

Interoperability solution: Italian perspective

Italian Presidency of the Council of Ministers
Department for Digital Transformation

AGENDA

- 1 Italian Interoperability ecosystem: API Catalog, Authentication and Authorization **National Digital Data Platform (PDND)**

- 2 Italian Interoperability ecosystem: **semantic interoperability with schema.gov.it**

- 3 **Next Steps**

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Italian Interoperability
ecosystem:

API Catalog, Authentication
and Authorization

**National Digital Data Platform
(PDND)**



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PER LA TRASFORMAZIONE
DIGITALE

NATIONAL DIGITAL DATA PLATFORM - PDND

STATE OF ART

The **National Digital Data Platform (PDND)** is the technological infrastructure that enables technical interoperability among Public Administrations by providing **Application Programming Interfaces (APIs)** to access their data assets. It operates in accordance with the Digital Administration Code (CAD) and current regulations, **eliminating the need for checks on the accuracy of self-certified data** and **streamlining processes to make them more efficient.**



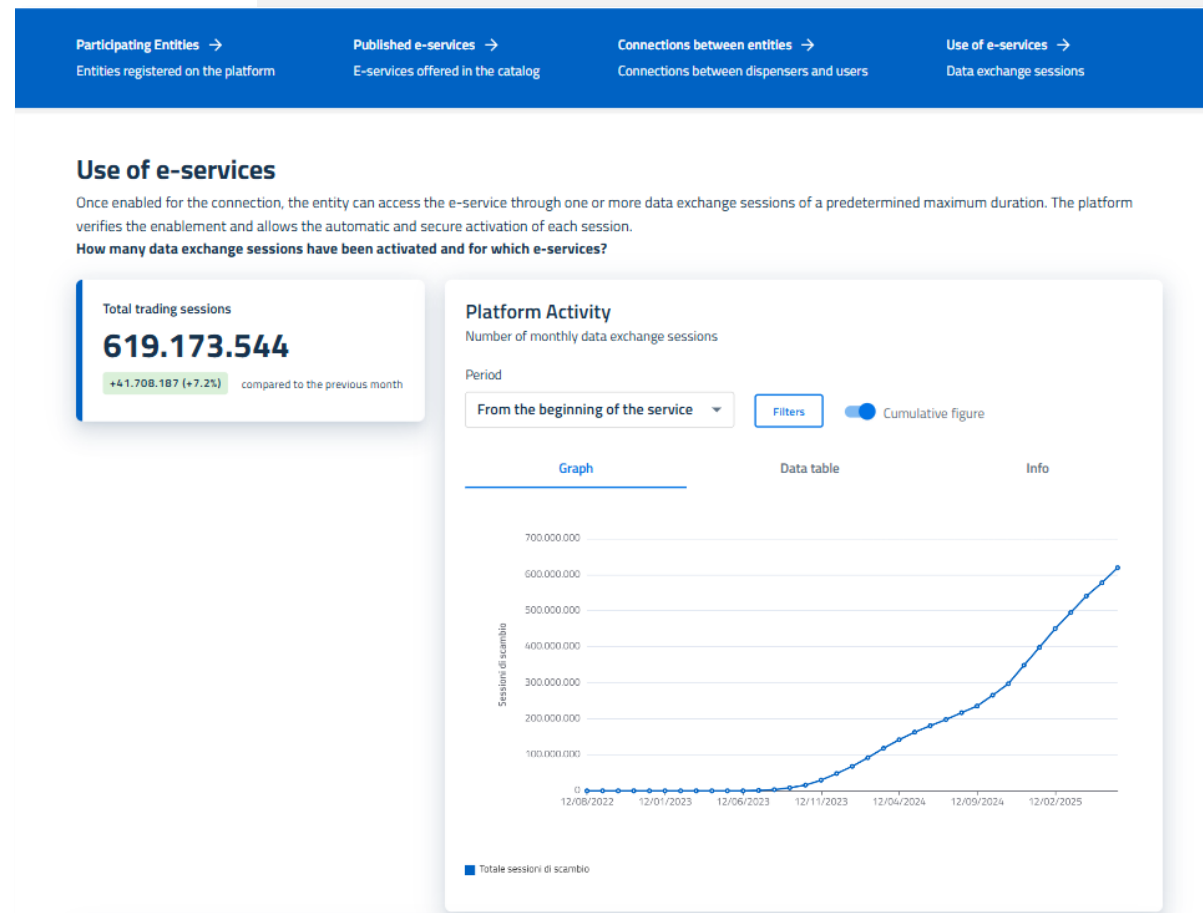
Launched in **2022**



→ **+9.000** onboarded entities

→ **+14.000** e-service published

→ **+1.000.000.000** exchange sessions realized



Source: webpage «The numbers of PDND», publicly accessible [here](#)

NATIONAL DIGITAL DATA PLATFORM - PDND

HOW IT WORKS



Enabling Registers
(IPA, ANAC, IVASS...) for attributes

Service Provider



0. Enrollment and onboarding

1. API Publication (Specs & Reqs)
+ semantics (schema.gov.it)



4. Approval of request

PDND

Authentication

API Catalogue

Agreements

Authorization

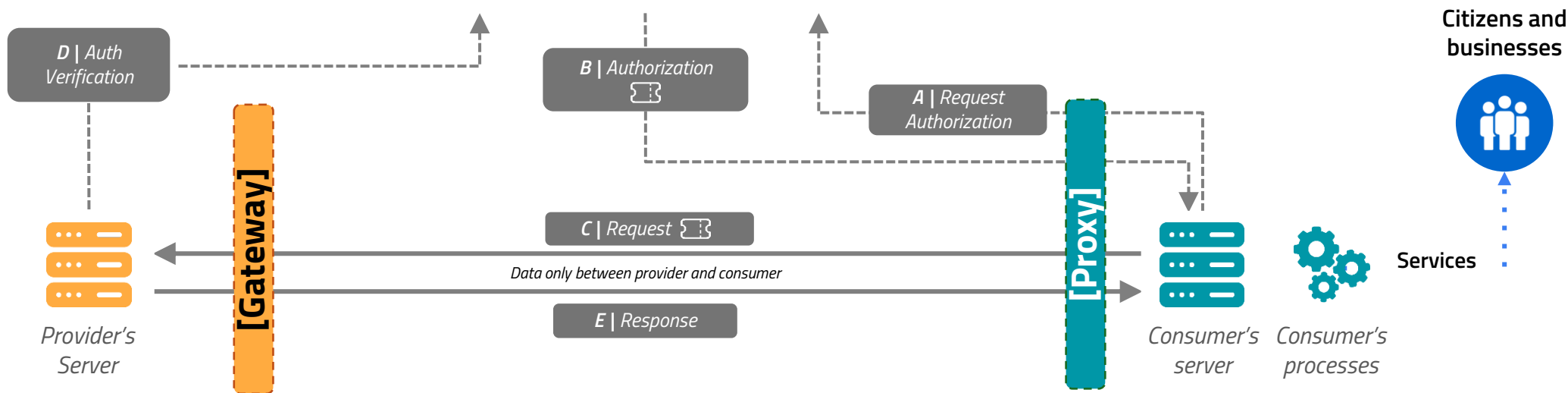
Service Consumer



0. Enrollment and onboarding

2. Browse + Get specs

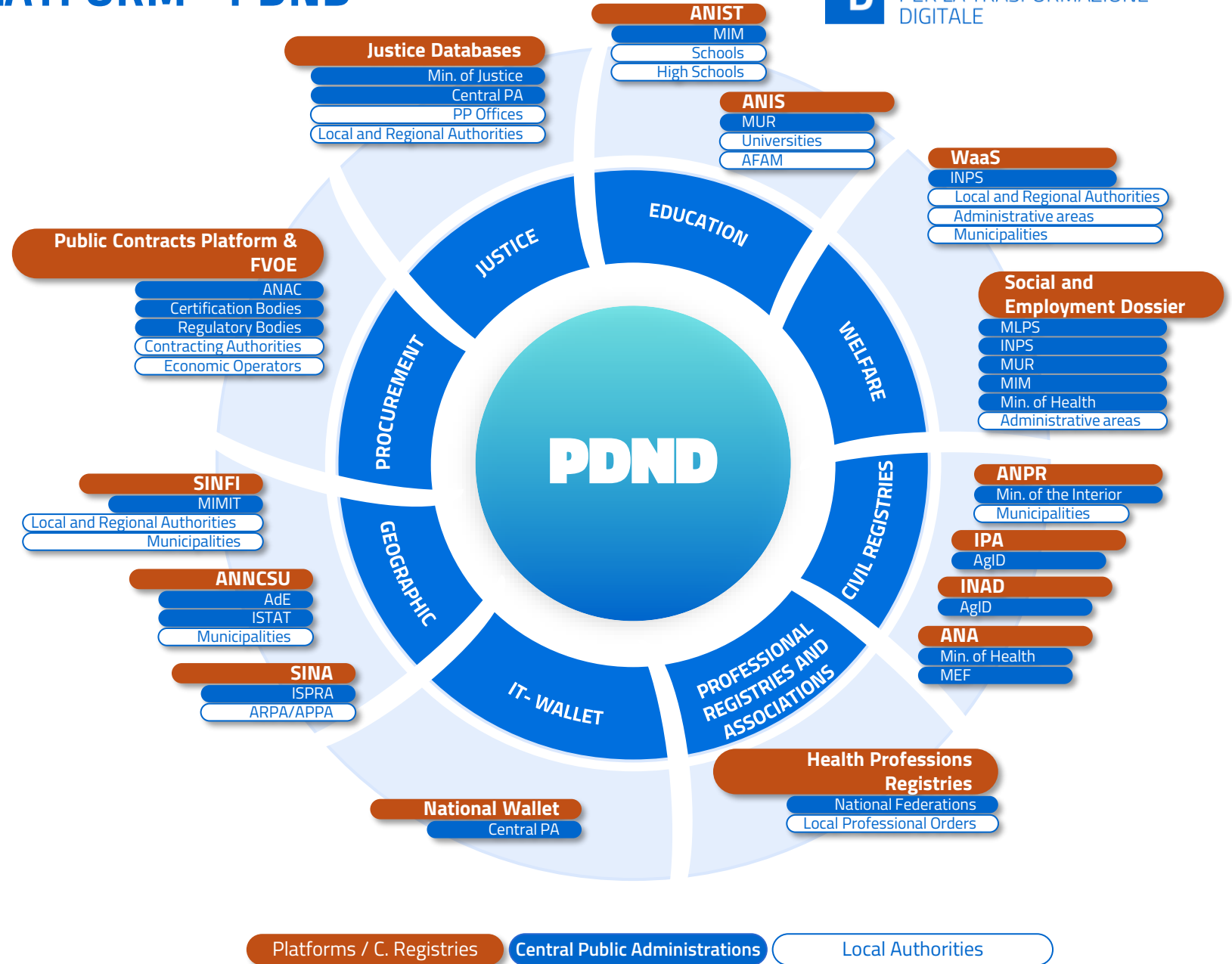
3. Service access request
(Decl Scope & Risk Analysis)



NATIONAL DIGITAL DATA PLATFORM - PDND

ECOSYSTEMS

From an authorisation tool for data exchange to a **new paradigm for the digital transformation of Public Administration**, the PDND enables the development and operation of a **wide range of complex ecosystems**.



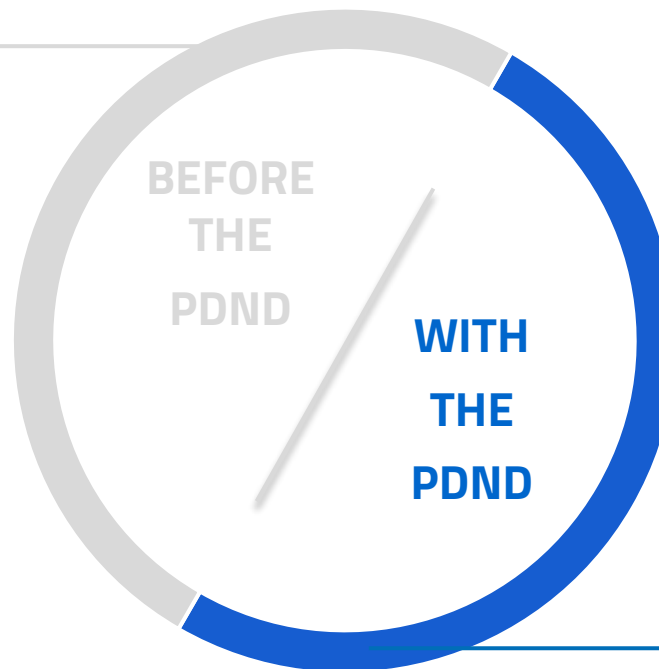


INAIL (**National Institute for Insurance against Accidents at Work**) is the **designated body** responsible for **safeguarding workers against physical injuries and occupational diseases**.

Among its main tasks, INAIL carries out **annual proof-of-life checks** for beneficiaries and spouses **receiving annuities**.

INAIL's Central Directorate required several months to complete the annual proof-of-life verification, due to the complexity of the process, which involved:

- 1. Sending **Excel files** to its regional offices listing the individuals to be verified;*
- 2. **Coordination between the regional offices and the municipalities** responsible for providing the required information;*
- 3. **Returning the verification results** to the Central Directorate once the municipalities had responded*



*Today, **proof-of-life verification is managed centrally through a digital platform with a dedicated dashboard integrated with the PDND.***

*INAIL authorized operators can **independently submit bulk requests** and receive **responses almost in real time.***

- **Faster, more accurate and traceable checks**
- **Optimization of resources**
- **Time efficiency**

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Italian Interoperability
ecosystem:
semantic
interoperability with
schema.gov.it



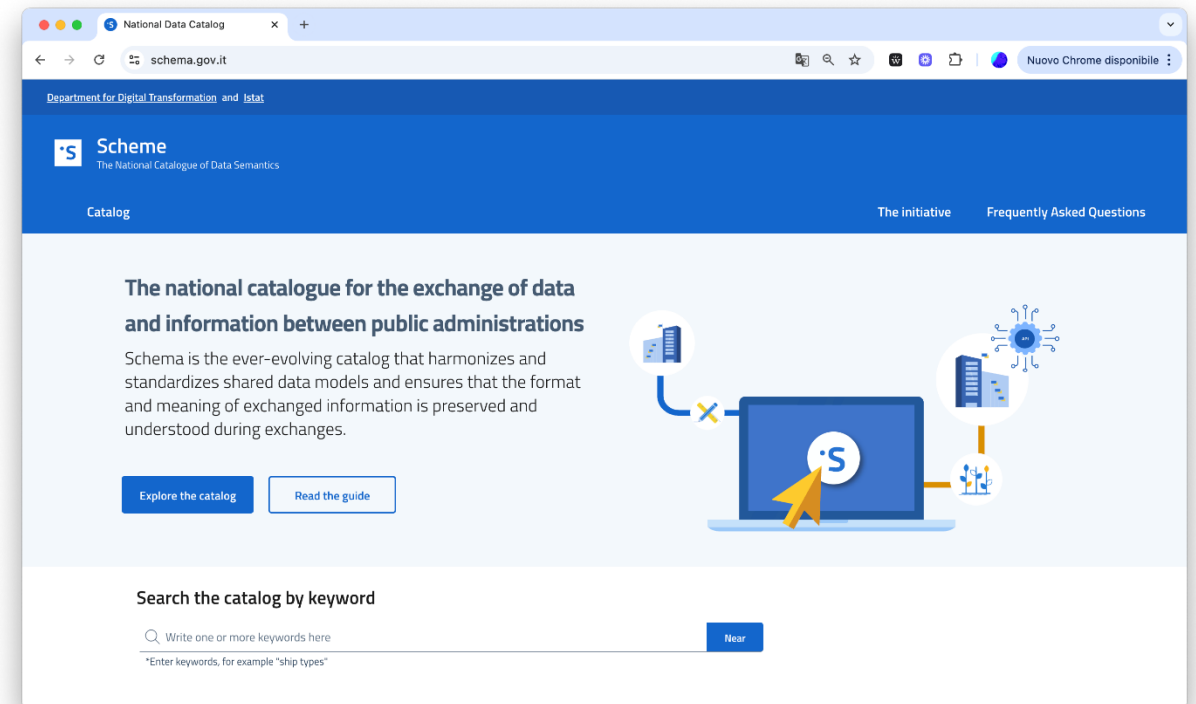
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NATIONAL DATA CATALOG

STATE OF ART

The **National Data Catalog (NDC)** – schema.gov.it, provides semantic assets to promote the development of **semantically interoperable APIs**. This **federated catalog** serves both public and private entities that exchange e-services via the PDND.

Ensuring the reuse of data models, to guarantee that the format and meaning of the exchanged information are maintained and correctly interpreted throughout the exchange process. The project also **supports entities with modeling stewardship and offers tools for developers**.



SEMANTIC RESOURCES NUMBERS



158
Controlled
vocabularies



73
Ontologies



74
Data schemas

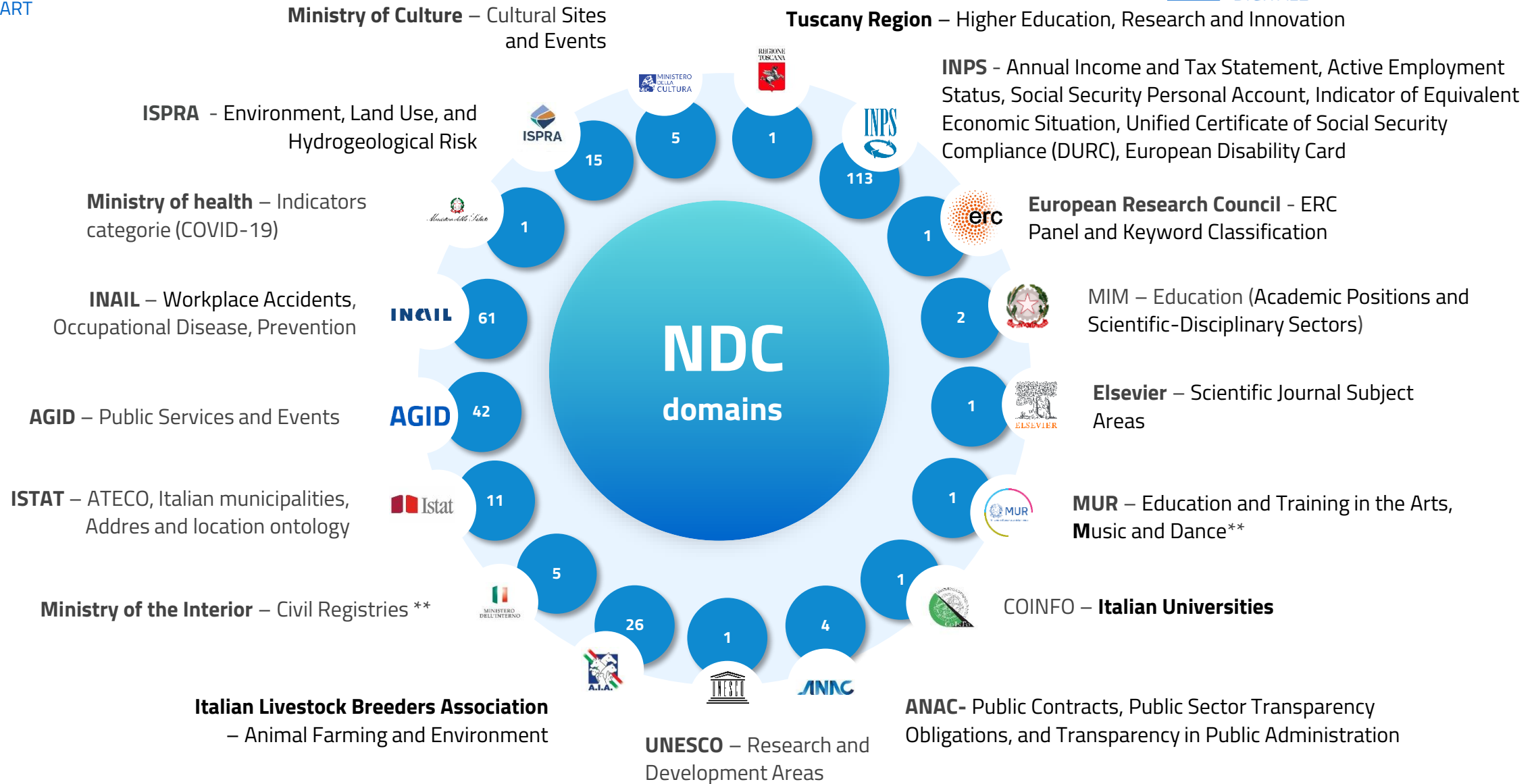


18
Contributors

Source: schema.gov.it march 2026

NATIONAL DATA CATALOG

STATE OF ART



Published Semantic Resources in the Catalogue

** Competent Authorities Involved, Supported by ISTAT

When multiple APIs are mapped to the same semantic, they transmit data with a unified meaning.

Using JSON-LD @context, different APIs can declare their alignment with the same vocabulary, allowing the properties to be accurately mapped to standardized terms. This promotes consistent interpretation and interoperability across diverse systems.

```
Person:
  type: object
  x-jsonld-type: https://w3id.org/italia/onto/CPV/Person
  # This custom property defines the associated json-ld
  # context that can be used to semantically describe
  # the instances.
  x-jsonld-context:
    '@vocab': 'https://w3id.org/italia/onto/CPV/'
    RPO: 'https://w3id.org/italia/onto/RPO/'
    tax_code: taxCode
    date_of_birth: dateOfBirth
    give_name: givenName
    family_name: familyName
  description: |-
    Questo schema rappresenta un'entità fisica.
  required:
    - give_name
    - family_name
    - tax_code
  properties:
    tax_code:
      $ref: '#/components/schemas/taxCode'
    family_name:
      maxLength: 255
      type: string
    give_name:
      maxLength: 255
      type: string
    date_of_birth:
      format: date
      type: string
  example:
    tax_code: RSSMRA75L01H501A
    family_name: Rossi
    give_name: Mario
    date_of_birth: '1961-01-01'
  taxCode:
    type: string
  description: >-
    An (eventually provisional) tax code.
    Note: assigning a x-jsonld-type to a primitive type
    would not add any semantic information.
  example: RSSMRA75L01H501A
  maxLength: 16
  minLength: 11
  pattern: >-
    [A-Z0-9]{16}
```

```
# Hover to show prefixes
_:b0 rdf:type CPV:Person .
_:b0 CPV:givenName "Mario" .
_:b0 CPV:dateOfBirth "1961-01-01" .
_:b0 CPV:familyName "Rossi" .
_:b0 CPV:taxCode "RSSMRA75L01H501A" .
```

```
Person:
  type: object
  x-jsonld-type: https://w3id.org/italia/onto/CPV/Person
  # This custom property defines the associated json-ld
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  x-jsonld-context:
    '@vocab': 'https://w3id.org/italia/onto/CPV/'
    RPO: 'https://w3id.org/italia/onto/RPO/'
    CF: taxCode
    DataNascita: dateOfBirth
    NomeProprio: givenName
    Cognome: familyName
  description: |-
    Questo schema rappresenta una persona fisica.
  required:
    - CF
  properties:
    CF:
      $ref: '#/components/schemas/CF'
    Cognome:
      maxLength: 255
      type: string
    NomeProprio:
      maxLength: 255
      type: string
    DataNascita:
      format: date
      type: string
  example:
    CF: RSSMRA75L01H501A
    Cognome: Rossi
    NomeProprio: Mario
    DataNascita: '1961-01-01'
  CF:
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3

Next Steps

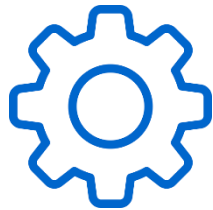


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NEXT STEPS

COLLABORATION AND DATA EXCHANGES

Q2 2026. We are designing an **evolution of the Italian National Data Platform** to **test support for cross-border interoperability**, while preserving national sovereignty.



The **prototype** will consist of **test dedicated nodes** enabling structured **cross-border data exchange among Member States**.

Its objectives are to:

- **validate the operational model**, showcase interoperability benefits;
- **provide supporting documentation** - including integration guidelines and explanatory materials - to facilitate potential future adoption.



NEXT STEPS:

- **Collaborate** with EU Member States and relevant use cases, with a view **to testing the Italian prototype for cross-border**
- **Analyse other regulatory sandboxes** in order to better understand their governance structures and operational models.

THANKS!

Italian Presidency of the Council of Ministers
Department for Digital Transformation