

EUROGI Members Meeting - Geospatial & Digital Transformation key for Industrial Revolution 4.0 and Society

Fisciano April 26th 2018

National Archives of Addresses for Urban Roads (ANNCSU) - An infrastructure for Italy

Francesco Di Pedè – Gianluigi Salvucci

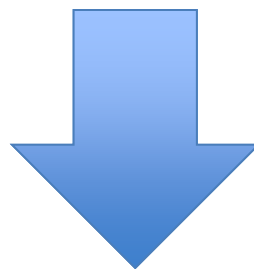
Direzione Centrale per le Statistiche Ambientali e Territoriali

Ufficio Archivio nazionale delle strade e dei numeri civici

Some questions to start:

- what is an address?
- why do we need addresses in public statistic?
- why do we need a national archive?

- conversion into words of the geographical coordinates of a place
- the most important linkage between social activities and place

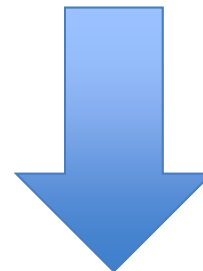


the addresses must be recognizable, unique in the municipality, because they guarantee movement from one point to another in the city

Address:



41.8222569,12.4572136



Roma, Viale Oceano Pacifico, 171

WHAT3WORDS

answers.roofer.monkey

Legislation about name of roads

Istat, it defines the technical rules for updating the road names and the street numbers for general censuses.

- ✓ Each public traffic area must have its own distinct name.
- ✓ Every access on the circulation area must be provided with a specific street number.
- ✓ Each municipality must take care of the filling out and updating of the list of roads according to the indications provided by Istat.

Use of list of streets

Many public administrations and companies, generally use one or more internal archives, often not coherent with each other.

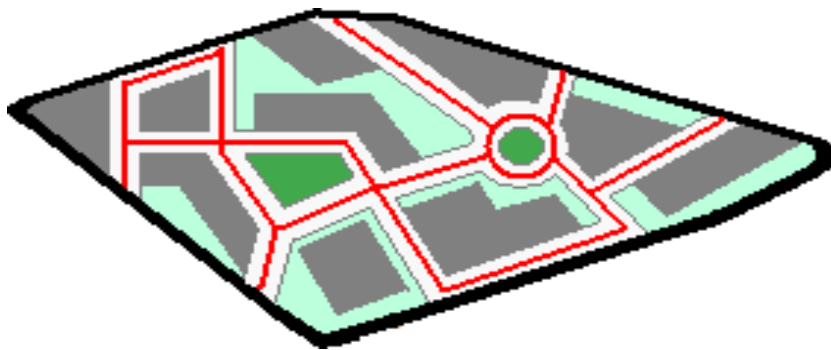
This implies expensive standardization processes for the correct recognition of addresses



Use of list of streets: Istat

The preparation of the topographical plan and the lists of streets and street numbers is fundamental for the census

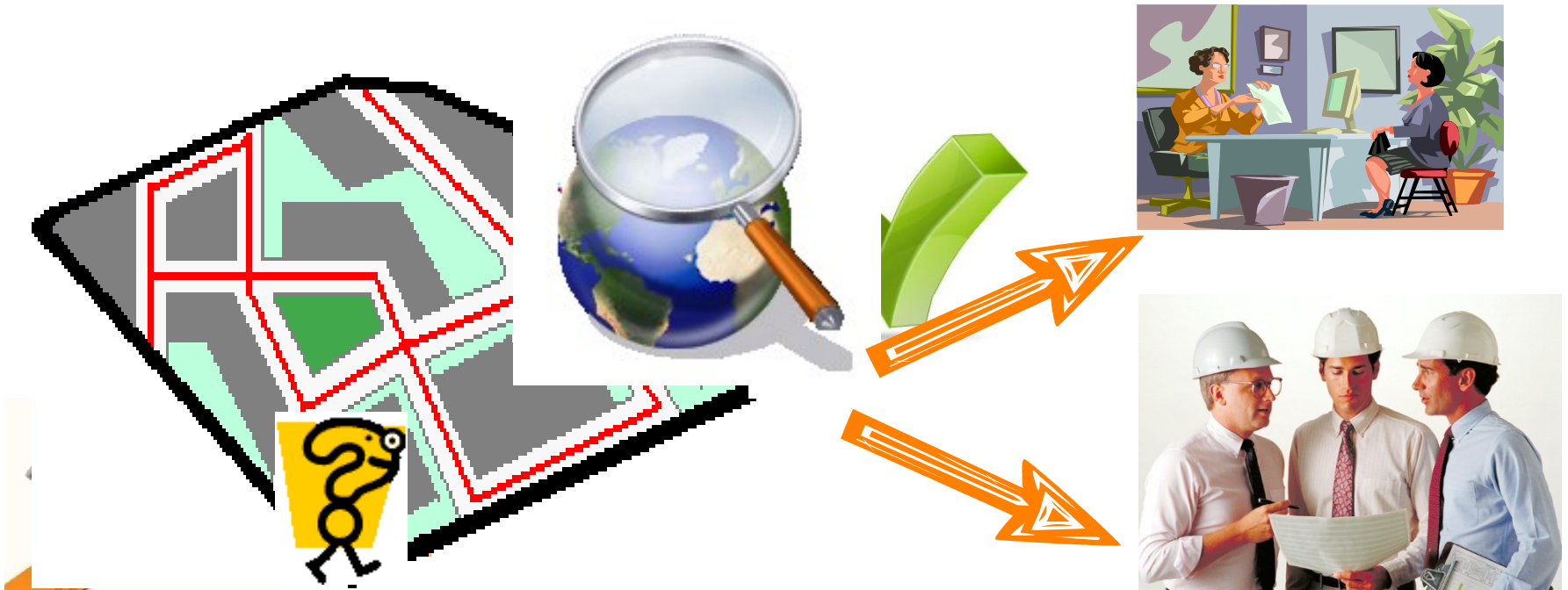
- **topographical plan:** division of the municipal territory into localities (centers, inhabited centers and production sites) and census area;
- **lists of streets and street numbers:** information on the circulation areas in the municipal area and on each street number;



Use of list of streets : income revenue authority

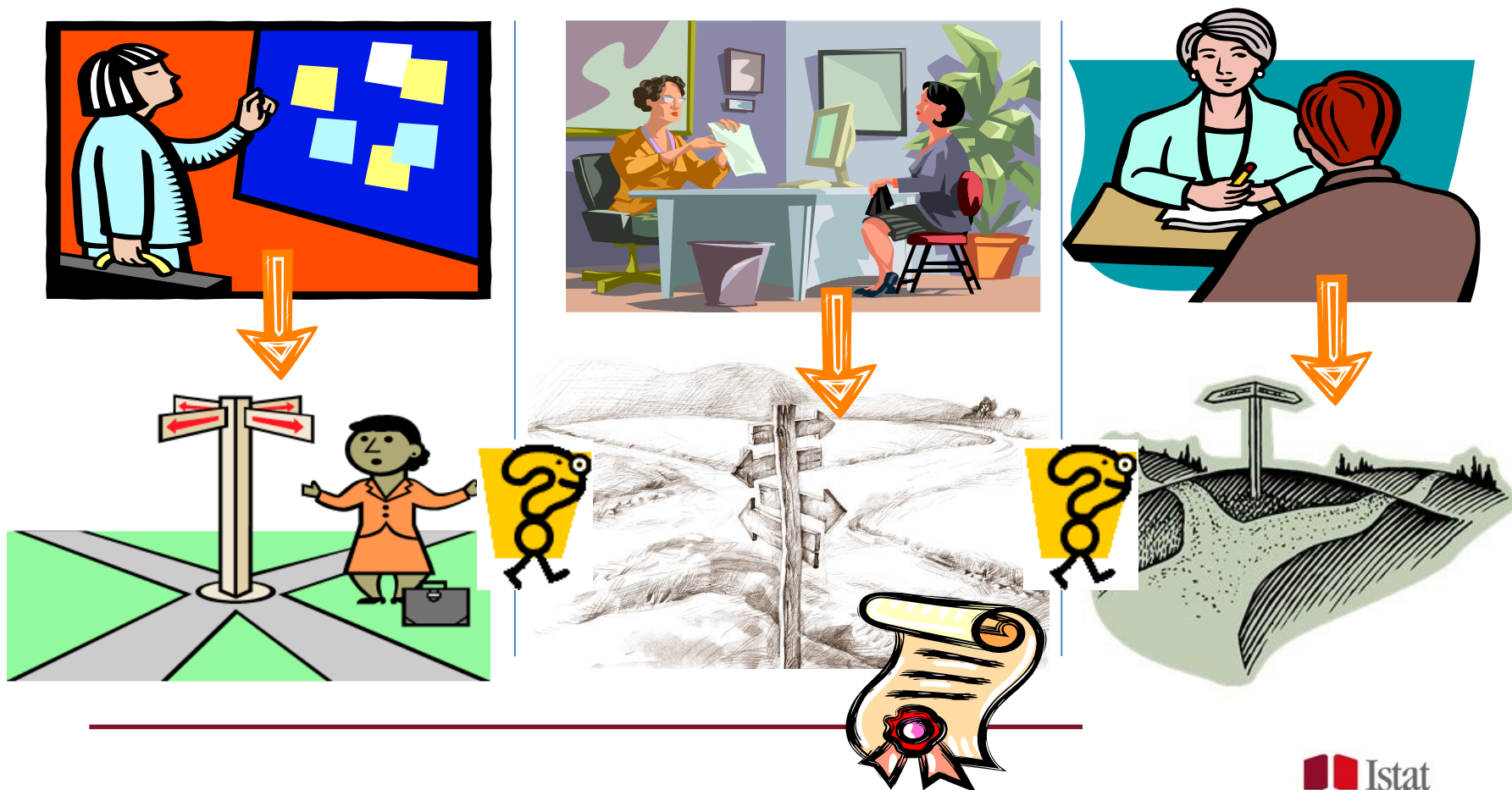
Currently the addresses in the cadaster are updated by professionals, architects, surveyors, etc

Periodically, the Authority, proceed to correct on the basis of the lists of roads of a commercial matter.



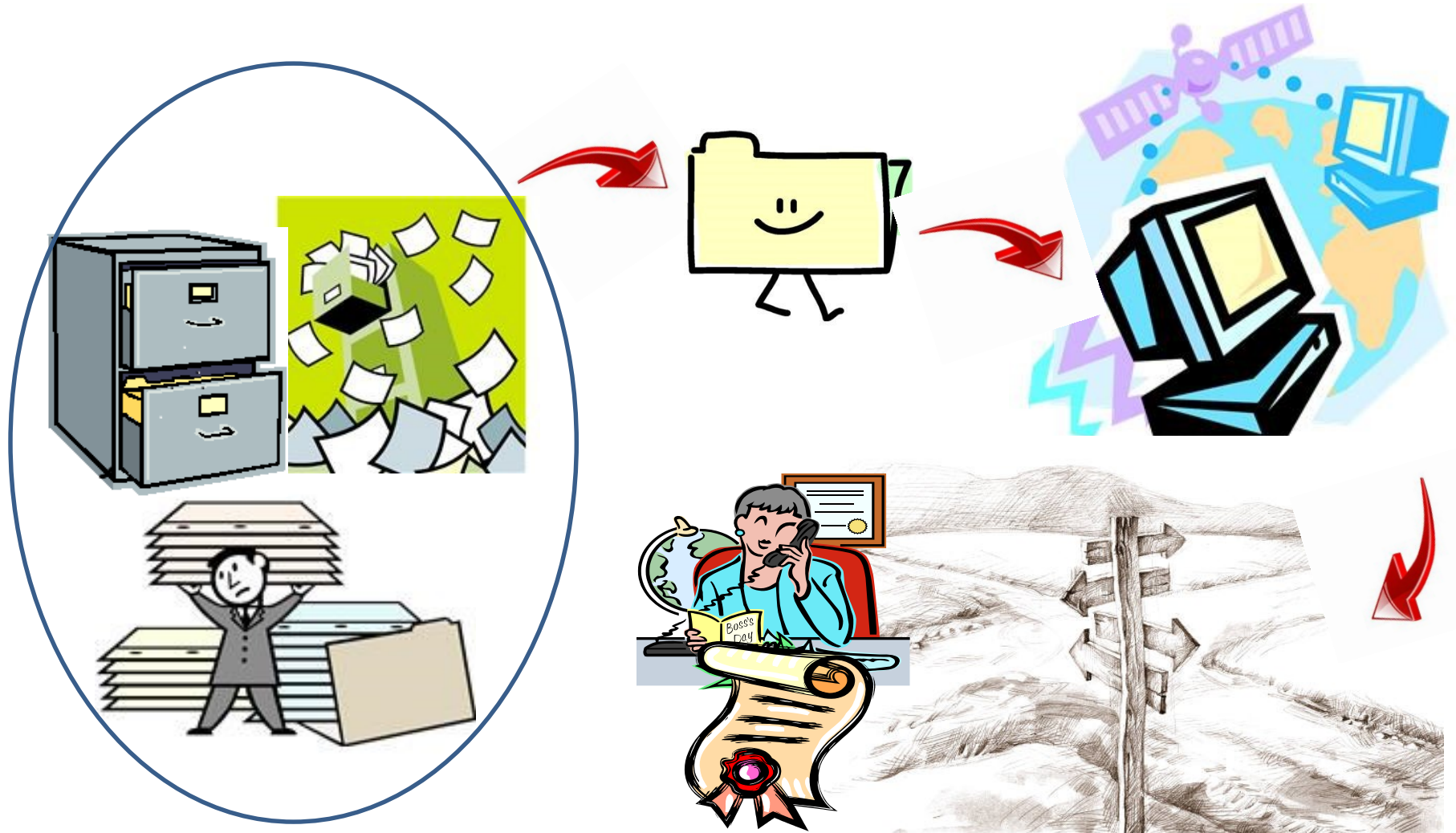
use of list of streets : municipality

Although the Municipalities are responsible for keeping the list of roads, they sometimes refer to lists of roads that are different among them (Registry office, Technical Office, Tax Office, Office of Toponymy, ...)



Digitization of archives

For these reasons it is necessary to digitize existing addresses, and to codify them to facilitate their identification



ANNCSU: an information infrastructure for the country

ANNCSU will ensure an archive at national level:

- **Digitizations** of all roads and relevant house numbers ,
 - **Univocal code** for each street and house number
 - **certified by the Municipalities**, to be used as a reference in the treatment of addresses by public administrations, citizens and businesses.
-

Advantages of ANNCSU

- **Uniformity at national level;**
- **Continuous updating and historicity of the data provided;**
- **Savings:** Traditionally, during the censuses, a survey was carried out on roads and directories with on-site inspections;
- **Interoperability:** integration with the main national databases;
 - ✓ the cadastral database;
 - ✓ the National Register of the resident population(ANPR);
 - ✓ the Tax Registry;
 - ✓ Census
- emergency services(118, Protezione Civile, Vigili del Fuoco, ecc.).

Organizational model of the ANNCSU

- **ISTAT** defines rules, the updating and standardization criteria of the data contained in the archive, as well as the quality levels of the information
- **l'Agenzia delle Entrate** manages the archive, through the information system of Taxation that guarantees its security, accessibility to services and assistance to users, according to quality standards already adopted by the Agency
- **Municipalities** provide for the periodic updating of the archive on the basis of the resolution contained in the registry regulation and the technical directives issued by ISTAT and in compliance with the rules of interviews established by the Inland Revenue Office



ANNCSU



Definitions - Odonyms and civic numbers

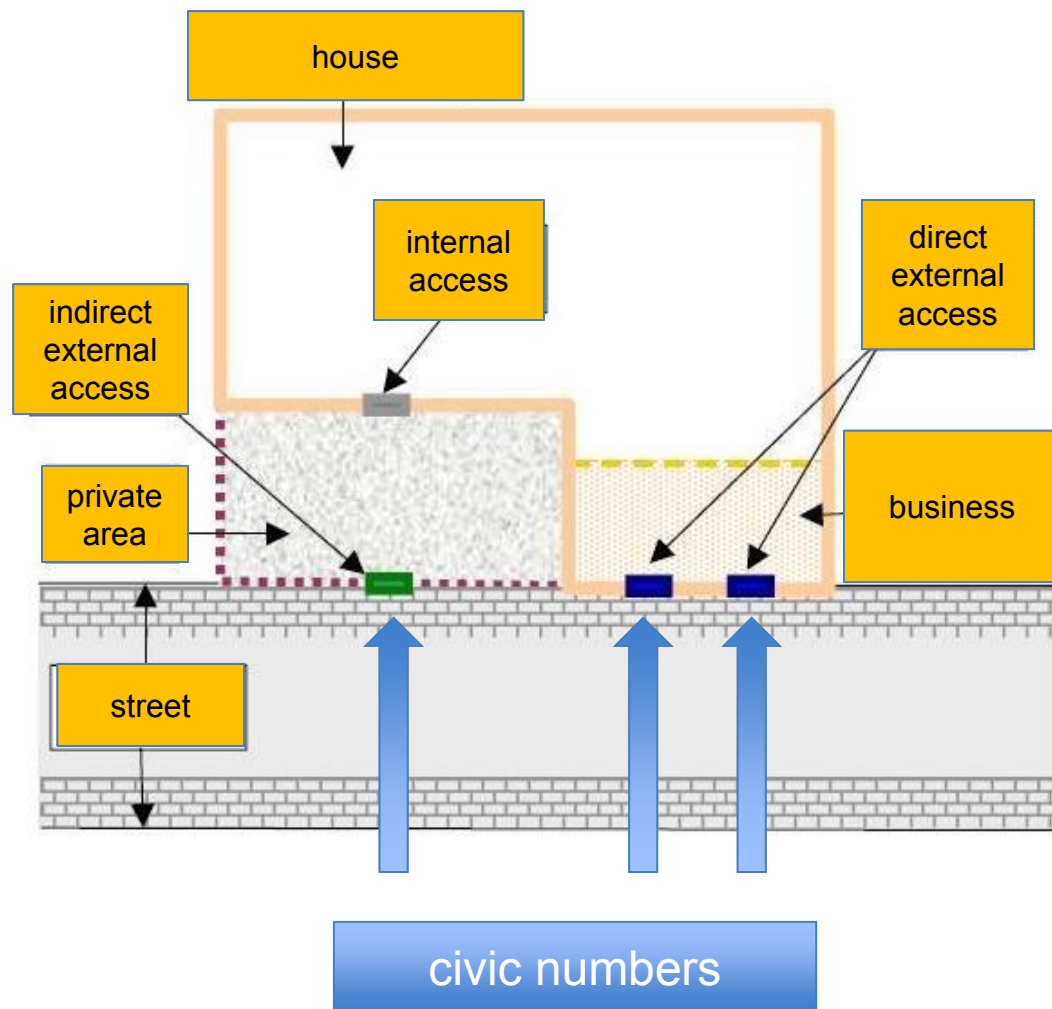
The odonym (toponym) is the name that a municipality assigns to each traffic area to identify the access to the buildings characterized by the street **number**

The odonym consists of:

- **kind of street...(DUG):** street, square, Alley, Boulevard, road
- **official name of the circulation area (DUF):** indicates the proper name assigned to each street, can be referred to a person, a city, animals



Definizioni - Accessi esterni diretti e indiretti

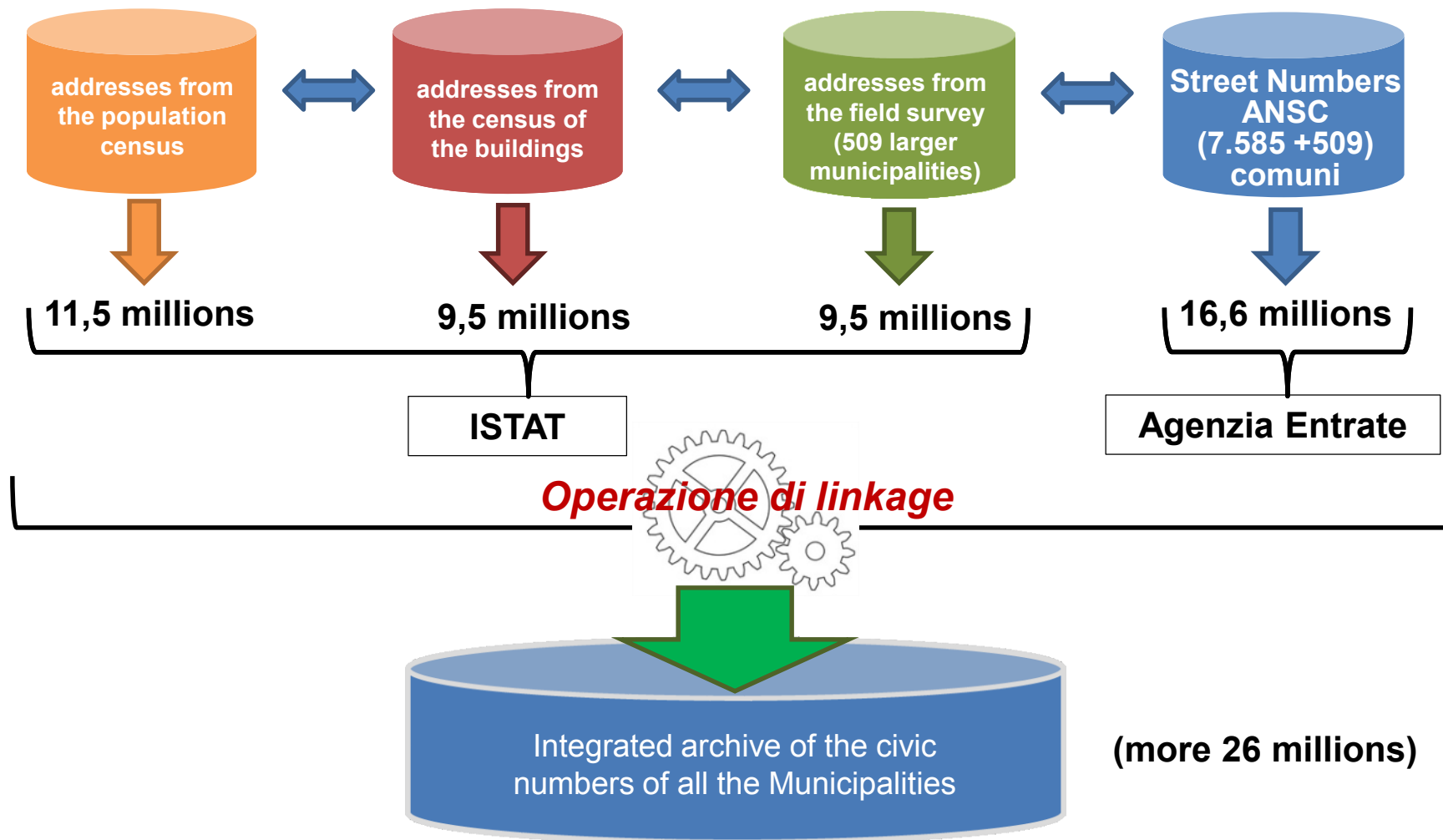


The civic numbering identifies the external accesses that directly or indirectly enter the houses, shops, offices, ecc..

Directly when access opens on the circulation area,

Indirectly when access opens on to courtyards, and internal stairs.

Running National Archives of Addresses for Urban Roads



Each odonym will be accompanied by the following information :

- **NATIONAL PROGRESSIVE:** National univocal progressive code, identification of the circulation area;
- **CODICE AGENZIA DELLE ENTRATE:** Administrative code assigned to the Italian Municipalities by the EFA and used in the composition of the fiscal codes (social security number) entitled to a person;
- **ISTAT MUNICIPALITIES CODE:** Administrative code assigned to Italian Municipalities by Istat;
- **MUNICIPAL CODE:** Univocal code provided by the Municipality during the certification phase of the odonym;
- **DUG:** General Urbanistic Name or species, identifying the type of circulation area;
- **DUF:** Official Urban Designation attributed to the circulation area;
- **ADMINISTRATIVE DENOMINATION:** Odonym, unless the kind of roads (DUG), present in the municipal resolution;
- **ODONYM in LANGUAGE:** Odonym registered in language different than Italian, as required by the rules on bilingualism;

Variables of ANNCSU – list of Streets

- **ODONYM LANGUAGE 2:** Odonym registered in another language different than Italian, as required by the rules on bilingualism;
- **LOCATION DENOMINATION:** Name of the area on which one or more traffic areas are placed;
- **UPDATE DATE:** Date of last update of any of the information accompanying the odonym;
- **DATE RESOLUTION:** Date of the provision of municipal resolution for the naming of the area of circulation;
- **MUNICIPALITY PROTOCOL :** Protocol number of the municipal resolution provision;
- **DATE PREFECTURE:** Date of authorization for the circulation area issued by the Prefecture;
- **PREFECTURE PROTOCOL :** Protocol number of the authorization provision issued by the Prefecture;
- **DATE START ODONYM :** Date of insertion or modification of the odonym;
- **DATE END ODONYM :** Date indicating the term of validity of the odonym in ANNCSU.

Each external **ACCESS** will be accompanied by the following information:

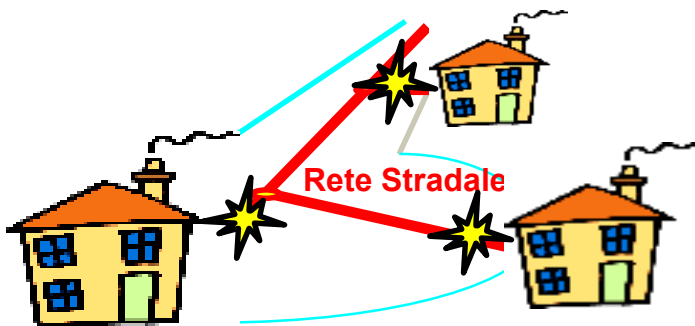
- **NATIONAL PROGRESSIVE STREET NUMBER:** National univocal progressive code, identifying external access;
- **NATIONAL PROGRESSIVE OF THE ROAD:** Univocal national progressive code identifying the traffic area on which the external access is located;
- **COMMUNE CODE :** Administrative code assigned to the Italian Municipalities by the ADE and used in the composition of the tax codes;
- **ISTAT CODE:** Administrative code assigned to Italian Municipalities by Istat;
- **MUNICIPAL CODE:** Univocal code provided by the Municipality in the process of certification of the house number;
- **STREET NUMBER:** Value of the house number assigned to the external access according to the natural sequence of the numbers;
- **EXPONENT:** Literal part of the house number present only if necessary;
- **SPECIFICITY:** Value BLACK or RED used in the presence of a specific method of attribution of civic numbering;

Variable of ANNCSU – list of Civic Numbers

- **METRIC:** Value of the street number assigned to the external access expressed in meters, used in case of metric system;
- **CENSUS AREA:** Univocal municipal code that identifies the census section in which the external access is located;
- **UPDATE DATE:** Date of last update of any of the information supplied with the house number;
- **DATE START OF CIVIC NUMBER:** Date of insertion or modification of the house number;
- **DATE END OF CIVIC NUMBER:** Date indicating the term of validity of the house number in the ANNCSU;
- **COORDINATE_X:** Abscissa of the metric coordinates of the access.
- **COORDINATE_Y:** Ordinate of the metric coordinates of the access

- a Road graph will be created based on the information contained in the archive
- Georeferencing the house numbers by assigning a pair of spatial coordinates to each address, making it thus representable on the map

DUG	DENOMINAZIONE	CIVICO	X	Y
VIA	2 GIUGNO	12	350122,452	4847960,718
VIA	2 GIUGNO	14	350131,976	4847971,060
VIA	2 GIUGNO	16	350141,500	4847981,402



- Logical linkage between buildings, address and road graph

analysis of denominations

**Municipal
DUF list**

**Occurrences
at the
national level**

PRO...
Mondovì

RICERCA NEL COMUNE MORO ☒ RICERCA IN LOC. ☐ RICERCA IN...

DUG	Denominazione	Loc
VIA	ALDO MORO	
VICOLO	DEL MORO	
STRADA	DI MOROZZO	
VIA	EMANUELE MOROZZO DELLA ROCCA	
STRADA	MOROSENGA	

Località

Località
POGLIOLA
RIFREDDO
SAN BIAGIO
SANT'ANNA AVAGNINA

Denominazione

Denominazione
A MORO (2 occorrenze)
A VIA MOROITI (1 occorrenze)
AL BOSCO DI SANTOMORO (1 occorrenze)
AL GORGOMORO (1 occorrenze)
AL MORO (3 occorrenze)
AL PRATO MORONDO (1 occorrenze)
ALBRIZI ALMORO' (1 occorrenze)
ALDO MORO (2535 occorrenze)
ALDO MORO - SAN LEO NUOVO (1 occorrenze)
ALDO MORO - VILLAGGIO FRANCOLINO (1 occorrenze)
ALDO MORO (COLI) (1 occorrenze)
ALDO MORO COOPERATIVA SASI (1 occorrenze)
ALDO MORO E CADUTI DI VIA FANI (1 occorrenze)
ALDO MORO E CADUTI FANI (1 occorrenze)
ALDO MORO E MARTIRI DELLA LIBERTA' (1 occorrenze)
ALDO MORO E MARTIRI DI VIA FANI (2 occorrenze)
ALDO MORO E VITTIME 16 MARZO 1978 (1 occorrenze)
ALDO MORO ESTERNA (1 occorrenze)
ALDO MORO FRAZIONE CORVARO (1 occorrenze)
ALDO MORO FRAZIONE RUBBIANELLO (1 occorrenze)
ALDO MORO GIA' STRADA QUINDICESIMA (1 occorrenze)
ALDO MORO INTERNA (1 occorrenze)
ALDO MORO RALLAVICINA (1 occorrenze)

**Denomination
analysis**

List of locations

DUF card

ALTRA

☐ SING. ☐ COLL. ☒ INDET.

☐ M ☐ F ☒

☐ ENDO ☐ ESO ☒

FONTE

<http://www.carnevaledimondovi.it/>

[http://it.wikipedia.org/wiki/Mondov](http://it.wikipedia.org/wiki/Mondov%C3%AC)

FIGURA DEL MORO CHE BATTE

DEL MORO

+ - SALVA Corretta

Errore	Descrizione	Toponimo
Denominazione corretta		

Tips

SUGGERIMENTI:

Trovata Denominazione tra i comuni Lavorati

denominazione DEL MORO

categoria ALTRO

nesso

endogeno

notaoperatore

fonte <http://it.wikipedia.org/wiki/Mondov%C3%AC>

descrizione Denominazione corretta

Molteplicità

denominazione DEL MORO

categoria ALTRO

nesso

endogeno

notaoperatore

fonte <http://www.carnevaledimondovi.it/index.php?option=com>

descrizione Denominazione corretta

Molteplicità

denominazione DEL MORO

categoria ALTRO

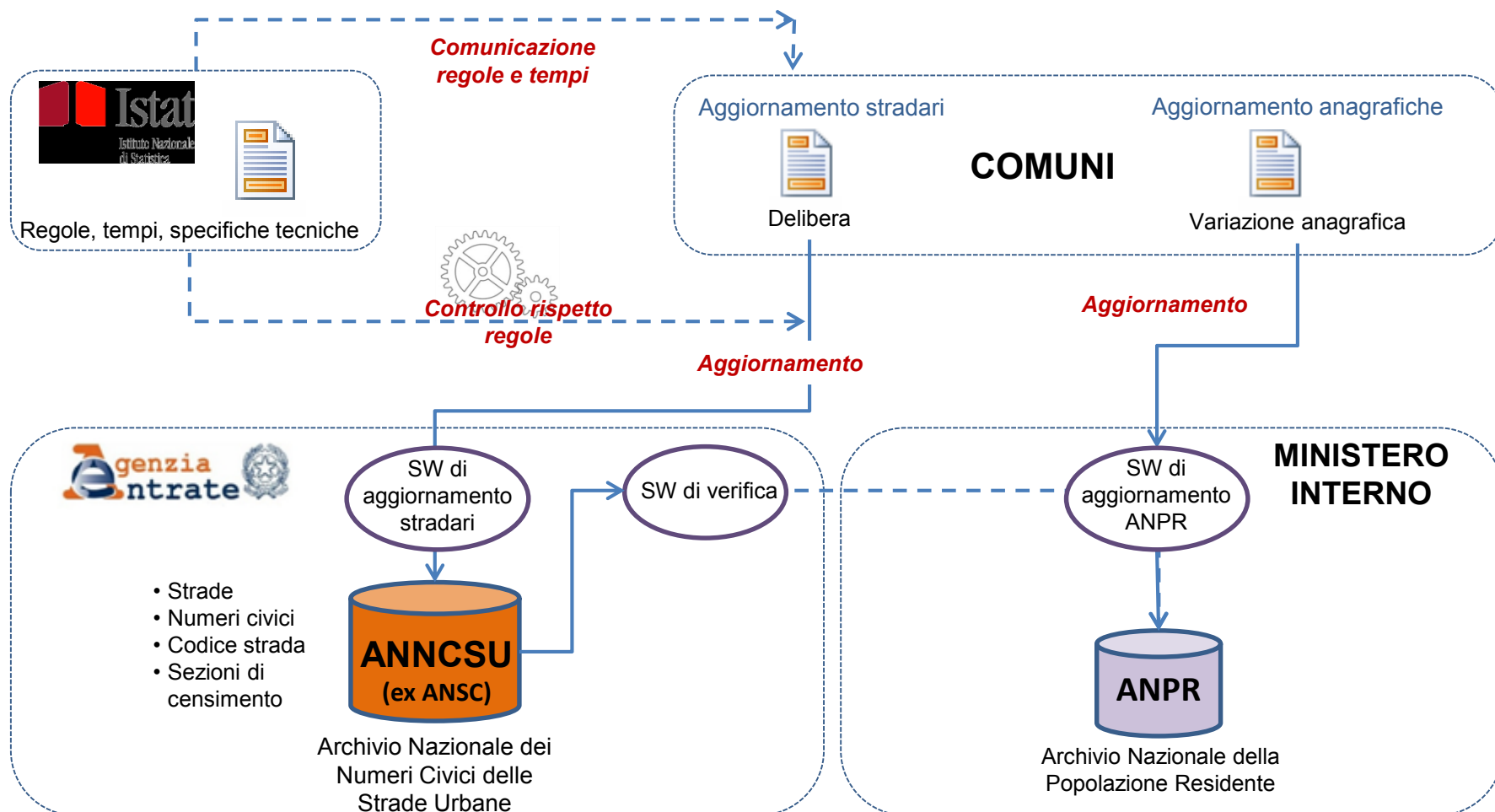
nesso

endogeno

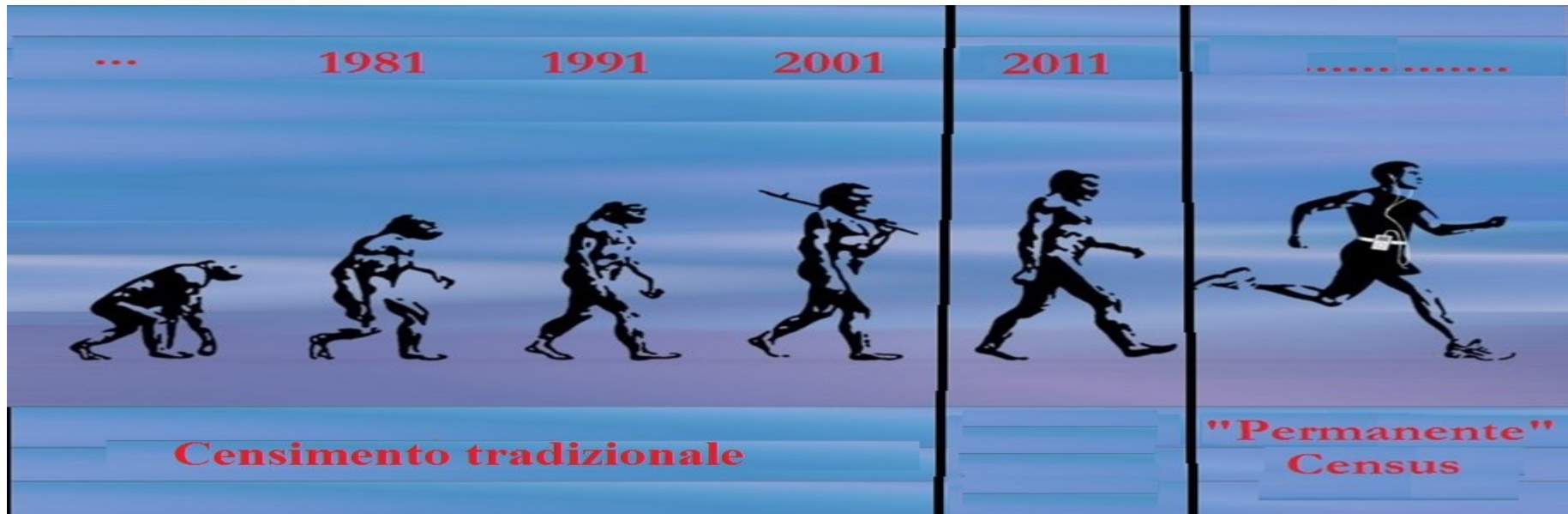
To facilitate the consultation and the choice of DUFs to be modified or assigned to new areas of circulation, the following semantic categories are included in the DUF dictionary.:

- **SINGLE PERSON** – Viale Giuseppe Garibaldi
- **NAMES OF COLLECTIVE PEOPLE** – Piazza degli Etruschi
- **FAUNA FLORA LANDSCAPE**– Via dei Gelsi, Viale dei Parchi
- **BUILDINGS** – Vicolo della Chiesa
- **NAMES OF PLACES**– Corso Genova
- **DATE** – Traversa Primo Maggio
- **EVENTS** – Largo Battaglia di Lepanto
- **ROADS OTHER ADMINISTRATIVE** – Autostrada A4
- **OTHER**(evocative) – Piazza della Repubblica, Vicolo Stretto.

Integration ANNCSU - ANPR



permanent census



from a ten-year periodic survey



an annual information system anchored on
statistical infrastructures kept up-to-date