



**Junta de Andalucía**

Consejería de Transformación Económica, Industria, Conocimiento y Universidades

INSTITUTO DE ESTADÍSTICA Y CARTOGRAFÍA DE ANDALUCÍA



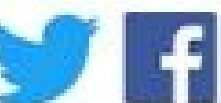
# GSGF in Statistics & Cartography Andalusia

EFGS 2020 Webinar

October 20th 2020

Institute of Statistics & Cartography of Andalusia

[www.juntadeandalucia.es/institutodeestadisticaycartografia](http://www.juntadeandalucia.es/institutodeestadisticaycartografia)





**Public Sector  
Information  
Infrastructure**

**Ecosystem  
Information  
Infrastructure**

**Population  
Information  
Infrastructure**

**Enterprises  
Information  
Infrastructure**

HORNO  
DEL  
CRISTO



ACCESSIBLE AND  
USABLE

STATISTICAL AND GEOSPATIAL  
INTEROPERABILITY

COMMON GEOGRAPHIES FOR  
DISSEMINATION OF STATISTICS

GEOCODED UNIT RECORD DATA IN A DATA  
MANAGEMENT ENVIRONMENT

USE OF FUNDAMENTAL GEOSPATIAL INFRASTRUCTURE  
AND GEOCODING



# 01

# USE OF FUNDAMENTAL GEOSPATIAL INFRASTRUCTURE AND GEOCODING

The adoption of a common and consistent approach to place statistical unit of a dataset in time and space using fundamental geospatial infrastructure

## High quality & Standardised location references & geocoding systems

- Regional & National Laws

Multiannual Statistical and Cartographical Plan 2013-2020.

- Standards & practices

Guidelines & training on Statistics, Cartography & georeferenced info

MANUAL DE BUENAS PRÁCTICAS  
PARA LA NORMALIZACIÓN DE  
FUENTES Y REGISTROS  
ADMINISTRATIVOS DE LA JUNTA DE  
ANDALUCÍA



GUÍA DE  
GEOCODIFICACIÓN  
DE FUENTES DE  
INFORMACIÓN  
ADMINISTRATIVA



INSTITUTO DE ESTADÍSTICA Y CARTOGRAFÍA DE ANDALUCÍA  
Consejería de Transformación Económica, Industria, Conocimiento y Universidades

Institute | Statistic | Georeferencing | Cartography | Ser

Portal IECA sobre el COVID-19 en Andalucía

STATISTICS  
20.708 19.062 19.271 22.574 26.873 33.434  
30.141 34.397 33.663 38.173 41.276 49.558  
22.077 21.905 22.410 25.923 26.825 28.851  
26.021 24.834 25.405 28.406 31.115 32.115  
14.852 13.574 13.770 15.803 18.144 18.144  
18.166 20.171 22.711 22.711 22.711 22.711

GEOREFERENCED

CARTOGRAPHY

COVID-19 in Andalusia | Labels Data | Multiterritorial Information Systems | Spatial Data Infrastructure | Unified Digital Street Map of Andalusia | Ortophotograph Maps download

GEOREFERENCING

Tutorials and tools

- Geocoding Guide Sources Administrative Information
- aLink: File Merge Tool
- Telegeo: Obtaining Normalised Coordinates of a Particular Point within the Territory
- Nordir: Address Normaliser
- Geodir: Address Geocoder
- GnolDE: platform for the publication of geographic information through web services



01

# USE OF FUNDAMENTAL GEOSPATIAL INFRASTRUCTURE AND GEOCODING

**Street & building  
entrance register  
for Andalusia**

Callejero Digital de  
Andalucía Unificado

## Andalusia Consolidated Geo-referenced Street & Building entrance register



**Fundamental Geospatial  
Infrastructure in regional Law**



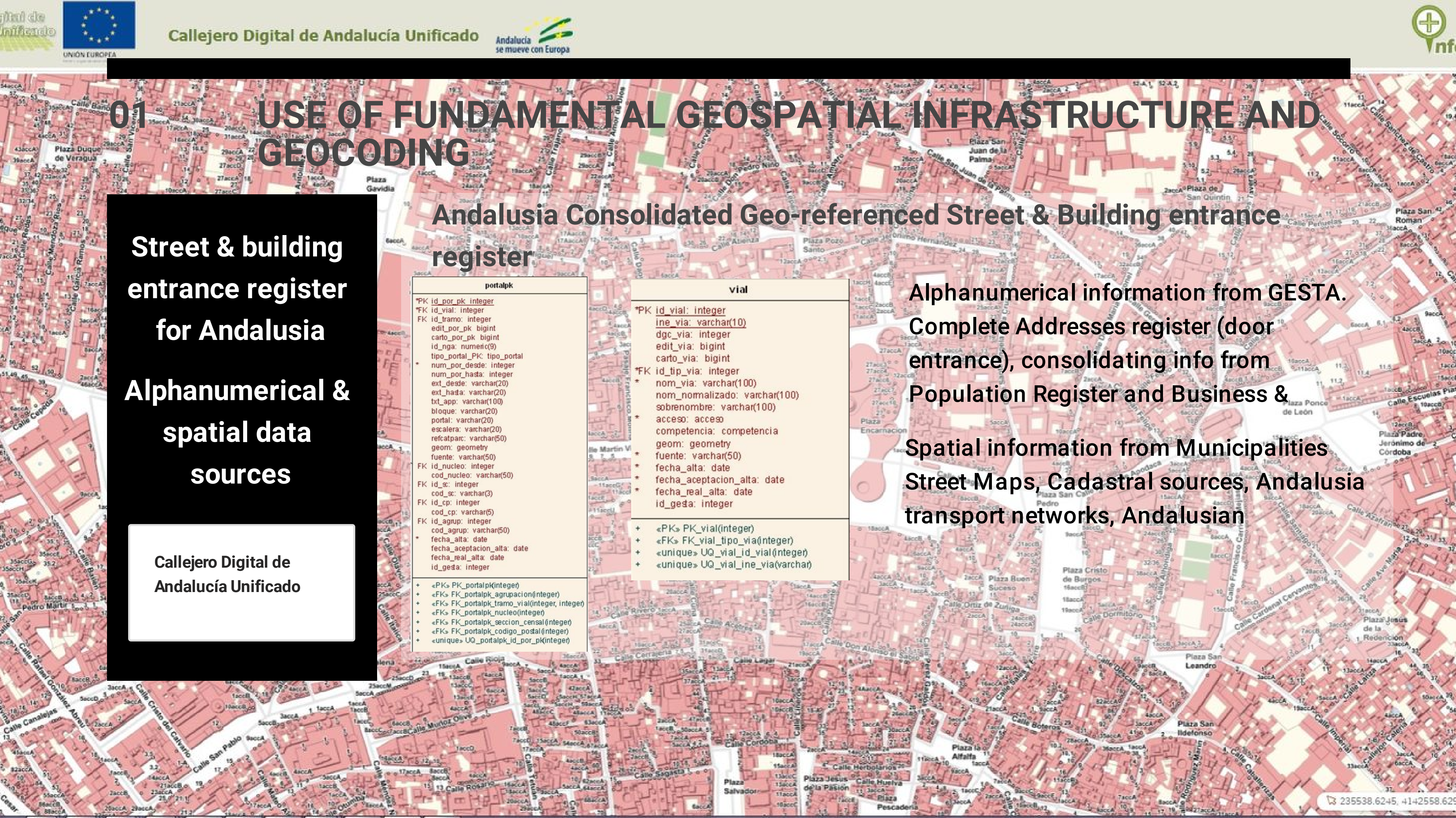
**Continuous update on  
inhabited addresses &  
business locations**



**Consolidates available  
sources. Decentralized &  
collaborative updating &  
maintenance process**







# 01 USE OF FUNDAMENTAL GEOSPATIAL INFRASTRUCTURE AND GEOCODING

Street & building  
entrance register  
for Andalusia  
Alphanumerical &  
spatial data  
sources

Callejero Digital de  
Andalucía Unificado

## Andalusia Consolidated Geo-referenced Street & Building entrance register

portalpk
*PK id_por_pk integer
*FK id_vial: integer
FK id_tramo: integer
edit_por_pk bigint
carto_por_pk bigint
id_nga: numero(9)
* tipo_portal_PK: tipo_portal
num_por_desde: integer
num_por_hasta: integer
ext_desde: varchar(20)
ext_hasta: varchar(20)
txt_app: varchar(100)
bloque: varchar(20)
portal: varchar(20)
escalera: varchar(20)
refcatpar: varchar(50)
geom: geometry
fuelle: varchar(50)
FK id_nucleo: integer
cod_nucleo: varchar(50)
FK id_sc: integer
cod_sc: varchar(3)
FK id_cp: integer
cod_cp: varchar(5)
FK id_agrup: integer
cod_agrup: varchar(50)
* fecha_alta: date
fecha_aceptacion_alta: date
fecha_real_alta: date
id_geda: integer
+ «PK» PK_portalpk(integer)
+ «FK» FK_portalpk_agrupacion(integer)
+ «FK» FK_portalpk_tramo_vial(integer, integer)
+ «FK» FK_portalpk_nucleo(integer)
+ «FK» FK_portalpk_seccion_censal(integer)
+ «FK» FK_portalpk_codigo_postal(integer)
+ «unique» UQ_portalpk_id_por_pk(integer)

vial
*PK id_vial: integer
ine_via: varchar(10)
dgc_via: integer
edit_via: bigint
carto_via: bigint
*FK id_tip_via: integer
* nom_via: varchar(100)
nom_normalizado: varchar(100)
sobrenombre: varchar(100)
* acceso: acceso
competencia: competencia
geom: geometry
fuelle: varchar(50)
* fecha_alta: date
* fecha_aceptacion_alta: date
* fecha_real_alta: date
id_geda: integer
+ «PK» PK_vial(integer)
+ «FK» FK_vial_tipo_via(integer)
+ «unique» UQ_vial_id_vial(integer)
+ «unique» UQ_vial_ine_via(varchar)

Alphanumerical information from GESTA.  
Complete Addresses register (door  
entrance), consolidating info from  
Population Register and Business &  
Spatial information from Municipalities  
Street Maps, Cadastral sources, Andalusia  
transport networks, Andalusian



01

# USE OF FUNDAMENTAL GEOSPATIAL INFRASTRUCTURE AND GEOCODING

**Street & building entrance register for Andalusia**

**Decentralized & Collaborative process**

Callejero Digital de Andalucía Unificado

## Andalusia Consolidated Geo-referenced Street & building entrance register





Linking of statistical unit records to geographic reference

PROCESS & INFRASTRUCTURES

Guidelines & Tools

Geocoding admin info Guidelines  
ALink In-house/Open tool for data structuring and matching.



Registers systematically georeferenced

Population register, Business register and Regional Public Services register consistently geocoded and georeferenced against ACAR



Identifier & Metadata

ID building entrance from ACAR + high precision point-geocode for Building entrance based on Inspire Data specification

Metadata on geocoding and geo-referencing sources, matching quality and time stamp

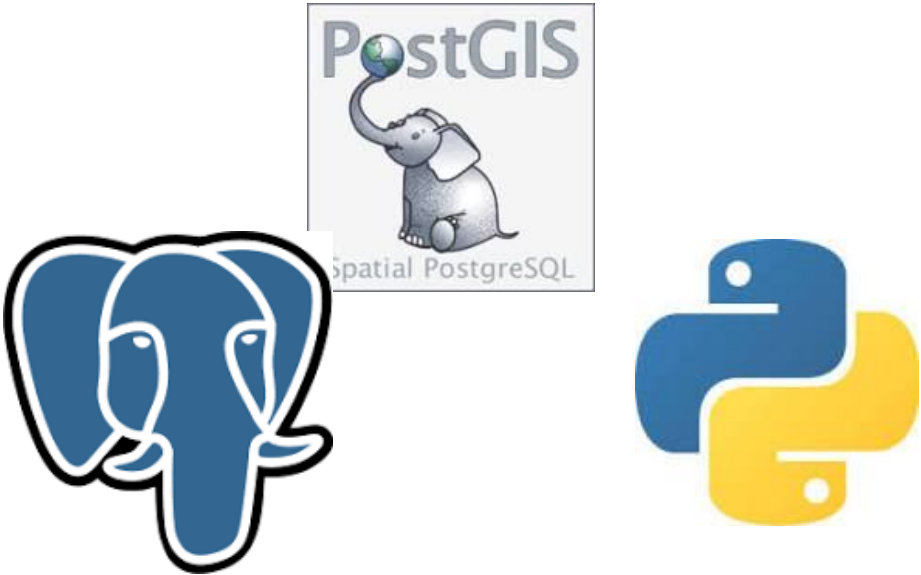


Street	Santa Clara
Number	5
Province	Sevilla
Country	España



X=2934510,6  
Y=1812057,6

ID E29345106N18120576





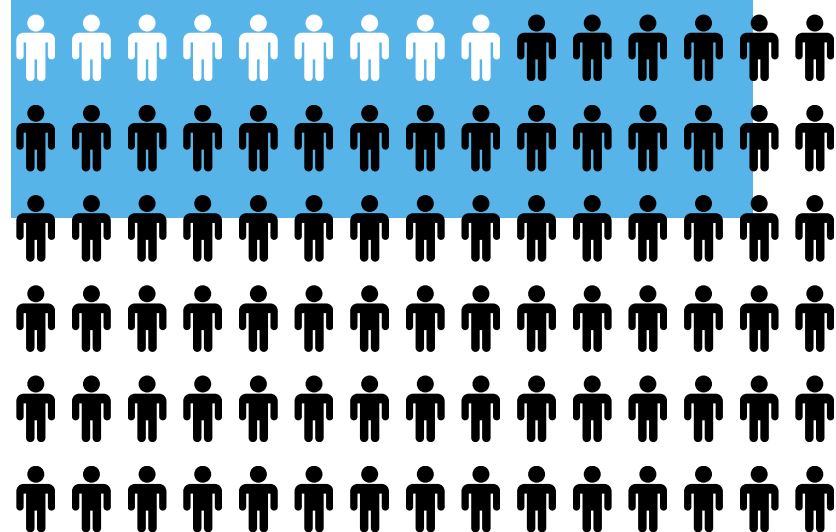
## 03 COMMON GEOGRAPHIES FOR DISSEMINATION OF STATISTICS

## GRID, ADMINISTRATIVE & OTHER BOUNDARIES IN ANDALUSIA

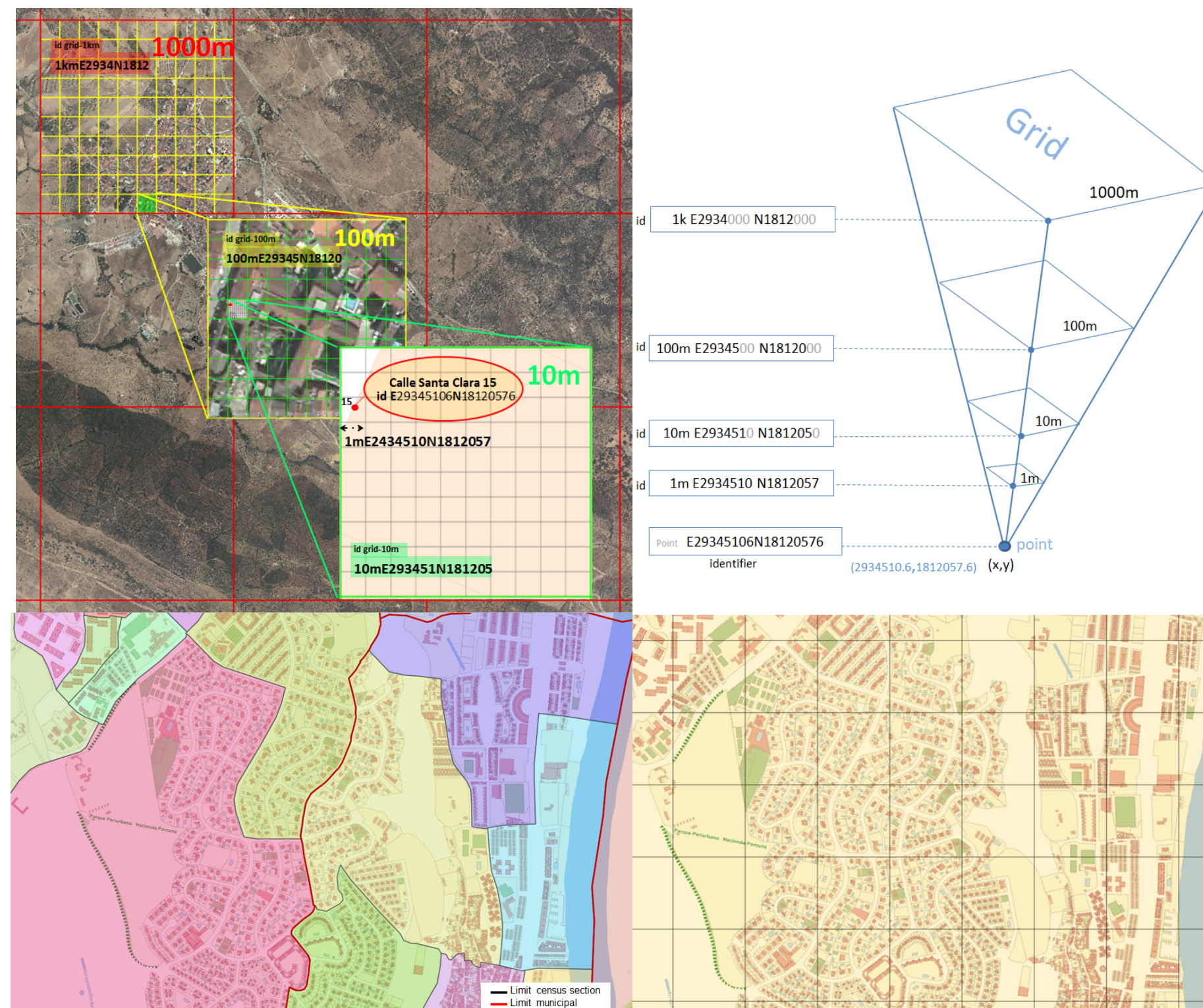
**COMMON AND  
AGREED SET OF  
GEOGRAPHIES  
FOR ANALYSIS,  
STORAGE,  
DISPLAY AND  
MANAGEMENT**

## Andalusian population data 2018

● Census tracts ● Grid cells



- Dissemination Guidelines
- Grid System, 250x250 m maximum disaggregation preserving privacy & confidentiality
- Spatial reference Data for Andalusia provides administrative boundaries, grid systems and other relevant zoning systems
- Training & recommendations on translation techniques





# STATISTICAL AND GEOSPATIAL INTEROPERABILITY

# METADATA STANDARDS

## Cartography and geography data

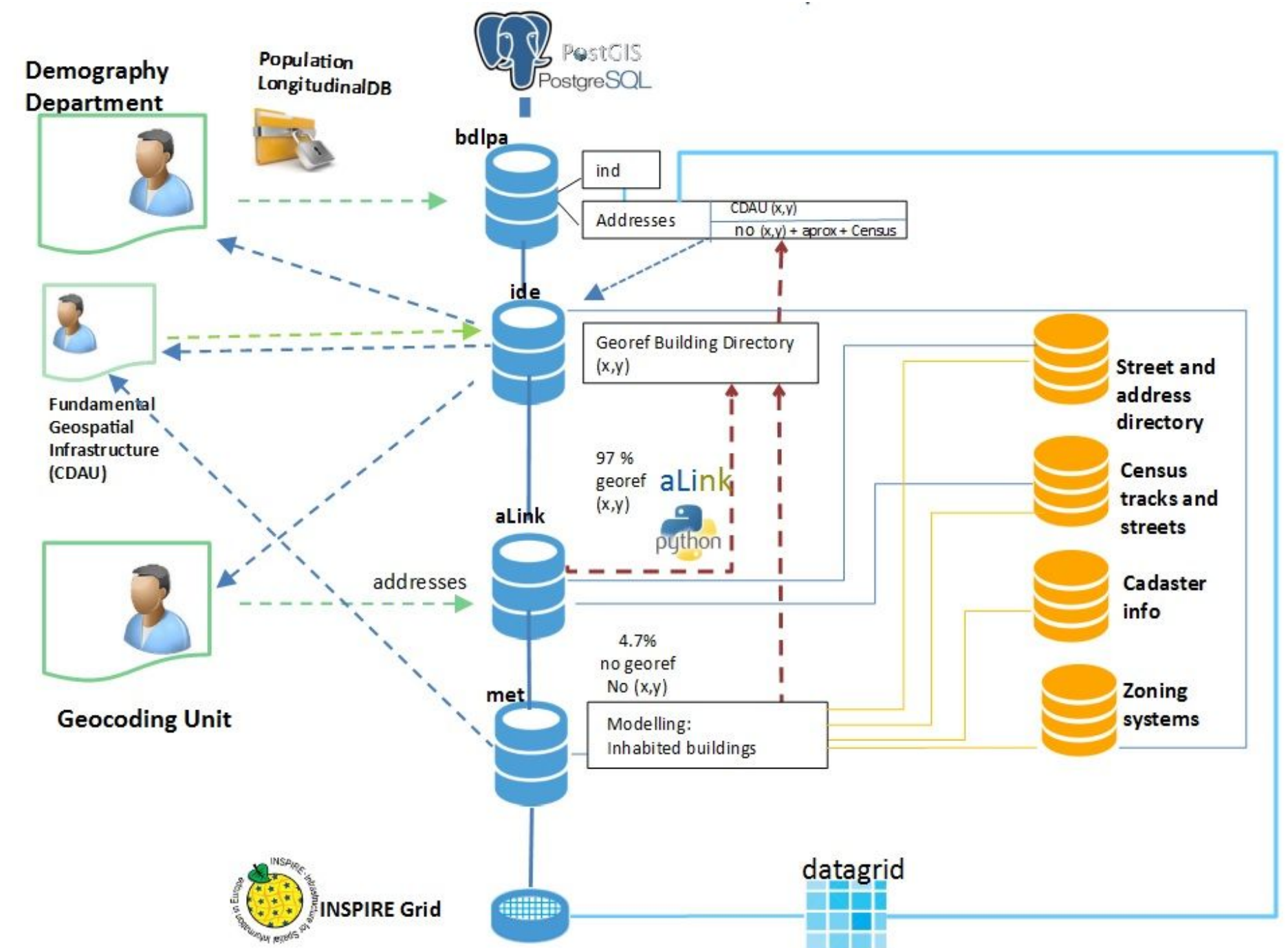
## ISO 19100 standards, OGC standards and INSPIRE

## Statistical data

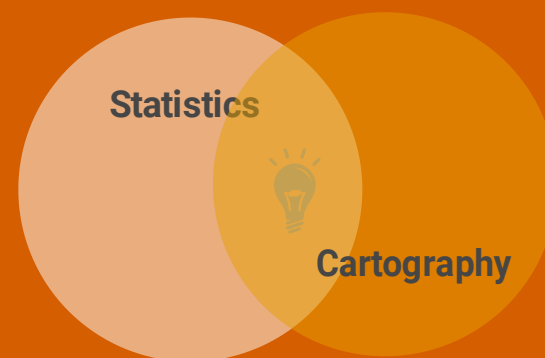
## Process and infrastructure applies relevant metadata standards

## Geospatially enabled statistical data

## Geocoding, data management and data infrastructure at IECA



# Use of internationally adopted standards and good practices from statistics and geography





# 05 ACCESSIBLE AND USABLE GEOSPATIALLY ENABLED STATISTICS

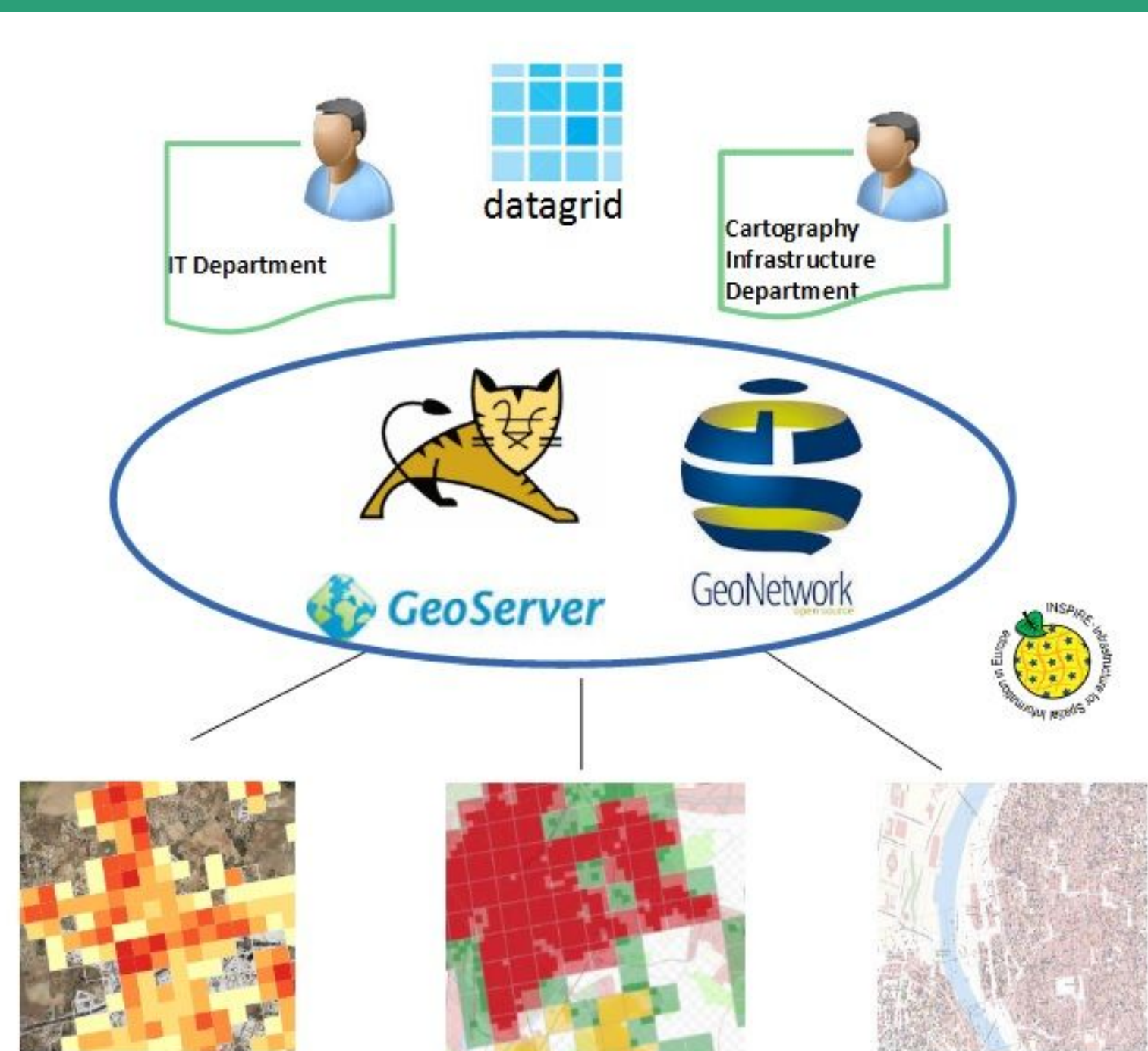
Access, analysis, visualisation and dissemination of spatially enabled statistics



Statistics spatially enabled and geodata release at IECA WFS/WMS/Shapes

- ✓ Population data (demographics and labour status)
- ✓ Companies over 50 employees, yearly
- ✓ Public infrastructure and services
- ✓ Fertility & Mortality data
- ✓ Degree of Urbanization
- ✓ Cadastral information

Institute of Statistics and Cartography of Andalusia.  
Georeference





# Institute of statistics & Cartography of Andalusia

INSPIRE, Andalusia spatial data infrastructure, web viewers & interoperable services (WMS and WFS)

INSPIRE, ISO19115 + ISO19119  
Statistical Metadata

Inspire grid, administrative boundaries & transfer & correspondences recommendations

Geocoding & georeferencing guidelines. ALink tool. Data sources (Business & Population registers). INSPIRE Identifier

ACAR, Street & Building entrance register. Guidelines on admin data harmonized collection & standardisation

## GSGF

ACCESSIBLE AND USABLE

STATISTICAL AND GEOSPATIAL INTEROPERABILITY

COMMON GEOGRAPHIES FOR DISSEMINATION OF STATISTICS

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