INTEROPERABILITY EXPERIENCES
IN THE ITALIAN CADASTRAL SYSTEM

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Agenda

1. Structure and Contents of the Italian Cadastral System
2. Data sharing among AdE, Municipalities and other Public Administration
3. AdE, ISTAT and Municipalities: National Addresses Register
4. Interoperability services concerning cadastral cartography
1. Structure and Contents of the Italian Cadastral System

LAND CADASTRE

Inventory basic element: the cadastral parcel

Continuous portion of land, located in a single municipality, having the same crop quality and productivity level, or use, under homogeneous property rights and held in one ownership

about 85.5 millions of cadastral parcels, 60 millions with assigned cadastral income values

LAND (parcels)

Cadastral assessment

Landowner income

Farmer income

URBAN BUILDING CADASTRE

BUILDINGS (urban real estate units)

Inventory basic element: the urban real estate unit

Part of a building, a whole building or groups of buildings, or an urban area, fit for having a functional and income autonomy

about 72.9 millions of buildings or parts of them, 63 millions with assigned cadastral income value

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1. Structure and Contents of the Italian Cadastral System

**LAND CADASTRE**

- **CENSUS ARCHIVE**
  - Includes technical and descriptive data related to the rural parcels

- **CARTOGRAPHIC ARCHIVE**
  - Includes about 300,000 maps in vector format
  - (344,000 cartographic files)

**URBAN BUILDING CADASTRE**

- **CENSUS ARCHIVE**
  - Includes technical and descriptive data related to the real estate urban units

- **PLANS ARCHIVE**
  - Includes graphic information (plans) related to each real estate urban unit

About 60 million inhabitants
About 300,000 square kilometres

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1. Structure and Contents of the Italian Cadastral System

SIT - INTEGRATED SYSTEM OF TERRITORY

✓ SIT is an evolution of the current cadastral cartographic system, a modern web GIS

✓ SIT is part of a wider project for the implementation of the Integrated Real Estate Register (A.I.I.), system in which the data managed historically in different systems are integrated

✓ In the Integrated Real Estate Register the whole AdE information asset is unified into one national system whose elements are conveniently integrated each other

✓ SIT goes beyond the current system based on the separation of all the archives (Cartography, Census DBs, Plans) and on a web-architecture spread on 101 AdE Provincial Offices.

✓ SIT allows the geo-based data surfing and search of all the information managed by the AdE, the spatial analysis and the integration with other data external to the cadastral domain.
1. Structure and Contents of the Italian Cadastral System

SIT – SURFING AND SEARCH

Exact searching by address (e.g. Rome – Venti Settembre street)
1. Structure and Contents of the Italian Cadastral System

SIT – SURFING AND SEARCH

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**DETAILED DATA ON THE REAL ESTATE URBAN UNITS INCLUDED IN EACH BUILDING**
1. Structure and Contents of the Italian Cadastral System

EXTERNAL DATA INTEGRATED IN THE "SIT"
2. Data sharing among AdE, Municipalities and other Public Administration

- **Portal for Municipal Authorities**
  - HTML via internet
  - Web service via SPC

- **CADASTRAL INFORMATION SYSTEM**

- **Automated Data Exchange System**
  - Accedi al servizio
  - Sistema Pubblico di Connettività e Cooperazione (SPC)

**Data exchange**
- Municipalities
- Other Public Administrations
- Automatic data exchange
- Data exchange on demand
- Structural mediation

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The “**Portal for Municipal Authorities**” is accessible to Municipalities on the basis of an agreement, for online supplying of cadastral data in two different ways:

- **"upon request"**: supplies upon request of an Administration, concerning – both for the Land and the Urban Building Cadastre and for the vector cartography – all cadastral data updated at the date specified by the user and/or the updates registered during a given time interval;

- **"specific"**: periodic supplies concerning data related to registration of new real estate units or changes in already registered units, the results of changes in cadastral incomes related to single real estate units, the metric data from the Urban Building Cadastre and data related to changes in the cadastral holders.
Within the framework of the Operational Cooperation and Digital Administration, the Agency has outlined technical and economic rules that apply to the use made of its data by other Public Administrations. Data are provided through the "Automated Data Exchange System" of the Agency, in compliance with provisions ruling the Public Connectivity System (SPC).

The "Automated Data Exchange System" meets the needs of those Local Authorities that, equipped with advanced information systems, are interested in an automated data exchange process.
3. AdE, ISTAT and Municipalities: National Addresses Register

On the 21\textsuperscript{st} of June 2010, AdE and ISTAT signed an agreement for the establishment of a House Numbers and Street Names National Register (ANSC).
First **ANSC** establishment, which contains the Street names’ registers of all the Italian Municipalities, was initially carried out on the basis of **toponyms** contained in the addresses of the housing units registered in the cadastral database, integrated with external sources.
During the population and housing census 2011

- **7,585** small Municipalities provided data to AdE & Istat (ANSC)
- **509** large Municipalities provided data only to Istat (RNC – Survey of house number)
3. AdE, ISTAT and Municipalities: National Addresses Register

- **CADASTRE**
  - Real Estate Urban Unit Addresses
- **EXTERNAL Source**
  - Street names

**ANSC**
- 7,585 small Municipalities
- 509 large Municipalities

**RNC**
- Survey and check of house number
- (509 large Municipalities)

**SGR**
- Archives of citizens and families addresses

**EDI**
- Archives of buildings addresses

**Mismatch**

**SW for Certification**
- Completed 100%

**Municipal Archives**

**Municipal Acts**

**Updating and validation activities in progress**
3. AdE, ISTAT and Municipalities: National Addresses Register

From ANSC to ANNCSU (House Numbers and Street Names National Register)

- Address Archive SGR: 11.5 millions
- Address Archive EDI: 9.5 millions
- Address Archive RNC: 9.5 millions
- Address Archive ANSC: 16.6 millions

Activity of linkage

Integrated Archive of street numbers of all the Municipalities (more than 26 millions)

Strengthening of ANSC in ANNCSU, through the integration of the archives
4. Interoperability services concerning cadastral cartography

Evolution of the Italian Cadastral Cartographic System: **WMS Service**

**Disposition of the General Director of AdE n. 271542 of 23\textsuperscript{th} November, 2017**

*Implementation of the Italian Legislative Decree of January the 27\textsuperscript{th}, 2010, n. 32 concerning the establishment of an Infrastructure for Spatial Information in the European Community (INSPIRE). View services of parcels data sets.*
4. Interoperability services concerning cadastral cartography

INTEGRATED VIEW

Cadastral Maps *(WMS Service – Agenzia delle Entrate)*

Ortho-Images *(WMS Services - Ministry of the Environment and Protection of Land and Sea)*
4. Interoperability services concerning cadastral cartography

INTEGRATED VIEW

Cadastral Maps *(WMS Service – Agenzia delle Entrate)*

Regional Technical Maps *(WMS Services – Lazio Region)*
4. Interoperability services concerning cadastral cartography

**INTEGRATED VIEW**

**Cadastral Maps** (*WMS Service – Agenzia delle Entrate*)

**Flood dangerousness Maps** (*WMS Services - Ministry of the Environment and Protection of Land and Sea*)
4. Interoperability services concerning cadastral cartography

WMS SERVICES OF OTHER ADMINISTRATIONS IN THE "SIT"
Thematic representation of damages caused by the earthquake
4. Interoperability services concerning cadastral cartography

WMS SERVICES OF OTHER ADMINISTRATIONS IN THE "SIT"

Thematic representation of damages caused by the earthquake in Central Italy – 30th October 2016

data coming from the Civil Protection

Service used to make more efficient the AdE cadastral activities
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Many thanks for your kind attention