

**Il Sistema Informativo Catastale:
una risorsa per le politiche di governo del territorio
Roma, 10 - 11 dicembre 2008**

ITALIAN SPATIAL DATA INFRASTRUCTURE

Elettra Cappadozzi

National Centre for ICT in the Public Administrations



CNIPA: The National Centre for ICT in the public sector

- CNIPA was founded in 1993 to coordinate and improve the development of public information systems
 - CNIPA is a central public administration placed under the authority of the Prime Minister's Office to support the policies of the Minister for Innovation and Reforms
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Italian government model

The Italian public administration is based on three levels of government:

- ✓ **National public authority**
(ministries, departments, agencies ..
about 100 bodies)
- ✓ **Regional** (20 Regions)
- ✓ **Local** (*about 8100 municipalities,
400 mountain communities and 100
provinces*)





Italian public spatial data

All public authorities collect, produce, reproduce and disseminate data to fulfill their public tasks

Many of them process spatial information

There exists a wide range of public spatial data in digital format

Most of them are strategic both for public and private sector, but not always they are homogenous and interoperable

There is not an unique public authority collecting, processing or disseminating spatial data at national level



Towards a national SDI for Italy

Many efforts in recent years:

- The Regions Lombardia, Sardegna, Piemonte and the Department of Civil Protection have complex SDI projects, with different platforms, different costs and different data
- All Regions in the south of Italy are developing a project concerning *spatial data and integrated information services* (Abruzzo, Puglia, Calabria, Sicilia, Molise, Sardegna, Campania)
- Umbria has developed a regional SDI for managing the addresses of all its Municipalities and for their collection in a regional database
- Almost all other regions are updating their cartographic database in accordance with the national guidelines
- The Environment Department has developed the “Portale cartografico nazionale” and has a vast Remote Sensing Plan for multispectral data (about 60 M€)



Towards a national SDI for Italy

Many efforts in recent years:

- The “Comando Carabinieri per la Tutela dell'Ambiente” (*Environmental Protection Command*) has developed an important project for the control of crimes against the environment, with a wide collection of spatial data, including many multispectral coverage
- The Department of “Demanio marittimo” has rebuilt and updated cadastral maps of all the Italian coasts
- SIGMATER project has developed **an infrastructure for interchange cadastral data** (maps, plants and administrative) owned by Cadastral Agency, reuse and integrate them with other regional and local spatial data (used in Emilia Romagna, Toscana, Liguria, Abruzzo, Valle D'Aosta, Piemonte, Sardegna, Sicilia, Campania, Puglia, Calabria, Molise, Marche, Umbria)
- Other relevant information system with spatial data:
National Cadastral Information System
National Agricultural Information System



Towards a national SDI for Italy

Spatial data is a basic part of the information systems of the public administrations

The main purpose of the mentioned projects is connected with the mission of the public administration, but they are hardly ever aimed at achieving an SDI

Most of the projects use standards for interoperable data and network services and often have a web geo-portal, but there is no uniform SDI that covers all of Italy



WHY a national SDI for Italy?

A need not only for INSPIRE directive



A need not only for the environmental issues

The spatial data is strategic in many decision processes, across any level of central, regional and local government and across almost all activities.



The Italian SDI in the e-gov context

We need to make public spatial data interoperable and available for access, sharing, exchange and re-use among public bodies in order to:

- give better services
- achieve more efficiencies
- spend less money in acquiring new data

The availability of spatial data between the Administrations is stated by Italian law in the e-government context



Italian e-government process

Started in 2000-2004 with the plan for e-government

Principles and policies are defined by the national law "Digital Administration Code" (CAD) *D.lgs n.82/2005*

It is based on:

- ✓ our model of public administration government
- ✓ strong interaction and cooperative approach between the public bodies
- ✓ data and services interoperability

It is a long term process and it is still ongoing

We are developing a national infrastructure for the e-gov:

Public System of Connectivity and cooperation (SPC-coop)

The spatial data are taken into account at art. 59 "Dati territoriali" in the "*Digital Administration Code*"



Italian e-government process

The Public System of Connectivity and cooperation (SPC-coop) is a public infrastructure aimed at linking all public sector bodies and making them able to develop, share and use data and network services under *legal validity*

Governance:

Joint Committee with national, regional and local public administrations

Main technical approach:

- ✓ Qualified connectivity services
- ✓ Homogenous technical rules for data interoperability and network services (based on web services and W3C standards)
- ✓ Public catalogues for network services availability

Developing project started in 2005,
The infrastructure is ready and is in the dissemination phase

For more information: www.cnipa.gov.it



The Italian SDI in the e-gov context

Assumptions under debate

Component	What	Who
Metadata	Spatial Data National Catalog (RNDT art. 59 CAD)	CNIPA and Administrations
Spatial data and related services	Cadastral DB, Topographic DB, Orthophoto, DTM, statistic units, addresses, toponymy, coast lines, streets	Each Administration
Services and network system	SPC coop	Commission for SPC coordination (ex art. 79 CAD) and Administrations
Agreements on sharing access and use of the data	ex. cadastral data sharing agreement	Committee ex art 59 CAD + other
Procedures for coordinating and monitoring	To be defined in the transposition law	Committee ex art 59 CAD + other



The Italian SDI in the e-gov context

Metadata

RNDT: The Italian geospatial metadata catalogue

It is established by “Digital Administration Code” (CAD) D.lgs n.82/2005 and is operated by CNIPA

It applies to the public sector

It is a public register used to:

- ✓ **Know**, under legal value, the availability of the spatial data owned by Italian public administrations, which are their basic characteristics and how it is possible to use them
 - ✓ **Develop services** based on interoperability and sharing data owned by different bodies
 - ✓ **Collaborate** with national, local and regional bodies in order to plan the collection of new data
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The Italian SDI in the e-gov context

DATA

Coordinate Reference Systems	Rete IGM95	IGM
	Punti fiduciali	Catasto
	Reti di raffittimento	Regioni
Geographical grid systems	AGRIT - statistiche in agricoltura	MiPAAF
	Inventario Forestale Nazionale	CFS
Geographical names	Repertorio toponomastico	IGM
	DBtopografici, Toponomastica, località significative	Regioni
Administrative units	Limiti amministrativi	ISTAT
	DB25	IGM
	DB Topografici CTRN	Regioni
	Marine jurisdictional area	IIM
	Autorità di Bacino	MATTM
Addresses	Toponomastica e Indirizzi	Comuni
Cadastral parcels	Cartografia catastale	Catasto
Transport networks	DB25	IGM
	DBPrior DB topografici CTRN	Regioni

Hydrography	DB topografici DBPrior CTRN	Regioni
	Pozzi	Regioni, Provincie, APAT
	DB25 - Idrografia	IGM
	DB Hydrography	IIM
	Bacini idrografici	Regioni, Autorità di Bacino, APAT, MATTM
Protected sites	SIC, ZPS	Regioni MATTM
	DB marine reserve area	MATT / IIM
	Parchi, riserve	MATT, Regioni
	Vincoli beni archeologici, paesistici etc..	MBCA, Regioni
	Spagge	Demanio Marittimo, Regioni, Comuni
	Vincolo idrogeologico	Regioni, MATTM

Annex I



The Italian SDI in the e-gov context

DATA

Elevation (land, ice and ocean surfaces; terrestrial elevation, bathymetry, shoreline)	DTM (Digital Terrain Model)	MATTM, Regioni, APAT, AGEA, IGM	Orthoimagery (geo-referenced image data)	Ortofoto	AGEA MATTM NOE Regioni
	DSM (Digital Surface Model)	MATTM		Spaziocarta	IGM
	Dati orografici	IGM	Geology	Carta Geologica	Regioni
	DB25	IGM		Carta Geomorfologica	Regioni
	DB Hydrography	IIM		DB25 - elementi Geomorfologici	IGM
	DTED - Liv. 1	CIGA		Carta Geologica d'Italia	APAT
	DB topografici Curve di livello Punti quotati	Regioni		Geologia e litologia	APAT
Land cover	Carta uso del suolo	Regioni			
	Carta della vegetazione	Regioni			
	Carta pedologica	Regioni			
	Carta forestale	Agricoltura (CFS-SIAN)			
	Corine Land Cover	MATTM, Regioni			

Annex II



The Italian SDI in the e-gov context

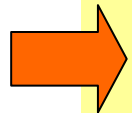
Services and network system architecture

Develop a national spatial data infrastructure compliant to INSPIRE without duplicate services and data

We are upgrade the existing infrastructures for e-government in order to minimize the costs for achieving a national SDI

We save investments made in the last years or still underway:

- Regional topographic Database
- Cadastral data Interchange
- SPC – SPCoop
 - ✓ Public Internetworking System
 - ✓ Public Cooperative System

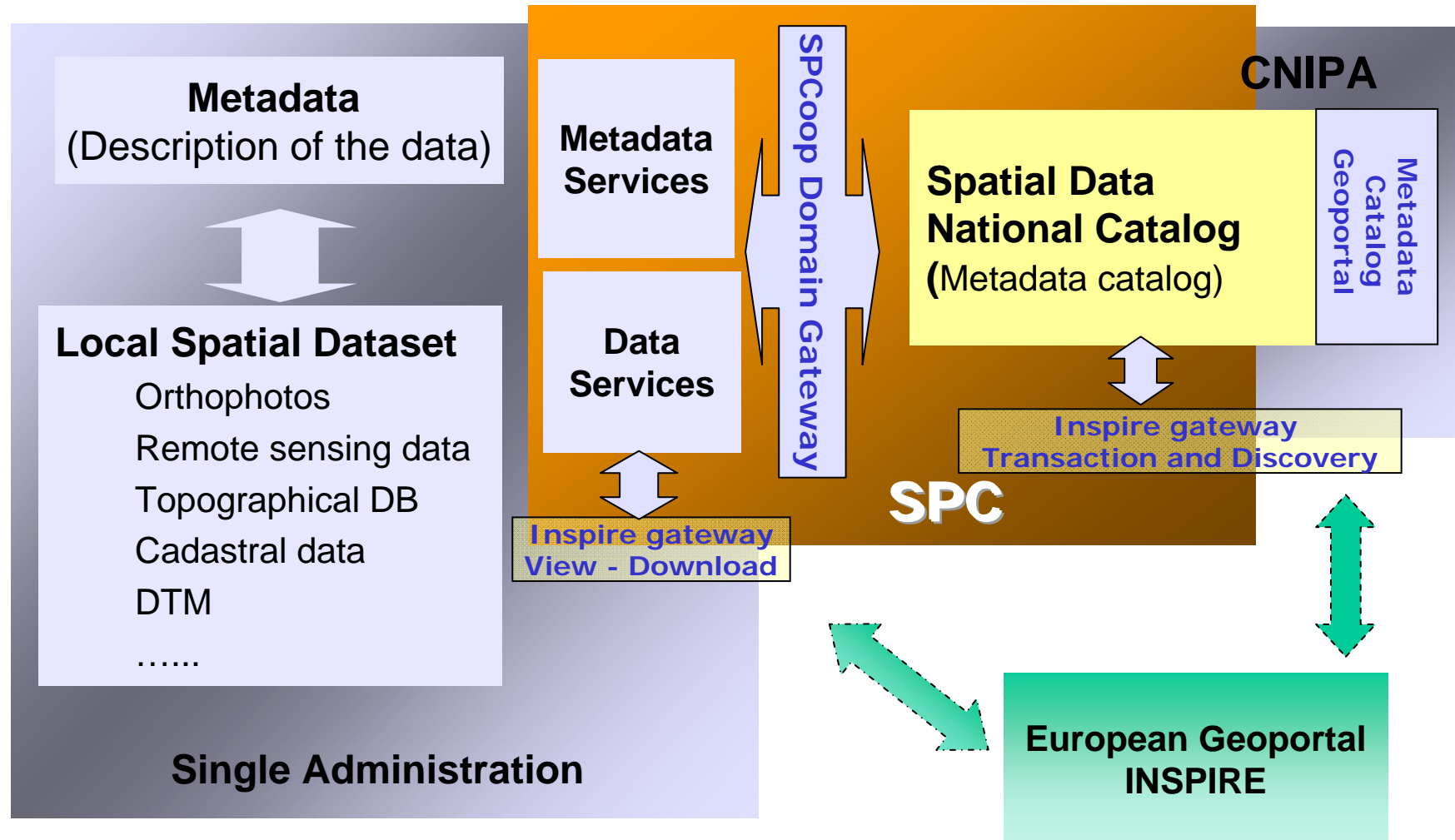


Make operations and generalized services for harmonization and interoperability of spatial data sets towards INSPIRE



The Italian SDI in the e-gov context

Services and network system architecture





The Italian SDI in the e-gov context

Agreements on sharing data

The Cadastral database has national interest (art. 59 CAD)

The Committee and the “Agenzia del territorio (AdT)” defined technical and economical rules for the use of cadastral data by the information systems of the other administrations and for access to cadastral database, compliant with the art. 59 of Digital Administration Code

Decree November 13th, 2007 of the Director of the AdT defines:

- Services list
- Sharing agreements schema between public Administrations and AdT(administrative issues)
- Technical specifications about provided services



The Italian SDI in the e-gov context

Procedures for coordinating and monitoring

Committee for Technical Rules on Geographic Information, ex art. 59 Digital Administration Code

The Committee is made up of representatives of the central administrations, local bodies and Regions

It began its activities in September 2007

The role is to define technical and economic rules concerning:

- The collecting of spatial data and relative databases
- The documentation and the usability of data and how to exchange them between Administrations

It submits to the Minister of Innovations the annual state of play about the spatial data and infrastructure in Italy.

CNIPA is a member of this Committee and also acts as the technical secretariat, in particular providing technical and scientific support



Italian SDI in the e-gov context

Next step

In the next tree years the upgrade is planning for:

- **RNDT: national geospatial metadata catalogue**
- **Uniform network services (discovery, view, download and transformation)**
- **Data harmonization (metadata, exchange formats and application schema)**
- **Deployment of the infrastructure in all administrations (Central, Regional and Local)**