ISA: Interoperability Solutions for European public Administrations

An holistic approach to the modernisation of European public administrations

E-Government Days
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Modernisation of public administrations – the Interoperability case

EU approach to interoperability among public administrations: the ISA programme

Alignment and contribution to other EU policy instruments
Growth and Jobs

- EU 2020 Strategy
- Digital Single Market
- Digital Agenda for Europe
- European Semester
- Modernisation of European public administrations

Public Sector – A big player in Europe

- Public sector: nearly half of EU GDP
- Public procurement: 19% of EU GDP
- By using e-procurement:
  ✓ savings of 5%-20% (€100- €400bn /year)
- Public sector: more than 25% of the total employment in EU

Public sector is part of the solution to the economic crisis
Personal data

Info I1

Info I2

Info I3

Info I4

Info I5

Statements on paper

Statement NN

End-to-end Public Services

Secure connection network

Ministry A (MSY)

Ministry B

Ministry C

National ID register

Register R1

Register R2

Register R3

Ministry A (MSZ)
Does Interoperability matter?

Walk the extra mile... towards an interconnected government model

- Develop synergies among institutions
- Unlock data across sectors
- Share services and solutions
- Optimize and simplify across ministerial boundaries

Enabler = Interoperability
Does Interoperability matter?

74% of the EU countries consider interoperability as a high priority in their political agenda

Extract from the European Interoperability Strategy (EIS) implementation review, October 2012

"The modernisation of public administrations should continue ... Open data is an untapped resource with a huge potential ... Interoperability and the re-use of public sector information shall be promoted actively."

Extract from Council Conclusions, October 2013
Does Interoperability matter?

<table>
<thead>
<tr>
<th>Country</th>
<th>2010 GDP (USD Millions)</th>
<th>Impact</th>
<th>Savings in figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>60,449,499</td>
<td>0.50%</td>
<td>$2.347 billion</td>
</tr>
<tr>
<td>Australia</td>
<td>368,736</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>469,374</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>2,087,890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>1,577,040</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>5,926,612</td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>2,560,002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>3,280,530</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>1,727,111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>2,051,412</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>5,458,837</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>1,034,804</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>779,356</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>1,479,819</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wasted time due to "waiting in the line" or delay produced due to "lack of interoperability" when citizens/businesses are served by a public administration results to impact on the GDP

Savings in figures

<table>
<thead>
<tr>
<th>Number of activities per year</th>
<th>per citizen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minutes to execute</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>0.04%</td>
</tr>
<tr>
<td>10</td>
<td>0.08%</td>
</tr>
<tr>
<td>15</td>
<td>0.13%</td>
</tr>
<tr>
<td>20</td>
<td>0.17%</td>
</tr>
<tr>
<td>25</td>
<td>0.21%</td>
</tr>
<tr>
<td>30</td>
<td>0.25%</td>
</tr>
<tr>
<td>35</td>
<td>0.29%</td>
</tr>
<tr>
<td>40</td>
<td>0.33%</td>
</tr>
<tr>
<td>45</td>
<td>0.38%</td>
</tr>
<tr>
<td>50</td>
<td>0.42%</td>
</tr>
<tr>
<td>55</td>
<td>0.46%</td>
</tr>
<tr>
<td>60</td>
<td>0.50%</td>
</tr>
</tbody>
</table>

(*) The Economic Impact of Interoperability, Microsoft research study
If the benefits are clear why are we not yet there?

Digital services

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eGovernment indicators for Sweden (2013):
% of households with Internet access: 93%
% of individuals using the Internet for interaction with public authorities to obtain information: 72%
% of individuals using the Internet for interaction with public authorities to return filled forms: 46%
Interoperability Barriers

- Legal and political
  - Enforcement
- Organisational
  - Country size
  - Institutional complexity
  - Lack of interaction
  - Resources (time, financial, skills ...)
- Technical:
  - Legacy technology
  - Replacing older systems

... and more

- Lack of visibility of existing available solutions including standards and specifications
- Language
- Lack of information and documentation
- Lack of trust
- Lack of technical and semantic IOP

Findings from the National Interoperability Framework (NIF) Observatory on barriers in establishing and implementing NIFs
Collaboration

Clear Framework

Leveraging Instruments

Streamlining

Holistic approach
Modernisation of public administrations – the Interoperability case

EU approach to interoperability among public administrations: the ISA programme

Alignment and contribution to other EU policy instruments
Interoperability Solutions for Public Administrations

Objectives

Efficient

... and effective electronic cross-border and cross-sector interaction between European public administrations.

European public administrations

... share and re-use existing successful or new Interoperability solutions, common services and generic tools.

Flexible and interlinked

... IT systems allow smooth implementation of Community policies and activities.
The ISA programme: an holistic approach

- Structuring & strategic activities
- Collection & assessment of interoperability solutions
- Mapping solutions into cartography
- Identifying missing parts
- Setting the IOP agenda
- Assess. of ICT implications of EU legislation

- Sharing of solutions
- Motivating and monitoring re-use
- Support the development & operation of ICT solutions
- Community building
- Raising awareness

Programme initiatives:
- EIF
- EIS
- Sharing & re-use
- SEMIC
- NIFO
- EFIR
- TES
- IMM

- Joinup
- EFIR
- SEMIC
- sTesta
- Joinup
- Comm. building
The European Interoperability Framework (EIF) comprises a set of recommendations covering all four interoperability levels.

**EIF recommendations for organisational interoperability**

**Recommendation 15:** Public administrations should document their business processes and agree on how these processes will interact to deliver a European public service.

**Recommendation 16:** Public administrations should clarify their organisational relationships as part of the establishment of a European public service.

**Recommendation 17:** Public administrations working together to provide European public services should agree on change management processes to ensure continuous service delivery.

The ISA programme: an holistic approach

Cooperating partners with compatible visions, aligned priorities, and focused objectives.

- **Legal Interoperability**
  - Aligned legislation so that exchanged data is accorded proper legal weight

- **Organisational Interoperability**
  - Coordinated processes in which different organisations achieve a previously agreed and mutually beneficial goal

- **Semantic Interoperability**
  - Precise meaning of exchanged information which is preserved and understood by all parties

- **Technical Interoperability**
  - Planning of technical issues involved in linking computer systems and services
# ISA outcomes

## Support the effective Implementation of EU legislations
- ICT Impact Assessments
- CISE
- EULF
- ECI
- ePrior
- PSI
- State Aid
- IMI
- INSPIRE
- ELI

## Key Interoperability Enablers
- Networks
- Semantics
- Information exchange
- Sources of trusted information (access to base registers)
- eSignature & eIdentification
- Catalogues of services

## Supporting Instruments to European Public Administrations
- EIS/EIF
- Sharing & reuse
- IMM
- CAMMS
- Decision Support Enablers
- EIA (ElrA and EU cartography)
- EFIR
- CIRCABC
- ICT Impact Assessments

## Accompanying Measures
- Community building
- Communication Activities

## Monitoring activities
- Programme
- TES
- NIFO
The European Interoperability Reference architecture and EU cartography

A four-view reference architecture for digital public services (across borders and sectors). Contributing to:

<table>
<thead>
<tr>
<th>Designing</th>
<th>Accelerate the design of systems that support the delivery of interoperable digital public services (across borders and sectors).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing</td>
<td>Provide a reference model for comparing existing architectures in different policy domains and thematic areas, to identify focal points for convergence and reuse.</td>
</tr>
<tr>
<td>Communicating and Sharing</td>
<td>Help documenting the most salient interoperability elements of complex systems and facilitate the sharing of reusable solutions.</td>
</tr>
<tr>
<td>Discovering and Reusing</td>
<td>Ease the discovery and reuse of interoperability solutions through the European Interoperability Cartography – EICart in Joinup website.</td>
</tr>
</tbody>
</table>
Supporting instruments to EU public administrations

European Interoperability Reference Architecture

- **Legal view**
- **Organisational view**
- **Semantic view**
- **Technical view**

*Application and Infrastructure*
Organisational View

Organisational Enablers

- Organisational Policy
- Organisational Procedure
- Organisational Structure

Public Policy

Business Process Model

Service Catalogue

Business Rule

Organisations

Interoperability Collaboration Agreement

Business

Public Administration

User

Interoperability Service Agreement

Service Provider

Citizen

Service Delivery Model

Public Service

Aggregated Public Service

Basic Public Service

Business Information Exchange

Business Transaction

Business Information Entity

European

National

Sub-National

Supporting instruments to EU public administrations

EIrA
Example case – IMI

- The Internal Market Information System (IMI) is a Trans-European System which supports Administrative Cooperation between Member States.
- IMI provides a secure online accessible application which supports the communication of national, regional and local administrations with their equivalent instances in other countries.
Organisational View

Organisational Enablers

- Organisational Policy
- Organisational Procedure
- Organisational Structure

Organisational Structure

- Business Information Exchange
- Service Catalogue
- Business Process Model
- Business Rule

Business Process

- User
- Citizen

Public Service

- Public Administration
- Competent authorities of the Member States

Specific sectors defined in the Directive on services in the Internal Market

Interoperability

- Provider Agreement

SLA

- Service Delivery Model

Notifications process

- Information request process
- Notifications and questions and answers transactions

 protestors

- EIrA

Electronic notification and information request Services

IMI acting as a Single Point of Contact

- Professional qualifications
- Posted workers
- Cross-border services
- e-Commerce services
• What exists?
• What is still missing?
Sharing and Re-use

3 types of collaboration - 12 cases

**Development and re-use of shared tools**
- EU: e-Prior and Open e-Prior
- BE: IMIO: re-use and pooling of IT
- SE: procurement framework for re-using free solutions
- CH: Financing eGovernment priority projects

**Development and use of shared services**
- EU: EC ICT Shared Services for EU services and other EU bodies
- EU: sTesta data communication network service
- UK: G-Cloud and Cloud store – shared services and procurement

**Shared development of IT solutions**
- EU: Customs - Sunset project
- EU: Customs - collaborative implementation of the Customs code
- FR: OpenMairie framework
- NO: Friprogforeningen
- FR: eBourgogne: Regional shared platform
Defining the Framework

- Analyse existing policies
- Analyse barriers and enablers + measures
- Define scope
- Define Principles
- Define Recommendations
- Sharing and Re-use Framework
- Measures

Quick wins

- Common clauses for contracts
- Business models
- Governance models
- Guidelines and templates for agreements
- Re-usability criteria for assets
- New Quick Wins
EIIf recommendations on base registers

“...registries are under the legal control of public administrations and are maintained by them, but the information should be made available for wider reuse with the appropriate security and privacy measures.”

Source: European Interoperability Framework 2.0

**RECOMMENDATION 11**

“Public administrations should make their authentic sources of information available to others while implementing the appropriate access and control mechanisms to ensure security and privacy as foreseen in the relevant legislation.”

Source: European Interoperability Framework 2.0

**RECOMMENDATION 12**

“Public administrations, when working to establish European public services, should develop interfaces to authentic sources and align them at semantic and technical level.”

Source: European Interoperability Framework 2.0
Good practices for the interconnection (and access to) base registers

<table>
<thead>
<tr>
<th>Legal</th>
<th>BRIDGING LEGISLATION</th>
<th>DATA SHARING PRINCIPLES</th>
<th>SERVICE TERMS AND CONDITIONS</th>
<th>COMPLIANCE WITH LEGISLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational</td>
<td>ORGANISATIONAL STRUCTURES</td>
<td>COLLABORATIONS</td>
<td>ORGANISATIONAL POLICIES</td>
<td>GOVERNANCE PROCESSES</td>
</tr>
<tr>
<td>Semantique</td>
<td>VOCABULARIES</td>
<td>IDENTIFIERS</td>
<td>CODE LISTS</td>
<td>GLOSSARIES</td>
</tr>
<tr>
<td>Technique</td>
<td>NETWORK FOR DATA TRANSPORT</td>
<td>INTERCONNECTION ARCHITECTURE</td>
<td>STANDARDS FOR DATA EXCHANGE</td>
<td>SECURITY</td>
</tr>
</tbody>
</table>
“Now! ... _That_ should clear up a few things around here!”
Semantics

Making visible existing solutions

Establishing agreements on basic semantics

Improving interoperability of open data

Raising awareness on semantic interoperability and metadata management

Key interoperability enablers

ADMS & Catalogue of semantic standards

Core Vocabularies

DCAT-AP
• A multi-purpose platform:
  - Interoperability observatory
  - Communities of interest around interoperability
  - Collaborative work environment
  - Catalogue of interoperability solutions

• Aims to facilitate the sharing and re-use of interoperability solutions made for public administrations

https://joinup.ec.europa.eu/elibrary/video/interoperable-europe-interested
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EU approach to interoperability among public administrations: the ISA programme

Alignment and contribution to other EU policy instruments
- Contribution to the **DAE:**
  - Pillar 2, \textit{"Interoperability & Standards"}  
  - Pillar 7, \textit{"ICT-enabled benefits for EU society"}

- **Services** directive
- **PSI** directive (and Open data)

- Collaboration with the European Structural and Investment Funds (**ESIF**):
  - Thematic objective 2, \textit{"Information and Communication technologies"}  
  - Thematic objective 11, \textit{"Institutional capacity building & efficient public administrations"}

- Synergies with related networks such as the EU public administrations network – **EUPAN**
PSI directive and Open data

- Communication on Open Data ([COM(2011)882](#))
- A revision of the Decision governing the re-use of Commission's own information ([2011/833/EU](#))
- Revision of the Directive on the re-use of public sector information ([2013/37/EU](#))
  ➔ To be transposed into national laws – by July 2015
- Open data-portals
  - [EU Open Data portal](#)
  - [pan-European portal](#)
Different metadata vocabularies + Limited accessibility and lack of awareness = Limited reuse of open datasets

How can I find and combine public data from various sources?

150+
Existing OGD Portal
Semantics

Interoperability enablers and support to EU legislation

eGOVERNMENT CORE VOCABULARIES

DCAT APPLICATION PROFILE FOR EUROPEAN DATA PORTALS

ADMS ASSET DESCRIPTION METADATA SCHEMA

CORE PERSON VOCABULARY

CORE BUSINESS VOCABULARY

CORE LOCATION VOCABULARY

CORE PUBLIC SERVICE VOCABULARY
DCAT-AP enables the provision of a **single point of access** (aka Pan-European Open Data Portal) to data sets published in national open portals

The DCAT Application profile (DCAT-AP) is a common template to describe public sector datasets and data catalogues

[publicdata.eu](http://publicdata.eu)
Services directive

Aims at releasing the untapped growth potential of *services markets* in Europe by removing legal and administrative barriers to trade in the services sector.

The Directive requires that all procedures involved in establishing a business and providing services in another EU country be *fully online*.

**Point of Single Contact (PSC) - supporting the implementation of the directive**

- overcoming administrative obstacles, streamlining procedures and offering seamless cross-border technology.
Points of Single Contact in EU Member States - challenges

• Several PSCs in 1 country;
• Different one-stop shops are **not integrated**;
• Different ways of describing and representing public services;
• Redundant descriptions of public services;
• Lack of user-centric approach for the PSCs;
Service catalogues

- Organise PSCs around **key generic business events** – harmonised across the EU;
- **Standard and user-centric way** of describing key generic business events and public services;
- **Flexible ways of integrating/connecting** other one-stop-shops, such as PSCs, eGoverment portals, websites of Chamber of Commerce;
- **Re-usable tools and specifications.**

**Working Group** – subgroup of the EUGO network
Austria, Estonia, Finland, Latvia, Lithuania, Spain and Greece
Country Position Papers

For many EU Member States, recommendations for: "improvement of administrative capacity in order to foster growth and prosperity"

Examples include:

- Create interoperable digitalisation of public administration
- Employ sound financial management
- Develop e-procurement capacities across the single market
- Simplify regulatory framework for businesses
- Achieve cross-border interoperability of online services and research centres throughout the EU
- Administrative simplification and transparency
- Improve quality, independence and efficiency of judicial systems
- Efficiency of tax collection
- Full and correct transposition of EU law
- Reduce delays in payments
- Promote use of alternative dispute mechanisms
Interoperability is not only a technical matter!

Collaboration

Streamlining

Clear Framework

Holistic approach

Leveraging Instruments

Is a driver but requires...