of Urban Information
(Sistemat de Información
Urbana, Ministerio de Fomento)

Ciempozuelos (Madrid)

2. Challenges for drawing *Nomenclátor* (VII)

Overlapping
and linked
information's:
cadastral
urban
borders



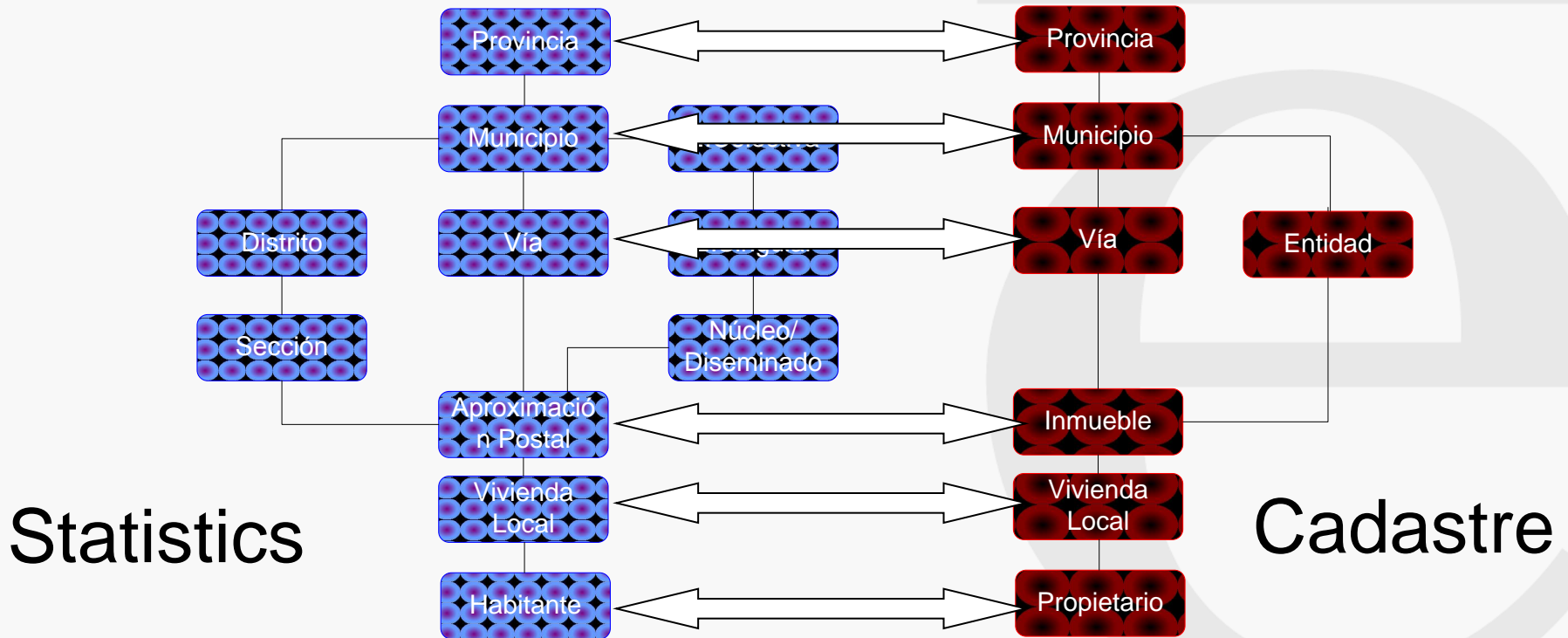
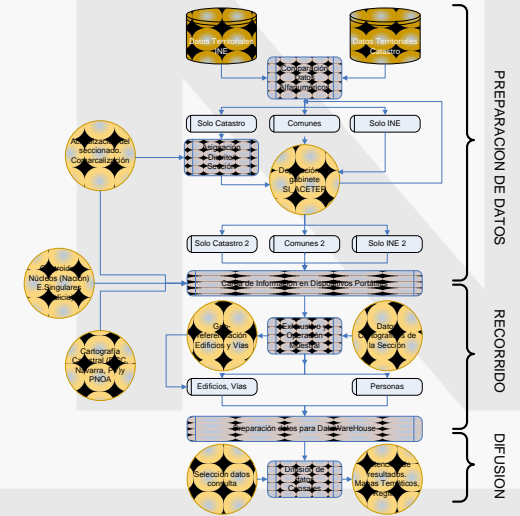
Source: Cadastral
Agency (Dirección
General del Catastro,
Ministerio de Hacienda)

Ciempozuelos (Madrid)

3. Bottom-up grid 2011: pilot test (I)

Geospatial strategy of 2011 Census (1).

A) Defining the bridges between cadastral and statistical concepts



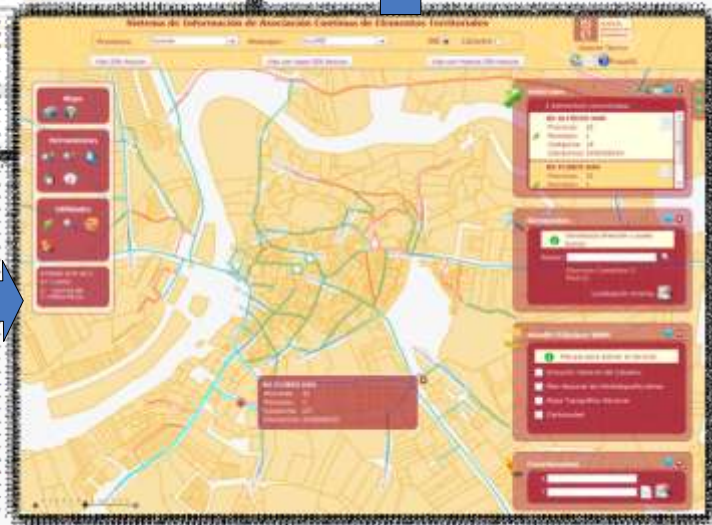
3. Bottom-up grid 2011: pilot test (II)

Geospatial strategy of 2011 Census (2).

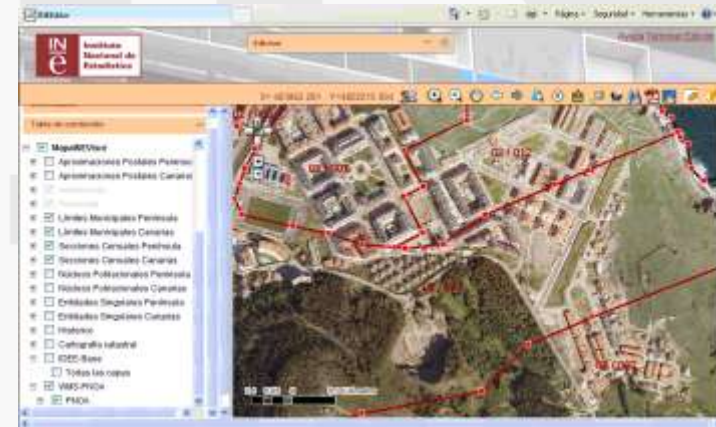
B) Matching streets and addresses:



Datos
Alfanuméricos



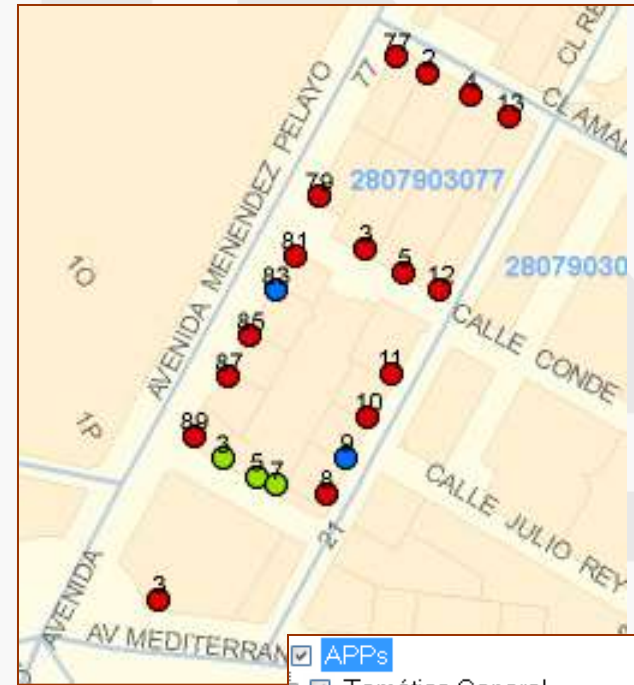
Visor GIS



3. Bottom-up grid 2011: pilot test (III)

Geospatial strategy of 2011 Census.

C) Using portable devices for checking or capturing coordinates:



- APPs
- Temático General
- APPs completamente resueltas
- APPs finalizadas ('Baja' o 'Duplicado')
- APPs parcialmente resueltas
- APPs no comenzadas del 'cuaderno'



3. Bottom-up grid 2011: pilot test (IV)

Methodological pilot test for producing grid statistics from 2011 Census.

Context:

- Field work is finished and address information of coordinates is internally available.
- Population figures is not yet available.

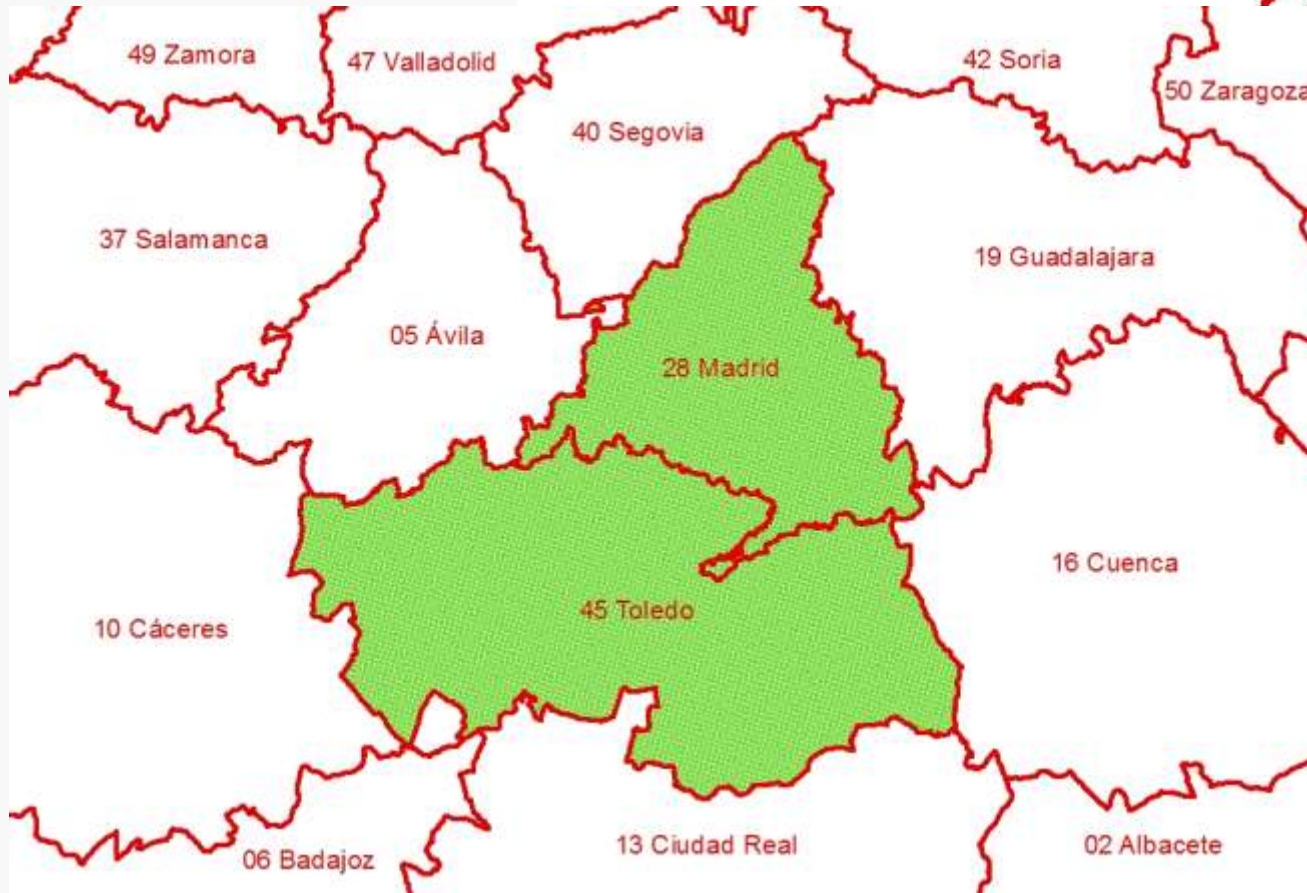
Parameters:

- Use real and final results of address coordinates.
- Partial area: Madrid and Toledo provinces.
- Limited test consistency were applied.
- No final works are tested: adjustments and confidentiality issues.
- Grid framework: EFGS/Eurostat grid:
- <http://www.efgs.info/data/european-datasets/eurogrid>

3. Bottom-up grid 2011: pilot test (V)

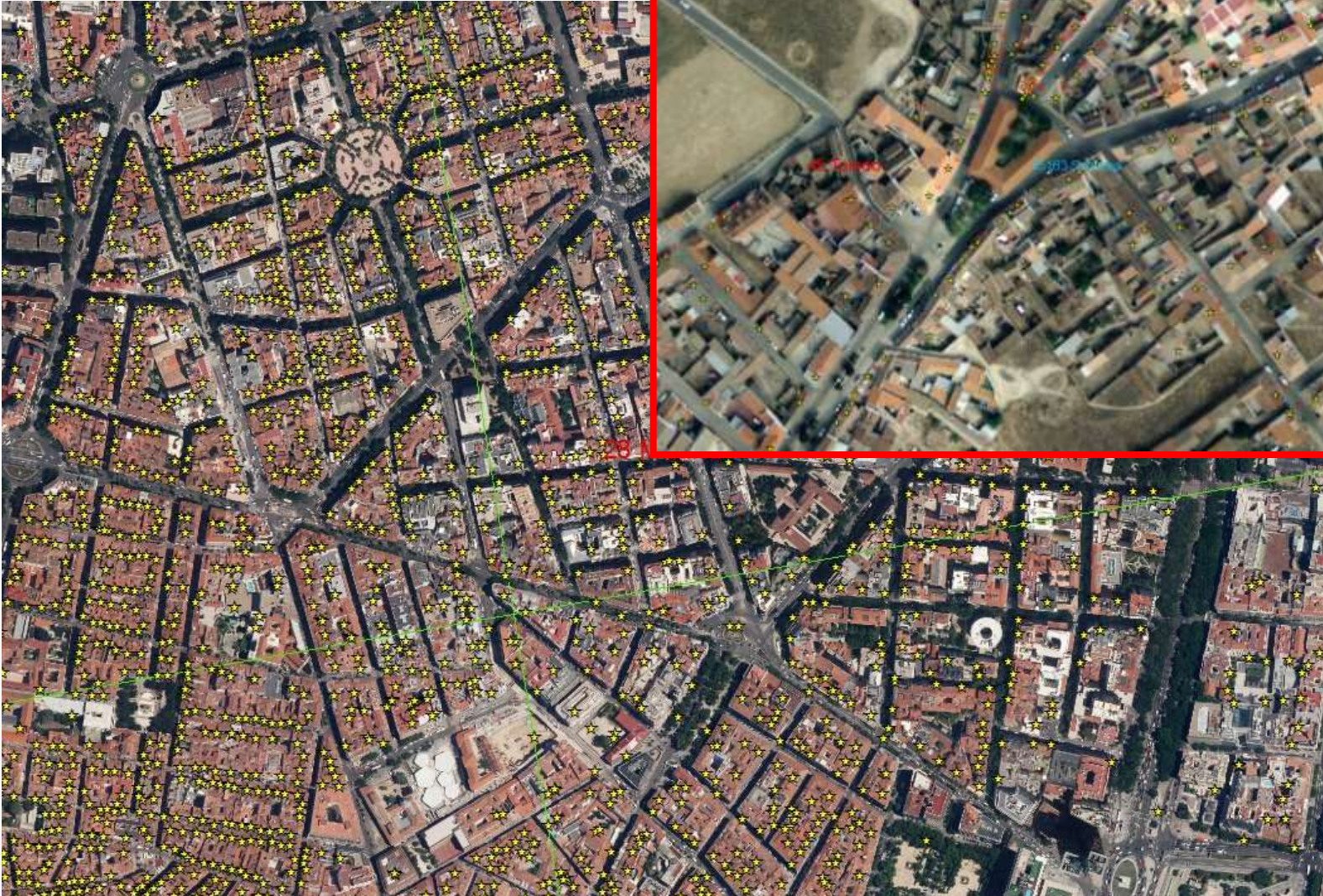
Test area:

Madrid and Toledo Provinces.



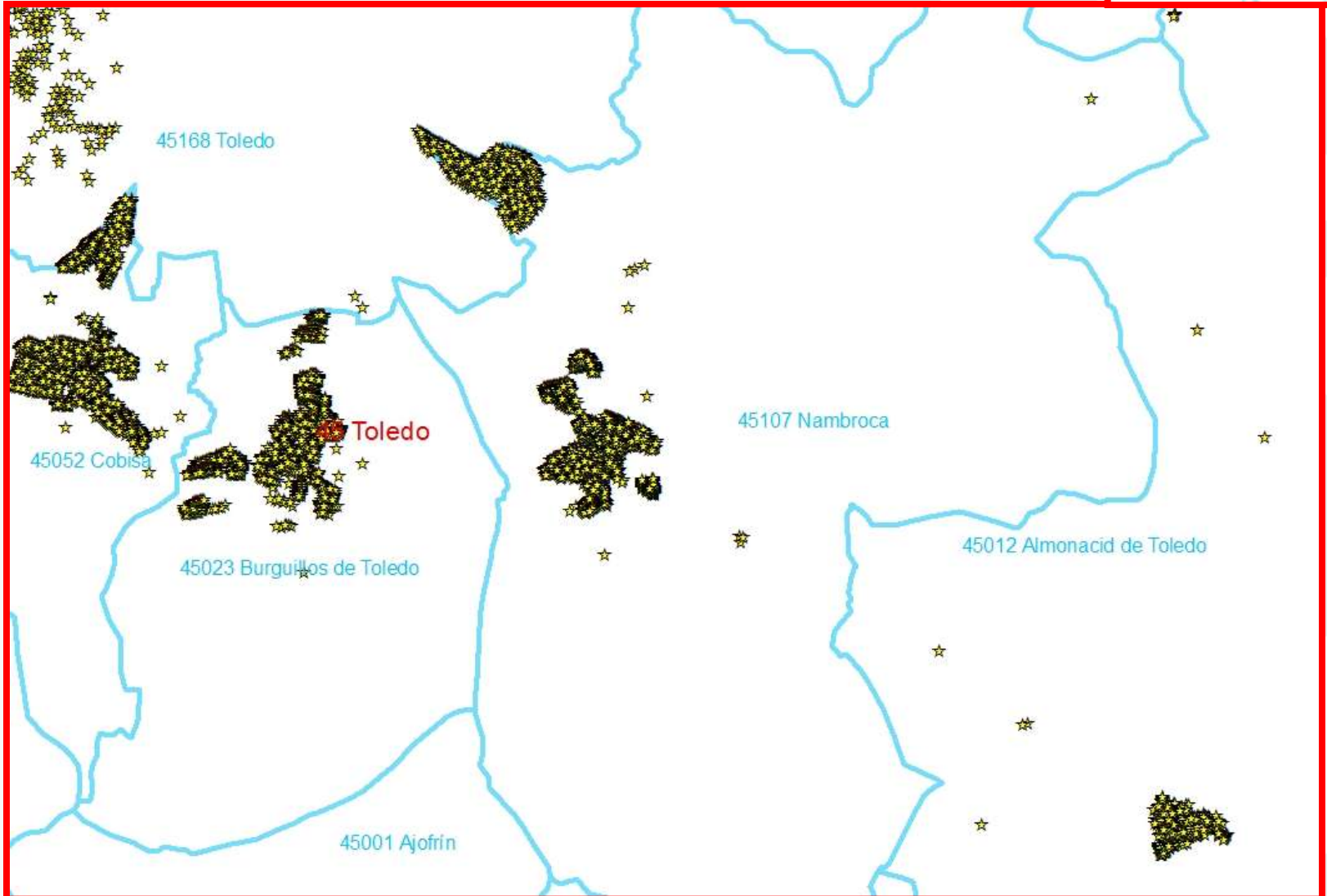
3. Bottom-up grid 2011: pilot test (VI)

First glance at 2011
address coordinates



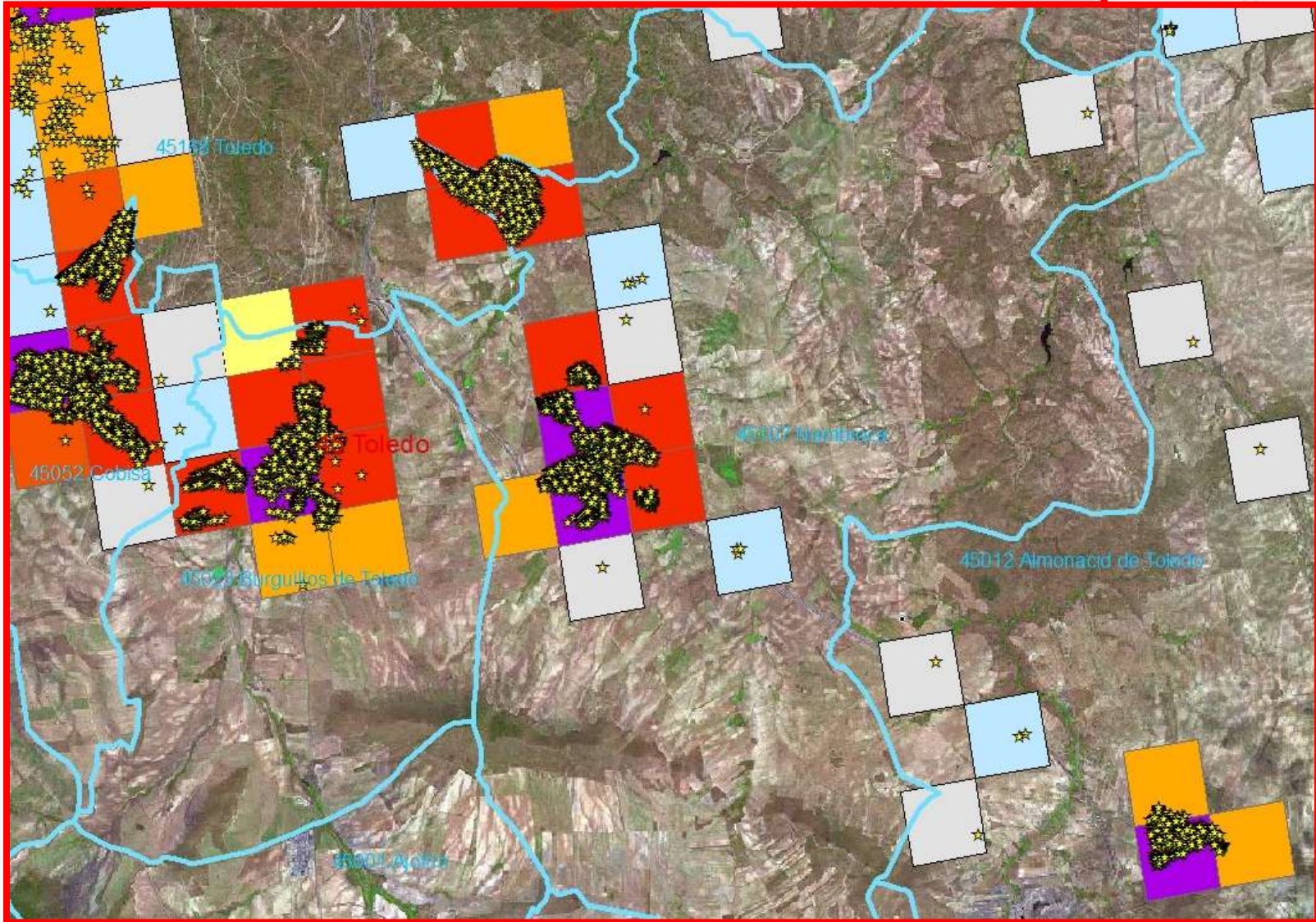
3. Bottom-up grid 2011: pilot test (VII)

Producing grid statistic of addresses (buildings)



3. Bottom-up grid 2011: pilot test (VIII)

Producing grid statistic of addresses (buildings)

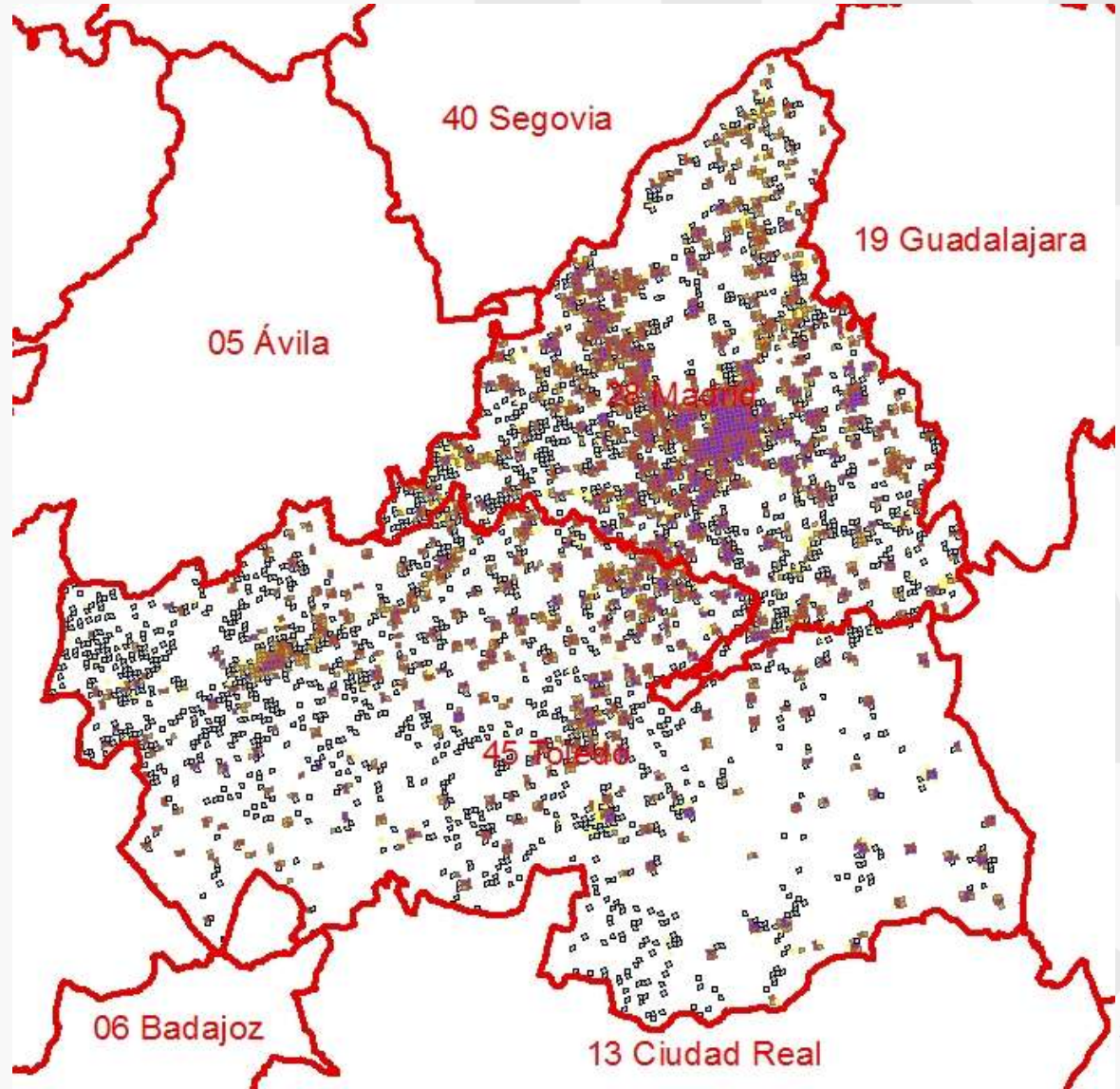


3. Bottom-up grid 2011: pilot test (IX)

Final results of pilot test:

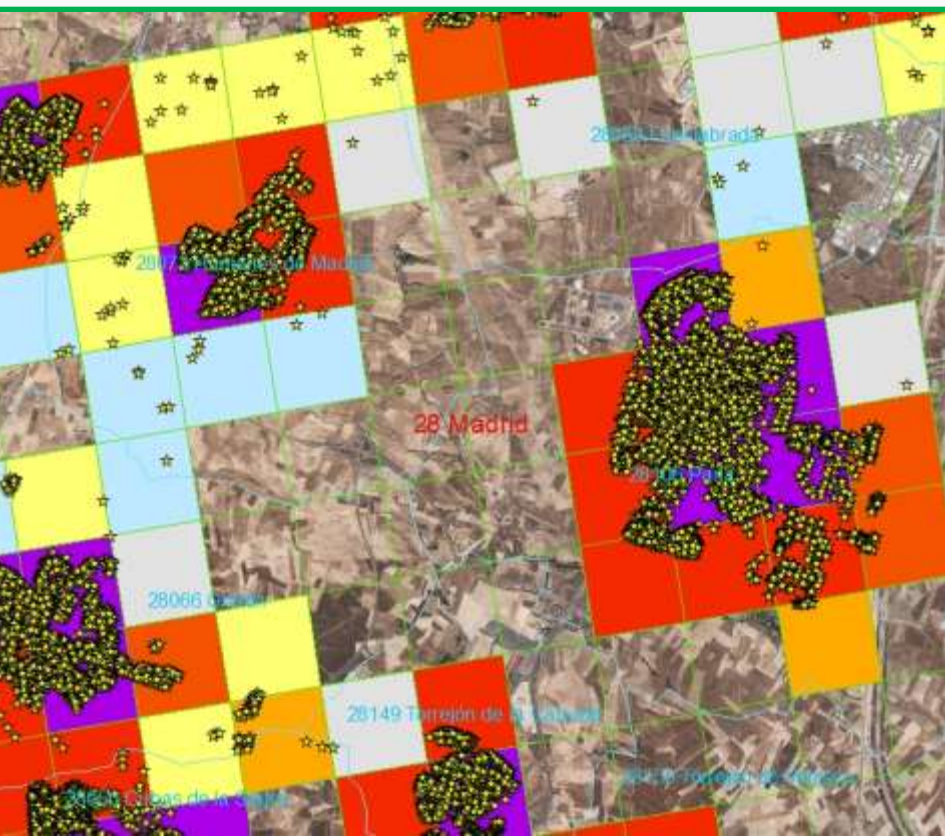
24.354 grid cells
583.906 addresses
(censal buildings).

Buildings	% cells	% Buildings
0	87,7	0,0
1	1,7	0,1
2-4	1,9	0,2
5-10	1,0	0,3
11-50	1,8	2,0
51-100	0,9	2,9
101-500	3,3	34,4
500-2804	1,6	60,0



4. Final comments (I)

Grid and morphological areas: differences and complementarities



4. Final comments (II)

Grid and morphological areas: differences and complementarities

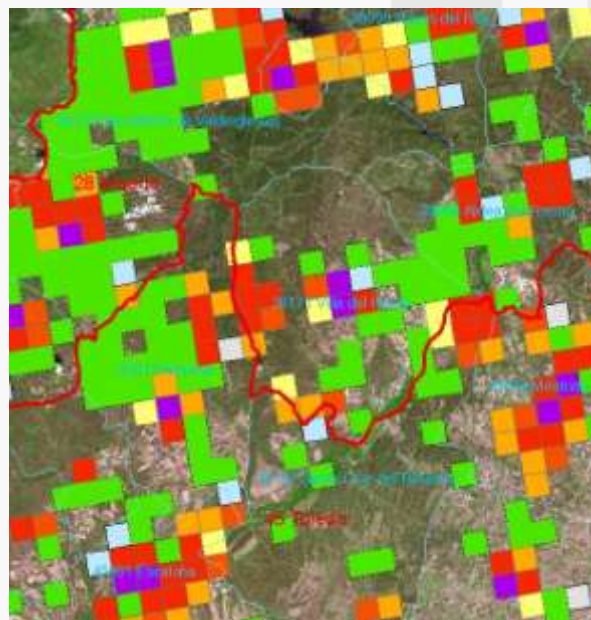
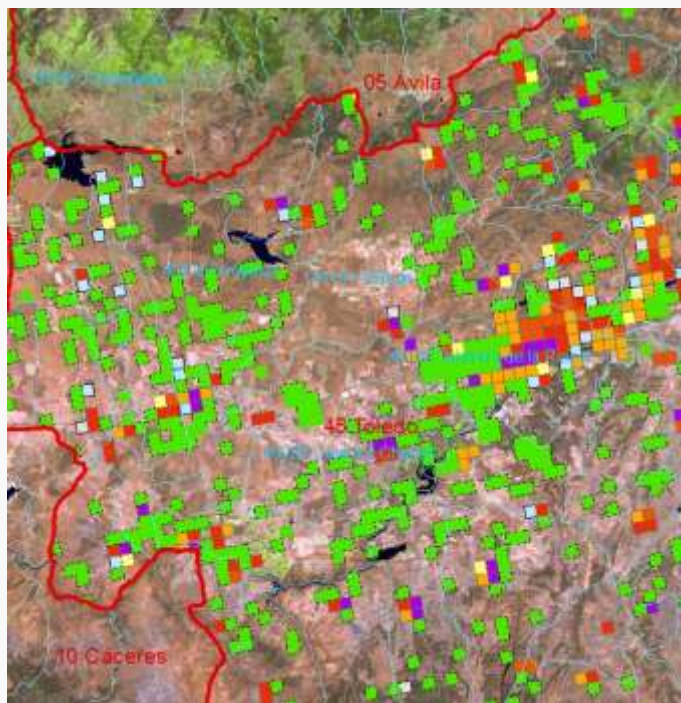


4. Final comments (III)

Differences Goerlich-Cantarino's 2006 results (inhabited cells) and 2011 pilot test (cells with buildings): draft comparison.

Cells not inhabited 2006 and with buildings 2011 test: 1.960

65'5% of cells 2011 [2.992]



Cells inhabited 2006 and without buildings 2011 test: none.

