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JOINING UP GOVERNMENTS

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LIST OF ABBREVIATIONS

A2A	Administration to administration
A2B	Administration to business
A2C	Administration to citizen
ADMS	Asset Description Metadata Schema
API	Application Programming Interface
CA	Competent Authorities
CAB	Change Acceptance Board
COFOG	Classification of the Functions of Government
CMS	Content Management System
CPSV	Core Public Service Vocabulary
CQL	Contextual Query Language
CSV	Comma-separated values
CWCMS	Corporate Web Content Management System
DG	Directorate General
EC	European Commission
ECAS	European Commission Authentication Service
ECMT	European Commission Machine Translation
EEA	European Economic Area
EFIR	European Federated Interoperability Repository
eID	Electronic Identity Card
EIF	European Interoperability Framework
eSD	Electronic Service Directory
esd-toolkit	European Service Delivery-toolkit

EU	European Union
FCOPS	Federated Catalogue of Public Services
FOAF	Friend of a Friend
FRBR	Functional Requirements for Bibliographic Records
HTTP	HyperText Transfer Protocol
IMI	Internal Market Information system
IOP assets	Interoperability assets
ISA	Interoperability Solutions for European Public Administrations
LAU	Local Administrative Unit
LSP	Large Scale Pilot
MS	Member State
MT@EC	Machine Translation at the European Commission
NGI	National Geographic Institute
NIF	National Interoperability Framework
NUTS	Nomenclature of Territorial Units for Statistics
OCD	Omnifarious Container for e-Documents
OWL	Web Ontology Language
PA	Public Administration
PSC	Points of Single Contact
PIL	Patient Information Leaflets
PS	Public Service
RDF	Resource Description Framework
REST service	REpresentational State Transfer service
ROI	Return on Investment

RSS	Really Simple Syndication Rich Site Summary
SC	Service Catalogue
SKOS	Simple Knowledge Organisation System
SP	Service Provider
SPOCS	Simple Procedures Online for Cross-border Services
sTESTA	Secure Trans European Services for Telematics between Administrations
SRU	Search/Retrieve via URL
SWOT	Strengths, Weaknesses, Opportunities, Threats
UI	User Interface
UPL	Uniform Product name List
URI	Uniform Resource Identifiers
URL	Uniform Resource Locator
YEST	Your Europe Syndication Tool
W3C	World Wide Web Consortium

GLOSSARY

Catalogue of public services	A catalogue of public services is a database or structured document that contains all the services which are provided by public administrations.
COFOG	The Classification of the Functions of Government (COFOG) is a classification defined by the United Nations Statistics Division. These functions are designed to be general enough to apply to the government of different countries. The accounts of each country in the United Nations are presented under these categories. The value of this is that the accounts of different countries can be compared.
Controlled vocabulary	<p>A controlled vocabulary is a code list which is used to organise or give structure to certain information. It contains predefined values for a certain subject. These vocabularies could be used for indexing schemes, subject headings, taxonomies, etc.</p> <p>These controlled vocabularies are used to give a structure to the federated catalogue of public services and categorise the public services (generic and specific).</p>
CWCMS	The Corporate Web Content Management System of the European Commission.
eGovernment portal	An eGovernment portal is a public administration portal to facilitate digital interactions through eServices between public administrations and citizens, businesses and other public administrations.
eID	eID is an electronic identity card that can be used for online and offline identification of the citizens. The card can also be used for signing electronic documents by means of a digital signature.
eService	An eService , in the EU context, is (part of) a public service that is made available on an eGovernment portal by a public administration. The administrative procedures can be completed via a user interface which is published on the internet and can request one or more web services.

Federated architecture	<p>A federated architecture is a composition of autonomous (decentralised) organised systems. It is an approach to coordinate the exchange of information across the organised system. A mapping is created between the multiple autonomous systems which forms the federated architecture; this is achieved by defining guidelines and standardised mapping.</p> <p>In a federated catalogue, content syndication is in place. The syndication will support the information exchange between the different systems.</p>
Federated catalogue of public services	<p>A federated catalogue of public services is a collection of other catalogues of public services which are joined together in a standardised method. The database or structured document contains all the public services of the catalogues included.</p>
Generic public service	<p>A generic public service is a service which is defined generically, i.e. it only contains information that applies to all the administrations that offer this service. They are typically defined by a coordinating body in a standardised way. These generic services detail the “what” but do not provide detail on “how” and “where” they are offered by a public administration. However, they can refer to the government level at which they are offered.</p> <p>Each service contains a number of fields to describe the content of the service (title, content and generic conditions, procedures, exceptions, documents and regulations). In addition, each service contains metadata; these fields serve to classify the service (competent authority/government level, authority/government level that delivers this service, theme, type and keyword).</p> <p>These services are constructed by a coordinating body as a unique list, agnostic of all public services offered by all executing public administrations. The outcome is a set of generic public services based on a standardised data model, taxonomy and ontology.</p>
Interoperability	<p>Interoperability, for European public service delivery, is the ability of disparate and diverse organisations to interact towards mutually beneficial and agreed common goals, involving the sharing of information and knowledge between the organisations, through the business processes they support, by means of the exchange of data between their respective ICT systems.</p>

Legal framework/legal basis	<p>A legal framework contains a set of rules or procedures which are legally defined and are applied to a certain domain or area.</p> <p>Legal frameworks dealing with public services, eGovernment aspects, transparency, etc. could be of interest for this study. These frameworks can have a direct or indirect impact on the development of the federated catalogue of public services.</p>
Local government level	<p>The local government level is the lowest level of administrative division in a country. These correspond to the local administrative units (LAU), LAU-1 and LAU-2, as defined in NUTS.</p>
Member States	<p>The Member States mentioned in this document are not only the Member States of the European Union but further include the three other EEA countries.</p> <p>EU-28 plus Iceland, Liechtenstein and Norway.</p>
Mirror	<p>A mirror represents an exact copy of a data set taking over the same structure and semantic model.</p> <p>A mirror of a catalogue of public services is created by generating a copy of the catalogue without making any changes to the semantic metadata model and taxonomy.</p>
Mirroring	<p>One-way synchronisation or mirroring occurs when it is expected that only one data source serves a master where the updates are performed. The synchronisation process only occurs in one direction and is pushed from the master source to the other location(s).</p> <p>The 'add', 'change', 'delete' actions will be carried out only on the master data source. The second source can be consulted ('read'), but it is not permitted to add, change or delete data.</p>

Multilingualism	<p>Multilingualism is the act of using multiple languages. Multilingualism is becoming a social phenomenon governed by the needs of globalisation and cultural openness. Owing to the ease of access to information facilitated by the Internet, individuals' exposure to multiple languages is becoming increasingly frequent thereby promoting a need to acquire additional languages.</p> <p>In this study, it is a concept which deals with the language coverage of the different Public Services in various domains in the federated catalogue.</p> <p>While developing the federated catalogue, there is a need to deal with multilingualism. It is a matter of debate which languages should be available within the federated catalogue.</p>
NUTS	<p>The Nomenclature of Territorial Units for Statistics or Nomenclature of Units for Territorial Statistics (NUTS from French Nomenclature des Unités Territoriales Statistiques) is a geocode standard for referencing the subdivisions of countries for statistical purposes. The standard is developed and regulated by the European Union, and thus only covers the Member States of the EU in detail. The Nomenclature of Territorial Units for Statistics is instrumental in the European Union's Structural Fund delivery mechanisms. For each Member State, Eurostat has established a hierarchy of three NUTS levels; the subdivisions in some levels do not necessarily correspond to administrative divisions within the country.</p>
One-stop-shop	<p>A one-stop-shop is a portal where the public (citizens and businesses) can comply with all their obligations in terms of rules, regulations and formalities without consulting other systems. .</p>
One-way synchronisation	<p>One-way synchronisation or mirroring occurs when it is expected that only one data source serves a master where the updates are carried out. The synchronisation process only occurs in one direction and is pushed from the master source to the other location(s).</p> <p>The 'add', 'change', 'delete' actions will be carried out only on the master data source. The second source can be consulted ('read'), but it is not permitted to add, change or delete data.</p>
Ontology	<p>Ontology is the science of describing the relationship between concepts. This can be used to gain insight into a particular domain by modelling the concepts and ideas (conceptualisation). The reasoning behind the federated catalogue can be defined by describing the relationships between the multiple concepts (catalogues).</p>

Ownership	The ownership of the federated catalogue means that an organisation has certain rights and duties concerning the operation of the catalogue. The owner will be held liable in the event of errors such as the malfunctioning of the catalogue, etc. The owner should guarantee the functionalities of the catalogue and the content syndication.
Point of single contact	The Services Directive requires the Member States to set up a Point of Single Contact . This is a public administration portal (and a one-stop-shop) for service providers with two main goals: providing information and completing administrative procedures. It is necessary for the portal to describe the requirements, procedures and formalities which are necessary to perform or access the services within a Member State. It also needs to provide contact details of competent authorities, access to public registers, and online forms, and process the applications filed.
Public administration	Public administrations are the competent authorities responsible for public services. They consist of national civil servants across the Member States and the European Commission. The federated catalogue of public services will include all public authorities at supranational, national, regional and local level of all EU Member States and EEA countries.
Public administration portal	A public administration portal is a portal owned by a public administration that provides information about what the public administration does and which public services they provide to citizens, businesses and other public administrations.
Public service	A public service is a service rendered by a public administration to either business (A2B), citizens (A2C) or other public administrations (A2A).
Regional government level	The regional government level is an administrative division in a country. These correspond to the NUTS 1, 2 and 3 regions.
Semantic data model	A semantic data model is a conceptual data model that represents data objects together with their properties and relationships and includes the capability to express information that enables parties to the information exchange to interpret meaning (semantics) from the instances, without the need to know the meta-model.
Service	A service is a resource that represents the capability to bring a certain outcome and value to the service requester and is enabled by the service provider.

Services Directive	<p>The Services Directive is an EU Directive on services in the Internal Market, which aims to release the untapped growth potential of services markets in Europe by removing legal and administrative barriers to trade in the services sector.</p> <p>The simplification measures foreseen by the Directive should significantly facilitate life and increase transparency for SMEs and consumers when they want to provide or use services in the single market.</p>
Service model	<p>A service model is a semantic data model which describes how the public service is built. The description of the service is created by means of metadata (data about data) which identifies all the characteristics and specifications of the data structure of a service.</p>
Services of general interest	<p>The concept Services of general (economic) interest (SG(E)I) is an official term used by the European Union for all services that are of specific interest to society. This includes all public services. The scope of the SGIs is broader than the scope of the public services in this document and can also include services which are often, but not always, in hands of private companies (e.g. water, electricity, mail).</p>
SOAP	<p>Simple Object Access Protocol (SOAP) is a protocol specification for exchanging structured information in the implementation of Web Services.</p>
Specific public service	<p>Specific public services are the public services which are actually rendered by a specific public administration.</p> <p>A specific service may be linked to a generic public service (if the generic concept exists at Member State level). The specific service is the executable and actionable part of a generic public service offered by a public administration. The same generic service (e.g. issue and ID card) could be executable and offered in many local authorities in various ways (different local forms, different buildings and opening hours).</p> <p>In contrast to generic services, these specific services also detail the “how” and “where” they are offered by a public administration and how they can be rendered by business (A2B), citizens (A2C) or other public administrations (A2A). It will spell out in detail to which authority/building/office one needs to go, give contact details of the organisation that provides the service, forms that need to be filled in and how the service can be rendered electronically.</p>
Taxonomy	<p>The taxonomy determines the classification of concepts, the division of ordered groups or categories. It is a science which defines a set of principles in order to classify concepts. In this case the definition of the controlled vocabularies could be seen as the taxonomy.</p>

Two-way synchronisation	<p>In a two-way synchronisation (bi-directional/both-ways synchronisation) the two sources are synchronising with each other when changes are performed. The synchronisation process copies the changes in both directions; the data source with the most recent version of the data will reconcile the changes in the other location.</p> <p>In contrast to one-way synchronisation, the two locations are considered equivalent.</p>
Users of the federated catalogue	<p>The federated catalogue of public services will be used by many parties. The catalogue is developed to support the public administrations and they will be the primary users. The public administrations will use the content of the federated catalogue to a certain extent (output). They will also support the content creation of the catalogue (input).</p> <p>A secondary user group is the public. The citizens and businesses can consult the federated catalogue as well (output).</p>
Web crawler	<p>A web crawler is an Internet bot that systematically browses the internet, typically for the purpose of web indexing.</p>
Web service	<p>A web service is a software system that enables communication between two or multiple information systems via interfaces that are described in a machine-readable language (WSDL). The information systems can interact with the web service in a pre-defined way (e.g. SOAP-messages).</p>
Web scraping	<p>Web scraping (web harvesting or web data extraction) is a computer software technique for extracting information from websites.</p>
Web syndication	<p>Web syndication is a form of syndication in which website material is made available to multiple other sites.</p>
WSDL	<p>The Web Services Description Language (WSDL) is an XML-based interface description language that is used for describing the functionality offered by a web service. A WSDL description of a web service (also referred to as a WSDL file) provides a machine-readable description of what the service can be called, what parameters it expects, and what data structures it returns. It thus serves a purpose that corresponds roughly to that of a method signature in a programming language.</p>

1 INTRODUCTION

1.1 OBJECTIVES OF THIS STUDY

This study is one of the steps in the broader Action 1.3 'Accessing Member State information resources at European level, Catalogue of Services' of the ISA work programme. The main objectives of this action are:

- **Harmonisation** around national and European service catalogues to give a better insight for European public administrations in what is available and how to access this information
- **Interconnect** the service catalogues of all the public administrations
- **Build** cross-border services

As one step in the action plan, is this particular study, the Catalogue of Services (CoS) Study II. The specific goals of this study are to:

- Analyse of the **existing public services models** and recommend what should be done to set up a common public services model
- Analyse and determine the **feasibility** of setting up a European catalogue of public services
- Define a **roadmap** with concrete set of steps on how to implement the catalogue

1.2 CONTEXT AND RELATION BETWEEN THE DIFFERENT WP

This study is the second step in the action. First step was the first study on Catalogue of web services. That study analysed the vision of a registry for web services by the public administrations of the Member States. For Study II the scope has changed: the emphasis is not on web services but on the establishment of a federated catalogue of public services.

Study II of the Catalogue of Services is divided into two work packages:

1. Examination of the current state of play in the Member States;
2. Requirements and scenarios for a European federated catalogue of public services.

Within the second work package the feasibility will be determined for setting up a European catalogue of public services. It will form the feasibility study for FCOPS.

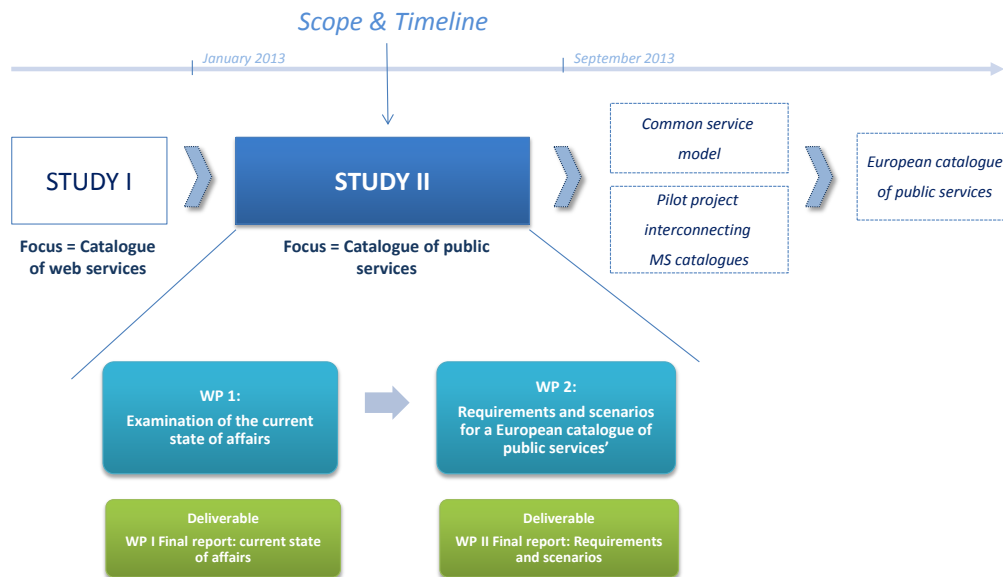


Figure 1 - Scope and timeline for the study

1.3 OBJECTIVES OF THIS DOCUMENT

This document is Deliverable WP I within the Catalogue of Services (CoS) II Study. This deliverable provides an analysis of the current state of play of catalogues of services in the Member States and aims to do this by:

- Positioning this study in relation to other on-going projects
- Describing of the current situation in the member states;
- Identifying of the countries which have catalogues of public service and public service models and determine how they are set up;
- Mapping the different public service models and approaches for the syndication of catalogues and related info that exists in the MS;
- Identifying of the commonalities in the service catalogues and public service models;
- Providing a set of best practices for service catalogues

1.4 HOW TO READ THIS DOCUMENT

The mean audience for this document is mainly public administrations, involved with the ISA programme, and specifically public service owners and developers. To a larger extent anyone with a stakeholder interest in the interoperability and efficiency of public administrations is also welcomed to read this document.

This document is organised as follows:

- **Chapter 1** gives an introduction into the study and this deliverable.
- **Chapter 2** sets out the legal context of a European federated catalogue of public services with potentially relevant legal bases.

- **Chapter 3** analyses relevant initiatives at European level. These initiatives were identified at the beginning of the project as being of interest for the study team. Some of the elements in these initiatives could be of use in defining the requirements for the federated catalogue of services.
- **Chapter 4** provides the main results of a high-level analysis of all public administration portals of the countries in scope. This analysis gives an indication of how the Member States present their public services to the public through a national portal.
- **Chapter 5** contains a high-level analysis of Member State portals targeting citizens and/or business. It focuses on the front-end and draws some conclusions relative to the layers of the EIF.
- **Chapter 6** presents in conclusion a more detailed analysis of some remarkable success stories within the Member States. These success stories will provide important input for the second work package of the study, i.e. the requirements and scenarios for the federated catalogue.

The annexes to this document provide more details or additional material in relation to the different chapters.

2 INITIAL ANALYSIS

2.1 VISION

The idea behind the federated catalogue of public services is supported by the following statement:

‘WOULDN’T IT BE GREAT IF I COULD START MY SEARCH FOR A PUBLIC SERVICE IN ANY MEMBER STATE FROM ANY PLACE?’

There is currently a myriad of portals at EU level, national level and regional level, but none of them cover all the public services which are provided to citizens, businesses and administrations across the EU. The ambition of the European federated catalogue of public services is to be a central repository of all public services offered within the Member States which can be accessed primarily by public administrations. The federated catalogue will not offer eService functionalities, but is a portal which will make reference to the requisite public services of the different public administrations.

This federated catalogue will run next to existing systems and will use their functionality to summarise and classify the public services of all the Member States. The catalogue will primarily be used by the public administrations of the Member States. The catalogue will provide one common structure and classification of the public services. This can then be used to build a pathway or communication channel between public services across the EU. In addition, the public administrations will be able to compare their full portfolio of services with the catalogue and take over the pre-defined structure whenever a new public service is being developed. At EU level the portal will offer the possibility of creating aggregated services.

2.2 CONCEPTUAL MODEL

This chapter covers a set of concepts which will give direction to the study. The concepts are a set of minimum requirements in order to create the federated catalogue of public services. All the requirements of the conceptual model are high-level requirements and hence are not explained in full detail in this chapter. The requirements will be further extended and refined in the feasibility study (work package 2).

When these concepts are realised they need to be in line with the EIA¹ and fit with the EIA building blocks. Furthermore, all the solutions developed for FCOPS should be described according to ADMS and added to EFIR². Via EFIR, the (semantic) assets used in FCOPS can be made available and reusable for other administrations.

The minimum requirements explained in this chapter include one general requirement about the scope of the catalogue. The other dimensions are grouped according to the four interoperability dimensions of the EIF. The legal dimension tackles the need for a legal basis. The organisational dimension covers the requirements for ownership and management of the system and its content, and the users of the catalogue. The semantic dimension deals with the need for a common service model, a model for a common classification of the public services and the issue of multilingualism across the Member States. And finally the technical dimension tackles the high-level requirements for the technologies which facilitate the federation and syndication of the contents in the federated architecture.

¹ European Interoperability Architecture project ISA Work programme: D1 D2 – European Interoperability Architecture - Reference Architecture, D2 – European Interoperability Architecture - Reference Architecture and D5 – Governance of the EIA Reference Architecture and Cartography

² ADMS and EFIR are briefly explained in section ‘4.7 Asset description metadata schema’ below

Table 1 - List of concepts

Concept	EIF layer	Requirements
Scope		All public services of all countries in ISA's scope at a national, regional and local level and all supranational services.
Legal basis	Legal	A legal framework will encourage the establishment of the catalogue. This could be either an existing framework that can be used to support the catalogue, or a new framework. There is a need to determine what, if anything, is required by way of a legal basis.
Ownership	Organisational	The system should be owned by an organisation independent of any Member State, e.g. the European Commission, but the content is owned by the public administrations of the respective Member States.
Users	Organisational	The primary users are the public administrations of the Member States; all businesses and citizens are potential secondary users.
Service model	Semantic	A public service model is required to structure the content of the public services (e.g. CPSV).
Classification	Semantic	A classification will be needed in order to structure the public services within the federated catalogue of public services. These services will be mapped with these controlled vocabularies and a multidimensional classification can be opted to enhance the user-friendliness and the flexibility of the catalogue.
Multilingualism	Semantic	A determination has to be made about the languages in which the platform should be available.
Federated architecture	Technical	The technical architecture should allow for a flexible federation of the Member States' public services to the federated catalogue of public services.

2.2.1 SCOPE

The federated catalogue of public services will include all the public services at supranational, national, regional and local level that are offered by all public authorities of all EU Member States, EEA countries and any candidate EU Member States who have signed a Memorandum of Understanding with the ISA Programme.

2.2.2 LEGAL BASIS

LEGAL FRAMEWORK

One of the tasks of the feasibility study will be to investigate whether there is any legislation that could justify the implementation and use of the federated catalogue of public services. If there is already a legal framework in place which can support the actual implementation of a federated catalogue of public services, it will be much easier to convince the Member States to participate.

The absence of a legal basis, on the other hand, does not necessarily imply that the Member States would not cooperate. In this case, it will be important to demonstrate the importance and identify the benefits of a federated catalogue of public services on a European level and on the basis of this create legal basis to create a frame for a federated catalogue (e.g. memorandum of understanding, intentional declarations, etc.)

2.2.3 ORGANISATIONAL

OWNERSHIP

The federated catalogue of public services will be owned by an organisation that can manage the federation and abstraction of the different Member States' catalogues. This could be the European Commission. The content of the federated catalogue of public services will be owned by the Member States. Every Member State will contribute their public services to the catalogue and will remain the owner of what they contribute. Thus the content is owned by many different parties, i.e. the Member States.

It is important to determine who is in charge of operating and maintaining the federated catalogue. There are several possibilities to choose from: an institution at European level, a working group of Member State representatives, or the authorities of the Member States themselves. Thus, the organisational ownership of the catalogue can be subdivided: owner of the system and owner of the content.

USERS

The primary target audience for the federated catalogue of public services will be the public authorities of the Member States. They will not only contribute to the catalogue but they will also be able to benefit from the catalogue because they will have access to the entire catalogue. Another advantage is that the public administrations are able to reuse the common model for describing and categorising the public services.

A secondary target audience for the catalogue will be the citizens and businesses who can benefit from the federated view of the public services on offer, both by having a common view at EU level, and of the offering per Member State.

2.2.4 SEMANTIC

COMMON MODEL AND MAPPING

The federated catalogue of public services needs to be built on solid foundations. Therefore it is recommended that a common service (metadata) model be defined to describe the public services. No model needs to be built; existing models can be reused and adapted to fit.

The service model from previous study is a first option, but this model needs to be changed for the implementation of a catalogue of public services. Another option is to extract and analyse all the service models used within the Member States, compiling their common characteristics and using these to build a new service model. In the same spirit, a working group on Joinup³ has already worked on defining a new Core Public Service Vocabulary that has been accepted by the Member States and is described in detail in Chapter 4.4.

This last option would be the best-case scenario as it has been agreed upon. However this model has been built at the lowest level of detail and may be extended within our study. This will be analysed at a later stage.

³ Joinup is an EC-sponsored platform for sharing and re-using interoperability solutions for national administrations (<https://joinup.ec.europa.eu>)

When a service model is designed and implemented within the federated catalogue of public services, it will be necessary to carry out a mapping with the service models of the Member States. The responsibility for the mapping can be given to a public authority at European level or at Member State level. The recommended course of action, and the course that seems more feasible, is to give the responsibility to the authorities of the different Member States. They can map their public services to the generic public services defined in advance at European level.

CLASSIFICATION

There is a need for common classifications to group the public services across Europe. However the catalogue does not need to limit itself to one type of classification. Multiple classifications can be used in parallel.

The benefits of a common classification are that:

- it will harmonise the public services when mapping them to a common classification and structure;
- this will allow for an easier comparison of the public services between the Member States; and
- it makes it easier to find public services.

There are many possibilities for structuring the services: allocating the public services by life events, categories within the esd-toolkit, sectorial, Classification of the Functions of Government (COFOG), etc. Each of these classifications should be looked at in greater depth to see how they can be used within the federated catalogue. A standardised thematic classification (e.g. life events) should be enforced and used within the federated catalogue combined with other classifications. This leads to multidimensional classifications and it will enhance the user-friendliness of the federated catalogue of public services. Once a standardised thematic classification is defined, the public administrations across the EU are able to use it within their catalogues and portals.

MULTILINGUALISM

The language situation in the European Union is complex. The European Union has 24 official and working languages, of which three (English, French and German) are used as working languages by the European Commission. There are also five co-official languages (Catalan, Basque, Galician, Welsh and Scottish Gaelic) which citizens are allowed to use in their contact with the European institutions. In addition, the scope of the federated catalogue comprises the EEA countries and some candidate EU Member States, most with additional official languages.

Given that the federated catalogue of public services should be available for all the Member States, the question arises as to the language in which the catalogue will be made available. The catalogue consists of different components, some of which might not necessarily be translated into all languages:

- Firstly, there is the language that should be used for the user documentation, the documentation about the system and how to use it (help, FAQs, etc.). This should be available in all the official languages in order to provide equal access to all users;
- Second, there is the catalogue itself with the user interface, the search functionality, the classifications and the generic services. This should also be available in all official languages in order to provide equal access to all users;
- Third, there are the specific services of the Member States; these will (probably) be available in the language of the Member States. Though these specific public services will be accessible throughout the EU and therefore they need to be translated in all the official languages.

There are automatic translation tools available, although a clear disclaimer should be used in this case to inform the users that these are machine translations and could therefore be incorrect. Examples of such tools are and Google Translate⁴, the MT@EC based on Euramis and Molto⁵.

2.2.5 TECHNICAL

FEDERATED ARCHITECTURE

There are some technical aspects that have to be taken into account to set up the federated catalogue of public services.

On the one hand, to accomplish the federation, the system must be able to exchange information exchange and syndicate content between the federated catalogue and the systems of the Member States. The methods for establishing this information exchange need to be flexible because not all the Member States have a catalogue of public services and other ways of federating the content may be required. Therefore, the back-end processes should be available for different types of exchanges: manual input and automatic exchange.

On the other hand, a user interface is required to interact with the target audience at the front end. The user should be able to consult the preferred information and use the available public service, found via the controlled vocabularies (classifications). The front end of the federated catalogue can provide several functionalities, e.g. a search engine, news feeds, etc.

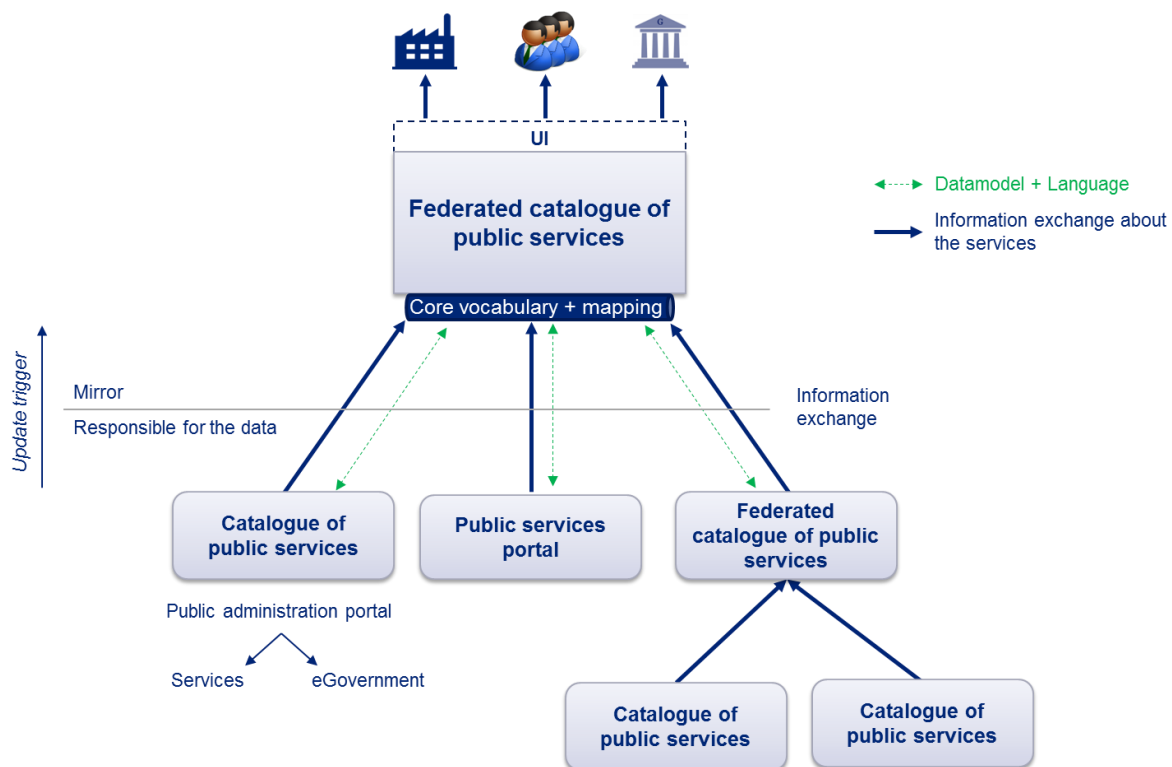


Figure 2 - Federated architecture of the catalogue of public services

⁴ http://translate.google.com/about/intl/en_ALL/

⁵ <http://www.molto-project.eu>

3 LEGAL CONTEXT

There is currently no legal basis within the European Union which explicitly encourages the Member States to create a catalogue of public services. However some directives and declarations are used as a basis for justifying the establishment of catalogues of public services.

3.1 SERVICES DIRECTIVE

The Services Directive⁶ deals with services of an economic nature⁷ offered by natural or legal persons⁸ of the Member States. The objective of the Services Directive is to release the untapped growth potential of services markets in Europe by removing legal and administrative barriers to trade in the services sector. The Services Directive was adopted by the European Parliament and the Council on 12 December 2006. The deadline for transposition was 28 December 2009. This Directive provides for businesses to receive online support through their business life cycle.

Under the Directive Member States are obliged to set up “points of single contact”, through which service providers can obtain all the relevant information and deal with all administrative formalities without the need to contact several authorities. The “points of single contact” have to be accessible at a distance and by electronic means. Each Member State can choose exactly how to implement this in national law.

All the Member States have established an electronic “point of single contact” in the form of a portal accessible through the internet. This portal is either a separate portal uniquely designed for this purpose or it is part of a general-purpose government portal.

Certain Member States have taken the opportunity to go a step further and have extended their points of single contact to public services for citizens as well (e.g. Bulgaria, Estonia, Hungary).

3.2 EUROPEAN INTEROPERABILITY FRAMEWORK

The objective of the European Interoperability Framework (EIF)⁹ is to improve cross-border interoperability between the public administrations within the European Union. By means of this framework the Member States are encouraged to promote and support European public services and the EIF guides the public administration in achieving this. It also seeks to connect the various National Interoperability Frameworks (NIFs) at European level.

The EIF is an interoperability framework that stimulates the cooperation of public services based on an agreed approach. To achieve this cooperation, a set of interoperable assets was defined in advance (e.g. vocabulary, concepts, principles, policies, guidelines, etc.).

Given that the EIF stimulates support for providing European public services, it is relevant for the federated catalogue of public services. The seventh principle, in particular, which is *Transparency*, could be used to stimulate the development of the federated catalogue. The Services Directive has the effect of stimulating public administrations to be more transparent towards the citizens and businesses. Through the federated catalogue, the public will be able to discover the offerings of the public administrations across the EU.

⁶ http://ec.europa.eu/internal_market/services/services-dir/index_en.html (27/6/2013)

⁷ Article 50 EC Treaty: http://eur-lex.europa.eu/en/treaties/dat/12002E/htm/C_2002325EN.003301.html (27/6/2013)

⁸ Article 48 EC Treaty: http://eur-lex.europa.eu/en/treaties/dat/12002E/htm/C_2002325EN.003301.html (27/6/2013)

⁹ http://ec.europa.eu/isa/documents/isa_annex_ii_eif_en.pdf

Two other principles, in addition to the seventh of transparency, could also have a positive indirect impact on this study:

- *Principle 10: Reusability*

This principle stimulates the public administrations to cooperate on the development of joint solutions on the one hand and on the other hand they encourage to reuse and share solutions and knowledge. The federated catalogue can be developed and share the knowledge to Member States without a catalogue. The lessons learned and the semantic assets (e.g. service model, controlled vocabularies, methodologies, etc.) can be shared with the Member States in order to create such a catalogue of public services on a national level. The federated catalogue might be supported by this principle of the EIF.

Public administrations might also learn from their counterparts in other Member States. They can see how they offer certain public services.

- *Principle 12: Effectiveness and efficiency*

This principle stimulates the public administrations to serve the public in an effective and efficient way. The federated catalogue can provide an overview of all the public services offered across the EU. When a citizens or business ask a question concerning a public service within the country or across the borders, the public administration can easily consult the federated catalogue of public service.

3.3 PUBLIC SECTOR INFORMATION DIRECTIVE

The Directive on the re-use of public sector information (Directive 2003/98/EC, known as the 'PSI Directive')¹⁰ entered into force on 31 December 2003. It focuses on the economic aspects of re-use of information rather than on the access of citizens to information. It encourages the Member States to make as much information available for re-use as possible. It addresses material held by public sector bodies in the Member States, at national, regional and local levels, such as ministries, state agencies, municipalities, as well as organisations funded for the most part by or under the control of public authorities (e.g. meteorological institutes). The Directive covers written texts, databases, audio files and film fragments; it does not apply to the educational, scientific, broadcasting and cultural sectors.

In June 2013, a revision of the Directive has been adopted by the Union legislator (Directive 2013/37/EU amending Directive 2003/98/EC on the re-use of public sector information¹¹). Member States have two years to transpose the provisions of the revised Directive into national law.

The revised PSI Directive:

- introduces a genuine right to reuse by making reusable all content that can be accessed under national access to documents laws;
- lowers the upper ceiling for charges on reuse applicable in standard cases to marginal costs, i.e. the costs incurred by the individual request for reuse (reproduction, provision and dissemination costs); exceptions are allowed in a limited set of cases;

¹⁰ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:345:0090:0096:EN:PDF>

¹¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:175:0001:0008:EN:PDF>

- expands the scope of application of the Directive to certain cultural institutions such as libraries (including university libraries), museums and archives, but making them subject to a number of different rules that reflect that set of rules of the 2003 Directive, namely:
 - There is no genuine right to reuse; only such documents the reuse of which has previously been allowed are reusable;
 - Cultural institutions can charge reusers based on the principle of full costs recovery, including a reasonable return on investment;
 - Cultural institutions may engage in the award of exclusive exploitation rights if necessary to ensure digitisation projects,
- reinforces the obligation to be transparent on conditions and on charges applied to reuse; and
- invites Member State to make more documents available in machine-readable and open formats.

A significant share of content, which is produced by public services, falls under national access to documents laws and is therefore also covered by the right to reuse of the revised PSI Directive. Any person or organisation may request this content for commercial or non-commercial reuse.

In addition to that the PSI Directive has led to the establishment of a growing number of Open Data portals¹² on which public sector information is made available to the public – as repositories or as link catalogues. Such portals may be considered as a public service. The FCOPS, as described in the vision, is a repository containing public information and hence falls under this directive.

¹² <http://ec.europa.eu/digital-agenda/en/open-data-portals>

4 ANALYSIS OF RELEVANT INITIATIVES

Several initiatives have already embarked to improve collaboration between the Member States (MS) on public Services. Each initiative was built separately with a unique well-defined scope and each has a different purpose for the target audience. Some of these initiatives can contribute in some way to the development of a federated catalogue of public services. This contribution can range from collaboration best practice to semantic elements of the initiatives and tools. This section provides an analysis of the context of ten initiatives.

An overview of the initiatives is in Figure 3. The overview indicates the target audience for each initiative: administrations (A), businesses (B), citizens (C). Capital letters indicate the primary focus audience and lower case letters indicate a secondary focus audience for a particular initiative.

A connection with the different public administration portals of the Member States is shown beneath the federated catalogue of public services because it will be useful to have a first look already at the different portals to see how they are structured and provide their services to the public. The first findings about these national portals are in section 5.

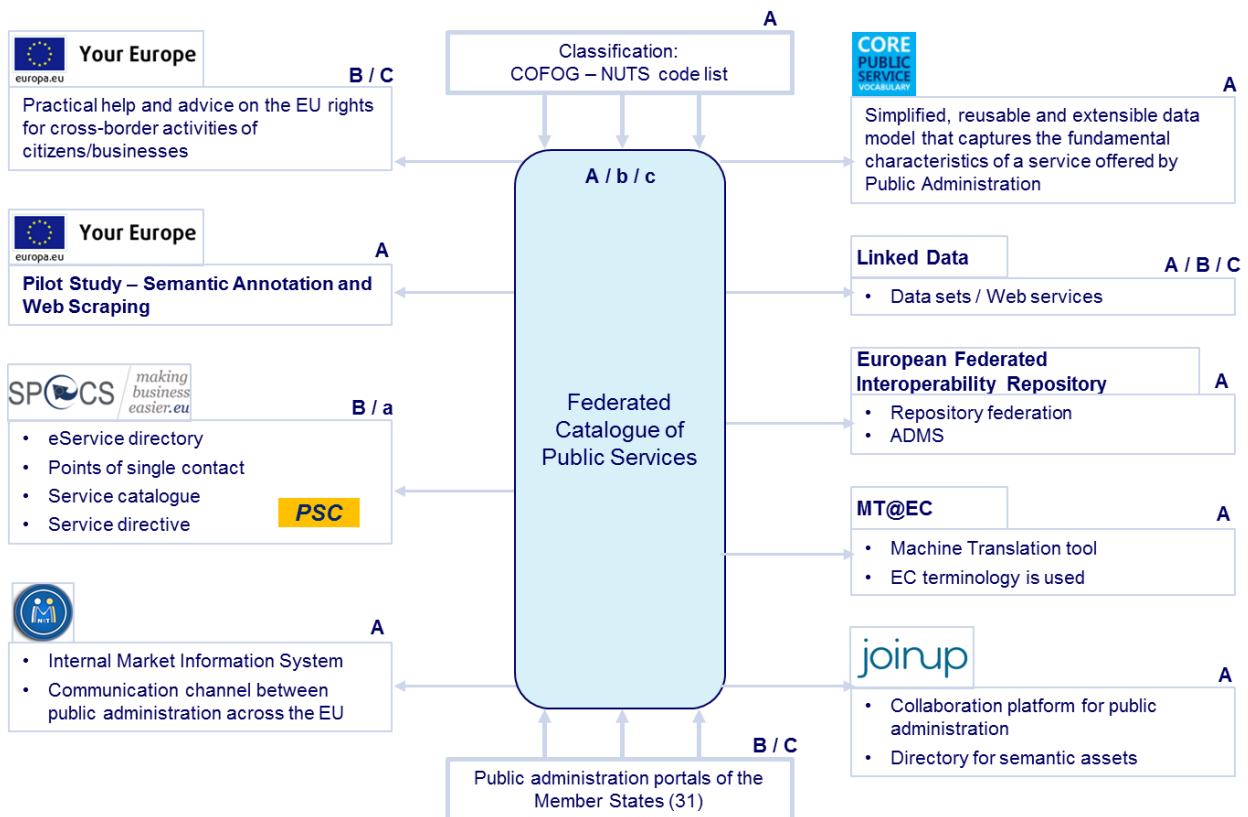


Figure 3 - Overview of existing initiatives

The next sections provide a brief description of the each of the initiatives, followed by a short explanation on how the initiatives could contribute to the federated catalogue of public services

4.1 YOUR EUROPE

Your Europe is a public administration portal that is designed to give advice to both citizens and businesses. It provides practical help on cross-border activities, including:

- The basic rights and obligations of the citizen/business;
- How the rights and obligations are implemented;
- How to obtain more personalised or detailed help (by e-mail or phone).

This information is available for each Member State of the European Union plus Iceland, Liechtenstein, Norway and in some cases Switzerland¹³. It is available in all official EU languages except Irish¹⁴. Your Europe focuses on real-life events and experience of citizens/businesses, and the questions that arise frequently as a result.

Therefore the content is clearly categorised by real-life events. The content is managed by two Directorates General of the European Commission:

- Information and guidelines for citizens are maintained by DG Internal Market and Services;
- Information and guidelines for business are maintained by DG Enterprise and Industry.

The European Commission and representatives of the EU Member States plus the three other member states of the EEA, they have formed an Editorial Board to work together closely to support the Your Europe portal. The Board meets twice a year to exchange information and review the status of and need for updates. The main task of the Member State representatives is to provide updated content contributions at national level.

The following sections provide greater in-depth analysis of the information available for citizens and business. The final section describes the content creation process and the added value of Your Europe for the federated catalogue of public services.

4.1.1 CITIZENS

The help and advice for citizens is applicable to their family members, even if they reside in/or are nationals of a non-EU country. The practical tips and information about the rights of a citizen are divided into groups, and within these groups are specific life events, and within each event, there are more detailed life event areas. In the case of work and retirement for example:

- Work and retirement is the life event group;
- Looking for work abroad is a life event within the group;
- Recognition of professional qualifications and taxes are two of the areas within that life event.

LIFE EVENT GROUPS

For each life event group, a list is provided with all the life events that are related to each other. For each life event, there is a list of areas. In some cases, the portal provides links to the portals of associated public administrations or information resources. For example, within the travel group, the citizen can easily access the information about 'Consular protection outside the EU', 'Cheaper mobile roaming in the

¹³ Not all the services provided by Your Europe are applicable to Switzerland, as Switzerland's arrangements with the EU are not as wide-ranging as those of the other non-EU countries covered, as these are EEA countries.

¹⁴ As of August 1, 2013, the section for business was also available in Norwegian, while Croatian was available only for the service for citizens.

EU', 'Package travel' and emergency numbers. For many of the life event groups, there is also contact information for each country for further help or information.

The Figure below shows all the citizen life event groups and life events.

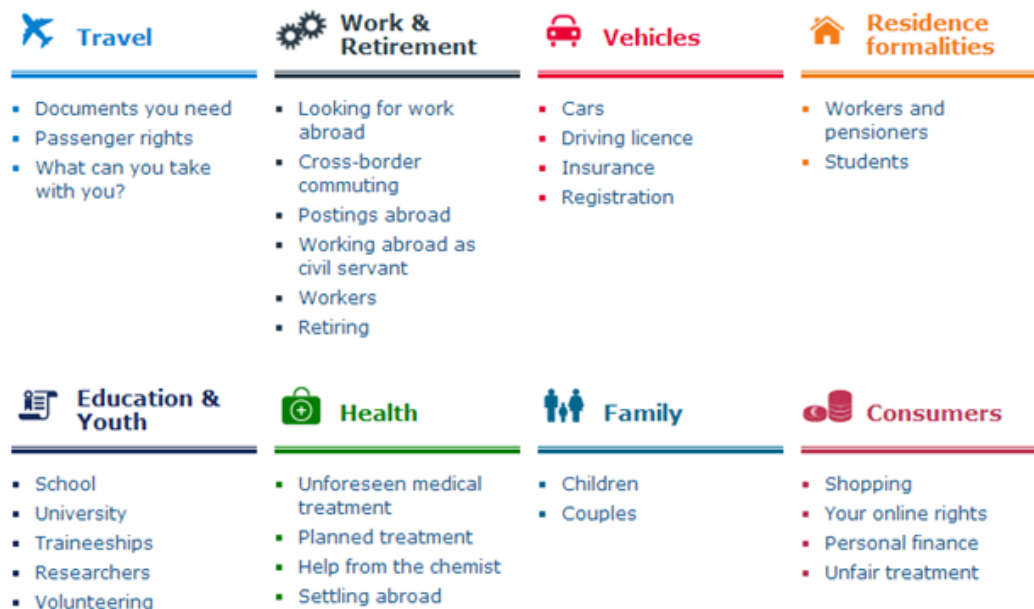


Figure 4 - Life event groups and life events

LIFE EVENTS

The life events are experiences that any citizen might encounter. This list is continuously updated and extended by DG MARKT. For each event, a brief description is provided which indicates when a particular event is applicable. There are links to the corresponding life event areas from each life event.

LIFE EVENT AREAS

Each life event is composed of diverse areas at a more detailed level. This area describes in depth what a citizen might need to know about in relation to a given cross-border activity. For example, a citizen wanting to work abroad (life event) is likely to consult information about work permits, taxes, etc. An explanation is provided for each area of exactly what the citizen needs to do before or when carrying out the activity and all the points to which particular attention should be paid are clearly indicated. Some short sample stories are provided so that citizens can identify with the situation.

In addition to the in-depth description, the examples and attention points, there are links to the website of the appropriate public administration, regulations and documents. In some cases (e.g. taxes) the portal provides the possibility of accessing information on each Member State because the regulations are different and too specific for each country.

The complete list of the citizen life events can be found in annex A.

4.1.2 BUSINESS

In addition to covering life events for citizens, the Your Europe portal is a practical guide for business. The portal provides information on what businesses need to do when operating cross-border. The categorisation of the information is comparable to that of the life events:

- Starting up is a business event group;
- Takeovers are a business event within this group;
- Access to finance is a business event area.

BUSINESS EVENT GROUPS

Unlike the life event groups, a business event group is not only a listing of all the business events in a business lifecycle in that group, but a description is provided of every business event group. This is extended with a description of all the business events belonging to the business event group and when these are applicable. The figure shows the business event groups and the business events.



Figure 5 - Business event groups and business events

BUSINESS EVENT

The business events are structured differently from the life events. The default view is information applicable at EU level. All the requirements and elements are well defined, and the areas are explained on the same page. The main difference is that the visitor to the page can choose to display the information for a specific Member State¹⁵. This distinction is made because most information for businesses is very specific for each Member State. Moreover, the areas which are related to the business events can differ from one EU country to another.

Links are provided to redirect the visitor to related documents, regulations or portals where more detailed information and very often personalised support are available. Some events have two additional sections available on their page. The first offers useful links to other relevant information resources (e.g. databases, portals etc.). The second describes the programmes of the European Commission (e.g. Fiscalis 2013 to help implement indirect taxation systems). The complete list of the business events can be found in annex B. The areas which are listed are those at EU level. This can be different for each Member State.

¹⁵ There are cases, such as tax, where this is true of life event areas, but it is not the general rule.

4.1.3 CONTRIBUTION OF 'YOUR EUROPE' TO FCOPS

Your Europe is an example of a descriptive catalogue of European cross-border public services which provides advice about the diverse cross-border public services. The portal categorises the public services in different life/business event groups.

The scope of Your Europe is to provide information to citizens and business on European cross-border public services. It focuses especially on the area in which EU legislation has provided opportunities and rights for mobile citizens and businesses. The way the legislation has been implemented is not the same across each Member State. The portal provides a clear view per Member State on what the citizen or business needs to do.

The scope only partially covers the scope of FCOPS, which strives to include all public services offered within the European Union. The federated catalogue of public services will, moreover, have a (primary) descriptive purpose, but will focus on the learning path for public administrations.

Your Europe is in a sense a catalogue because it gives an overview of the existing cross-border public services that are offered within the European Union. However, it does not use a fixed public service model. Therefore the way in which the public services are presented in a user interface is different from that of FCOPS. The method of grouping the public services in life and business events could nevertheless be an inspiration for the taxonomy used by FCOPS to classify public services.

An Editorial Board is dedicated to creating and publishing the content on the Your Europe portal. Each Member State has nominated a representative as a member of the Board. As this is a highly demanding responsibility, some Member States have split the task with two representatives, often reflecting a split in the subject areas.. The content creation process is still performed manually via e-mail. The Editorial Board meets twice a year to discuss the tasks and performed the initiatives planned.

The process of content creation is supported by two tools:

- LiveRay: this is used by the central Your Europe web editor team to prepare and document all the content which needs to be published;
- CWCMS: this is an internal tool which is used by the European Commission to publish information on any portal which is created by the Commission. This tool is used to publish the documents received by the editors via the LiveRay tool.

This manual process requires a lot of time and effort from the editors. The European Commission has initiated a pilot to research the technique which requires the least amount of effort for Member States. This is discussed in the next section.

4.2 PILOT STUDY ‘YOUR EUROPE’ – SEMANTIC ANNOTATION AND WEB SCRAPING

Your Europe launched a pilot study¹⁶ to investigate several possibilities for content syndication. This could replace the current a manual procedure for content creation and publishing on the Your Europe portal. As the previous section described, this manual procedure supported by two tools – as described in LiveRay for content creation and preparation, and CWCMS for content publishing – demands a lot of effort from the Member States. The study investigates how the procedure could be automated and which scenario requires the least effort.

The study takes two different perspectives:

- Provision of national content
 - Current situation
 - Scenarios studied
- Content publication methods
 - Integrated content
 - Content at the end of the page
 - Linked content.

The national content refers to the information which is available for the Member State on EU legislation. It indicates how the legislation is implemented within that particular Member State. In addition to the national content, there is Your Europe content, which provides an explanation of the EU legislation.

4.2.1 PROVISION OF NATIONAL CONTENT

Currently Your Europe uses two kinds of content integration for the portal: Questionnaires in Microsoft Word® and deep linking. The Word questionnaires require a lot of effort from both the Your Europe team and the members of the Editorial Board. The Your Europe team creates a structure for the information in a Word file. This file is then sent to the Editorial Board. The Board members fill in the Word document with the requested information and then return it. The Your Europe team members then review the documents and send the document to a contractor. This contractor converts the document to the format supported by the CWCMS in order to publish it on the portal.

The other form of content integration within the Your Europe portal is simple deep linking . This is a methodology where the portal refers or links back to a specific web page or specific piece of content on a website instead of referring to the home page of the website. This improves efficiency because the user does not need to start searching on the new portal on the basis of the description but is redirected to the specific public service information.

¹⁶ Your Europe Syndication Tool Pilot Project, Governance Implication of Content Syndication – European Commission

The study is investigating certain other scenarios which could support Your Europe content creation and publishing:

- *Web forms:*
Your Europe could set up different standardised web forms to be filled in by the Member States to create the content for the Your Europe portal. Once the content is created, it would be possible to edit or translate the descriptions before it is published.
- *Content syndication:*
This is a technique which automates the procedure of content creation and publishing. The owner of the content needs to provide the information in a certain agreed format that is then extracted by Your Europe from the original sources.
 - *National content based on the Your Europa Syndication Tool (YEST) semantic asset*
Each information source from the Member States needs to take over the defined YEST's semantic asset. All the semantic assets are mapped with the one of YEST and the content can then directly be uploaded without a custom-made process (automated) for each information source.
 - *National content not based on YEST semantic asset*
Each information source keeps its own semantic assets and architecture. The raw data is extracted from the source and mapped with the standardised structure via an automated process. This process needs to be custom-made for each source as it differs each time. The process will identify the relevant pieces and load it on the portal.
 - *Tagged national content*
In this scenario each information source owner (Member State) needs to include certain predefined tags within the content. These tags can be incorporated via metadata in a way such that this information is not published or visible for visitors to the Member State portals. On the Your Europe side, the web scraping technique, file transfer or web service can be used to go through the content, extract the relevant information and publish it on the Your Europe portal.
 - *Aggregation of content*
Each information source can keep its semantic structure and architecture. The YEST will copy the complete web page (HTML) from the source and store it within YEST. The content will be published in just the same way as it is available on the Member States web pages.

The pilot study has carried out a qualitative analysis (based on development cost, maintenance, ROI, operation complexity, human resources and security), an analysis of distribution of effort (for Member States, EC staff and IT contractor) and identified the advantages and drawbacks in order to compare the different scenarios. Based on the output of these evaluation criteria, the study has concluded that the '*tagged national content*' would be the most appropriate technique for content syndication. This technique would require least amount of effort for the Member States by adding metadata tags to the national content. The workload for this scenario is shared between the European Commission and the Member States.

The YEST web forms would require considerable effort and involve duplication of effort (as the content already exists). The scenario without the commonly used semantic asset would not be feasible due to the great effort that would be required to draw up tailored procedures for each information source. If the content were aggregated without a common lay-out, then one web page might contain different content structures. This could be very user-unfriendly.

4.2.2 CONTENT PUBLICATION METHODS

Once the content is extracted, it needs to be published on the Your Europe portal. The study identified and investigated several alternatives for content publication. These different scenarios have an impact on the presentation layer of the portal (structure-wise) and also on the efficiency of the search engine (the way the pages are indexed).

- *Integrated content*
The national content is intertwined within the Your Europe content. The web pages can contain diverse content boxes with more specific information which can be hidden or visible. If it is hidden, the user can request the content by clicking on the related buttons, links, dropdown boxes, etc. This will only be possible when national content is available for the Your Europe content.
- *Content at the end of the page*
Unlike the intertwined national content from previous alternative, the national content will be displayed in its entirety at the end of the page. This scenario is linked with the 'Aggregation of content' for the content syndication scenario. The hidden/visible functionality is still possible in this concept.
- *Linked content*
In this concept the national content is not published on the Your Europe portal. The Your Europe content refers to the national portals via links. These links can be included at the end of the page or integrated as in the first concept.

Similar to the case for the provision of the national content, the content publication options are validated against evaluation criteria: search engine optimisation, usability, advantages and drawbacks. '*Integrated content publication*' has been identified as the most suitable publication method. This option will ensure that the content is available within the same structure as the Your Europe portal.

If the national content were published at the end of the web page, this would lead to inconsistencies within the lay-out of the portal.

4.2.3 CONTRIBUTION OF 'YOUR EUROPE' PILOT STUDY TO FCOPS

The pilot study was finalised in February 2013 and the outcome of the study is of interest for the implementation of the federated catalogue of public services. The conclusions on the content syndication open up a possibility for content syndication in the federated catalogue. The study determined that this option involves the least amount of effort for Member States, due to a shared workload between the European Commission and the Member States.

The content syndication technique chosen is an example of **semantic annotation**. The Member States need to add predefined tags (preferred metadata tags, e.g. XML) within the content they publish on their portals. In order to extract the relevant information, the Your Europe Syndication Tool will use the **web scraping** technique. This technique uses a **crawler** to go through each Member State portal to extract the information according to certain rules for selecting the required metadata tags. After this, the content can be published.

The European Commission needs to define the metadata tags in advance and to take into account that it should be possible for the federated catalogue of public services and the Your Europe portal to use these tags. This will improve the exchange of information for both initiatives and the Member States only need to add the tags once.

4.3 SPOCS

The objective of the Services Directive is to encourage the growth potential of service markets in the European Union by eliminating all legal and administrative complications. The measures introduced by the Services Directive are designed to create transparency, freedom for service providers to establish in other Member States and the delivery of services between Member States.

Since December 2009, each Member State has been required to set-up a Point of Single Contact (PSC), a public administration portal covering all the procedures for a business to establish a service activity. It serves as a connection point between public administrations at the national level on the one hand and the businesses on the other in order to simplify the entire administrative burden businesses usually encounter. On these portals, businesses are able to retrieve information about the public services' rules, regulations, procedures and formalities related to setting up a business.

SPOCS¹⁷ (Simple Procedures Online for Cross-border Services) is what is known as a Large Scale Pilot (LSP) project that was initiated to develop a connection mechanism between the service providers and the national public administrations via the next generation of Points of Single Contact. The mechanism is intended to support businesses that want to expand to other countries and supports the PSC in providing the business with information on the regulations they need to follow (e.g. applying for licences, permits and other administrative work). SPOCS enables the use of e-procedures by building cross-border solutions on top of the Member States' existing systems. This fosters the interoperability of the PSC solutions across the European dimension. Building blocks are developed during the project to ensure safe transmission of information and documents between the administrations. These building blocks bridge the gap between the Member States' regulations and build an interoperability layer. The first step in the SPOCS project was to create service catalogues and directories to collect all the necessary information about the services:

- **Service catalogues (SC):** store information about e.g. public services, competent authorities (CAs), areas, responsibilities, document types and fees. This information is used to inform the Service Provider (SP) about what the public administration offers and the conditions on which it offers them.
- **Interoperable eService directories (eSD):** store information about gaining access to and the conditions of eServices. This information is used to configure and execute electronic procedures. The eService directories find appropriate Points of Single Contact as well as the public agencies responsible for the processing of applications in an efficient and clear way.

¹⁷ Website of SPOCS: <http://www.eu-spocs.eu>

The figure below shows how SPOCS has built the interoperability layer to establish communication between the Member States.

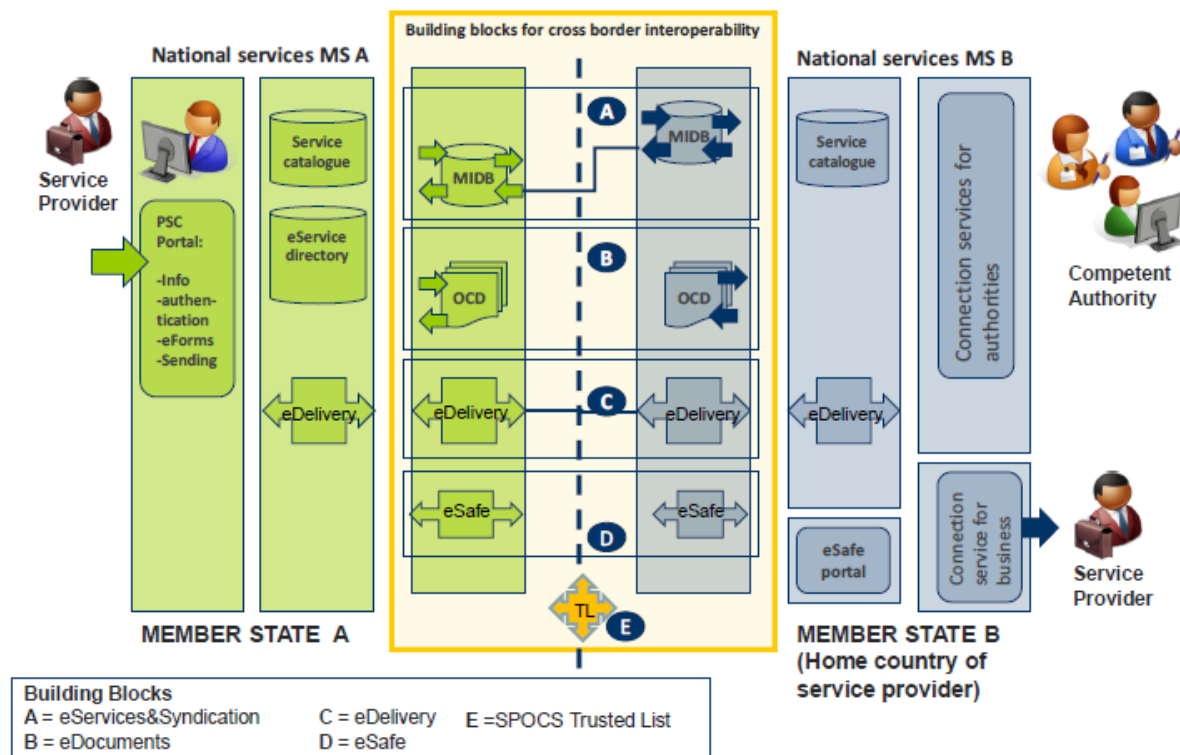


Figure 6 - Building blocks of the interoperability layer of SPOCS

As shown in the figure above, the connection mechanism provide several building blocks to transport the documents, permits, information, etc. safely between the different information systems. These elements are described below.

The first building blocks mentioned in the figure are eServices and content syndication. The specification of an **eService** consists of three components: the common information model, search module and transformation module. The information model is a conceptual model of the eService and the other two components are Java Application Programming Interfaces (API) that contain operations to load, update, delete and search services. **Content syndication** is a collection of mechanisms that defines how to exchange the metadata and public information through the eService Directories. This enables the Points of Single Contacts to present the business (Service Provider) with information on documents from the business’s home country equivalent to those required for a public service in the country of the PSC.

The Omnifarious Container for **eDocuments** (OCD) functions as a multi-layered framework that enables the exchange of eDocuments within a kind of container. The first layer is the payload which will hold the eDocuments and safeguard the transfer. The implementation of this container only allows documents to be transferred in pdf format or ZIP files. The second layer supports the automatic processing of the eDocument by describing the document in a unified way and is called the metadata layer. This layer exists at two levels. The first level describes the specifications of the documents and the other contains the description of the OCD. Both are formatted in one XML file and XML schema. Finally the authentication layer is used to safeguard the documents by electronically signing the omnifarious container for eDocuments.

Another mechanism developed to support the exchange of information is the **eDelivery** gateway. An eDelivery solution needs to be connected with an adapter to map the service. With this adapter it is possible to establish a reliable exchange of structured, non-structured and/or binary data with asynchronous communication channels. The gateway is constrained by security requirements; for example, it has to guarantee the protection of confidentiality, integrity, authenticity, non-repudiation and accountability.

The last building block is the **eSafe**. This is a virtual repository for storing, administering and sharing personal electronic data and documents. By using this method, a public administration can deposit documents in a kind of vault and indicate the parties which are authorised to access those documents. It is a means of making online transactions secure, efficient and user-friendly for e-government processes.

All these building blocks within the interoperability layer can use the **SPOCS Trusted List**, which stores information about the Trusted Services Providers and services. The trusted list module is a Java library that performs all the requested signature and certificate validations.

4.3.1 SPOCS CONTRIBUTION TO FCOPS

The SPOCS project was initiated in first instance to improve interoperability between the Points of Single Contact across Europe. Further analysis is required on how SPOCS can contribute to the development of the federated catalogue of public services. The SPOCS content syndication mechanism will be especially useful in building up and collecting the content of the federated catalogue. It will be responsible for the information exchange between the catalogue and the Member States. There are two strategies for establishing an information exchange channel: pull or push.

All Member States have currently established an electronic “point of single contact” in the form of a portal accessible through the internet. This portal is either a separate portal uniquely designed for this purpose or it is part of a general-purpose government portal. These portals can be examined during the analysis to check whether Member States have built a catalogue and how it is implemented. The best practices across the EU can be derived from the results.

4.4 CORE PUBLIC SERVICE VOCABULARY (CPSV)

One of the Joinup communities is of special importance for the federated catalogue of public services. This is the Core Vocabularies community created to collaborate on the alignment of the semantic specifications needed to set-up eGovernment. They have already designed four Core Vocabularies but are still improving the final outcomes. These are:

- Core Business Vocabulary;
- Core Person Vocabulary;
- Core Location Vocabulary;
- Core Public Service Vocabulary.

Only the last vocabulary type is relevant for this study. It is analysed in depth in the following section.

4.4.1 DEFINITION OF CORE PUBLIC SERVICE VOCABULARY

Core Vocabularies improve the interoperability between the Member States by making it easier to reuse and share data. The vocabularies define the core components of the data entities which can be published and used by other Member States to map them with their existing information systems. This enables communication between different IT systems across sectors and borders, and it is strongly advised that these vocabularies be used in the development of new e-Government services.

The Joinup platform gives a good definition of a Core Public Service Vocabulary (CPSV):

‘THE CORE PUBLIC SERVICE VOCABULARY IS A SIMPLIFIED, REUSABLE AND EXTENSIBLE DATA MODEL THAT CAPTURES THE FUNDAMENTAL CHARACTERISTICS OF A SERVICE OFFERED BY PUBLIC ADMINISTRATION.’¹⁸

The vocabulary describes a minimum set of elements that represent a public service. Its aim is to offer a technology-independent and generic data model. It will be used as a *lingua franca* for the existing service models of public administrations in the Member States on all levels. This will guarantee cross-border and cross-sector interoperability, and exchange of information and services.

The CPSV encompasses the following aspects to support the interoperability:

- Discovery of services;
- Detection of the regulations and procedures that are related to the service delivery;
- Recognition of the relations between service provider and service consumer;
- Identification of similarities between the service delivery across organisations.

4.4.2 FUNCTIONALITY OF CORE PUBLIC SERVICE VOCABULARY

Metadata and reference data are key elements in enabling communication between the different information systems of the public administrations across the Member States. That metadata often has a very specific context, and agreeing on one common standard for metadata and reference data is a critical step towards interoperability within the European Union. This agreement is highly influenced by several factors, including diversity in culture, languages, regulations, etc. Consequently, the model should start from a high level of abstraction to make it easier to deal with these factors.

¹⁸ http://joinup.ec.europa.eu/asset/core_public_service/description

The Core Public Service Vocabulary brings together all the concepts mentioned above and introduces the conceptual model which is represented in Figure 7.

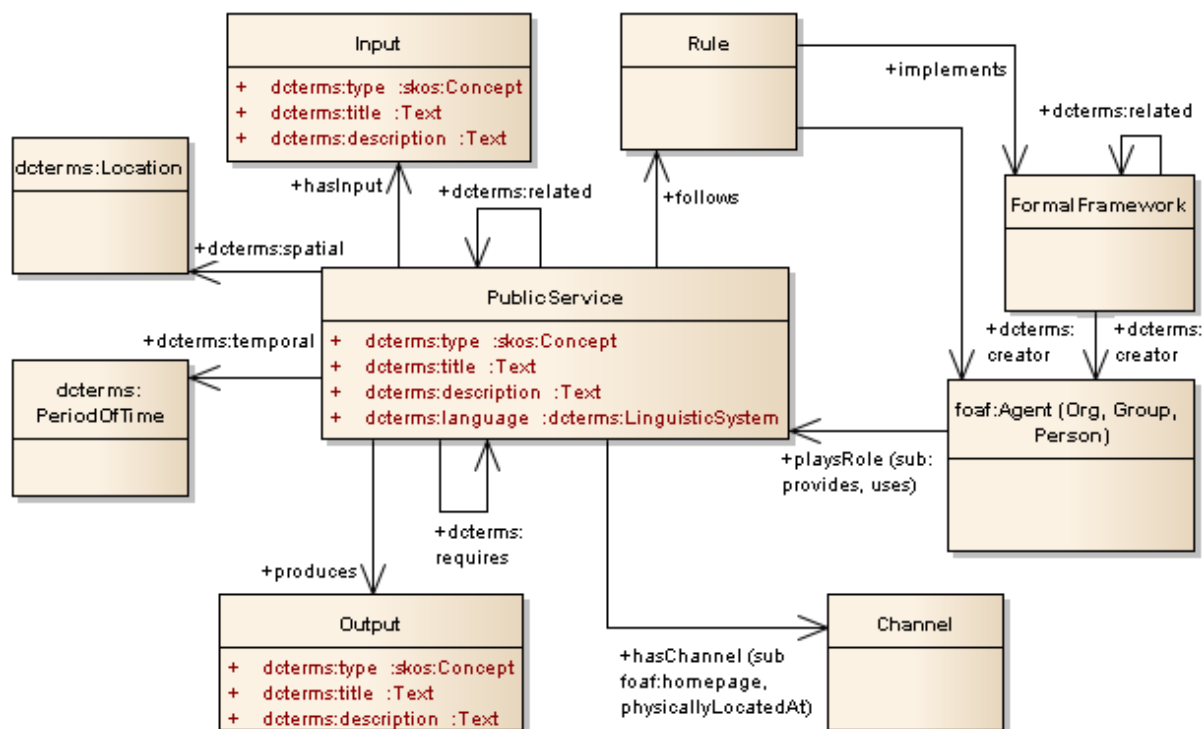


Figure 7 - Conceptual model of a Core Public Service Vocabulary¹⁹

The advantage of using the core vocabulary is that the minimal set of predefined classes, relationships and properties is shared by the public administrations and is technology independent.

In the central position of the conceptual data model is the public service which is linked to other classes.

- Some services require input of documents or particular artefacts, and this is described within this **input class**.
- The public service usually provides a document or an artefact as an **output** and the characteristics are described within this class. (It is important to note that an output is not the same as the outcome.)
- The **rules** which determine and regulate the public services are defined in a separate class. These rules are defined by a single organisation and implement the combination of legislation and policy within a **formal framework**. The author(s) defined are the organisations responsible and not the individuals who have created a set of rules or a framework. The class **Agent** represents all the individuals, organisations or groups that are involved in the services.
- The other classes define the availability of the public services within a certain space and/or time frame. The public service can make a difference between the 'spatial' and the physical presence of the public service location.

Using the conceptual data model of the core vocabularies will bring many advantages when developing interactions between Member States. Figure 8 shows how a CPSV can be applied in this interactions .

¹⁹ Link to the latest version: https://joinup.ec.europa.eu/asset/core_public_service/asset_release/core-public-service-vocabulary-0

While public administrations, citizens and business are looking for a public service via a common interface, this common interface can use the CPSV to obtain the metadata and reference data of the public services provided by other public administrations. After this data has been obtained, the interface will be able to interact with the services that are available.

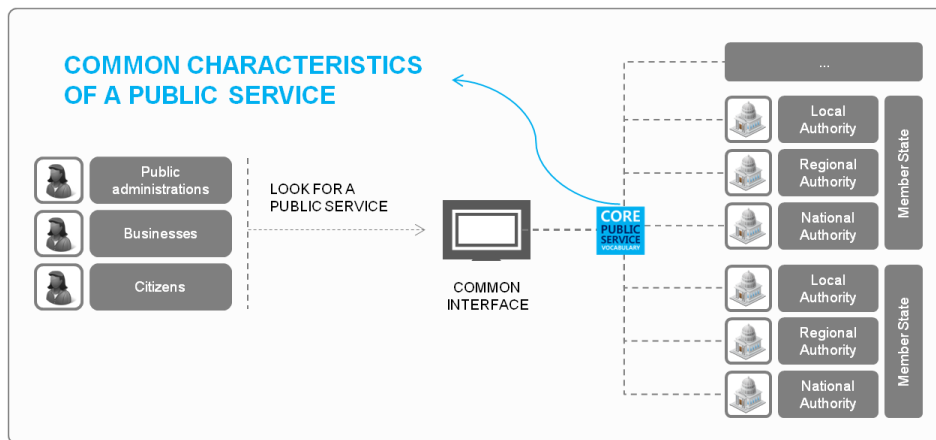


Figure 8 - Use of Core Public Service Vocabulary

4.4.3 CONTRIBUTION OF CORE PUBLIC SERVICE VOCABULARY TO FCOPS

The CPSV could be used as the common data model for public services for the implementation of the federated catalogue of public services. It is of help when the data models of the Member States are either harmonised or mapped to the CPSV's common data model.

The team behind the CPSV did a pilot to map the service model of Flanders with the CPSV. The method that the CPSV team used can be applied for the study of the service models of the different Member States.

4.5 LINKED DATA

Data is a main asset of companies and public administrations, and Linked Data²⁰ is a perfect technique for them to handle and better manage this data. Linked Data combines the various types of government data without redesigning the existing information systems and without centralising the data in data silos. Some associations within the diverse data resources (i.e. a web of data) can lead to the development of valuable new and innovative services, and improve the quality of decision-making process. Each Linked Data initiative will foster data collaboration and transparency among the EU Member States.

A web of data is the concept of one large interconnected network of data shaped by connecting all the data retrieved from the different sources (individuals, governments, business and machines). Here the focus is not on the volume of data but more on fitting the pieces together, and enriching the existing data with interrelationships that provide the data with a context. Tim Berners-Lee²¹ defined four main design principles for creating a machine-readable data structure, so that the information systems are able to find relationships (links) within the data:

1. Identify data entities by means of **Uniform Resource Identifiers** (URI);
2. Use HTTP URLs to look up the URIs;
3. Structure the information according to standards (e.g. RDF);
4. Include links to other URIs, so more things can be discovered

Discovering new relationships within data will be easier and quicker if these principles are enforced across the different public administrations. There are two different situations in which a search may be made for links within the data resources: resources with overlapping data and resources with complementary data. Within the overlapping data, the data sets will have mutual elements of information (partial) or may even refer to equivalent data entities (full). The relationships between such data sets will be generated at the level of the URIs. In the case of complementary data resources, the data sets will not have information in common, but they will refer to two divergent data sets although the data entities will have some relationship with each other.

4.5.1 CONTRIBUTION OF LINKED DATA TO FCOPS

The ISA Linked Data pilot study has demonstrated how to link address data coming from the three Belgian address registers and the National Geographic Institute (NGI) using the Core Location Vocabulary. The design principles have the potential to be used to map public service offerings from different Member States using the Core Public Services Vocabulary.

²⁰ Website of Linked Data: <https://joinup.ec.europa.eu/community/semic/news/understanding-linked-data-example>

²¹ <http://www.w3.org/DesignIssues/LinkedData.html>

4.6 CLASSIFICATIONS

4.6.1 CLASSIFICATION OF THE FUNCTIONS OF GOVERNMENT (COFOG)²²

The **Classification of the Functions of Government**, abbreviated as **COFOG**, was developed in its current version in 1999 by the Organisation for Economic Co-operation and Development (OECD) and published by the United Nations Statistical Division (UNSD) as a standard classifying the purposes of government activities.

The classification has three levels of detail:

- Divisions;
- Groups;
- Classes.

Divisions describe the broad objectives of government, while groups and classes both define the means by which these broad objectives are achieved.

Eurostat carried out a study in 2011²³ which compared COFOG and the classification used by all the Member States. This report shows that most Member States used COFOG for their budgetary reporting.

4.6.1.1 CONTRIBUTION OF COFOG TO FCOPS

COFOG is regarded as the appropriate basis for examining the structure of government expenditure. On the assumption that all the public services offered by public authorities cause government expenditure, it is possible to use this classification for FCOPS.

4.6.2 NUTS

The Nomenclature of Units for Territorial Statistics (NUTS) is a standardised code list that is used as a reference for the subdivisions of countries (geo codes). The code list was developed by the European Union (Eurostat) for statistical purposes.

It contains three levels in the hierarchy which provides divisions for the EU Member States, the candidate countries and the members of the European Free Trade Association. This hierarchy can differentiate between the administrative divisions within the Member States.

A NUTS code consists of following elements²⁴:

- *NUTS top level: country code:*
A two-letter code referring to the country, this is based on the ISO 3166-1 alpha-2 code²⁵. An exception is made for the United Kingdom: UK is used instead of GB.
- *NUTS-1: major socio-economic regions (97 regions):*
The major socio-economic regions are indicated with a number behind the country code.

²² <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4>

²³ Manual on sources and methods for the compilation of COFOG Statistics, 2011, Eurostat, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-11-013/EN/KS-RA-11-013-EN.PDF

²⁴ http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction (22/07/2013)

²⁵ http://www.iso.org/iso/country_codes/iso_3166_code_lists/country_names_and_code_elements.htm (22/07/2013)

- *NUTS-2: basic regions for the application of regional policies (271 regions):*
The basic regions are a further subdivision of the country which is represented by one number.
- *NUTS-3: small regions for specific diagnoses (1303 regions):*
The third subdivision, representing the small regions is referred to by another number.

The topmost level is indicated with a 0. Therefore the numbering in the other NUTS levels starts with 1 and ascends per new region. For certain countries these levels will have more than 9 instances at a particular level, in these cases the number is replaced with a character (starting with an A). An overview of the NUTS levels is given Figure 9.

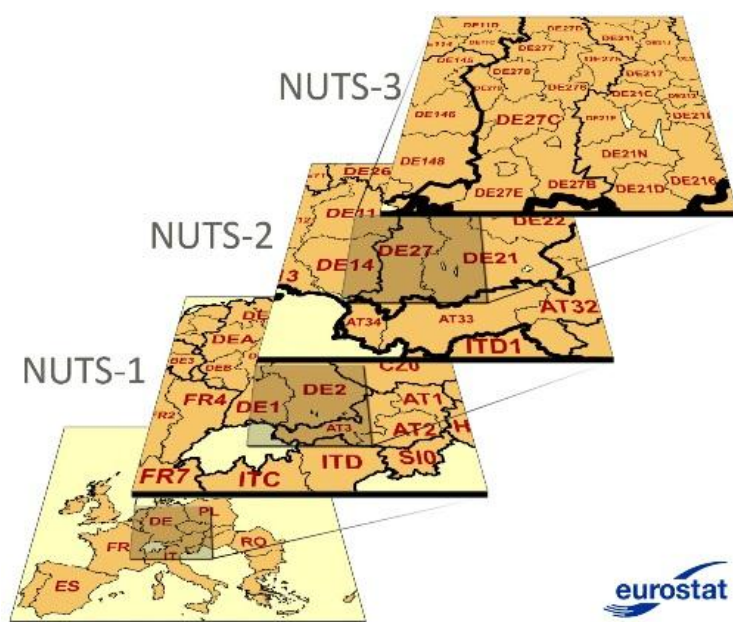


Figure 9 - NUTS-codes

4.6.2.1 LAU CODES

The Local Administrative Units (LAU)²⁶ codes were developed by Eurostat in order to generate statistics at a local level. This list is a low level of administrative division of a country, which extends the NUTS code list with two levels.

- *LAU-1: formerly NUTS-4 (8397):*
The upper LAU level is not applicable to each country; it is a further division within NUTS-3.
- *LAU-2: formerly NUTS-5 (121601):*
The lower LAU level identifies the municipalities or comparable divisions in the countries.

This code list can change frequently. Eurostat keeps track of all changes and sends out a new code list to EU Member States once a year.

²⁶ http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/local_administrative_units (22/07/2013)

The table below gives examples of the NUTS and LAU codes for Belgium, Germany and the Netherlands.

Table 2 - Example NUTS and LAU code list

	Belgium		Germany		Netherlands	
NUTS level 0	BE	Belgium	DE	Deutschland	NL	Nederland
NUTS-1	BE2	Vlaams Gewest	DE1	Baden-Württemberg	NL1	Noord-Nederland
NUTS-2	BE21	Provincie Antwerpen	DE11	Stuttgart	NL11	Groningen
NUTS-3	BE211	Arrondissement Antwerpen	DE11A	Schwäbisch Hall	NL111	Oost-Groningen
LAU-1	n/a	n/a	n/a	n/a	n/a	n/a
LAU-2	11001	Aartselaar	08127008	Blaufelden	0007	Bellingwedde

4.6.2.2 CONTRIBUTION OF NUTS AND LAU CODE LISTS TO FCOPS

The NUTS and LAU code lists are standardised geographic identifiers which are already used for statistical purposes. The lists provide a good overview of the diverse geographical divisions of the Member States. Therefore the NUTS and the LAU codes can be included as controlled vocabularies within the federated catalogue of public services. The user will be able to find a specific public service offered in a specific country, region, or even municipality by drilling down via the NUTS or LAU code.

Another advantage of using these codes is that public administrations will be able to compare the specific public services among other Member States. For example they can compare a specific public service in order to learn from other Member States on which government level they should offer it (federal, regional, local, etc.) They are able to see how one Member State offers its public services compared with a second Member State.

Using these code lists as controlled vocabularies will create added value to the federated catalogue of public services.

4.7 ASSET DESCRIPTION METADATA SCHEMA

Asset description metadata schema is a part of EFIR and is used as the underlying description language. EFIR or the creation of a European Federated Interoperability Repository (EFIR) is an on-going action in the ISA Programme's. This action comes as a follow-up to the success of the ADMS-enabled federation on Joinup, a catalogue of semantic assets described using ADMS, with already 21 federated repositories. The future repository will extend the current catalogue, based on ADMS, to other types of interoperability assets and solutions (legal, organisational and technical).

The objective of the European Federated Interoperability Repository²⁷ (EFIR) is to improve the search for the interoperability assets (IOP assets) of all Member States on the Joinup platform. The EFIR makes it possible to share and search for semantic assets from other international organisations, including standardisation activities and bodies. The EFIR's federated repository functions as a reusable generic tool which can be downloaded by national public administrations. As a software tool, the EFIR is used to manage their interoperability assets at a national or regional level and share them with other administrations.

In addition, the EFIR provides a common (central) European Commission service. The Commission provides a pre-defined set of IOP assets that define the challenges, conflict areas and possible alignment among the Member States. The main focus of the EFIR is on the content and not on the collaboration between different Member States.

Finally, the repository serves as an addition to the current documentation on the Joinup platform because it consists of semantic IOP assets which represent a collection of reference data used as eGovernment metadata, including methods, techniques, guidelines, standards, specifications and software artefacts.

These types of IOP assets in the different EU countries are not available in one central place in the Member States. Therefore, the main challenge for the EFIR is to collect all the relevant assets and keep them up to date. It is recommended that the various countries use the repository directly to generate documentation for their national IOP assets. In some cases a country may already have drawn up such a repository; then they need to map their own asset descriptions to the metadata files of the EFIR by using the Asset Description Metadata Schema (ADMS).

ADMS is mainly used to pursue one single metadata vocabulary (lingua franca) to describe the semantic IOP assets and translate them into a machine-readable format. All these vocabularies are gathered together at one single access point (the EFIR) so that the Member States can easily search, identify, retrieve and compare the semantic assets from another Member State. This avoids duplication and produces reusable sources. Once these assets are published they can be connected with other schemes in cross-border and cross-sector activities (see functionality below in Figure 10).

²⁷ EFIR website: http://ec.europa.eu/isa/actions/04-accompanying-measures/4-2-4action_en.htm

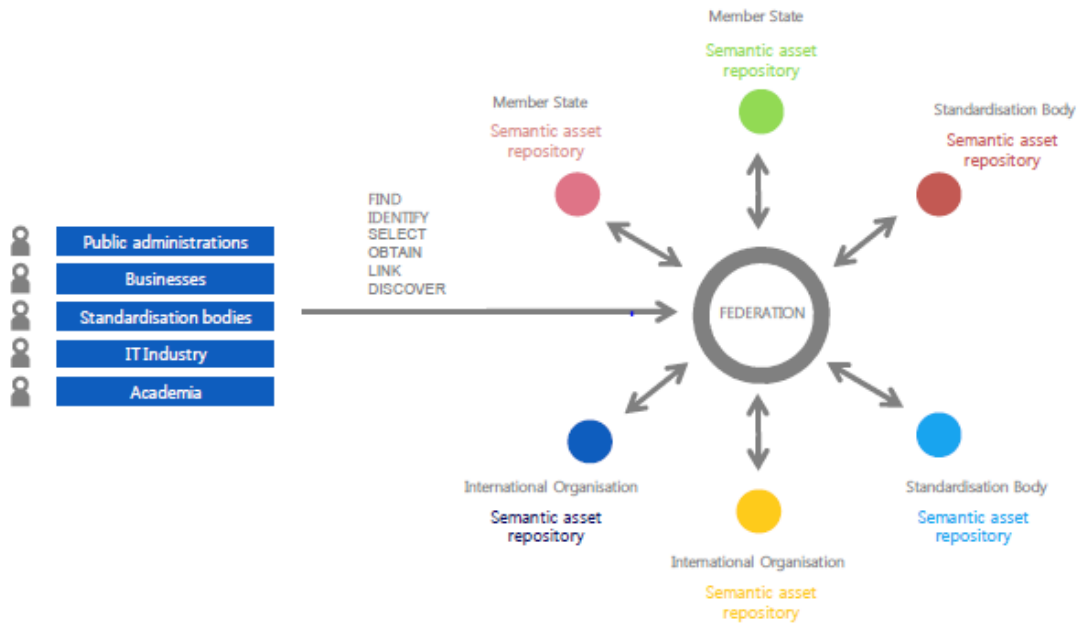


Figure 10 - ADMS functionality in a federation

4.7.1 CONTRIBUTION OF ADMS TO FCOPS

ADMS can be used to establish the actual federation of the catalogue. It will be used to describe in a machine-readable format the public services and/or catalogues (considered as semantic assets) in order to use a common model within the federated catalogue of public services. The structure used for the public services within a Member States can be mapped via ADMS to the structure of the common model used in the federated catalogue, making it possible to establish communication and information exchange.

4.8 JOINUP PLATFORM

Joinup²⁸ is a platform designed for the European Commission as part of the Interoperability Solutions for Public Administration (ISA) programme. The initiative was taken in order to encourage collaboration between the Member States, experts and the ISA team. The participants can share their experience on interoperability on this collaborative platform and hold discussions in order to reach a common understanding on certain interoperability topics.

The platform provides a collection of relevant content and insight in following areas:

- Interactions between public administrations with the specific focus on cross-border and cross-sector networks;
- Pan-European electronic public services and eGovernment projects;
- Legal guidelines for building new solutions, using existing software within the public administrations, and the interoperability impact of EU actions and regulations;
- Collection of semantic assets, methodologies and practice aids.

The platform has three main parts: the communities, semantic assets and software.

The **communities** are designed especially for improving and stimulating discussion on new developments for interoperable assets; the Core Vocabularies (4.4 Core public service Vocabulary (CPSV)) are a good example of the final product of such a community. Each community focuses on certain areas of interoperability and events are created to gather all the experience within the specific areas, and look for usable solutions which could be distributed across the Member States. Members of the Joinup platform are free to choose to which communities they want to subscribe and make contributions, or from which they wish to receive information.

In addition to the concrete communities, Joinup provides a repository for all the semantic assets. This repository is a central place where the members of the Joinup platform can post and find all the semantic interoperability assets. The repository distinguishes between the following categories:

- **Catalogue of assets:** 20 online repositories with a collection of domain models, ontologies, thesauri and code lists;
- **Projects:** these are environments for working together on the development of semantic assets; each member can contribute to a project or make a proposal for a new interoperability project;
- **Federated repositories:** these repositories are the collection of semantic assets provided by the public administrations, standardisation organisations and business across the EU; they are published in line with the Asset Description Metadata Schema (ADMS, see 4.7 Asset description metadata schema).

Finally, the Joinup platform also provides a place for publishing the software items developed by the different Member States.

The purpose of the Joinup platform is to improve collaboration on particular topics and bring the subject experts together across Europe. Therefore the platform can be used to involve experts to validate and help identify the needs and requirements of the federated catalogue.

²⁸ Website of the Joinup platform: <http://joinup.ec.europa.eu/>

4.8.1 CONTRIBUTION OF JOINUP TO FCOPS

The collaborative platform of Joinup focuses on improving the interoperability between Member States and between public administrations. The platform is a central place where semantic assets and open-source software can be uploaded, discussed and modified. Therefore the experience and knowledge which is gained by the working groups on Joinup can be used for the further analysis and development of the federated catalogue of public services.

The governance body behind Joinup consist of diverse stakeholders: developers, project officers from ISA, a communication contractor (community building) and contractors which are responsible for the project management/portfolio, quality insurance and testing. This group behind the Joinup platform is called the Joinup community or the Change Acceptance Board (CAB). The CAB meets monthly or 2-monthly to discuss the new changes to Joinup, the new proposals of semantic assets, etc.

The process of introducing new semantic assets can be achieved via different channels, following a normal change request procedure. One method is that a project officer itself proposes a new semantic asset which is then discusses within the CAB meeting. Another possibility is that a user of Joinup proposes a semantic asset of an update to an asset via the CMS of Joinup. In order to post the request the user can choose between two alternatives:

- Via a web form: the user follows a manual procedure via a form to send the request through. By following this method, the user doesn't need to transform the semantic asset in the ADMS format (standard format which is used for Joinup).
- Automatic upload: the user is able to upload the semantic asset in the agreed ADMS format for Joinup. The asset will be sent via a RDF-file.

Looking at the way of working of Joinup it leads to two procedures to increase the flexibility of the platform. The user is able to choose between a manual procedure (demands an effort from the user) and an automatic procedure (is easier for more mature users). This set-up should also be pursued for the federated catalogue of public services. FCOPS should provide a CMS for manual insertion of (specific and generic) public services and an automatic procedure for the Member States with a catalogue of public services.

On the technical point of view, the Joinup platform is developed in a standard Drupal environment combined with a MySQL database in the back-end. The Drupal environment represents the CMS for the Joinup platform and it uses the European Federated Interoperability Repository with the ADMS (cf. 4.7 Asset description metadata schema) as the underlying description language. The federation partners deliver the data and semantic assets in ADMS-format via a RDF-file.

The experience of Joinup can be used in order to develop FCOPS in a Drupal environment and a MySQL database. Also a working group can be set-up on Joinup to discuss the functionalities and the creation of FCOPS.

However there is an inconsistency between the objective of Joinup and the one of FCOPS. The Joinup platform can be used in order to develop the system but the focus of Joinup is to enhance the interoperability among the public administrations across EU. The primary focus of the federated catalogue of public services is also on public administration to stimulate the learning aspect (comparison between public services and structures and the development of a catalogue of public services on Member State level). Though a secondary focus of FCOPS is on the public (citizens and businesses), while the Joinup platform is not targeted to the citizens and businesses but rather to support the public administrations. This should be considered while choosing the right platform for FCOPS.

4.9 MACHINE TRANSLATION @ THE EUROPEAN COMMISSION (MT@EC)

DG Translation (DGT) launched the statistical machine translation tool MT@EC, funded by ISA, with the objective of improving the efficiency and effectiveness of electronic cross-border interaction between European public administrations. The tool will replace the European Commission Machine Translation Service (ECMT) legacy tool, which is based on an outdated rule-based technology.

The key element of the new system is that it will have a statistical data-driven approach. Unlike the legacy system, it will not require manual development of rules, dictionaries, etc. The new system will use existing language resources and a self-training system by means of a statistical algorithm in order to learn while translating. There will be a 'retraining' procedure for improving the translations to human quality.

The problem/opportunity statements to be incorporated in the new system funded by ISA were defined as being that it should²⁹:

- cover the same user needs as the EMTC;
- be available in at least all EU languages;
- be customisable to the needs of public administrations and services;
- guarantee trusted intra- and cross-border exchange and use of confidential information;
- safeguard continuity of service;
- use the language resource available in all Directorate-Generals (text corpora, translation memories, dictionaries, terminology databases, etc.);
- reduce the cost of translating.

The machine translation tool will reduce the language barriers across the EU. Citizens or businesses will no longer be restricted to understanding documents only in languages they know. Public administrations will not need to translate the key elements of a document for people in other countries. It will be easy to translate the documents, letters, e-mails, etc. created by public instances with MT@EC. The tool will guarantee high-quality translation and use common EC terminology. However a quality check will still be needed; the tool will deal with sensitive information, and a machine can misinterpret the meaning of words.

The translation of the documents will be faster than with ECMT, but it will not achieve real-time translation. There will be a small delay and queue time within the servers. The translations will be carried out via an interactive approach; a translation request is made via the machine-to-machine application programming interface (API) and the tool will send the translated document to the appropriate person, department or publish it in the required location.

A pro-active approach is advised; the documents are posted and cached on the servers. These documents can then be checked and edited by means of human interaction. The document can then be published.

Google Translate is an alternative to machine translation within the federated catalogue. Both concepts are compared in Table 3.

²⁹ http://ec.europa.eu/isa/actions/documents/isa_2.8_machine_translation_workprogramme.pdf (22/07/2013)

Table 3 - High-level comparison between MT@EC and Google Translate

MT@EC	Google Translate
Similarities	
A quality check is needed after the translation, because a machine can still make errors of interpretation.	
Differences	
Connection through the sTESTA connection. IMI is available for competent authorities at national, regional and local level in the EU, Iceland, Liechtenstein and Norway. Though, the registration in IMI has to be approved by an IMI coordinator.	Publicly available
All EU languages	Covers all EU languages plus a number of others. The number of languages is increasing over time.
Free of charge	Free of charge for the web version Charge per million translated characters for the Google API which lets websites and programs integrate with Google Translate programmatically. ³⁰
Limits to terminology used within the EU domain and all official languages of the EU	71 languages are available using Google Translate
Respects format and lay-out of documents	Does not look at lay-out of documents
An API is available for M2M connection	An API is available which can be used on websites
Small delay per translation, queue time needs to be incorporated	Real-time translation

4.9.1 CONTRIBUTION OF MT@EC TO FCOPS

The federated catalogue of public services will contain information on all the public services offered within the Member States. These public service descriptions are not yet available in all the EU official languages. To reduce the cost, effort and time for translating each description into all the official languages, MT@EC can be of support.

It will facilitate the translation of the public services description and the documents which are available for the public. The priority for the translation will be the descriptions; this will increase the use and the efficiency of the usage of information.

³⁰ Google Translate API: <https://developers.google.com/translate/v2/pricing>

4.10 INTERNAL MARKET INFORMATION SYSTEM (IMI)

The Internal Market Information System (IMI)³¹ is a tool designed to build a network of public administrations across the European Union, Iceland, Liechtenstein and Norway. It provides a secure online accessible application which supports the communication of national, regional and local administrations with their equivalent instances in other countries.

The system is designed to overcome existing barriers, such as administrative and working cultures, and the difference between the Member State languages. The system aims to reduce the administrative burden for the stakeholders, and increase the efficiency and effectiveness of the communication. This leads to savings in resources, time and better service quality through transparency.

The European Commission built the system in cooperation with the participating countries to speed up the cross-border administrative cooperation. The system offers a uniform working method agreed upon by every EEA country. The workflow for using IMI encompasses the following steps:

1. Identify the partner authority in another EU country via the multilingual search function;
2. Create a request:
 - a. Select the pre-translated question (in the language of the person raising the question); or
 - b. Provide a request via text input and attach documents;
3. Send the request to the authority selected;
4. The authority receives the request in their preferred language;
5. The authority sends back a reply via pre-translated answers or via machine translation in their language.
6. The user receives the answer in their language.

The IMI system also provides a tracking system in order to see the progress of the requests. In this way the user knows whether the authority contacted is working on it. The system is available to all administrations in the thirty countries of the European Economic Area (EEA) and in all European Union languages. Registration in IMI is only open for those countries and needs to be approved by an IMI coordinator.

The development of the IMI system is based on three key principles³²:

- it should not impose additional administrative cooperation obligations on Member States beyond those already contained in the relevant Internal Market legislation;
- it should provide the flexibility to respect the diverse administrative structures (working with different systems) and cultures in Europe;
- the system should be flexible in order to provide access to all the public administrations (which are working with different systems, etc.), comply with the different parts of Internal Market legislation, and take into account the different cultures in Europe;
- it should be a single system to avoid a proliferation of information systems.

³¹ http://ec.europa.eu/internal_market/imi-net/index_en.html (24/07/2013)

³² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0703:FIN:EN:PDF>

In relation to the first principle, the development of the IMI system was initially based on:

- *Services Directive (Directive 2006/123/EC):*
Article 29 of the Services Directive obliges public administrations (Member States) to provide assistance to their counterparts in other EU countries. This must be achieved through electronic information exchange.

The IMI system can provide support to facilitate this communication and cooperation between the public administrations.
- *Directive on the recognition of professional qualifications (Directive 2005/36/EC):*
The IMI system covers the most mobile professions (e.g. doctors, pharmacists, physiotherapists, accountants, teachers and architects). A directory has been created with all the registered professions.
- *Commission Decision 2008/49/EC, the IMI Regulation:*
This decision dealt inter alia with how registered IMI users who have obtained information about individuals process that information. Individuals need to be told how their information is used, what their rights are and that they are able to exercise their rights.

The scope of this Decision may be extended by national legislation on data protection.

The latest IMI regulation (EU) N° 1024/2012 entered into force on 4 December 2012. Aside the fact that it repealed *Commission Decision 2008/49/EC*, it did not change the way IMI operates, but consolidated its legal framework. The Regulation also paves the way for expansion of IMI to further areas. Furthermore, IMI extended to the Euro Cash-In-Transit Regulation and Directive on Patients' Rights, for the problem solving network SOLVIT and for notifications under the Services Directive and the e-commerce Directive.

4.10.1 CONTRIBUTION OF IMI TO FCOPS

The Internal Market Information system has defined the questions and answers in the system to facilitate communication between the public administrations. By using this technique, the system can easily send the message through in another language for the corresponding public administration. Each stakeholder can communicate in their own mother tongue.

The IMI system is a real-life example which uses MT@EC in order to provide more flexibility to the users by providing the option of sending a non-predefined question. Users can enter their own text and documents which are not predefined by the European Commission. Once the message is sent through, it will be translated into the preferred language via the machine translation tool. This experience is useful for FCOPS.

Furthermore, users of IMI are potential users for the future FCOPS, they will be able to find information of public services from other public administrations through standard structure, metadata model and taxonomy. Via IMI, users can request more information dealing with public services offered by other administrations (within the same or another Member State). When FCOPS is operational, these users can consult the catalogue in order to find the required information of the public services.

5 ANALYSIS OF MEMBER STATE PUBLIC ADMINISTRATION PORTALS

All Member States have already built portals for citizens and businesses. Most Member States have set up multiple portals for different purposes (e.g. public administration portal and eGovernment portal); other Member States have a single portal for all purposes. The intention of these public administration portals is to provide information on the different functions of the public administrations and on the public services they offer to citizens, businesses and other public administrations.

The public services are sometimes offered in the form of eServices on the portals. In such cases, these are considered to be eGovernment portals. An eGovernment portal is owned by a public administration to facilitate digital interaction through web services between the public administrations and citizens, businesses and other public administrations. The eGovernment portal and the public administration portal may be one single portal, but this is not always the case.

Many Member States have distinct portals for each ministry or other authority. The focus of this study is on overarching national portals. A list of the public administration portals in scope was given in the initial report for this study. This was the starting point for further analysis of the semantic and organisational structure, and categorisation of these services.

The first group are the Points of Single Contacts (PSCs) which have been a legal requirement for each Member State since 2009. The PSCs are the public administration portals for businesses that wish to do business or provide services in the Member States. The table below lists the PSCs.

Table 4 - Points of Single Contact sample

Country	Points of Single Contact
Austria	http://www.eap.gv.at/
Belgium	http://business.belgium.be/
Bulgaria	http://www.egov.bg/
Croatia	http://www.psc.hr/
Cyprus	http://www.businessincyprus.gov.cy/
Czech Republic	http://www.businessinfo.cz/en/
Denmark	http://www.virk.dk/cms/render/live/da/sites/virk/home.html
Estonia	https://www.eesti.ee/eng/services
Finland	http://www.yrityssuomi.fi/web/enterprise-finland
France	http://www.guichet-entreprises.fr
Germany	http://www.dienstleiten-leicht-gemacht.de/
Greece	http://www.eu-go.gr/sdportal/index.jsp?lang=EN
Hungary	https://ugyintezes.magyarorszag.hu/
Iceland	http://psc.island.is/en/
Ireland	http://www.pointofsinglecontact.ie/
Italy	http://www.impresainungiorno.gov.it/sportelli-suap
Latvia	https://www.latvija.lv/EN/WebLinks/Portal/
Lichtenstein	http://www.eu-go.li/
Lithuania	http://www.verslovartai.lt/
Luxembourg	http://www.guichet.public.lu/entreprises/en/index.html
Malta	http://www.businessfirst.com.mt/en
Netherlands	http://www.answersforbusiness.nl/
Norway	https://www.altinn.no/en/

Poland	http://www.eu-go.gov.pl/pl/dla-przedsiębiorcy/
Portugal	http://www.portaldaempresa.pt/cve/pt
Romania	http://www.edirect.e-guvernare.ro/
Slovakia	http://www.minv.sk/?sekcia-verejnej-spravy
Slovenia	http://www.eugo.gov.si/en/
Spain	http://www.eugo.es/
Sweden	http://www.verksam.se/portal/en_GB/web/international/home
United Kingdom	https://www.gov.uk/uk-welcomes-business/overview

5.1 SAMPLE FOR ANALYSIS

The list in the Table below contains all the national public administration portals and eGovernment portals in the Member States. A high-level analysis was carried out of those indicated in bold. For each portal analysed at a high level, a fact sheet was created that can be found in Annex D.

Table 5 - Public administration portals sample

Country	Type	Website
Austria	Public administration portal for citizens	https://www.help.gv.at
	Public administration portal for business	https://www.usp.gv.at/Portal.Node/usp/public
	Starting a business	http://investinaustria.at/EN/Home/ABA-Invest+in+Austria.aspx
Belgium	Public administration portal	http://www.belgium.be/en
	Administrations	http://www.fedict.belgium.be/nl/
	Portal for functionaries	http://www.fedweb.belgium.be/nl/
Bulgaria	Public administration portal	http://www.egov.bg/
	eGovernment portal	http://www.egov.bg/ereg-public/res/primaryService/browse.rg
Croatia	eGovernment portal	http://www.hitro.hr/
	Starting a business	http://www2.hgk.hr/en/
	Portal for foreign businesses	http://www1.biznet.hr/Burza/do/language?code=en_GB&appParam=RU
Cyprus	Public administrations for citizens, businesses, residents abroad and administrations	http://www.cyprus.gov.cy
	Public administration portal for business, with the focus on start-ups	http://www.businessincyprus.gov.cy/

Czech Republic	Public administration portal	http://portal.gov.cz
	Information exchange for Citizen to administration (C2A), Business to administration (B2A) and Administration to administration (A2A)	https://www.mojedatovaschranka.cz/
Denmark	Public administration portal for businesses	http://www.vaekstguiden.dk/#result2 ; this portal contains: - http://www.startvaekst.dk/ - http://www.virk.dk/
	Public administration portal for citizens	https://www.borger.dk/Sider/default.aspx
	Public administration portal for foreigners	http://www.nyidanmark.dk
	Catalogues of information and interoperability frameworks	http://digitaliser.dk/kataloger
Estonia	eGovernment portal and public administration portal (C, B and A)	https://www.eesti.ee
	eGovernment portal, e-services	http://e-estonia.com
	Information portal for business	http://www.eas.ee/en
	RIHA information system for administrations	https://riha.eesti.ee/riha/main
Finland	eGovernment portal	http://www.suomi.fi
	Public administration portal for businesses	http://www.yrityssuomi.fi
France	Public administration portal	http://www.service-public.fr/
	eGovernment portal	www.mon-service-public.fr/
Germany	Public administration portal	http://www.bund.de
	Business public administration portal	http://www.ixpos.de/IXPOS/Navigation/EN/your-business-in-germany.html
Greece	Public administration portal	http://www.ermis.gov.gr/
	Public administration portal and eGovernment portal	http://www.kep.gov.gr/
	eGovernment portal (A2A interoperability framework)	http://www.e-gif.gov.gr
Hungary	Public administration portal	https://ugyintezes.magyarorszag.hu/
	eGovernment portal	https://gate.gov.hu/sso/ap
	Electronic Public Services	https://gate.gov.hu/sso/ap

Iceland	eGovernment portal	http://psc.island.is
	Public administration portal	http://en.island.is/
Ireland	Public administration portal for citizens	http://www.citizensinformation.ie/en/
	Public administration portal for businesses	http://www.basis.ie
	eGovernment portal	http://www.gov.ie/
Italy	Public administration portal	http://www.lineaamica.gov.it/
	eGovernment portal	http://www.italia.gov.it
Latvia	eGovernment portal	https://www.latvija.lv/LV/WebLinks/
Liechtenstein	eGovernment portal	http://www.llv.li
Lithuania	eGovernment portal	https://www.epaslaugos.lt
	Public administration portal for businesses	http://www.businessgateway.lt
	Portal	http://www.lietuva.lt/
Luxembourg	Public administration portal and eGovernment portal	http://www.guichet.public.lu/home/fr/index.html
Malta	Administration portal	https://gov.mt/
	Administration portal for business	http://www.businessfirst.com.mt
	eGovernment portal	https://www.mygov.mt/PORTAL/(dxtw2b45chgs2dajdrxrcoei)/webforms/home.aspx https://secure2.gov.mt/servizz/home?l=43B1FE761FE51D49B79B53A17BBED958E92687B53C6D6161
Netherlands	Public administration portal	http://www.rijksoverheid.nl/
	Public administration portal for businesses	http://www.answersforbusiness.nl/
Norway	Public administration and eGovernment portal for business	https://www.altinn.no/en/
	eGovernment portal	http://tjenester.norge.no/en
Poland	Public administration and eGovernment portal	http://www.eu-go.gov.pl
Portugal	Public administration for	http://www.portaldocidadao.pt

	citizens	
	Public administration portal for businesses	http://www.portaldaempresa.pt/
	Catalogues of information and interoperability frameworks	http://www.iap.gov.pt
Romania	Public administration portal	http://www.edirect.e-guvernare.ro/
Slovakia	Public administration portal	http://portal.gov.sk/
Slovenia	Public administration and eGovernment portal	http://e-uprava.gov.si
	eGovernment portal for businesses	http://evem.gov.si/
Spain	Public administration portal	http://www.060.es
Sweden	Public administration portal for businesses	http://www.verksamt.se/
	Public administration portal	http://www.regeringen.se/
	eGovernment portal	http://www.skatteverket.se/
United Kingdom	Public administration and eGovernment portal (direct.gov.uk)	https://www.gov.uk/

5.2 HIGH-LEVEL ANALYSIS

The purpose of the analysis was to identify all the public administration portals at national level containing information on public services (cf. 2 Initial analysis). Some Member States have more than one portal each covering a specific target audience. After the list was completed, a high-level analysis was carried out on at least one portal per country. Where a country provides a separate portal per audience, the focus of the analysis was on the citizen and business portal(s). A total of 41 portals have now been analysed and taken into account for the statistics and conclusions.

The analysis looks first at the scope, service information type and target audience and then moves on to the aspects that follow the structure of the EIF layers: legal, organisational, semantic and technical. The focus of the high-level analysis is on the information available at the front end of the portal. The back end elements were only analysed if the information was readily available.

The second phase of the analysis focused on interesting cases and the person(s) responsible in the Member States were contacted for this (see section 6 Analysis of catalogues of public services). Initial contact was established via e-mail with a request for additional information, and, if necessary, a conference call was set up to obtain specific information.

The fact sheets that are made during the high-level analysis can be found in Annex D. The fact sheets in Annex D of the results of the high-level analysis are based on what is available on the portal. For some elements assumptions were made. These are explained in the next section.

5.2.1 SCOPE OF THE PORTAL

A country can have several levels of authority with different public administrations operating at each level. This study covers national, regional and local levels. The national level comprises an entire country. The local level is the lowest level corresponding to LAU 1 and LAU 2. The regional level is in-between, and corresponds to the NUTS 1, 2 and 3 regions.

The high-level analysis was limited to the national public administration portals. Hence, in 44% of the cases, the portal is limited to national public services only. In 56% of the cases the focus was on multiple levels, going from a national to a regional or local level. Figure 11 show the balance in the scope of the portals.

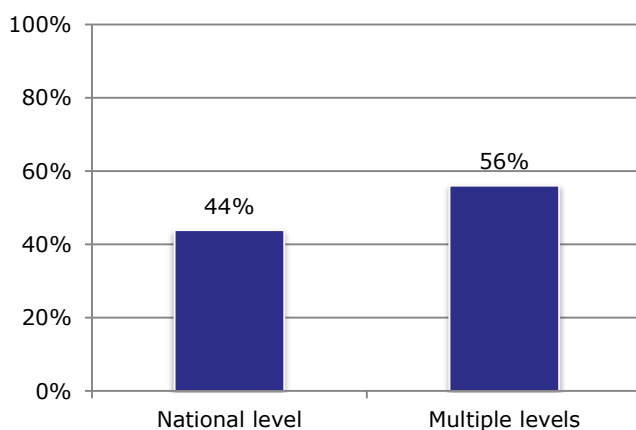


Figure 11 - Scope of portal

5.2.2 SERVICE INFORMATION TYPE

The next dimension analysed in this study is the service information type. This dimension indicates how the information concerning the public services is published. This dimension can contain the following elements:

- service description: the portal provides information on the public services (static text);
- references: the information refers to an external source with more information, forms and/or eServices;
- forms: the portal provides downloadable application forms and/or documents;
- eServices: the portal provides a way to perform the public service online.

The public services frequently consist of a combination of these elements. In only one case (Cyprus³³) is the service description not available; the portal provides references to documents and eServices. On 34% of the portals, citizens or businesses are provided with eServices. However, this should not be taken to imply that eServices are not available in the other cases. In 15% of cases, a reference is provided to an external source where the actual eServices or forms are located. Figure 12 indicates how often a service information type occurs in percentage terms.

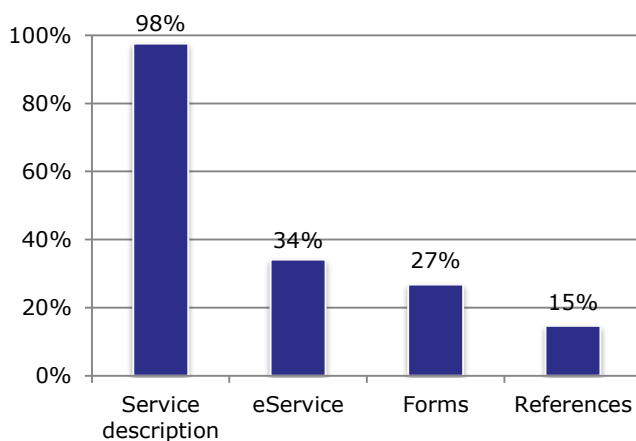


Figure 12 - Service Information Type

5.2.3 TARGET AUDIENCE

The Member States build their portals with the purpose of providing information about public services to a specific target audience. All Member States have portals that target business and citizens. The analysis has shown that 85% and 73% of the analysed portals target businesses and citizens respectively.

³³ Cypriot portal: <http://www.cyprus.gov.cy/>

In terms of focus, analysis shows that the focus of Member States' portals is divided accordingly: (these figures are not represented in Figure 13 - Target audience)

- only for Citizens 12%
- only for Businesses 27%
- for Citizens and administrations 2%
- for Citizens and businesses 41%
- for Citizens, businesses and administrations 12%
- for Citizens, businesses, resident foreigners and administrations 5%.

These numbers indicate that a portal does not necessarily focus on one particular subgroup; it will most often provide information for multiple audiences (61% of the portals analysed).

Moreover, some portals have a focus on other public administrations or resident foreigners. Some Member States have separate portals for these groups, but these portals are considered to be out of scope.

The percentages for each target audience are shown in the Figure below.

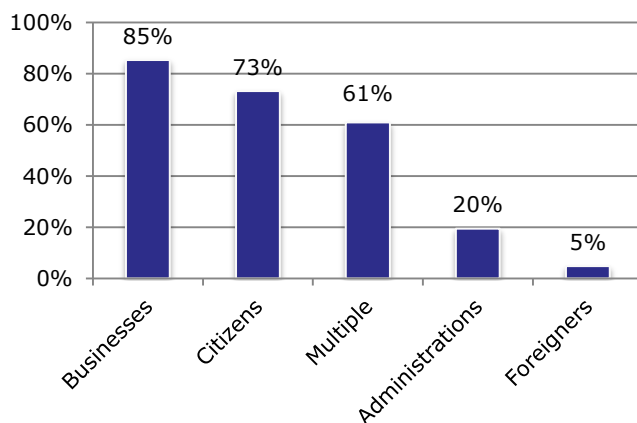


Figure 13 - Target audience

5.2.4 LEGAL ASPECTS: OBLIGATION (NOT) TO PUBLISH

The legal aspect explores whether legal information is provided which justifies the creation of a catalogue of public services.

For 73% of the portals analysed, no legal information or framework could be found that could support the creation of a catalogue. On the other hand, 20% of the portals analysed mention the transparency principle of EIF as a justification for disseminating information. In only 5% of cases was mention found of specific legislation requiring administrations to make all their information available to the public. This gives a direct impact on the services offered by the public administrations as they need to publish their public services.

In two instances (Latvia and Spain), it was possible to identify the fact that the publication of public services is a statutory requirement. It might be that more Member States have formulated a decision requiring or advising publication of the service information, but no mention of these was found. It is also possible that a Member State's public service eServices come under some regulatory framework or public service at a particular government level (e.g. only national public services.)

There is one case (Germany) which specifically mentions³⁴ that the public services of lower government levels cannot be published at a national level. This is because of the autonomy of the Bundesländer to implement the federal laws and regulations. However, the legal basis allows an exception if specific cooperation agreements are made between the Länder and the Bund to permit the publication. An overview is shown in Figure 14.

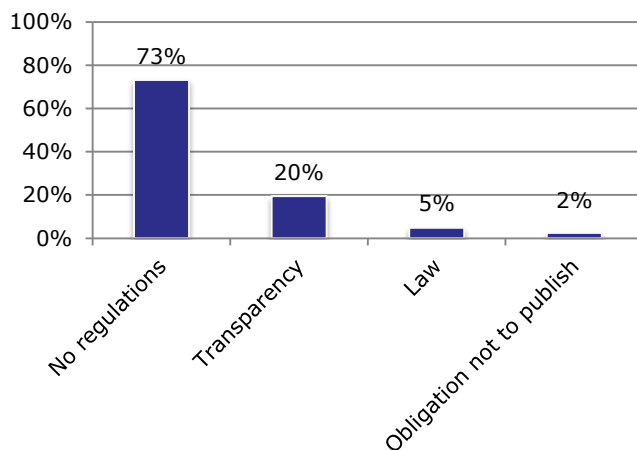


Figure 14 - Obligation (not) to publish

5.2.5 ORGANISATIONAL ASPECTS: OWNERSHIP OF SERVICES

When looking at the ownership aspect of the federated catalogue of public services, there is a distinction between the portal and the actual services. The portal owner is in most cases a central body or a working group that determines the front end and back end of the portal. The owner is also responsible for the maintenance of the portal. However, in almost all the cases, there is a specific mention that they are not liable for the content of the public services. This indicates that ownership of the public services (in content terms) lies with another party.

In more than 50% of cases, the public administrations are responsible for the content and functionality of their services within the catalogue. The administrations need to cooperate with the owner of the catalogue. They need to decide how the information exchange will take place, including the maintenance of the services (new services, updates, deletion of service). The portal owner is thus not liable for this; they just gather and provide all the information for the public.

In three of the instances analysed, ownership of the services is split. Each party is responsible for a specific section of the public services on the catalogue. For example a third-party organisation may be responsible for the eServices, while the public administration takes care of the content.

In four other portals analysed, the owner of the public services is a central body. They provide all the content and functionalities for the catalogue. This can be the same owner as the catalogue or an external party that is not the owner of the catalogue. Figure 15 shows the proportions of the ownership types identified. In 32% of the portals analysed, there was no mention of ownership.

³⁴ Art. 83 Constitution, <http://dejure.org/gesetze/GG/83.html>

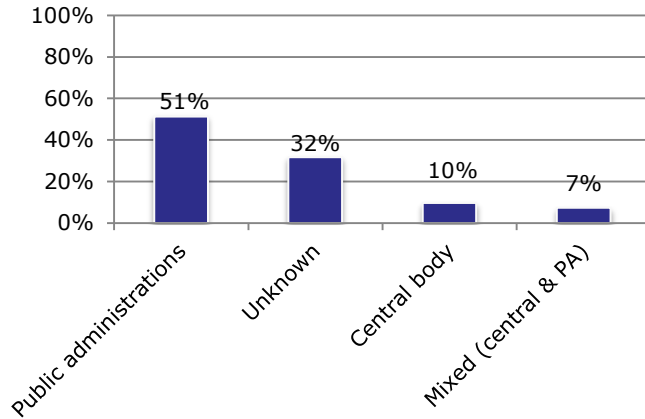


Figure 15 - Ownership of the public services

5.2.6 ORGANISATIONAL ASPECTS: RULES FOR PUBLISHING

Within certain Member States, there are rules on publishing public services formulated by the owner. Nine portals explicitly mention that guidelines are in force. The elements recurring most frequently for these cases are:

- following the accessibility principles for access to the public services for the disabled (e.g. Ireland, Italy);
- guidelines on how to set up a public service (e.g. Latvia);
- format of publications, public services, data exchange(e.g. Czech Republic, Lithuania);
- technical framework (e.g. Netherlands, Iceland and Luxembourg);
- guidelines for building a good User Interface for the portals(e.g. Italy and Norway).

In the case of Latvia, there are rules on how to build the public services. The owner of the portal, the State Regional Development Agency, even supports the efforts of public administrations by organising specific training.

Figure 16 shows that only 22% of the portals mention guidelines for publishing public services.

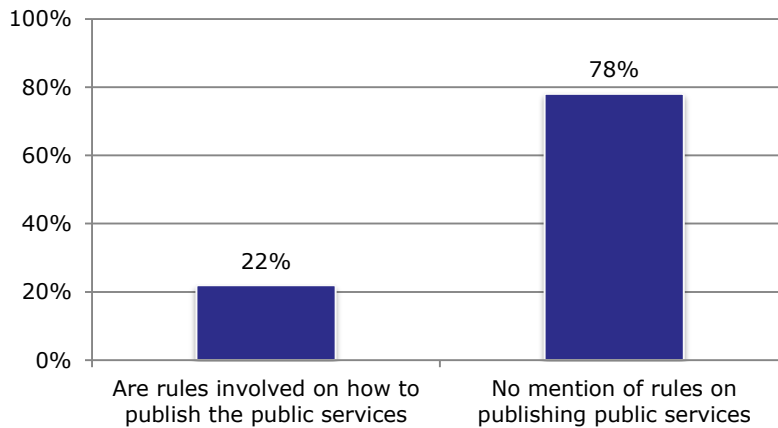


Figure 16 - Guidelines for publishing

5.2.7 SEMANTIC ASPECTS: SEMANTIC MODEL

The high-level analysis was carried out on the front end of the portals. The elements of the semantic model visible for each portal were identified. The items published most frequently are:

- title;
- web links to more details about the public services. The user is in most cases directed to an external portal;
- service description;
- further contact details for the competent public administrations;
- input, this can range from entering a name and address to a login or even documents.

The front end is not always exhaustive. For example, the identification number is a required field within the semantic model, but it is most likely that this will not be published (98% of the cases). Another example is the case study; only three of the portals analysed provide this. However case studies are very user-friendly and therefore it can be useful to include this field. An overview of all the elements can be found in Figure 17.

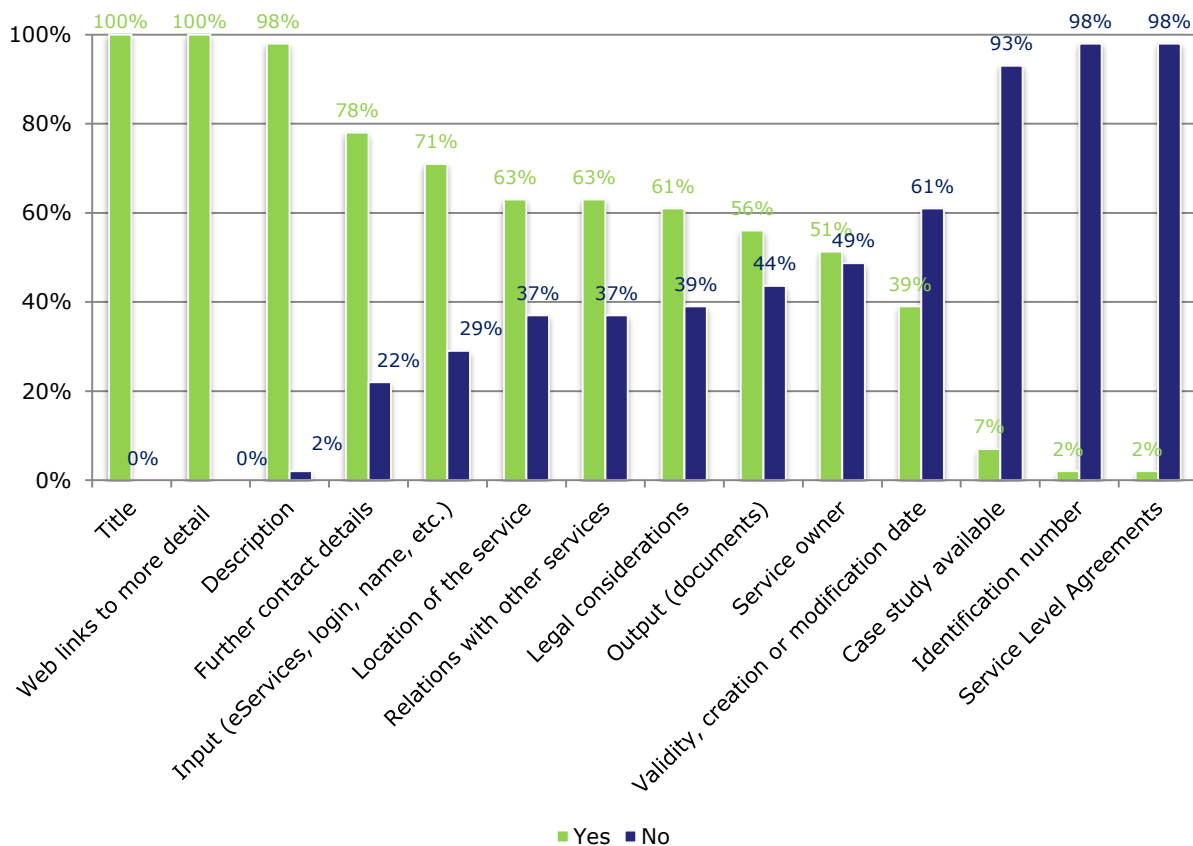


Figure 17 - Elements of the semantic model

5.2.8 SEMANTIC ASPECTS: CLASSIFICATION OF SERVICES

Most of the portals have a controlled vocabulary to classify their public services. This vocabulary is used in order to create a structure within the public services. In addition, it often defines how the portal will be set up. In some cases, multiple classifications are offered to improve the user-friendliness of the web pages.

In most cases, the portals also provide a classification of the public services by themes. These are not standardised and can differ between Member States. Life events are one example (cf. 4.1 Your Europe), but the themes have a broader view than those events. There is this field on 90% of the portals.

Finally, two cases of clear exceptions were identified: one Cypriot and one Croatian.

For Cyprus, two portals were analysed. One³⁵ has a classification based on life events (themes). The other Cypriot portal³⁶ has a more specific purpose and focuses on starting up a business. The classification is based on the different sectors in which a company can be created. This kind of classification is mapped with 'Other' in the Figure below.

Croatia has developed a portal³⁷ that only provides access to their electronic systems. The Croatian public services are incorporated in these systems (assumption), but they are not described separately on the portal. This kind of classification is mapped with 'None' in the Figure below.

Figure 18 maps the different classifications with their proportions, showing that some portals provide both thematic and A-Z classifications.

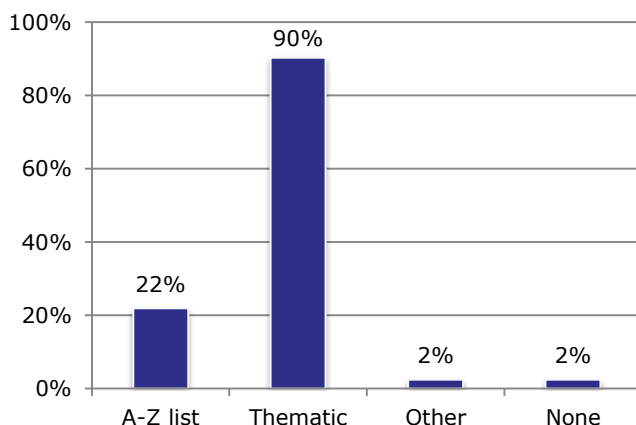


Figure 18 - Classification of services

5.2.9 SEMANTIC ASPECTS: MULTILINGUALISM

Dealing with multilingualism is a final aspect analysed within the semantic area. The languages in which the portal is available was identified for each portal. The graph in Figure 19 shows if the Member States have translated their portals into languages other than their official language(s).

In certain EU countries there is more than one official language, but this does not imply that all web pages are translated into all official languages. More detail per Member States can be found in Annex D (see fact sheets section Semantic – Languages). Thirty-four percent of the portals provide their web pages only in their official languages, while 66% of the portals are in other languages.

Certain portals provide the freedom to the user to translate it to all languages by using the Google Translate functionality. One of those portals (i.e. the Netherlands³⁸) has translated its web pages into

³⁵ Cypriot portal: <http://www.cyprus.gov.cy>

³⁶ Cypriot portal: <http://www.businessincyprus.gov.cy/>

³⁷ Croatian portal: <http://www.hitro.hr/>

³⁸ <http://www.answersforbusiness.nl/>

English and in addition provides the Google Translate box (this portal is also added to the category 'Also non-official languages').

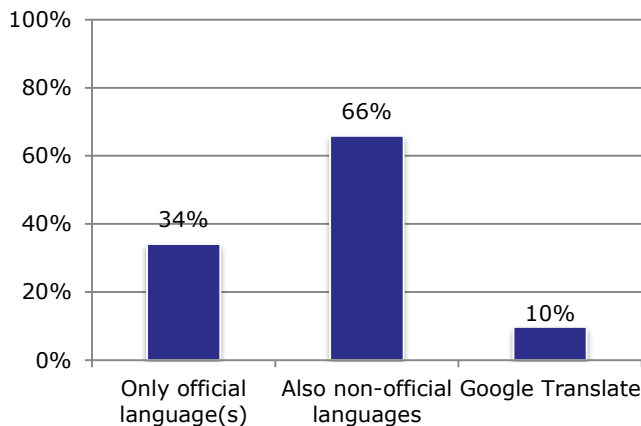


Figure 19 - Translations available on the portals analysed

The percentage for use of languages other than the official language(s) does not indicate that all the pages of a certain portal are translated. In 12% of the instances analysed, only a limited number of pages are available in other languages. In this case, either basic information and/or information some key public services is translated

To extend the research on multilingualism, we identified the languages other than the country official language(s) available on the portal per country, excluding the Dutch portal that also offers the Google Translate functionality (63%, i.e. 26 portals). Figure 20 shows that English is the most commonly used languages other than the country official language(s) on the portals.

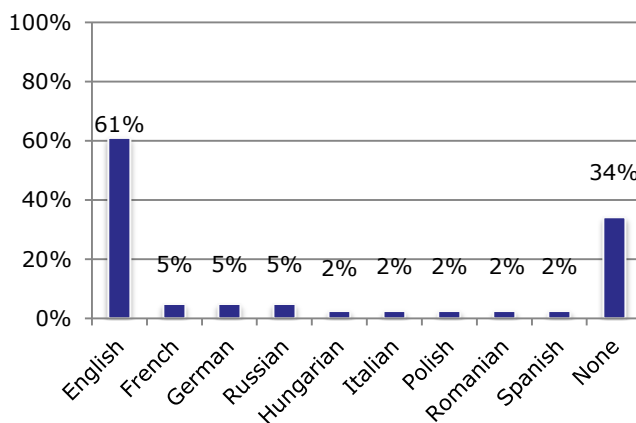


Figure 20 - Non-official languages used on portals

5.2.10 TECHNICAL ASPECTS: CONTENT SYNDICATION

The next EIF requirement is the technical area. This is rather a difficult area to investigate during the high-level analysis because this is the back end of the portal, although some parts of content syndication can be seen as front end. Examples are updates sent to the public, open data, etc. Figure 21 gives an overview of the usability of the techniques discovered.

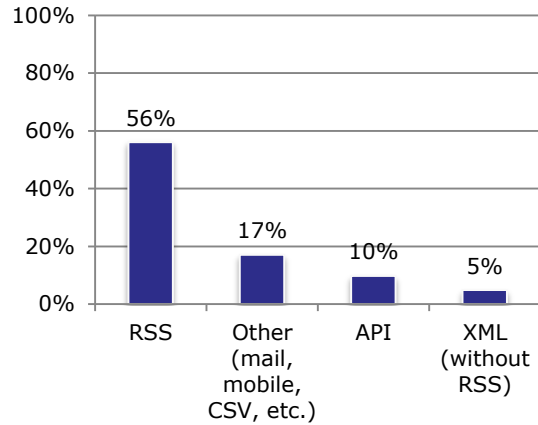


Figure 21 - Content syndication

The Figure shows that in more than 50% of the portals analysed, RSS feeds are made available for content syndication. These feeds can be used for several purposes: news feeds; updates on the public services; new public services; published articles, etc. RSS is a specific XML-format that can be used for information exchange. A generic XML-format is used within two portals to create Open Data files. These files are available to enable the citizens and businesses to consult the list of public services.

Another content syndication method that is found is API. Four portals use this to establish a method for information exchange with citizens or businesses. Finally, in 17% of the cases, the portals provide another method of syndication: e-mail updates, CSV-files, HTML-frames, scripts, etc.

5.2.11 TECHNICAL ASPECTS: TECHNOLOGY TO MANAGE THE CATALOGUE

Another technical aspect that was examined is the system used to manage the catalogue. Since this is more the back end, the information was not always found.

The analysis identified that 27% of the portals are supported by a Content Management System. This percentage is rather on the low side, but it seems reasonable to assume that more portals are supported by a CMS. In addition to those using CMS technology, two portals were found to use other technologies: API support and a technical standard (Netherlands: Samenwerkende Catalogi, cf. 6.4).

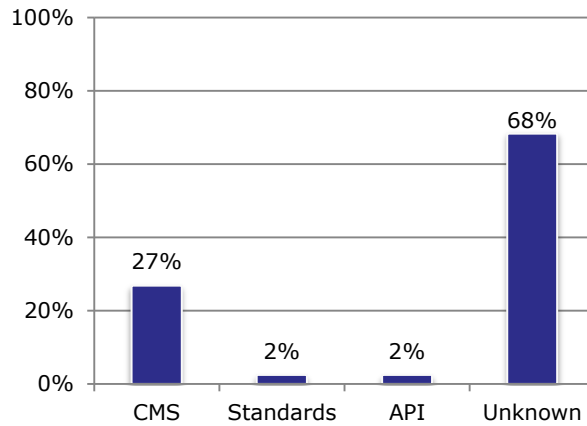


Figure 22 - Technology to manage the catalogue

5.3 CONCLUSIONS

This section summarises the different trends discovered during the first analysis. Section 6: Analysis of catalogues of public services will elaborate further on the interesting cases identified for further in-depth analysis, where contact was made with those responsible for the portal to discuss the organisational and operational fundamentals of the portal with a focus on the back end of the portal and the technical set-up.

5.3.1 HIGH-LEVEL ANALYSIS

When looking at all portals it is noticeable that more than half of them have a broader scope than just the national public services. This could improve the functionalities and scope of the federated catalogue. If an automatic content syndication is in place, it will require the same effort to include the national public services as for the public services at other levels. For other cases, there will need to be a workaround to include their regional and local public services via an automatic or manual content syndication technique.

The analysis has shown that each portal provides some kind of service description that further elaborates on the services offered. With one exception, that only refers to documents, eServices and more details. The service descriptions will be incorporated within the federated catalogue of public services. This implies that the effort needed is limited to the mapping of semantic models.

5.3.2 LEGAL

When looking at the legal aspects, then only 27% of the portals refer to regulations in force in the Member State. Setting up a new legal framework for the federated catalogue of public services will be very complex and hard. It could take years to set up such a framework.

However the federated catalogue can use the EIF transparency principle as a justification for disseminating information at a European level. This will stimulate the support and willingness of public administrations. To be precise, 20% of the portals mention transparency as a basis for the creation of the portal, i.e. the public administrations want to provide as much information as possible to citizens and businesses. Additionally, 5% of the portals refer to specific legislation.

5.3.3 ORGANISATIONAL

From an the organisational point of view, the statistics shows that in more than 50% of the cases, the public administrations are responsible for their own public services. This methodology should also be incorporated when dealing with the ownership of the services in FCOPS. However, the ownership of the catalogue should still lie with a central body. The public administrations should collaborate closely by means of a working group to define all the generic public services. These generic services should then be used to create a mapping with all the public services offered within the Member States.

Of the portals analysed, 22% work to guidelines on how the public administrations should publish their public services. In developing FCOPS, it would be advisable to set up certain guidelines on the mapping of services, connection and structure of the public services. The owner of the catalogue needs to provide pre-defined rules about the format and techniques which apply for all the public administrations.

5.3.4 SEMANTIC

The first block within the semantic aspect is the semantic model. Front-end analysis is not the best way to obtain insight into the semantic models used. But it was possible to identify some of the (visible) elements of the semantic model. Though the required elements which are important in carrying out mapping are not of interest for the public and are most likely hidden, the actual semantic service model can be extracted once those responsible are interviewed as part of the in-depth analysis.

The frequently published fields (title, web links, service description, etc.) should be included within the semantic model. The semantic models which are operative in the Member States can afterwards be mapped with the model of the federated catalogue.

An important element that also needs to be considered in the service model is the classification. Most of the portals analysed use a thematic classification, especially by life events. Certain Member States have already defined a multidimensional classification which provides for the possibility of several categories. Generally a combination of life events and an A-Z list is offered. This vision should be taken over in FCOPS, which should therefore have a multidimensional classification. This will increase the usability and flexibility of the catalogue for the user.

The next trend identified relates to the multilingualism on Member State portals. There is so far no common language in which all public services should be offered. Nevertheless, it is notable that 61% have translated their information to English even though it is not an official language of the Member State. In consequence, it could be advisable to provide the public services in the official language(s) of the Member State and also in English. Both versions can then be included in the federated catalogue. Anyone wanting to access public services in any Member State can then be sure of finding that information in English at least.

Another recommendation is to translate the controlled vocabulary into all EU official languages. This will improve the user-friendliness and a broader public will be reached. It will be easier for the user to navigate through FCOPS in their mother tongue.

An additional option would be to consider machine translation to translate the public services (e.g. 4.10 IMI) in all official languages. The two options that are available are: the ISA machine translation tool and Google Translate. The ISA funded tool (cf. 4.9 MT@EC) uses EC terminology and is free of charge. This is an advantage compared with the Google Translate API. The Google API charges a price per million translated characters, it delivers the translation in real-time, but is likely to deliver less accurate translations on EU domain specific terminology.

5.3.5 TECHNICAL

The final principle within the EIF is the technical aspect. Although the analysis focused on the front end of the portal, it was possible to identify some technical elements as well. These focused on how the information is published by the public administrations. For this they have developed several alternatives in addition to the portal, for example APIs, CSV, mail, RSS, XML (Open Data), etc. The most frequently used technique is RSS. This technique is a specific XML-format designed to send updates to those who have subscribed to it. RSS can therefore be considered for a back end solution in the federated catalogue. The public administrations can create RSS feeds to send through their offered services. These feeds have a pre-defined structure which could be determined by the European Commission in order to extract the required information.

The federated catalogue should not be limited to one particular technique for content syndication. The Member States do not have one standardised methodology (at European level) to build their portals. Therefore it is advisable to support certain commonly used techniques to enlarge the coverage within the EU.

More than 25% of the portals are visibly supported by a Content Management System. However, one can assume that this number is higher. Not all the portals mention how the webpages are created or supported. This assumption can be confirmed or refuted by means of in-depth research.

6 ANALYSIS OF CATALOGUES OF PUBLIC SERVICES

6.1 SAMPLE OF THE IN-DEPTH ANALYSIS

Based on the high-level analysis and certain points of single contact, it was possible to identify several cases of particular interest for the federated catalogue of public services. These were selected based on several key points:

- is there a catalogue of public services available which might feed the portal with information?
- does the Member State use certain techniques for content syndication?
- how broad is the scope of the portal/catalogue (inter/intra-Member State public services, national public services only or limited to a specific government level)?

Based on these questions, seven interesting cases were selected and are described further below. The high-level analysis focused on the front-end of the portal. While the in-depth analysis has a different approach, it focuses more on all aspects; including the front-end, back end, processes, etc. Each of these cases is mapped with the concepts described within the conceptual model (section 2.2). By doing this, the diverse cases can be compared with each other and can be used in the further requirement analysis of the federated catalogue of public services.

6.2 ESD-TOOLKIT – NORTH SEA REGION COUNTRIES

The esd-toolkit³⁹ was initiated by the United Kingdom in cooperation with SmartCities⁴⁰. The ownership of the tool is dedicated to the UK government, but esd-toolkit is managed by a private software company called Porism⁴¹. There are two main aspects: the Local Government Citizen Insight and the Standards List. By combining these two elements it becomes a very good tool for local authorities. The site is continuously updated, extended and revised because of the importance of the tool. The esd-toolkit was created expressly for administrations, but the 'Citizen Insight' part can also be useful for businesses.

6.2.1 CITIZEN INSIGHT

Citizen Insight can mainly be used to gain a better understanding of the characteristics and profile of the citizens of a number of EU countries and Norway, and in particular those of the North Sea region. Their preferences and demand for public services are identified and the results can be compared between the Member States.

The main benefits to local government from using the Citizen Insight are:

- discovering the most suitable channels for providing their services;
- establishing the right services in the right areas;
- setting up a profile for the demand for services within a particular area;
- identifying common areas within the same country and across national boundaries;
- discovering where transnational partnerships can be created to provide services to equivalent populations.

³⁹ Website of esd-toolkit: <http://esd-toolkit.eu/>

⁴⁰ <http://www.smartcities.info/>

⁴¹ <http://www.porism.com/>

This toolkit was mainly built for local governments, but it can happen that companies use the tool to gain insight into the profile of their customers and operating region.

The toolkit facilitates the analysis by providing three kinds of views: map view, data view and text view. The insight maps, text and data view describe the characteristics of the EU citizens with particular detail for the North Sea Region. It is possible to zoom by view on to the services provided and households in each geographical area and the people of a certain area can afterwards be compared to their 'near neighbours'. The start positioning for each view is the predominant profile group; this indicates the type of household which is dominant within each area.

The categories of household are:

- Sophisticated singles
- Career and family
- Routine service workers
- Bourgeois prosperity
- Comfortable retirement
- Hard working blue collar
- Metropolitan strugglers
- Low income elders
- Post-industrial survivors
- Rural inheritance

MAP VIEW

The map view is a method for gaining a better view of the regional aspects and the differences between people living across the EU. The user of the toolkit can choose to display different values on the map view: predominant profile group, a specific household group (percentage), a service group, a service subgroup (level of presence and demand in the area) or the nearest neighbours. Figure 23 gives the example of the predominant profile group.

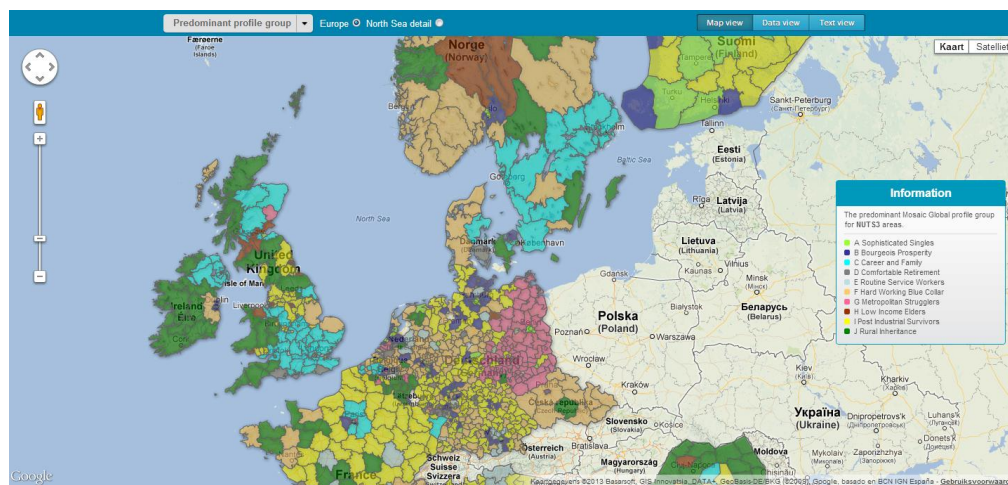


Figure 23 - Predominant profile group in map view of Citizen Insight

TEXT VIEW

In text view it is possible to choose between different types of households or the predominant profile groups. A brief explanation is displayed that describes all characteristics and requirements for the household category selected. The text view is extended with a small profile of the people who belong to this category and a propensity chart which shows all the services that the people will probably demand (see Figure 24).

H Low Income Elders

Low Income Elders are typically people who are retired or close to retirement, who have accumulated few if any financial assets and who are now almost entirely reliant on modest state pensions for their income. Typically renting small houses or apartments, whether from private landlords or from the public sector, they content themselves with very modest lifestyles devoid of all but the most basic luxuries. Many of these people struggle to find the means to pay for their utilities, particularly fuel, and have few financial resources to fall back on in times of emergency. However brought up in times when money was scarce, most of this group are content with modest pleasures and gain satisfaction from watching the television, conversations with neighbourhoods or with local shop-keepers, visits from grown up children, an occasional cigarette and from participating in competitions and lotteries. Their tastes in food are traditional and they prefer old established and trusted brands. Few people are computer literate and hardly any access the internet.

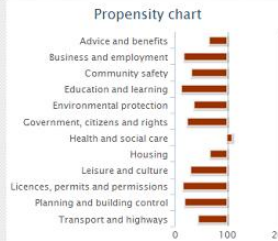
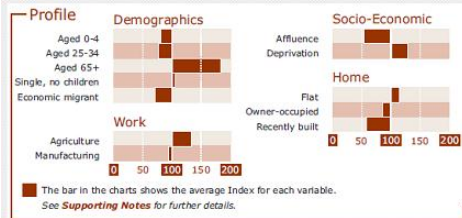


Figure 24 - Example of text view of a household type Citizen Insight

Another option within the text view is for the user to select a certain service. The information given with that service will not have the same level of detail as for a household category. The portal displays a hierarchical structure to the user that is subdivided by three levels: service group, service subgroup and the services. No description or explanation is foreseen when the user selects a service group. Information is provided only if the user drills down to a certain subgroup. A propensity chart and a brief description will be available together with all the services included in that particular subgroup. Within each level of detail, it is possible to access the definition of the item which will redirect the user to the Standards Lists.

DATA VIEW

The data view provides all the facts available about a particular service across all the Member States (e.g. total households, level of demand for the services). After registering on the portal it is possible to drill down in the data and build a data table as shown, by way of example, in Figure 25.

Area ↕	Total households ↕	Percentage service demand ↕
Belgium	1,752,675	Very low
Denmark	2,553,601	High
Germany	6,618,341	Very high
Netherlands	4,460,208	High
Norway	2,271,101	Low
Sweden	1,686,626	Medium
United Kingdom	9,153,602	Very high

Figure 25 - Data view in Citizen Insight

6.2.2 STANDARDS LIST

The other valuable source of information for the public administrations is the Standards List. This list contains more than 1300 public services that are delivered by the local governments of Belgium, England & Wales, Germany, Norway, Scotland, Sweden and the Netherlands. Any local authority can use this list to perform an audit on what they deliver, see whether they lack certain public services and ensure that their systems and administrative processes cover all relevant public services. This list provides a common model for describing public services.

The structure of the public services contains the following elements:

- Id: a unique reference number;
- Name: the name of the service;
- Definition: a short description of the service to define which people could request the service;
- In scheme: identifies the list to which the service belongs;
- History notes: contains all the updates of the service and indicates when the service was added to list;
- Same as: refers to similar services in other lists;
- Type: indicates if it is a function or service;
- Resource URI: link to the actual service structure (the definition);
- Mapping: positions the service in the hierarchical structure of its service groups and refers to similar services in other lists;
- Profile information: provides the possibility of accessing the service in Citizen Insight (map, data or text view).

The public administrations can use the reference numbers to exchange information on the services, and they can access the document and statistics gathered by the other local authorities. The local authority public services available are categorised in three main groups:

- Service list: this is a general list which summarises all the public services used in one or more local service lists;
- Local list: this is a subset of the service list and it includes all the local authority public services provided by the participating Member States.
- Function list: the public services are categorised in a hierarchical structure of service groups and subgroups, and these services are mapped with the other lists (service and local).

A mapping between function groups and service groups can be found in Annex C. For the standard list is a dynamic classification⁴² created, this classification is build based on diverse controlled vocabularies covering the function lists, thematic classifications etc.

These service lists have been used for some years in Norway and the UK. Each service delivered in Norway is checked with the legislative requirements. The service list, which is maintained by the Kommuneforlaget, can be used for the service applications forms within the municipalities. Within the UK, the service list is maintained by the esd-toolkit for England & Wales, and Scotland. The list contains links that are published for each public service. This allows each local authority to compare their public services with the public services of other local authorities.

⁴² <http://standards.esd.org.uk/>

6.2.3 CONCEPTUAL MODEL ANALYSIS OF THE ESD-TOOLKIT

For each concept described within the conceptual model (section 2.2) the esd-toolkit is analysed and described in the table below.

Table 6 - Conceptual model analysis of the esd-toolkit

Concept	EIF layer	Esd-toolkit analysis
Scope		All local public services from 7 North Sea Region countries are included within the esd-toolkit. The toolkit only deals with generic public services which are based on the specific public services within those countries.
Legal basis	Legal	No legal framework is associated with the esd-toolkit.
Ownership	Organisational	The system is owned by the UK government and is managed by a private company Porism.
Users	Organisational	The esd-toolkit targets the public administrations as users for the standard lists and the citizen insights. However businesses can also acquire valuable information from the citizen insights. The standard lists are publicly available but the view with citizen insights is limited; the user needs to log in to retrieve a full overview.
Service model	Semantic	The esd-toolkit has defined a semantic data model in order to define the generic public services within the esd-toolkit. This model also describes the relations between the diverse services, whether they are linked, similar within another country, etc. The structure of the semantic data model can be found in section 6.2.2.
Classification	Semantic	The classification of the esd-toolkit uses a dynamic classification covering thematic classification, function lists, etc. This classification improves the user-friendliness of the catalogue.
Multilingualism	Semantic	The esd-toolkit is mainly available in English. For each country the list of public services is also provided in the official language (for Belgium only in Dutch).
Federated architecture	Technical	The esd-toolkit covers the generic public services offered on local government level. No specific public services are included; however they are consulted in order to define the generic services. A federated catalogue is not in place with the local governments.

6.2.4 CONTRIBUTION OF ESD-TOOLKIT TO FCOPS

The difference with Your Europe is that the esd-toolkit lists all the services foreseen at a local level, while Your Europe focuses on cross-border public services.

The esd-toolkit provides a list of all the local authority public services in the participating Member States at a granular level and defines a categorisation. This categorisation can be found in Annex C Mapping between the service groups and the function list.

The Standards List has a service model which describes the different public services. To know whether the service model to describe the public services is the same for each of the participating Member States required further analysis.

6.3 INTERBESTUURLIJKE PRODUCTEN- EN DIENSTENCATALOGUS (IPDC) – BELGIUM

The Interbestuurlijke Producten- en DienstenCatalogus (IPDC)⁴³, the *interadministration product and services catalogue*, is a catalogue of public services in Flanders. The catalogue is managed by CORVE (the coordination cell of the Flemish government) and contains public services at a European, federal, regional, provincial and municipal level. The catalogue was launched in May 2013.

Public administrations are the target audience for the IPDC. They can use the standard public service descriptions in their own communication with the public. The IPDC was set up by the Flemish Government (the eGovernment and ICT Management entity of CORVE and the Vlaamse Infolijn), representatives of the provinces and municipalities (VVSG, V-ICT-OR, VVP and KORTOM) and vendors (HP and Belgacom).

6.3.1 METADATA MODEL

The below metadata model defines the structure and ontology of the public services in the IPDC catalogue.

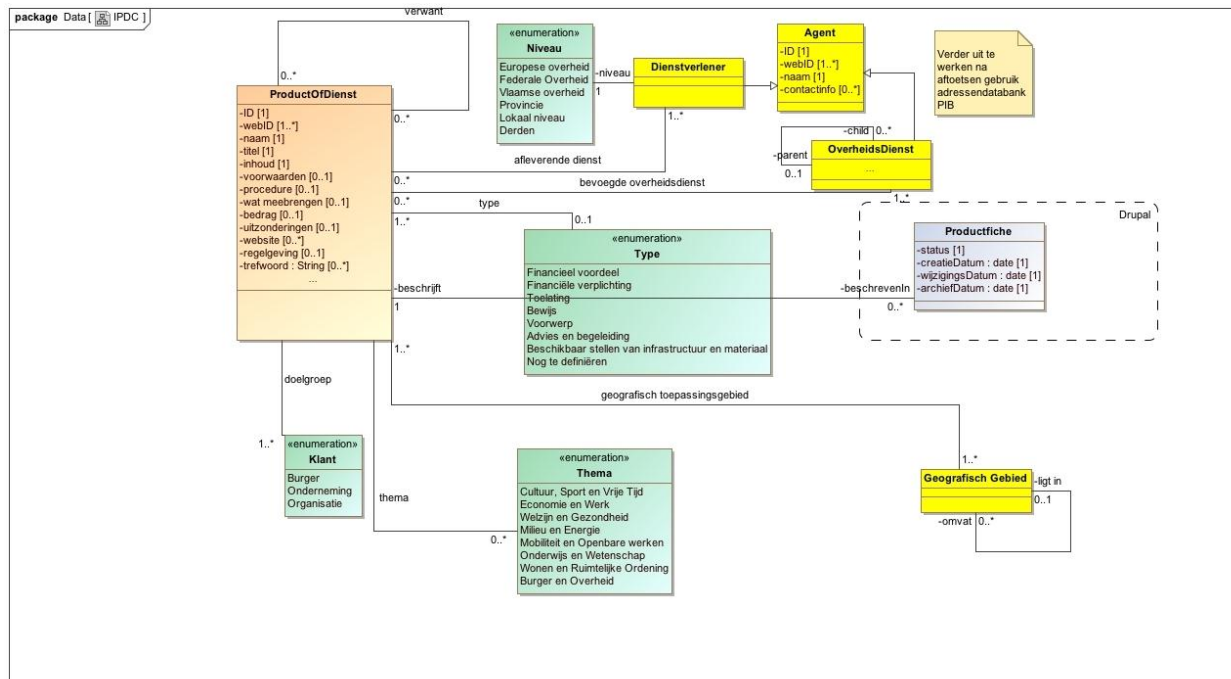


Figure 26 - IPDC metadata model

⁴³ <http://productencatalogus.vlaanderen.be/> (20/6/2013)
<http://www.corve.be/projecten/lokaal/IPDC/> (14/11/2013)

6.3.2 CLASSIFICATIONS

The IPDC currently has five controlled vocabularies for classifying the public services:

- the customer type;
- the competent authority;
- the delivering authority;
- the type of public service;
- a thematic classification.

The customer types of the public services can be citizens, businesses and organisations. And a public service can be linked to multiple customer types

The competent authority is the authority responsible for creating the public service. The delivering authority is the authority responsible for delivering the public service to the public. For example, a driving licence is defined at a federal level; however the public service is delivered at local level.

The type of public service is classifies public services in different types, e.g. permission, financial benefit, advice.

The thematic classification is a simple taxonomy based on government functions.

6.3.3 EDITORS

The public services are created and managed by the relevant levels in the public administrations.

- Flemish level: Vlaamse Infolijn⁴⁴;
- Federal level: Chancery of the Prime Minister;
- Municipal and provincial level: team of volunteer editors from the municipalities and provinces.

The Vlaamse Infolijn has its own separate editor's environment.

For the Chancery of the Prime Minister and for the municipal and provincial editor team a user interface has been created on the platform where they can create and manage the public services. This platform has been created on a portal that is accessible through the internet⁴⁵. However for Flemish and federal level there are web services foreseen to exchange the public service information.

⁴⁴ <http://www.vlaamseinfolijn.be/> – the government information service which is accessible via a range of channels.

⁴⁵ <http://publicatie-productencatalogus.vlaanderen.be/> (20/6/2013)

Figure 27 gives an overview of the architectural building blocks and how the information is exchanged on the input and output side.

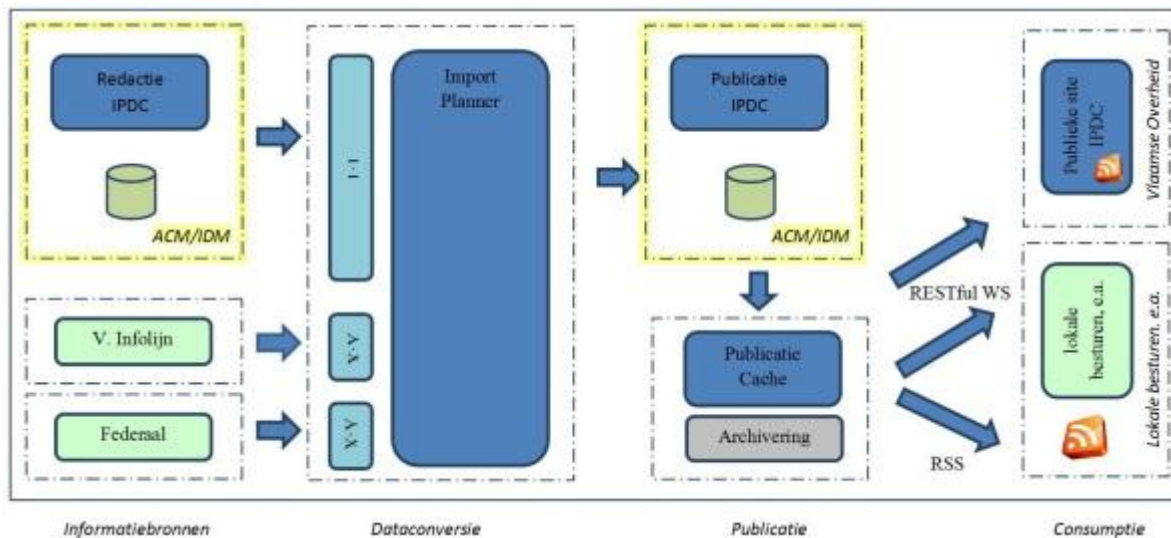


Figure 27 - Architecture of the IPDC

6.3.4 DATA OUTPUT

The catalogue shares the public service records either through RSS or RESTful web services. In addition, a user interface has been created to search through the entire catalogue and retrieve individual public services.

6.3.5 CONCEPTUAL MODEL ANALYSIS OF INTERBESTUURLIJKE PRODUCTEN- EN DIENSTENCATALOGUS

For each concept described within the conceptual model (section 2.2) the Interbestuurlijke Producten- en Dienstencatalogus is (IPDC) is analysed and described in the table below.

Table 7 - Conceptual model analysis of IPDC

Concept	EIF layer	IPDC analysis
Scope		The IPDC aims at cataloguing the public services and products on European, Flemish, federal, regional, provincial and municipal level within Belgium. A focus is on generic public services and not on the specific public services
Legal basis	Legal	There is no legal basis associated with the IPDC.
Ownership	Organisational	The catalogue is created by the Flemish Government (the eGovernment and ICT Management entity of CORVE and the Vlaamse Infolijn), representatives of the provinces and municipalities (VVSG, V-ICT-OR, VVP and KORTOM) and vendors (HP and Belgacom). The ownership of the catalogue is dedicated to CORVE.
Users	Organisational	The main target audience of the catalogue are the public administrations.
Service model	Semantic	A metadata model is created in order to describe the diverse public services within Belgium. In a pilot project this metadata model has been mapped with the CPSV.
Classification	Semantic	The catalogue enforces 5 different controlled vocabularies: the customer type, the competent authority, the delivering authority, the type of public service, a thematic classification.
Multilingualism	Semantic	The catalogue is only available in Dutch.
Federated architecture	Technical	In order to generate the generic public services, the IPDC uses teams of editors. The public services are created by representatives on the diverse government levels: <ul style="list-style-type: none"> ▪ Flemish level: Vlaamse Infolijn ; ▪ federal level: Chancery of the Prime Minister; ▪ municipal and provincial level: team of volunteer editors from the municipalities and provinces; ▪ the Vlaamse Infolijn has its own separate editor's environment. Each representative on municipality level can create and manage the public services via a user interface. The representatives on federal and Flemish level can use web services in order to exchange the public service information.

6.3.6 CONTRIBUTION OF THE INTERBESTUURLIJKE PRODUCTEN- EN DIENSTENCATALOGUS (IPDC) TO FCOPS

The IPDC is a nice example of catalogue of public services and the Flemish government would be interested in a European catalogue of public services because they would be able to better inform the citizens and businesses through their helpdesk.

Interesting also for FCOPS is the use of the metadata model which has been mapped with CPSV in a pilot project and the use of different classifications.

6.4 SAMENWERKENDE CATALOGI⁴⁶ – THE NETHERLANDS

The *Samenwerkende Catalogi*, which means ‘cooperating catalogues’, is a platform offered by the Dutch Ministry of Interior Affairs through its ICT and eGovernment arm, Logius, to all Dutch organisations offering public services. This platform contains:

- a database, which contains an index of all public services offered by the participating public administrations;
- a standard taxonomy;
- a uniform product list;
- a metadata model;
- a search function.

In the Netherlands most public administrations at every level already had their own catalogue of public services which they made available to the public through their own website. The concept of the Samenwerkende Catalogi is that all the participating organisations provide their catalogue of public services in a standardised XML-format. In turn the participating organisations have full access to the entire database of public services.

Logius explains that the biggest benefit of the Samenwerkende Catalogi is that the public can consult any public service from any government portal at any level. This means that the public does not need to know where a public service is offered.

The legal base for the Samenwerkende Catalogi is the Services Directive of the European Union.

6.4.1 METADATA MODEL

De Samengestelde Catalogi uses a data model which is based on the OWMS⁴⁷. The OWMS (Overheid.nl Web Metadata Standard) was developed by KOOP (*Kennis- en exploitatiecentrum Officiële Overheidspublicaties* – Centre of knowledge and exploitation of official government publications) by order of the Dutch Ministry of Interior and Royal Affairs as part of the NUP (Nationaal UitvoeringsProgramma dienstverlening en e-overheid – National Implementation Programme of public services and e-Government). The OWMS provides a standard which ensures that all government information is exchanged unambiguously.

The OWMS is based on the Dublin Core Metadata Initiative (DCMI)⁴⁸ Abstract Model (DCAM)⁴⁹ and consists of semantic and syntax agreements. These agreements are based on the properties of the government information elements, controlled vocabularies for these properties and the syntax of these properties. The version currently in use is OWMS 4.0⁵⁰.

The tables below show the metadata elements used for the Samenwerkende Catalogi^{51,52}:

⁴⁶ <http://www.logius.nl/producten/toegang/samenwerkende-catalogi/> (20/6/2013)

⁴⁷ <http://standaarden.overheid.nl/owms> (20/6/2013)

⁴⁸ <http://www.dublincore.org/> (20/6/2013)

⁴⁹ <http://dublincore.org/documents/2007/04/02/abstract-model/> (20/6/2013)

⁵⁰ Normatieve Specificatie OWMS 4.0 – Overheid.nl Web Metadata Standaard, ICTU: e-overheid voor Burgers, 3/5/2011, <http://standaarden.overheid.nl/owms/4.0/doc/NormatievespecificatieOWMS4.0v1.0.1.pdf> (20/6/2013)

⁵¹ Informatie Publicatie Model Samenwerkende Catalogi 4.0 - Deel B: Technische Beschrijving, Logius, 23/4/2012, http://www.logius.nl/fileadmin/logius/product/Samenwerkende_Catalogi/SC_versie_4.0_docs/IPM_SC4.0_Deel_B_v1_0_.pdf (20/6/2013)

OWMS core elements

Table 8 - OWMS core elements

dcterms:identifier
dcterms:title
dcterms:language
dcterms:type
dcterms:modified
overheid:authority
dcterms:spatial
dcterms:temporal.

Table 9 - OWMS secondary elements

dcterms:audience
dcterms:subject
dcterms:abstract

Table 10 - Other elements

overheidproduct:productID
overheidsproduct:onlineAanvragen (online request)
overheidsproduct:aanvraagURL (request URL)
overheidsproduct:eenmaligAanmelden (Single sign-on)
overheidsproduct:contact (Contact (not used))
overheidsproduct:uniformeProductnaam (Uniform product name (UPL))
overheidsproduct:gerelateerdProduct (Related product)

Apart from these metadata elements it is also possible for the public administrations to define part in XHTML. This is a piece of free text which should be easily comprehensible for citizens.

6.4.2 UNIFORM PRODUCT NAME LIST (UPL)

The Samenwerkende Catalogi uses a controlled vocabulary which is called the *Uniforme Productnamenlijst*, UPL, or uniform product name list. It is a standardised list of public services offered by public administrations.

The public administrations are free to choose the name of their public service. However in the public services catalogue a data element is created where the public administration has to indicate what the standardised public service name is. By linking the real name of the public service with a standardised name, it is possible to compare the public services of different public administrations.

The UPL was initially based on the existing public services. If a public service was offered by at least five public administrations, a UPL entry was created. The UPL was further enriched by input from the transaction type catalogue (zaaktypecatalogus)⁵³ developed by KING, the Dutch local authorities' quality

⁵² <http://standaarden.overheid.nl/sc/4.0/xsd/sc.xsd> (20/6/2013), xsd-schema with the metadata elements in SC4.0

⁵³ <http://www.kinggemeenten.nl/ztc/ztc-20> (20/6/2013)

institution, Wmo-producten van Regelhulp⁵⁴ (the product catalogue of the service providing assistance for those entitled to care benefits), ondernemersproducten van Antwoord voor bedrijven⁵⁵ (the business product catalogue of the Dutch Point of Single Contact set up under the European Services Directive, and the list of all the permits and notices).

The use of a UPL entry is not mandatory for the public administrations, but it is strongly encouraged.

The UPL is not complete. If a public administration does not find a corresponding standardised public service name, it is possible to attribute it to a dummy-value, *UPL naam nog niet beschikbaar* (UPL name not yet available). When the UPL is extended, these public services will be taken into account for the creation of new UPL entries. The update of the UPL is also carried out based on input from Regelhulp, KING and Antwoord voor bedrijven.

6.4.3 THEMATIC CLASSIFICATION (TIO)

A controlled vocabulary of public services, the *Thema-indeling Overheid (TiO)*⁵⁶, 'thematic classification government', is available as part of the OWMS framework (see 6.4.1 Metadata model). The taxonomy consists of two levels and in the current version 1.6 there are 17 level 1 entries and 100 level 2 entries.

The translations of the Level 1 categories are:

- Foreign affairs;
- Art and culture;
- Economy;
- Education and research;
- Family;
- Health and care;
- Environment and energy;
- Nature and landscape;
- Habitat;
- Order and law;
- Political administration and society;
- Sports, welfare and recreation;
- Administrative registries and documents;
- Planning and infrastructure;
- Traffic and transport;
- Living;
- Employment and income.

All the entries in the UPL (see 6.4.2 Uniform Product name list (UPL)) are linked to a theme⁵⁷.

⁵⁴ <http://www.regelhulp.nl> (20/6/2013)

⁵⁵ <http://www.antwoordvoorbedrijven.nl/> (20/6/2013)

⁵⁶ http://standaarden.overheid.nl/owms/4.0/doc/waardelijsten/overheid.themaindelingoverheid_v1.6 (20/6/2013)

⁵⁷ http://standaarden.overheid.nl/sc/4.0/relatie_UPL-TIO.xml (20/6/2013), file in Sparql XML format

6.4.4 INPUT OF PUBLIC SERVICES

If a public administration wants to participate with Samenwerkende Catalogi, they have to publish their own catalogue of public services in the predefined standard XML format on a freely accessible http.

Before a public administration publishes their XML, they have the opportunity to validate the format of the XML through an online validator service⁵⁸.

6.4.5 SEARCH FUNCTION

The public administrations can build into their own portal a search functionality which launches a query in the Samenwerkende Catalogi. This query is handled by using the standard SRU⁵⁹, which is a standard XML-focused search protocol for Internet search queries, utilizing CQL (Contextual Query Language), a standard syntax for representing queries.

The results of the search query are returned in an XML message in accordance with the SRU specifications.

The public using the search function on the portals of the public administrations might not even be aware that they are searching in the Samenwerkende Catalogi. The public administrations are free to decide how to use the search function in their own portal as long as they use the predefined SRU specifications.

6.4.6 CONCEPTUAL MODEL ANALYSIS OF THE SAMENWERKENDE CATALOGI

For each concept described within the conceptual model (section 2.2) the Samenwerkende Catalogi is analysed and described in the table below.

Table 11 - Conceptual model analysis of the Samenwerkende Catalogi

Concept	EIF layer	Samenwerkende Catalogi analysis
Scope		The Samenwerkende Catalogi uses a uniform product list and a standard taxonomy. The uniform product list covers all generic public services on all government levels; however this list is not yet exhaustive. If a specific public service could not be mapped it is first mapped to a default category and afterwards it is reviewed to see if a generic service should be added. The standard taxonomy is created to map the generic services and create a structure within the catalogue. This taxonomy can be used by other public administrations.
Legal basis	Legal	The Samenwerkende Catalogi can find support in the legal base in the Services Directive of the European Union.
Ownership	Organisational	It is a platform offered by the Dutch Ministry of Interior Affairs through its ICT and eGovernment arm ,Logius, to all Dutch organisations offering public services.
Users	Organisational	The public administration will be granted full access to the entire database of public services if they provide their public services in a standardised XML-format. Logius explains that the biggest benefit of the Samenwerkende Catalogi is that the public can consult any public service from any government portal at any level (through the search banner). This means that the public does not need to know where a public

⁵⁸ <http://owmsvalidator.overheid.nl/uploadform.html> (20/6/2013)

⁵⁹ <http://www.loc.gov/standards/sru/index.html> (20/6/2013)

		service is offered.
Service model	Semantic	The OWMS representing the services model, is based on the Dublin Core Metadata Initiative (DCMI) ⁶⁰ Abstract Model (DCAM) ⁶¹ and consists of semantic and syntax agreements.
Classification	Semantic	A controlled vocabulary of public services, the <i>Thema-indeling Overheid</i> (TiO) ⁶² , 'thematic classification government' is a standardised classification used within the Samenwerkende Catalogi. The taxonomy consists of two levels and in the current version 1.6 there are 17 level 1 entries and 100 level 2 entries.
Multilingualism	Semantic	Overheid.nl is only available in Dutch while answersforbusiness.nl is available in Dutch and English.
Federated architecture	Technical	<p>The actual Samenwerkende Catalogi does not contain any data from the database. It serves as a reference catalogue that refers to the XML-documents, supplied by the Member States in a standardised format. These references are used to access the specific public services offered by the public administrations.</p> <p>These XML-documents are made online available and are accessed by means of a URL (also used by the search banner). The generic public services are also gathered within such a document and is online available.</p> <p>The Samenwerkende Catalogi serves as a reference catalogue to the XML-documents without storing any data. Therefore a federated architecture is in place.</p>

6.4.7 CONTRIBUTION TO FCOPS

The Samenwerkende Catalogi is an excellent example of a federated catalogue of public services and FCOPS can learn a lot from this Dutch experience.

The tit-for-tat rule that public administrations can only use the catalogue if they share their own catalogue would encourage public administrations to actively participate even though it is not mandatory. Moreover, the cooperation with software vendors has as a consequence that the Samenwerkende Catalogi are used even more widely.

The Samenwerkende Catalogi relies on different standards. These standards make it very clear for all the participating organisations and software vendors what they need to implement in order to work with the Samenwerkende Catalogi. These standards are created for the data model, the classification and a uniform product list. FCOPS will also need to work with similar standards and can take over some of the concepts from the Samenwerkende Catalogi.

The data exchange with the Samenwerkende Catalogi and the local catalogues of public services also occurs by use of standards. The data input uses a structured standard XML-format. The data output uses the standard SRU specifications in order to launch search queries in the Samenwerkende Catalogi and to return the results in an XML format.

⁶⁰ <http://www.dublincore.org/> (20/6/2013)

⁶¹ <http://dublincore.org/documents/2007/04/02/abstract-model/> (20/6/2013)

⁶² http://standaarden.overheid.nl/owms/4.0/doc/waardelijsten/overheid.themaindelingoverheid_v1.6 (20/6/2013)

6.5 FORM – DENMARK

FORM⁶³ (*FORretningsReferenceModel*) is a Danish reference catalogue of public services. This catalogue provides a common structure and a common language for public services at all levels of public administration in Denmark. They are the intended target audience for FORM.

The reference catalogue of public services can be consulted through FORM online⁶⁴.

6.5.1 DATA MODEL

The *FORM informationsmodel* (see Figure 28 - FORM informationsmodel) is the data model used to describe the public services in FORM.

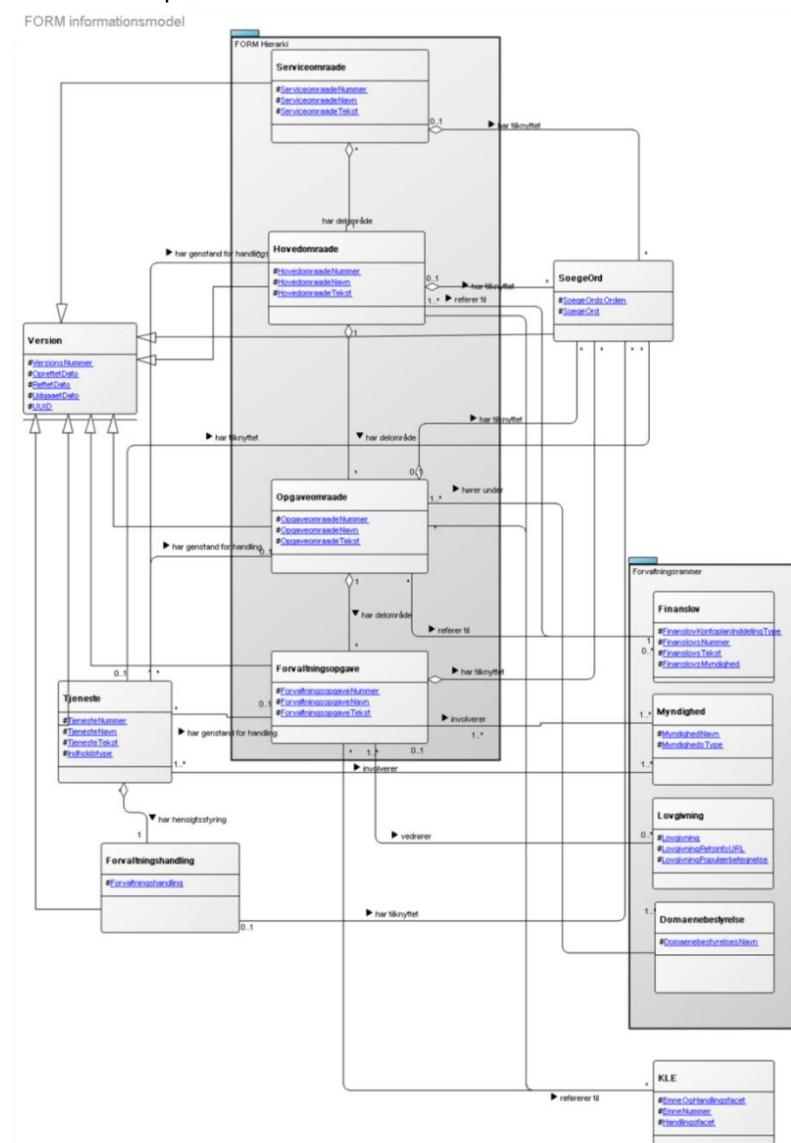


Figure 28 - FORM informationsmodel

⁶³ <http://arkitekturguiden.digitaliser.dk/klassifikation/taksonomi-forvaltningsopgaver-form> (20/6/2013)

⁶⁴ <http://www.form-online.dk> (24/6/2013)

6.5.2 CLASSIFICATIONS

FORM categorises public services at four levels:

1. 34 service areas (*serviceområder*) group the functions of public administrations in relation to citizens and businesses, for example, 'Education and training'.
2. 90 main areas (*hovedområder*) are regions of the service industries, which reflect the economic context in relation to appropriations, for example 'Primary'.
3. 332 task areas (*opgaveområder*) reflect the context of the public service mission, which is expressed in the legislation, for example, 'Education in public schools and independent schools'.
4. 1400 Management functions (*forvaltningsopgaver*) are the public services and the internal services of public administrations. For example, 'Folkeskolens structure and content.'

In addition to these categories, 14000 search terms are defined that are linked to these four categories in order to facilitate the search for the public services. These search terms can be official terms, synonyms or local variations of the standard public service names.

6.5.3 EDITORS

FORM has been centrally maintained since 2007 by a team of four editors. These editors are selected experts who represent the Danish municipalities, regions and the *Digitaliseringsstyrelsen* (digital agency).

6.5.4 LINK WITH BORGER.DK

Borger.dk is the Danish portal and one-stop-shop for the Danish citizens. All articles and eServices on borger.dk are linked to the standard public services of FORM. FORM-online provides a web link to the linked articles and eServices on borger.dk when selecting a standard public service (see Figure 29 - Extract from FORM online with link borger.dk article and eService).

The screenshot shows a hierarchical list of police tasks under the heading '40 Politi'. The tasks are listed with their respective codes and descriptions. Below the list, there are two boxes containing links to borger.dk articles and eServices.

40 Politi i § ⌵

40.15 Politiets opgaver i § ⌵ ⌵ FL ↗

- 40.15.02 Politiets opgaver overordnet
i § ⌵ FL ↗ 4.
- 40.15.05 Kriminalprævention
i § ⌵ ⌵ FL ↗ 4.
- 40.15.08 Politiklager
i § ⌵ FL ↗ 4.
- 40.15.10 Offentlig ro og orden
i § ⌵ FL ↗ 4.
 - 40.15.10.06 Lokal politivedtægt
i § ⌵ FL ↗
 - 40.15.10.09 Alarmcentraler
i § ⌵ ⌵ FL ↗
 - 40.15.10.17 Politianmeldelser
i § ⌵ ⌵ FL ↗

Borger.dk artikel

- [Anmeld tyveri, it-kriminalitet, sexturister, rufferi og kvindehandel](#)
- [Hittegods og findelen](#)
- [Ring til politiet - ring 114](#)
- [Voldtægt](#)

Borger.dk selvbetjening

- [Anmeld IT-kriminalitet til politiet](#)
- [Anmeld tyveri til politiet](#)

Figure 29 - Extract from FORM online with link borger.dk article and eService

The link between FORM and borger.dk allows other public administrations to make use of the descriptions on borger.dk. For example, when the Rødovre Municipality restructured their website in 2009, they chose to use the link between FORM and borger.dk to feed the content of the new website.

Currently about 60% of the content of the Rødovre municipality website⁶⁵ is taken from borger.dk. Similarly other municipalities use the same mechanism to populate the content of their respective websites.

6.5.5 CONCEPTUAL MODEL ANALYSIS OF FORM

For each concept described within the conceptual model (section 2.2) FORM is analysed and described in the table below.

Table 12 - Conceptual model analysis of FORM

Concept	EIF layer	FORM analysis
Scope		This catalogue provides a common structure and a common language for public services at all levels of public administration in Denmark. It serves as a reference catalogue.
Legal basis	Legal	There is no legal base associated with FORM.
Ownership	Organisational	FORM is governed by the Danish government.
Users	Organisational	The target audience of form are the public administrations on all government levels.
Service model	Semantic	A data model is used within form in order to set-up the reference catalogue of public services (see section 6.5.1).
Classification	Semantic	The catalogue uses four levels within the classification: services areas, main areas, task areas and management functions. Furthermore there are search terms defined to support the search functionality within the catalogue. These terms are official terms, synonyms, local variations of the standard public service names, etc.
Multilingualism	Semantic	The catalogue is only available in Danish.
Federated architecture	Technical	A central editor team is responsible to create and manage the public services. The catalogue is offered as a product for the public administrations and it is publicly available.

6.5.6 CONTRIBUTION OF FORM TO FCOPS

FORM is a nice example of generic public services and gives valuable input for the requirements of FCOPS. The taxonomy and data model are very interesting for creating the requirements of FCOPS.

⁶⁵ <https://www.rk.dk/> (24/6/2013)

6.6 NASJONALE TJENESTEKATALOG – NORWAY

The Nasjonale Tjenestekatalog⁶⁶ (national service catalogue) is a commercial product of the Kommuneforlaget⁶⁷, the Norwegian local authorities' publisher. It is a catalogue of municipal public services in Norway. Currently 180 public services are described in the catalogue.

6.6.1 DATA MODEL

The below data model defines the data fields for a public service in the Nasjonal Tjenestekatalog.

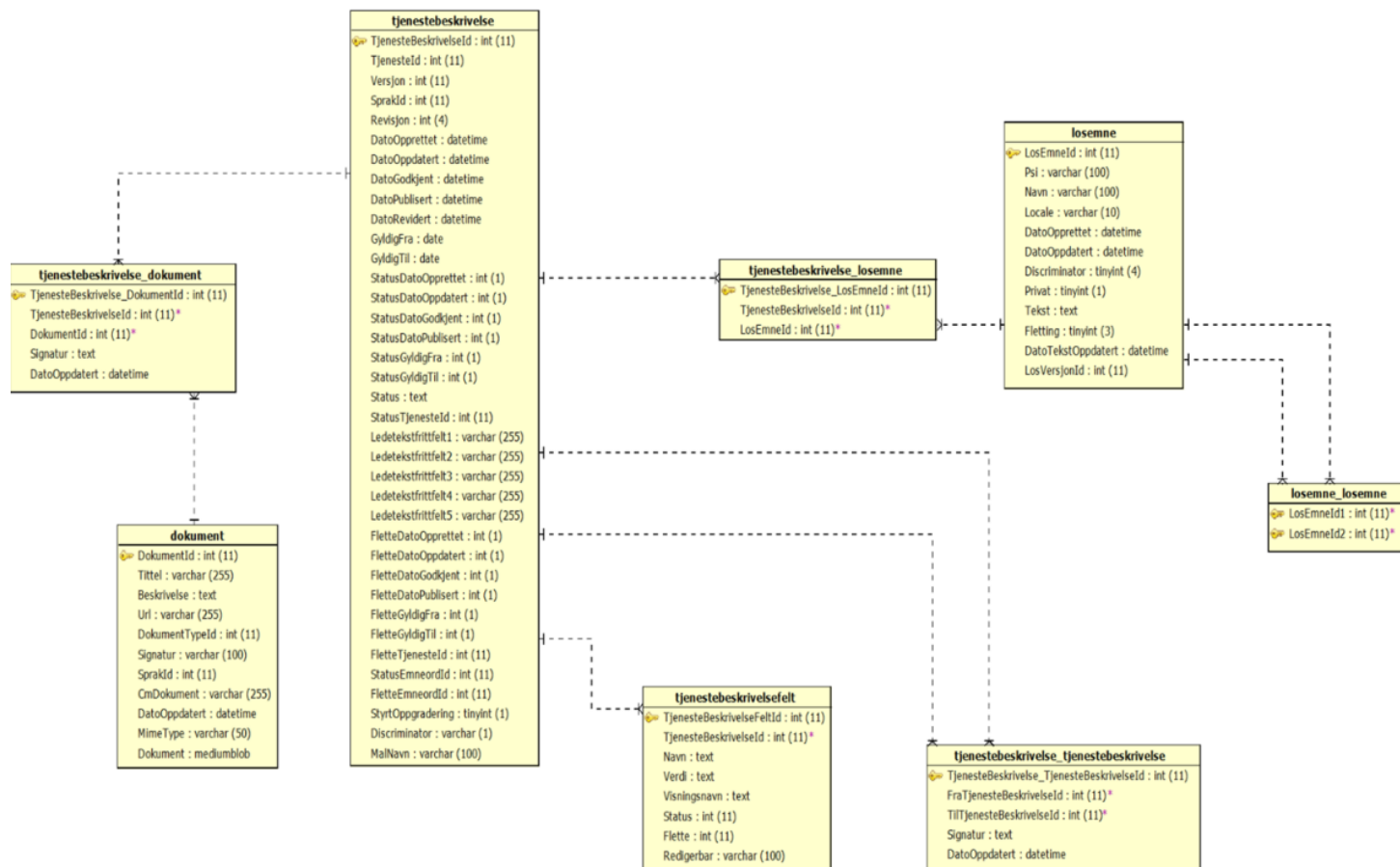


Figure 30 - Nasjonale Tjenestekatalog data model

⁶⁶ http://www.kommuneforlaget.no/kf/eprodukter/innbyggerprodukter/nasjonal_tjenestekatalog/

⁶⁷ <http://www.kommuneforlaget.no>

6.6.2 CLASSIFICATION

Kommuneforlaget uses a controlled vocabulary created by the Agency for Public Management and eGovernment (DIFI) of the Norwegian government called LOS⁶⁸.

LOS consists out of:

- a controlled vocabulary of 400 subjects;
- 1500 key search terms;
- a taxonomy of 15 elements at level 1 and 78 at level 2. This is the Norwegian standard thematic classification for the public services.

6.6.3 EDITORS

The catalogue is continuously updated with new or changing laws and regulations which affect the services of the municipalities in Norway. The update is carried out by experts employed by Kommuneforlaget (a private company), and by a wider network who verify the changes in the public service descriptions.

6.6.4 MULTILINGUALISM

The data model allows for public service descriptions in multiple languages. Currently 80 public services are translated into English, French, Russian, Turkish and Arabic; especially the public services concerning health care.

6.6.5 CONCEPTUAL MODEL ANALYSIS OF THE NASJONALE TJENESTEKATALOG

For each concept described within the conceptual model (section 2.2) Nasjonale Tjenestekatalog is analysed and described in the table below.

Table 13 - Conceptual model analysis of Nasjonale Tjenestekatalog

Concept	EIF layer	Nasjonale Tjenestekatalog analysis
Scope		The catalogue contains public services offered on a municipal level, it focusses on the specific public services.
Legal basis	Legal	There is no legal basis related to the Nasjonale Tjenestekatalog. Though each public service description is based on legal texts and frameworks.
Ownership	Organisational	The catalogue is owned by a private company called the Kommuneforlaget. Experts in the company create the divers public services.
Users	Organisational	The main audience for the catalogue are the public administrations. They can use the public service descriptions within their administration to support the public. They can use these commonly used descriptions.
Service model	Semantic	A service model is defined to set-up the Nasjonale Tjenestekatalog, see section 6.6.1.
Classification	Semantic	The classification used within the catalogue is created by the Agency for Public Management and eGovernment; LOS. It contains different subjects, key search terms and a thematic taxonomy for the public services.

⁶⁸ http://los.difi.no/struktur/bytt_sprak?sprak=eng

Multilingualism	Semantic	Currently 80 public services are translated into English, French, Russian, Turkish and Arabic; especially the public services concerning health care.
Federated architecture	Technical	A central editor team is responsible to create and manage the public services. The catalogue is offered as a product for the public administrations. In contrast to the Denmark equivalent FORM, the catalogue is not publicly available.

6.6.6 CONTRIBUTION OF THE NASJONALE TJENESTEKATALOG TO FCOPS

The Nasjonale Tjenestekatalog is a private initiative. The commercial value of this public services catalogue clearly indicates the added value of catalogue of public services for public administrations. The experience of Kommuneforlaget can be very valuable. The existence of a Norwegian standard controlled vocabulary for public services is remarkable and can give a valuable input for a similar initiative on a European level.

The evolution of this commercial product would be very interesting to follow-up in the future if it would co-exist with FCOPS. However, they already cooperate with ESD-toolkit by providing them the English content of the public services in their catalogue.

6.7 LATVIJA.LV – LATVIA

Latvija.lv⁶⁹ is Latvia's public portal, a point of single contact for both citizens and businesses. It contains a centrally managed catalogue of all public services offered by national and local public administrations.

The catalogue is managed by the *Valsts reģionālās attīstības aģentūra* (State regional development agency), but the public services are created and managed by the relevant public administrations.

Currently the descriptions of the public services are only available in Latvian, although the portal has some sections available in both Russian and English.

The catalogue of public services on Latvija.lv is based on decisions No. 446⁷⁰ of 13/9/2011, No. 480⁷¹ of 25/5/2010 and No. 421 of 19/6/2010 of the Cabinet of Ministers which are based on the European Services Directive.

6.7.1 DATA MODEL

The public services are described using a common data model with the following data elements:

- Service name;
- Service owner;
- Activity;
- Description;
- Recipient;
- Recipient (specific defined criteria);
- Laws & regulations;
- Service documents;
- Service to request the necessary forms;
- Service receipt;
- Price;
- Comment on Service Receipt and price;
- Administrative process;
- Appeal procedures;
- Reminder;
- Warning;
- Service level authentication (security);
- Living situation;
- Service request channel;
- Service approval;
- Service receiving channel;
- Service provider;
- Address service provider;
- Opening hours;
- Telephone, e-mail, link;
- Account no. for charged fees;
- Appeals body.

⁶⁹ <https://www.latvija.lv>

⁷⁰ <http://likumi.lv/doc.php?id=235909>

⁷¹ <http://likumi.lv/doc.php?id=211207>

6.7.2 CLASSIFICATIONS

Because Latvija.lv is a public portal, it uses an intuitive thematic controlled vocabulary based on life events⁷².

There are the 12 level 1 categories:

- Residence, real estate, construction, geodesy, cartography;
- Finance, EU funding;
- Family, children, health, social services;
- Education;
- Business Activities;
- Culture, art, sports;
- Agriculture;
- Employment, labour law, occupational health and safety;
- Public consultations, elections, honours;
- Personal protection, personal status, consumer rights, public procurement;
- Transport, tourism, migration, consular services;
- Protecting the environment.

These level 1 categories are further subdivided into 91 level 2 categories.

No standard public services are created centrally; hence every public administration manages its own services without links to similar public services of other public administrations. So the same public service can be created for different municipalities. For example the public service for registering a birth can be called: *Dzimšanas fakta reģistrācija*, *Dzimšanas fakta reģistrēšana*, *Dzimšanas fakta un paternitātes reģistrēšana* or *Dzimšanas fakta, paternitātes vai adopcijas reģistrēšana*. This is possible because every municipality is the authority for naming their own public services, even when the same public services are also delivered by all other municipalities.

6.7.3 INPUT TO PUBLIC SERVICES

A platform, *Integrētās valsts informācijas sistēmas (IVIS)*⁷³, the integrated state information system, has been created where civil servants of the public administrations can create and manage their public services. It is also possible to import the details of the public services from this system into the website of the public administrations.

⁷² <https://www.latvija.lv/LV/PublicServices/Default.aspx> (26/6/2013)

⁷³ <https://ivis.eps.gov.lv/ivisportal> (26/6/2013)

6.7.4 CONCEPTUAL MODEL ANALYSIS OF THE PORTAL LATVIJA.LV

For each concept described within the conceptual model (section 2.2) the portal Latvija.lv is analysed and described in the table below.

Table 14 - Conceptual model analysis of Latvija.lv

Concept	EIF layer	Latvija.lv analysis
Scope		The portal serves as a single point of contact for citizens and businesses. It contains all specific public services offered by national and local public administrations.
Legal basis	Legal	The Latvian portal refers to the decisions No. 446 of 13/9/2011, No. 480 of 25/5/2010 and No. 421 of 19/6/2010 ² of the Cabinet of Ministers which are based on the European Services Directive.
Ownership	Organisational	The Latvian portal is managed by the State regional development agency. The public services are added and managed by the public services themselves.
Users	Organisational	The main focus of the portal is to provide information to the citizens and businesses.
Service model	Semantic	The portal defined an own service model in order to describe the public services. The different field within the model are mentioned in section 6.7.1.
Classification	Semantic	The classification of the portal supports thematic categories (12 on level 1).
Multilingualism	Semantic	The catalogue is mainly available in Latvian and some parts of the catalogue are translated into English and Russian.
Federated architecture	Technical	The editor's environment is centrally managed in order to create and manage the public services.

6.7.5 CONTRIBUTION OF LATVIJA.LV TO FCOPS

Latvija.lv is a typical public administration portal, a one-stop-shop for both citizens and businesses. Almost every Member State in the European Union has one. This portal is of particular interest because it has a catalogue of public services where all public administrations are obliged to enter their public services. Not only is a user-interface made available for the public administrations to create and manage the public services, but an automatic interface is also created where public administrations can federate their data. A common data model and controlled vocabulary have been created to ensure the federation works properly.

6.8 060.ES – SPAIN

060.es⁷⁴ is Spain's public portal containing the information of all services that are offered by public administration for citizens and businesses. This portal is centrally owned by the *Ministerio de Hacienda y Administraciones Públicas* (Ministry of Finance and Public Administration).

The Ministry receives all the information on the public services from public sources. The content, organisation and choice of links are then selected and coordinated by the Directorate General for Administrative Modernisation, Procedures and Promotion of Electronic Administration of the Ministry of Public Administration.

The information is available in all languages spoken in Spain: Spanish, Catalan, Galician and Basque. There is also an English-language version of the portal.

Public administrations are obliged by law to publish and keep the information up-to-date which is related with public services and procedures they offer: the requirement is in Article 42.4 of Law 30/1992⁷⁵, of November 27, Legal Regime of Public Administrations and the Common Administrative Procedures.

6.8.1 DATA MODEL

In response to the statutory requirement the public administrations have created a list with all the procedures they provide. These lists⁷⁶ (one per administration) are provided in a static pdf-file. All the public services offered are mentioned in a service model which contains the following data elements:

- Identification number;
- Procedure, title;
- Subject;
- Type;
- Time resolution;
- Possibility to request form (eForm/ static);
- *Efecto silencio* – Administrative silence;
- Possibility to request via office;
- *Efecto silencio* – Administrative silence;
- Administrative order;
- URL.

Within the data model there is a specific field that is mentioned twice: *Efecto silencio*. This field is created by law. When this field is positive, it is mandatory that the public administration provide a response to what the citizen asked. If the field is negative, the citizen knows that they can escalate it to higher courts after the legal deadline.

⁷⁴ <http://www.060.es>

⁷⁵ <http://www.boe.es/buscar/act.php?id=BOE-A-1992-26318>

⁷⁶ http://www.060.es/060/appmanager/portal/desktop/?_nfpb=true&_pageLabel=descargaProcedimientos

This data model is used to build the structure of the public services. They focus especially on specific items:

- Title;
- Description (subject);
- Web links to more detail;
- Contact details;
- Relation with other services.

6.8.2 CLASSIFICATIONS

The portal provides three different sections which provide information to citizens and business. Each section has defined a controlled vocabulary to build an intuitive public service structure:

- Online service:
 - Work;
 - Companies;
 - Education;
 - Health
 - Safety and consumers;
 - Traffic and transport;
 - Personal documents;
 - Culture, tourism and leisure;
 - Taxes, pensions and financial aid;
 - Environment.
- Areas of interest:
 - Studying at university;
 - Finding a Job;
 - Going to the administration;
 - Changing address;
 - Managing a business;
 - Making a small legal claim.
- Theme search:
 - Working in the administration;
 - Finding out about procedures;
 - Finding grants, scholarships and grants;
 - Searching legislation.

These classifications are further subdivided into other thematic groups.

6.8.3 CONCEPTUAL MODEL ANALYSIS OF THE PORTAL 060.ES

For each concept described within the conceptual model (section 2.2) the portal 060.es is analysed and described in the table below.

Table 15 - Conceptual model analysis of 060.es

Concept	EIF layer	060.es analysis
Scope		The Spanish portal contains catalogues (in pdf-format) describing all public services on national government level. The portal also provides service description of all public services.
Legal basis	Legal	The Spanish portal refers to the Article 42.4 of Law 30/1992, which indicates that the public administrations are obliged by law to publish their specific public services.
Ownership	Organisational	The portal is centrally owned by the Ministry of Finance and Public Administration.
Users	Organisational	The portal is mainly focused on citizens and businesses.
Service model	Semantic	The service model is deducted from the structure used within the catalogues of public services (pdf-format); see section 6.8.1).
Classification	Semantic	The Spanish portal is structured according to three classifications: online service, areas of interest and theme search.
Multilingualism	Semantic	The information is available in all languages spoken in Spain: Spanish, Catalan, Galician and Basque. There is also an English-language version of the portal.
Federated architecture	Technical	There is no federated architecture in place to build the portal 060.es. However they provide a kind of messaging system for citizens to send out newsletters and warnings if certain public services are updated. The citizen can subscribe for certain public services in order to receive those warnings.

6.8.4 CONTRIBUTION OF 060.ES TO FCOPS

060.es is a national catalogue of public services which will be able to provide input of Spanish public services on a national level to FCOPS. Next to that like the other catalogues of public services the data model and taxonomy of the classifications are a valuable input for the requirements of FCOPS.

6.9 PHARMA.BE

Pharma.be is a conglomeration of Belgian pharmaceutical companies and represents the pharmaceutical industry towards other partners such as doctors, hospitals, pharmacies and the government.

E-compedium.be⁷⁷ is a catalogue containing all the patient information leaflets (PILs) of the represented pharmaceutical companies. These PILs are made available in 5 versions: scientific version in both Dutch and French and a version for the public in Dutch, French and German.

E-compedium is owned by pharma.be and is managed by an external service provider. The content of the PILs are the responsibility of the pharmaceutical companies.

The pharmaceutical company sends the 5 versions of a PIL to a central mailbox of the service provider in a non-standard format in either PDF or Word. The service provider receives these e-mails and the content of the 2 scientific versions are inserted into a MySQL database into a standardised format and the 3 public versions are, if necessary, converted into a PDF. The conversion is partially done automatic but there is always a manual check for every PIL. After the PILs are inserted into the database there is first a validation by the pharmaceutical company before it can be made available through the website.

For an update the same process is used and the service provider overwrites the entire content of the previous version. Because version control is activated older versions are easily retrieved. When a PIL needs to be removed an e-mail with the request is sent to the same mailbox by pharmaceutical company. The entire process takes about 1-2 working days.

Pharma.be chose to work with this centralised approach with the external service provider to increase the efficiency of the process and the coherence of the data.

The database is MySQL and the front-end is built on Drupal. E-services are also made available for partners, after payment:

- A unique URL for every PIL
- A search banner which can be included in other websites
- A collection of all PILs of a specific category/group

6.8.3 CONCEPTUAL MODEL ANALYSIS OF THE PORTAL E-COMPEDIUM.BE

For each concept described within the conceptual model (section 2.2) the portal e-compedium.be is analysed and described in the table below.

Table 16 - Conceptual model analysis of e-compedium.be

Concept	EIF layer	e-compedium.be analysis
Scope		A catalogue containing all patient information leaflets for all members of pharma.be, i.e. Belgian pharmaceutical companies.
Legal basis	Legal	The catalogue doesn't have a legal basis, however the content of the PILs in the catalogue are bound by the regulations of the European Medicines Agency.
Ownership	Organisational	The catalogue is owned by Pharma.be, managed by an external

⁷⁷ <http://www.e-compedium.be>

		service provider and the content is the responsibility of the pharmaceutical companies.
Users	Organisational	The target audience are primarily the partners like doctors, hospitals and pharmacies, but it is accessible to the entire public.
Service model	Semantic	A metadata model is created in order to describe the diverse public services within Belgium. In a pilot project this metadata model has been mapped with the CPSV.
Classification	Semantic	No classification, but indexes are used in order to create search functionality on the product name.
Multilingualism	Semantic	The scientific PILs are available in Dutch and French, the general PILs are available in Dutch, French and German. Translation is the responsibility of the pharmaceutical companies.
Federated architecture	Technical	The entire process for data entry is manual so there is no federated architecture. For the data output there is the possibility for e-services.

6.9.1 CONTRIBUTION OF E-COMPENDIUM.BE TO FCOPS

E-compendium is a catalogue of PILs for all participating Belgian pharmaceutical companies. The process is largely manual but this ensures that a 4-eyes principle is used before the content is published. This 4-eyes principle could be interesting case to tackle machine translations in FCOPS.

Next to that it is interesting for FCOPS to see how e-compendium.be offers e-services for the data output next to the website, including a search banner which can be used by third parties.

6.10 CONCLUSION

6.10.1 COMMON WAYS OF WORKING

Performing a high-level analysis and a second in-depth analysis has provided a broad overview of the current situation in the Member States. It has shown that each Member State works differently and separately.

In the first high-level analyses, the Member State portals were investigated. Only the portals that focus on citizens and businesses were in scope. Certain countries have developed multiple portals, each focusing on a specific target audience. A total of 41 portals were analysed in 31 countries.

These portals provide a list of public services which are structured according to a certain classification. The public services can be offered in diverse formats: a description of physical services, reference to web services or forms that are made available for the public through the portal. The owner of the portal has in most cases defined a thematic classification to give structure to the portal and the public services.

In certain Member States these portals are powered by catalogues of public services. The in-depth analysis focused especially on those cases. This catalogue can be developed at different government levels within the Member State. For example, in Spain 060.es works at a national level and a catalogue (pdf-format) is provided containing only national public services. In Belgium, on the other hand, a catalogue has been created at a regional level (Flemish) which contains the public services of all government levels to support the helpdesk in the Flemish Region ('*Vlaamse Infolijn*').

Irrespective of the set-up of the Member States at government level, it is possible to identify three common ways of working when cataloguing services at Member State level. Figure 31 gives an overview of these.

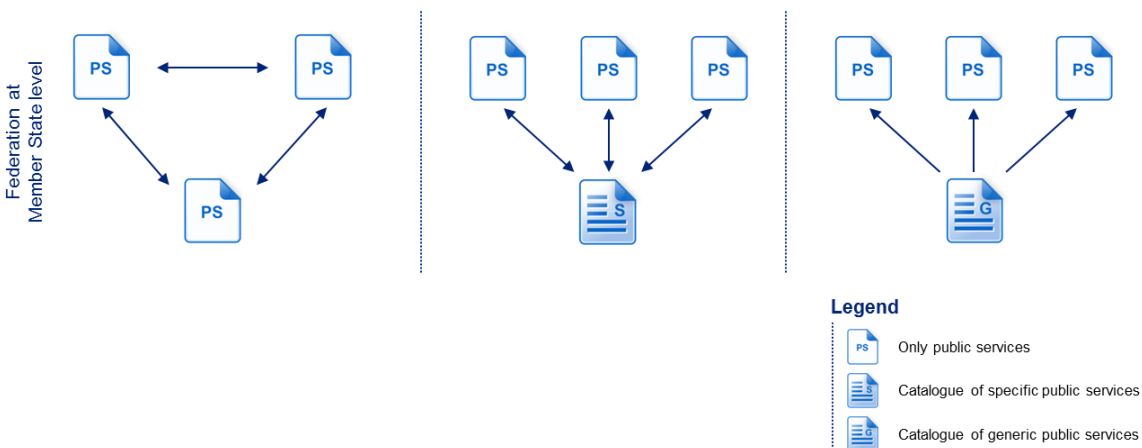


Figure 31 - Current approaches to catalogue services

Most Member States have not yet created a catalogue of public services (the left-hand position on Figure 31). In this case the public administrations offer their own public services separately and without knowing what other administrations are offering. However a listing of the public services within the Member State can be found on their portal. These portals provide their own classification which might differ from Member State to Member State. This is a decentralised way of working and it is difficult to provide support and information to citizens and businesses about public services offered by other bodies.

In second set-up (illustrated in the centre of Figure 31) the Member States have created a catalogue of public services. This is a more centralised model; all public administrations publish information about the services they offer in a (national) catalogue (manual input or automatic federation). By using such a catalogue it is possible to create an overview of what is offered within the various public administrations. An example of this set-up can be found in Latvia⁷⁸, where the State Regional Development Agency has created a catalogue of public services. The national and local public services are created and managed by the relevant public administrations.. Through the set-up of the catalogue the Latvian citizens and businesses are able to find information about all public services in the national portal. And next to that all public administrations are able to pull the information on public services to their own portals.

Within the last set up, the catalogue includes only generic public services (see right set up on Figure 31). These public services are described in a standardised format by using pre-defined assets (e.g. semantic data model, taxonomy). The purpose of such catalogue is to create a generic and distinct overview of which public service is offered within the Member State. These services can be used by and tailored to the different public administrations.

These services are defined by consolidating the offering of all the public administrations within the Member State. They can use this as a basis to define the generic public services. Examples of this set up can be found in the Netherlands, Norway and Denmark.

The Dutch Ministry has defined all the generic services (gathered in the Uniform Product name List - UPL) which are provided for public administrations. Therefore they have created a taxonomy (thematic classification), uniform product list, metadata model, etc. The administrations are still free on how to create their specific public services; however they need to specify for each specific service the relating generic service from the UPL. This is possible by entering the standardised name of the service in the foreseen data element within the catalogue of the public administration. In this way the public administrations establish a connection with the overarching catalogue of the Dutch Ministry with the generic public services. The assets and pre-defined standards provided by the Ministry stimulate the interoperability between public administrations and improve the standardisation within the Netherlands.

Denmark (FORM⁷⁹) and Norway (Nasjonale Tjenestekatalog) are working via editors. These editors describe the different public services according to a pre-defined and standardised data model and publish the services in a catalogue. The different municipalities and administrations can use these standard public services which are described in a common language and structure in order to make it applicable for all government levels. This editorial task is given a government institution within Denmark, but for Norway this is done by a private company specialised in software development for public administrations.

6.10.2 COMMONALITIES OF PUBLIC SERVICE MODELS

During the initial analysis several initiatives were investigated to discover functionalities that could contribute to FCOPS. The Core Public Service Vocabulary (CPSV) is a simplified, reusable and extensible data model that captures the fundamental characteristics of a public service, and is identified as a key contributor to FCOPS.

The CPSV is developed by a working group on Joinup containing representatives of all the Member States. It is currently managed by the W3C and could be used as a standard to describe public services across Member States. The technology-independent data model should be reused as much as possible

⁷⁸ <https://www.latvija.lv> (08/06/2013)

⁷⁹ <http://www.form-online.dk> (24/6/2013)

to improve standardisation and interoperability in Europe. The standardised metadata model enables the communication between the information systems of public administrations across Member States. The CPSV is therefore a vital building block in the development of FCOPS. However, the CPSV is an abstract model that needs to be further refined when it is put into practice.

Several mappings between existing public service models and the CPSV were done in a pilot. These mappings were done by taking a few public services as an example and map them with the data elements of the CPSV. The following public service models were already mapped:

- SPOCS large-scale project⁸⁰,
- Flemish Intergovernmental Product and Service Catalogue ('Interbestuurlijke Producten- en Dienstencatalogus')⁸¹,
- Irish Citizens Information portal⁸², and
- e-CODEX large scale pilot⁸³.

The pilot of these mappings⁸⁴ is of interest to the further development of FCOPS. It gives insights on how the mappings are done with the CPSV and it tests whether the CPSV is exhaustive and generic enough to map it with different public service models.

EXAMPLE SEMANTIC ELEMENTS HIGH-LEVEL ANALYSIS

During our high-level analysis, the semantic aspects are investigated of the national public administration portals (cf. Table 5 - Public administration portals sample). Each portal was examined whether it provides specific information of the semantic elements. If the element is represented on the front-end (portal) then it indicates that such data element is required in their public service metadata model.

A mapping between the items analysed in the portals and the CPSV data elements can be found in Table 17. This mapping indicates that information can be exchanged between FCOPS and the information systems of the Member States. The public service models of both sides need to be mapped in order to extract the required information and load it into the database of FCOPS.

Table 17 - Commonalities between semantic elements found in high-level analysis and the CPSV

<i>Data elements analysed during high-level analysis</i>	<i>CPSV data elements</i>
Identification number	
Title	dcterms:title :Text
Description	dcterms:description :Text
Language	dcterms:language :dcterms:LinguisticSystem
Web links to more details	class foaf:Agent(Org, Group, Person)
Further contact details	class foaf:Agent(Org, Group, Person)
Case study available	
Service level agreements	

⁸⁰ http://www.eu-spocs.eu/index.php?option=com_processes&task=showProcess&id=18&Itemid=61 (14/11/2013)

⁸¹ <http://www.corve.be/projecten/lokaal/IPDC/> (14/11/2013)

⁸² <http://www.citizensinformation.ie/en/> (14/11/2013)

⁸³ <http://www.e-codex.eu/home.html> (14/11/2013)

⁸⁴ <http://cpsv.testproject.eu/CPSV/> (14/11/2013)

Input	<i>class</i> Input
Output	<i>class</i> Output
Location of service	<i>class</i> dcterms:Location, or <i>class</i> Channel and <i>relation</i> hasChannel(sub foaf:homepage, physicallyLocatedAt)
Period of time	<i>class</i> dcterms:PeriodOfTime
Relation with other services	<i>relation</i> dcterms:related or <i>relation</i> dcterms:requires
Service owner	<i>class</i> foaf:Agent(Org, Group, Person) and <i>relation</i> playsRole(sub: <u>provides</u> , uses)
Legal considerations	<i>class</i> Rule and <i>class</i> FormalFramework
<i>Taxonomy**</i>	dcterms:type :skos:Concept
<i>Service information type**</i>	dcterms:type :skos:Concept

The high-level analysis investigated which of these data elements are accessible on the portals. Not all information is readily available for the end-user of the portal. Therefore the assumption can be made that some information (e.g. identification number) is kept hidden on certain portals.

Below is a table with these data elements. The percentage behind the data element is the level of occurrence of these data elements in the 41 portals analysed (cf. Figure 17 - Elements of the semantic model in 5.2.7 Semantic aspects: Semantic model and Figure 19 - Translations available on the portals analysed in 5.2.9 Semantic aspects: Multilingualism):

▪ Identification number	2%	▪ Output	56%
▪ Title	100%	▪ Location of service	63%
▪ Description	98%	▪ Period of time	39%
▪ Language	66%*	▪ Relation with other services	63%
▪ Web links to more details	100%	▪ Service owner	54%
▪ Further contact details	78%	▪ Legal considerations	61%
▪ Case study available	7%	▪ <i>Taxonomy</i>	100%**
▪ Service level agreements	2%	▪ <i>Service information type</i>	100%**
▪ Input	71%		

*The percentage of language represents the number of portals analysed that provides the public service information in (a) language(s) other than the national official languages

** The taxonomies and service information types were analysed in the section 'high-level analysis' of the national portal fact sheets (see Annex D)

The data element 'other' (see semantic section in fact sheets) is left out of discussion because it contains extra relevant information that is found. This should not be included in the public service model.

EXAMPLE 'SAMENWERKENDE CATALOGI'

The 'Samenwerkende Catalogi' is an interesting case that is analysed in-depth within this study. This initiative tends the closest to the vision of FCOPS. It consists of a federating catalogue at national level and has established communication channels with the various public administrations in the Netherlands.

The catalogue at national level contains a uniform product list (all generic public services offered in the Netherlands) and a standardised taxonomy. The public administrations can use this list and the taxonomy

on one condition; it has to make their specific public services available for the national catalogue and they have to map their public services with the generic public services.

A high-level mapping can be found in the table underneath; the data elements used in the 'Samenwerkende catalogue' are mapped to those in the CPSV.

Table 18 - Mapping between the public service models of 'Samenwerkende Catalogi' and the CPSV

Data elements in 'Samenwerkend Catalogi'	Data elements in the CPSV ⁸⁵
dcterms:identifier	
dcterms:title	dcterms:title :Text
dcterms:language	dcterms:language :dcterms:LinguisticSystem
dcterms:type	dcterms:type :skos:Concept
dcterms:modified	<i>class</i> dcterms:PeriodOfTime
overheid:authority	<i>class</i> foaf:Agent(Org, Group, Person) and <i>relation</i> playsRole (sub:provides, uses)
dcterms:spatial	<i>class</i> dcterms:Location
dcterms:temporal.	
dcterms:audience	<i>class</i> foaf:Agent(Org, Group, Person) and <i>relation</i> playsRole (sub:provides, uses)
dcterms:subject	dcterms:type :skos:Concept
dcterms:abstract	dcterms:description :Tekst
overheidproduct:productID	
overheidsproduct:onlineAanvragen (online request) <i>field represents 'yes' if online request is possible otherwise a 'no' is mentioned</i>	<i>relation</i> hasChannel(sub foaf:homepage, physicallyLocatedAt)
overheidsproduct:aanvraagURL (request URL)	<i>class</i> Channel and <i>relation</i> hasChannel(sub foaf:homepage, physicallyLocatedAt)
overheidsproduct:eenmaligAanmelden (Single sign-on)	
overheidsproduct:contact (Contact (not used))	<i>class</i> foaf:Agent(Org, Group, Person)
overheidsproduct:uniformeProductnaam (Uniform product name (UPL))	<i>relation</i> dcterms:related
overheidsproduct:gerelateerdProduct (Related product)	<i>relation</i> dcterms:related or <i>relation</i> dcterms:requires

7 ANNEX

⁸⁵ Informatie Publicatie Model Samenwerkende Catalogi 4.0 - Deel B: Technische Beschrijving, Logius, 23/4/2012, http://www.logius.nl/fileadmin/logius/product/Samenwerkende_Catalogi/SC_versie_4.0_docs/IPM_SC4.0_Deel_B_v1_0_.pdf (20/6/2013)

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ANNEX A. COMPLETE LIST OF ‘YOUR EUROPE’ SERVICES DESCRIBED FOR CITIZENS

Live event groups	Life events	Life event area
Travel	Documents you need	EU nationals
		Non-EU family members
	Passenger rights	Travellers with reduced mobility
		Rail passenger rights
		Air passenger rights
		Bus and coach passenger rights
		Ship passenger rights
		Air security
	What can you take with you?	Animal or plants
		Animal products
Alcohol, tobacco, cash		
Work and retirement	Looking for work abroad	Transferring unemployment benefits
		If you don't find work
		Right to benefits
		Access to jobs in the public sector
		Qualifications for employment
		Taxes
		Work permits
	Cross-border commuting	Work-related rights
		Benefits
		Family benefits
		Taxes
		Problem areas
	Postings abroad	Conditions and formalities – employees
		Conditions and formalities – self-employed
		Benefits
		Family benefits
		Taxes
		Work-related rights
	Working abroad as civil servant	Benefits
		Taxes

	Workers	Work-related rights
		Benefits
		Family benefits
		Access to jobs in the public sector
		Qualification for employment
	Taxes	
	Work permits	
	Retiring	State pension – claims and calculations
		Supplementary pension rights
		Family benefits
Healthcare coverage		
Death grants		
Taxes		
Vehicles	Cars	Buying a car abroad
		Car rental abroad
		Selling your car abroad
		VAT on cars bought abroad
	Driving licence	Validity in EU countries
		Loss, theft and renewal
	Insurance	Validity
		Accidents abroad
Registration	Car registration and taxes	
	Formalities and documents	
Residence formalities	Workers and pensioners	Rights, conditions and formalities
		EU family members
		Non-EU family members
		Elections
	Students	Rights, conditions and formalities
		EU family members
		Non-EU family members
Education and youth	School	Starting school in another EU country
		Partnering with schools abroad
	University	Admission and entry conditions
		Fees and financial help

		Recognition of academic diplomas	
		Student exchanges	
		Healthcare	
		Working while studying	
	Traineeships	Financial support	
		Health	
	Researchers	Grants and jobs	
		Taxation	
		Healthcare	
	Volunteering	Where to start	
		Next steps after finding your project	
Health	Unforeseen medical treatment	Health cover for short visits	
		Going to a doctor abroad	
		Emergency hospital treatment	
			Expenses and reimbursement
	Planned treatment	Access rights	
		Finding the right hospital abroad	
		Expenses and reimbursements	
	Help from the chemist	Presenting a prescription abroad	
		Expenses and reimbursements	
	Settling abroad	Your social security cover	
Visiting a doctor			
Social security rights			
Family	Children	Parental responsibility	
		Adoption	
		Child abduction by parent	
		Family benefits	
	Couples	Marriage	
		Registered partnerships	
		Unmarried couples	
		Divorce and legal separation	
		Maintenance (child/spousal support)	
Consumers	Shopping	Price discrimination	
		Guarantees	

	Repairs, replacements, refunds
	Returning unwanted goods
	VAT
	Buying services
Your online rights	Accessing and using online services
	Shopping online
	What to do when things go wrong
Personal finance	Opening a bank account
	Day-to-day banking
	Credit, loans and mortgages
	Insurance
Unfair treatment	Unfair commercial practices

ANNEX B. COMPLETE LIST OF ‘YOUR EUROPE’ SERVICES DESCRIBED FOR BUSINESSES

Business event groups	Business events	Business event area
Starting up	Start-ups	Points of Single Contact
		One-stop shops
	Takeovers	Ensuring access to finance
		Raising awareness and support mentoring
		Organising transparent markets for business transfer
		Ensuring transfer-friendly tax systems
Managing	Accounts	International accounting standards
		Adapting accounting systems to small businesses
	Taxes	Direct taxation
		Indirect taxation
	Staff	EU-wide labour market
		Workers posted abroad
		Recognition of professional qualifications
		Social security
	Statistics	/
	Financial difficulties	/
Expanding	Partners	European economic interest groupings (EEIG)
		European cooperative societies
	Branches	Types of secondary establishment
		Requirements
	Mergers	Points of Single Contact
		Acquisition
	Outside the EU	Controlling mergers
International trade policy		
EU market	Goods	Customs
		Free movement of goods
		Restrictions
		New legislative framework
		Harmonisation

		Mutual recognition
		Product contact points
	Services	Services Directive
	Competing fairly	Antitrust
		State aid
	Public contract	EU-wide public procurement
		International rules
Research and innovation	New ideas	Generating knowledge
		Transferring knowledge
	Research	/
	Intellectual property	/
Responsible business	Environmental rules	Emissions Trading System
		Waste management
		Eco-design of energy-using products
		Reach
		Integrated Pollution Prevention and Control
		Going beyond requirements
	Staff welfare	Non-discrimination
		Gender equality
		Health and safety at work
		Labour relations
	Sustainability	Corporate social responsibility
		Products life cycle
		Ecolabel
		Eco-management and audit scheme
		Eco-Innovation Action Plan
		Lead Market Initiative
		Action Plan for sustainable consumption and production and sustainable industrial policy
		Small Business Act
		European Business Awards for the Environment
		Training and up-skilling
Finance and support	Access to finance	/
	Business support	Helping businesses

		Communicating with businesses
Exit strategy	Selling on	Ensuring access to finance
		Raising awareness and support mentoring
		Organising transparent markets for business transfer
		Ensuring transfer-friendly tax systems
		Winding up
	Bankruptcy	Insolvency
		Simpler and faster bankruptcy procedures
		Starting again after bankruptcy

ANNEX C. MAPPING BETWEEN THE SERVICE GROUPS AND THE FUNCTION LIST

Id	Service group	Function group
2	Advice and welfare rights	Advice and benefits
3	Benefits	Advice and benefits
4	Community support	Advice and benefits
5	Grants and aid	Advice and benefits
7	Business advice and support	Business and employment
8	Business grants	Business and employment
9	Business rates	Business and employment
10	Careers and employment	Business and employment
11	Commercial property	Business and employment
12	Health and safety	Business and employment
13	Regeneration	Business and employment
14	Tenders and contracts	Business and employment
15	Trading standards	Business and employment
17	Criminal justice	Community safety
18	Emergencies	Community safety
19	Fire safety	Community safety
20	Police services	Community safety
21	Neighbourhood security	Community safety
22	Youth offending	Community safety
24	Adult education and lifelong learning	Education and learning
25	Early years and childcare	Education and learning
26	Educational support	Education and learning
27	Higher education	Education and learning
28	Schools	Education and learning
29	Special education needs	Education and learning
31	Animal welfare	Environmental protection
32	Conservation and sustainability	Environmental protection
33	Countryside and farming	Environmental protection
34	Environmental health	Environmental protection
35	Funerals and cremations	Environmental protection
36	Parks and open spaces	Environmental protection
37	Pollution control	Environmental protection
38	Waste management	Environmental protection
39	Recycling	Environmental protection
40	Street care and cleaning	Environmental protection
41	Utilities	Environmental protection
43	Accessing and updating personal information	Government, citizens and rights
44	Asylum and immigration	Government, citizens and rights
45	Commercial activities	Government, citizens and rights
46	Communications and publicity	Government, citizens and rights
47	Complaints and compliments	Government, citizens and rights
48	Consultations	Government, citizens and rights
49	Data protection and freedom of information	Government, citizens and rights
50	Democracy	Government, citizens and rights
51	Equality and diversity	Government, citizens and rights
52	Municipal operation	Government, citizens and rights
53	Policy and performance	Government, citizens and rights

54	Registration	Government, citizens and rights
55	Statistics and census information	Government, citizens and rights
56	Taxation	Government, citizens and rights
57	Volunteering and voluntary organisations	Government, citizens and rights
59	Adult services	Health and social care
60	Care homes, supported and sheltered housing	Health and social care
61	Careers	Health and social care
62	Community centres and facilities	Health and social care
63	Children and family care	Health and social care
64	Doctors, GPs and hospitals	Health and social care
65	Health and medical advice	Health and social care
67	Council and community housing	Housing
68	Homelessness and prevention	Housing
69	Housing advice	Housing
70	Improvements and repairs	Housing
71	Multiple occupancy homes	Housing
73	Arts and entertainment	Leisure and culture
74	Events and exhibitions	Leisure and culture
75	Leisure activities	Leisure and culture
76	Libraries	Leisure and culture
77	Local history and heritage	Leisure and culture
78	Museums and galleries	Leisure and culture
79	Religion and culture	Leisure and culture
80	Sports and sporting venues	Leisure and culture
81	Tourism	Leisure and culture
83	Alcohol and entertainment	Licenses, permits and permissions
84	Animals	Licenses, permits and permissions
85	Building and construction	Licenses, permits and permissions
86	Businesses and markets	Licenses, permits and permissions
87	Social care and education	Licenses, permits and permissions
88	Hazardous materials	Licenses, permits and permissions
89	Food	Licenses, permits and permissions
90	Gambling and lottery	Licenses, permits and permissions
91	Transport	Licenses, permits and permissions
92	Utilities	Licenses, permits and permissions
93	Waste and pollution	Licenses, permits and permissions
94	Water activities	Licenses, permits and permissions
96	Coastline	Marine and waterway services
97	Inland waterways	Marine and waterway services
98	Ports and harbours	Marine and waterway services
100	Building control	Planning and building control
101	Development control	Planning and building control
102	Heritage and landscape	Planning and building control
103	Planning policy	Planning and building control
104	Town centre management	Planning and building control
106	Community transport	Transport and highways
107	Cycling	Transport and highways
108	Footpaths, byways and bridleways	Transport and highways
109	Maintenance	Transport and highways
110	Parking	Transport and highways
111	Public transport	Transport and highways

112	Road safety	Transport and highways
113	Transport schemes	Transport and highways

ANNEX D. FACT SHEETS ON MEMBER STATE PORTALS ANALYSED

Overview of the portals analysed

Austria – Citizen portal (1/2).....	119
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Denmark – Business portal (1/3)	135
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Denmark – Citizen portal (3/3)	139
Estonia	141
Finland.....	143
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Germany.....	147
Greece.....	149
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AUSTRIA – CITIZEN PORTAL (1/2)

High-level analysis			
Country	Austria		
Link to portal/catalogue	https://www.help.gv.at		
Type of portal	Federated portal with online forms (circa 1.000 forms; 350 eForms)		
Level of portal	Different ministries on national and regional level are incorporated		
Federated	Yes, different forms for the municipalities		
Classification of services	Categorisation similar to life events and an A-Z search engine is available		
Categories on the first level	Working; building and housing; government authorities; education; documents and identification; family and partnership; free time and mobility; living in Austria; social affairs and emergencies; tax and finance		
Complexity of further categorisation	The categorisation exists in most cases of 3 levels, but in some cases it contains 4 levels		
Service Information Type	Static text and in some cases extended with (electronic) forms. Currently 1.000 forms are available on help.gv.at, 350 are electronic forms.		
Target audience	Citizens		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated; the information comes from different channels which are responsible for the content, links, and forms Centralised: the forms are presented on the portal		
Ownership catalogue	The common pages (home, search engine, overview, etc.) are owned by the Bundeskanzleramt (Federal Chancellery)		
Ownership services	The owner of the content, information and eForms is the relating authority (the organisation/administration that is responsible is mentioned at the bottom of the page). The updates are the responsibility of the relative authorities. Process is not yet known.		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)	By use of content syndication the content of HELP.gv can be presented in partner websites, see RSS feeds are available for content syndication		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The authority or institution of the public administration having technical jurisdiction assumes full responsibility for the text.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to access eServices
Title	Yes	Output? (documents)	Yes, forms can be received.
Description	Yes	Location of the service	Yes, forms are available online
Language	German, English (limited)	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes, other relating services are mentioned within the public services.
Further contact details	Yes	Is the owner of the service provided?	Yes, the owner of the service is presented on the bottom of the page
Case study available	No	Legal considerations	Yes, the concerning regulations are mentioned

Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services?	Content-Management-System Content.Node®		
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments			
Other consulted sources			

AUSTRIA – CITIZEN PORTAL (2/2)

High-level analysis			
Country	Austria		
Link to portal/catalogue	https://www.usp.gv.at		
Type of portal	Federated portal with online forms and eServices		
Level of portal	Different ministries on national and regional level are incorporated		
Federated	Yes, different forms for the municipalities		
Classification of services	Categorisation similar to life events and an A-Z search engine is available		
Categories on the first level	Foundation; tax and finance; people; running operation; health and safety; environment and transport; foreign trade; IT and intellectual property; grants and tender; acquisition and resolution; industry information		
Complexity of further categorisation	The categorisation contains three levels		
Service Information Type	Static text and in some cases extended with (electronic) forms.		
Target audience	Businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated; the information comes from different channels which are responsible for the content, links, and forms Centralised: forms are centralised on the portal		
Ownership catalogue	The common pages (home, search engine, overview, etc.) is owned by the Bundeskanzleramt (Federal Chancellery)		
Ownership services	The owner of the content, information and eForms is the relating authority (the organisation/administration that is responsible is mentioned at the bottom of the page).		
Maintenance catalogue			
Maintenance services	The updates are the responsibility of the relative authorities. Process is not yet known.		
Content syndication (processes)	By use of content syndication the content of HELP.gv can be presented in partner websites, by 1) RISKommunal (vendor for commune websites) 2) Script-include 3) Integration as HTML frame 4) via RSS		
Are rules involved on how to publish the public services			
Accountability on information (liability)			
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, for certain services, the user's needs to log in
Title	Yes	Output? (documents)	No, documents are provided online.
Description	Yes	Location of the service	Yes, forms are available online
Language	German, English (not all the public services)	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes, other relating services are mentioned within the public services.
Further contact details	Yes	Is the owner of the service provided?	Yes, the owner of the service is presented on the bottom of the page
Case study available	No	Legal considerations	No

Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services	Content Management System: intraspecific Content.Node; Gentics		
Other			
Additional Comments	https://www.usp.gv.at/linkaufloesung/applikation-flow?leistung=LA-UP-GL-USP_Anmeldung&flow=LO&quelle=USP		
Other consulted sources	Sign on the Finanz online (eGovernment portal):		

BELGIUM

High-level analysis			
Country	Belgium		
Link to portal/catalogue	http://www.belgium.be/		
Type of portal	Portal		
Level of portal	All levels		
Federated	Federation (assumption) of 1.200 administrations at all the different levels of power		
Classification of services	Categorisation based on a kind of life events		
Categories on the first level	Family; justice; mobility; health; environment; housing; economy; taxes; education; work; about Belgium		
Complexity of further categorisation	There are 2 levels of classification		
Service Information Type	Static public services. A separate page is foreseen with the web links to all the online services.		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption)		
Ownership catalogue	Federal government, Federal Chancellery		
Ownership services	The federal government is responsible for the content that is provided on belgium.be. The websites that are mentioned on the pages, is owned by the relating administration and is not covered by the federal government		
Maintenance catalogue	Federal government		
Maintenance services	Federal government, the online services are maintained by the related instances.		
Content syndication (processes)	RSS feeds are available for content syndication		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The federal government accepts no liability for direct or indirect damage caused as a result of referring to or using the web sites or the information available on the web sites to which the portal site refers.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	Yes, the location of the eServices are mentioned
Language	Dutch, French, English and German	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes, the relating public services are provided
Further contact details	Yes	Is the owner of the service provided?	Yes, as it is of the federal government
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the	Web content management of Fedict (assumption)		

catalogue/services?

Building blocks and
technical architecture
Relations with other
public services

Other

Additional Comments

Other consulted sources

BULGARIA

High-level analysis			
Country	Bulgaria		
Link to portal/catalogue	http://www.egov.bg/		
Type of portal	eGovernment portal		
Level of portal	National		
Federated	Federation of different levels of power (national, regional and local)		
Classification of services	Categorisation based on a kind of life events, divided according to the type of user (citizens or business)		
Categories on the first level	<p>Citizen: taxation declarations, customs control; education; agriculture, livestock, environment; pensions, social benefits, allowances; culture science, tourism, intellectual property; personal data and documents, family; real estate, construction; justice, policing, defense, transport; employment and labor relations, civil service, unemployment; social and health insurance, health care, cash benefits.</p> <p>Businesses: taxes, excise duties, customs; education, culture, tourism, intellectual property; finance, gambling, insurance; health, social services and insurance, employers; agriculture, forestry, ecology; procurement, concessions; industry, trade, construction; energy, information technology, communications, transport; registration of legal entities.</p>		
Complexity of further categorisation	There are 3 levels of categories available		
Service Information Type	Static public services with possibility to go to relating eServices.		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?	Administrative authorities, persons performing public functions and organizations providing public services are required to provide all services within its jurisdiction or electronically, unless the law provides for a particular mode of performing certain actions or the issuance of the relevant acts. see article 10 http://www.mtitc.government.bg/page.php?category=486&id=3634		
Decisions not to publish?			
Organisational			
Structure of public services	federated		
Ownership catalogue	Republic of Bulgaria		
Ownership services	Republic of Bulgaria		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	<p>Any damages caused by legal or factual actions based on the information published on this website are paid entirely by the actions taken by individuals.</p> <p>The portal is not responsible for the legality, completeness, accuracy and timeliness of the content of the information resources of third parties to which they electronic links refer from this site, or the legality of the activities of such third parties.</p>		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, to access the services the user's needs to log in. Certain eForms can be accessed and needs input from the user.
Title	Yes	Output? (documents)	Yes, forms can be downloaded and printed out
Description	Yes, based on legal documents	Location of the service	Yes, online
Language	Bulgarian	Validity, creation or modification date	No

Web links to more detail	Yes	Relations with other services	No
Further contact details	Yes, a list of all the ministries, municipalities, etc. are given	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, the information about the public services is based on legal documents. The legal are checked by the Ministry of Transport and Communication (see lex.bg)
Service Level Agreements	No	Other	To use 'My Portal' the user needs to sign in
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	<ul style="list-style-type: none"> - All the information provided to the public is based on legal documents and laws - For the eServices, you can fill in the forms as an anonymous person or login. The eServices are indicated with a blue box next to the service in the list or on the bottom of the page - You need to log in to use 'my Portal' pages 		
Other consulted sources			

CYPRUS – PUBLIC ADMINISTRATION PORTAL (1/2)

High-level analysis			
Country	Cyprus		
Link to portal/catalogue	http://www.cyprus.gov.cy		
Type of portal	Listing		
Level of portal	National		
Federated	Yes, it gathers all the documents and public services from different administrations and lists them all up. (assumption)		
Classification of services	Categorisation is based on life events		
Categories on the first level	Persons with disabilities; education; youth; vehicles and boats; certificates and documents; land and property; work and occupation; family and child; complaints; grants and benefits		
Complexity of further categorisation			
Service Information Type	It is a pure listing of documents (Word, Excel, pdf or zip-files) or eServices. Some of the listed public services are a link towards the relating public administration.		
Target audience	Citizens, Residents abroad, businesses and governments		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	federated (assumption)		
Ownership catalogue	Ministry of Finance and the Ministry of Information Technology		
Ownership services			
Maintenance catalogue			
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	Links to external sites are provided for the user's convenience and do not constitute or imply their endorsement, recommendation or favoring.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, in some cases the user needs to log in to access the eServices (external websites)
Title	Yes	Output? (documents)	Yes, forms can be downloaded and printed
Description	No	Location of the service	Yes, online
Language	Greek, English	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes, relating services are mentioned and useful webpages are displayed
Further contact details	Yes	Is the owner of the service provided?	No, but the selected public services redirect the users to the corresponding public administrations
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No
Technical			

What technology is used to manage the catalogue/services?
Building blocks and technical architecture
Relations with other public services

Other

Additional Comments

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Other consulted sources

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CYPRUS – SPECIFIC BUSINESS PORTAL (2/2)

High-level analysis			
Country	Cyprus		
Link to portal/catalogue	http://www.businessincyprus.gov.cy/		
Type of portal	Portal		
Level of portal	National, with the focus on starting businesses		
Federated	Yes, it gathers the documents and public services from different administrations and lists them all up. (assumption)		
Classification of services	The services are especially focused on starting a business. The classification is therefore based on the sector where the business will start in.		
Categories on the first level	Services sectors; business startup; service recipients		
Complexity of further categorisation	Depending on the public service, the classification consists of two or three levels		
Service Information Type	The public services are broadly explained, some eServices are also listed. A search engine is also available.		
Target audience	Businesses (especially to start-up)		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	federated (assumption)		
Ownership catalogue	Ministry of Commerce, Industry and Tourism		
Ownership services			
Maintenance catalogue			
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	The representations of opinions or recommendations of third parties, which may also be included on this site, do not necessarily reflect the views of the Republic of Cyprus, its Governmental bodies, or its officials nor indicate a commitment to a particular course of action.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed when accessing the eServices
Title	Yes	Output? (documents)	Yes, documents can be downloaded and printed
Description	Yes	Location of the service	Yes, online
Language	Greek, English	Validity, creation or modification date	No
Web links to more detail	Yes, to relating documents and authorities	Relations with other services	No, only public services are provided to go a step further (e.g. Business Startup > Setup Procedure > VAT Registration)
Further contact details	Yes	Is the owner of the service provided?	No, but the selected public services redirect the users to the corresponding public administrations
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No

Technical	
What technology is used to manage the catalogue/services?	
Building blocks and technical architecture	
Relations with other public services	
Other	
Additional Comments	To access the eServices, you need to log in.
Other consulted sources	

CROATIA

High-level analysis			
Country	Croatia		
Link to portal/catalogue	http://www.hitro.hr/		
Type of portal	Portal, a way to access the information and services of public administrations and to support the information exchange between the public administrations and the public (provides webservice).		
Level of portal	National		
Federated	Yes (assumption)		
Classification of services	Classification based on the sectors.		
Categories on the first level	How to start a company; how to start a craft business; eRegos (company register); eKatastar (land register); ePension; eTax; eHealth; FINA eCard.		
Complexity of further categorisation	Only 'how to start a company' and eRegos has a second level. All the other provides a high-level description		
Service Information Type	Static descriptions and eForms		
Target audience	Business and citizens		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Yes (assumption)		
Ownership catalogue	VLADA RH		
Ownership services	FINA will offer the financial and administrative services to the portal.		
Maintenance catalogue	iSite		
Maintenance services	FINA will offer the financial and administrative services to the portal.		
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)			
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	Yes, online
Language	Croatian and English	Validity, creation or modification date	No
Web links to more detail	Yes, web links to the ePortals are provided	Relations with other services	No
Further contact details	No	Is the owner of the service provided?	No
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services?	iSite creates portals for the government and other organisations. They use a content management system.		

Building blocks and technical architecture
Relations with other public services

Other

Additional Comments

The portal is just an location where web links to the different ePortals in Croatia are gathered. The portal also provides some information about how to start a business.

Other consulted sources

FINA works together with Hitro.hr to share their experiences and services within the financial sector. (Each FINA office offer personalized financial and administrative services.)

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CZECH REPUBLIC

High-level analysis			
Country	Czech Republic		
Link to portal/catalogue	http://portal.gov.cz		
Type of portal	Portal		
Level of portal	National		
Federated	Federation of the public services from different ministries and administrations (assumption)		
Classification of services	First subdivision between the public services: Citizens, businesses, foreigners within the Czech Republic and the other public administrations. The next subdivision is based on a kind of life events.		
Categories on the first level	Citizens: housing; travel; right; finance; culture; defense and security; citizen and the state; nature and agriculture; family; social security; education, science and research; employment; health; basic registers. Businesses: safety at work; auctions; finance; competition; land registry; branches; protection of industrial property; social security; disclosure of information; basic registers; traders. Foreigners: marriage; citizenship; entry and stay of foreigners in the territory.		
Complexity of further categorisation	The classification consists of three levels.		
Service Information Type	Static, but Czech Point functions as an extension of this portal and it provides all the eServices that are available. On this		
Target audience	Public administrations, citizens, businesses and foreigners within Czech Republic		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	federated (assumption)		
Ownership catalogue	Ministry of Internal Affairs		
Ownership services	The ownership of the data of the public services are not owned by the portal of the government if they extracted from external information systems		
Maintenance catalogue	The Ministry?		
Maintenance services	The portal of the government has not the opportunity to improve the accessibility and the quality of the provided information that comes from external information systems		
Content syndication (processes)	RSS feeds with information on new and changed documents: -The published information (XML RSS) -Journal (RSS XML) -Forms of electronic filing (RSS XML) -RSS feeds for individual publishing can be found on the card publishing organization		
Are rules involved on how to publish the public services	The documents need to be structured according to certain guidelines. There are guidelines provided concerning the accessibility and structure of documents that are published online. Guidelines are provided concerning the format of documents, publications and data		
Accountability on information (liability)			
Semantical			
Identification number	Yes	Input (eServices, name, etc.)	Yes, for certain eServices input is needed.
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	Yes, it shows who provides the public service and where the location is
Language	Czech	Validity, creation or modification date	Yes, the release date and latest update is given. Due date isn't always mentioned (see bottom of the page)

Web links to more detail	Yes	Relations with other services	No
Further contact details	Yes	Is the owner of the service provided?	Yes
Case study available	No	Legal considerations	Yes, the laws where the information is based upon is given
Service Level Agreements	No	Other	XML structure is available to consult
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture	Base Registries		
Relations with other public services			
Other			
Additional Comments	The FAQ are also mentioned underneath the description of the public service		
Other consulted sources	This source indicates how the documents should be structured to publish online		

DENMARK – BUSINESS PORTAL (1/3)

High-level analysis			
Country	Denmark		
Link to portal/catalogue	http://www.startvaekst.dk/		
Type of portal	Portal		
Level of portal	National and local administrations		
Federated	Yes (assumption), it uses the content of the websites created by the national and local public administrations.		
Classification of services	Categorisation based on a business lifecycle.		
Categories on the first level	Idea, Start-up phase, Operating, Growth, Decline, Tools		
Complexity of further categorisation	The number of levels depends on what the user needs; some categories have 2 subdivisions, other has 3. The information is clearly subdivided in an intuitive way.		
Service Information Type	The public services are described in a static format, virk.be provides a more dynamic environment (see underneath).		
Target audience	Businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption)		
Ownership catalogue	Danish Business Authority		
Ownership services	The different public administrations that provides the public services on their website.		
Maintenance catalogue	The Danish Business Authority and Fund is not responsible for technical errors, downtime or possible loss of data.		
Maintenance services	The nation and local public administrations that provides the content on startvaekst.dk is responsible for the maintenance of the public services.		
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	Business Authority and Greenhouses assumes no responsibility for any erroneous information supplied by agencies responsible for these laws and regulations. In addition, assuming Business Authority and Greenhouses no responsibility for any financial consequences associated with the misuse of information, tools (eg, tables) and guidance from Start Growth.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	Yes, templates are downloadable (e.g. marketing plan)
Description	Yes	Location of the service	No
Language	Danish, English but they differ from each other	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes, 'Other users recommend' is available for each services; it will provide the relating public services.
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No

Technical	
What technology is used to manage the catalogue/services?	
Building blocks and technical architecture	
Relations with other public services	
Other	
Additional Comments	The portal provides the businesses with tools (tests, templates and other practical documents) to support them in the creation/running of the companies
Other consulted sources	

DENMARK – BUSINESS PORTAL (2/3)

High-level analysis			
Country	Denmark		
Link to portal/catalogue	http://www.virk.dk/		
Type of portal	Communication portal; it is a medium to establish communication between administrations and businesses. It also provides eForms (6443) on different aspects for the businesses. The portal is design by cross-public cooperation and focusses on the business a		
Level of portal	local and national authorities		
Federated	Yes, it uses the content of the websites directly created by the national and local public administrations		
Classification of services	Categorisation is based on a kind of life events and sectors. An alphabetical list is also provided.		
Categories on the first level	Buildings and properties; energy and environment; business and industry; agriculture, forestry and fisheries; staff and training; health and safety; transport; business conditions; economy.		
Complexity of further categorisation	For each category a second level of categorisation is defined, in some cases there is a third level of categorisation.		
Service Information Type	It contains reports/applications in a static (pdf) or a dynamic (eForms in pdf) format.		
Target audience	Businesses		
Legal			
Obligation to publish?	/		
Decisions not to publish?	The businesses are obliged to report to the public administrations, virk.dk provides the opportunity to do it electronically.		
Organisational			
Structure of public services	federated		
Ownership catalogue	Danish Business Authority (and virk.dk steering committee (http://www.virk.dk/home/om-virkdk/om-virkdk.html)).		
Ownership services	The national/local administrations are responsible for the information that is published on virk.dk		
Maintenance catalogue	Virk.dk (and the Danish Business Authority?)		
Maintenance services	The national/local administrations are responsible for the information that is published on virk.dk and the application schemes; they are also obliged to update the information		
Content syndication (processes)	Mobile accessibility to the portal		
Are rules involved on how to publish the public services			
Accountability on information (liability)	At Virk.dk you can find contact information for government authorities and municipalities. The information comes directly from the agencies themselves, and they are responsible for updating them.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to access the eServices
Title	Yes	Output? (documents)	Yes, documents are downloadable.
Description	Yes; very briefly, it explains by whom it can be used and what it actually is	Location of the service	Yes, online accessible
Language	Danish, English but they differ from each other	Validity, creation or modification date	No
Web links to more detail	Yes, relating authorities are provided. Links to the applications are given.	Relations with other services	No
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, they explain that the businesses are obliged to

Service Level Agreements			report to the administrations.
	No	Other	No
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services			
Other			
Additional Comments	An overview of the availability of the most essential services		
Other consulted sources			

DENMARK – CITIZEN PORTAL (3/3)

High-level analysis			
Country	Denmark		
Link to portal/catalogue	https://www.borger.dk/Sider/default.aspx		
Type of portal	Portal including a Digital mailbox		
Level of portal	In cooperation between the State, Denmark and Danish Regions.		
Federated	Yes, the content is a collection of information provided by various authorities		
Classification of services	Classification is based on life events		
Categories on the first level	Work, benefits, vacation; Housing and relocation; Danes abroad; Family and children; Consumption and insurance; Recreation; Disabled; Environment and energy; Pension and retirement; Police, judiciary, defense; Society and rights; School and education; Health and illness; For young people; Transport and travel; Foreigners in Denmark; Elderly; Economy, tax, SU.		
Complexity of further categorisation	For each category a second level and a third categorisation is defined; each subdivision is well-aligned.		
Service Information Type	<ul style="list-style-type: none"> - Information of the public services are static; the public services provides the descriptions of the different aspects and they provide an overview of the relating eServices. - Digital mailbox for the communication between the citizens and authorities 		
Target audience	Citizens and administrations (communication towards citizens)		
Legal			
Obligation to publish?	<ul style="list-style-type: none"> -The Parliament has decided that each citizen should have a Digital Mailbox as of November 2013. This supports the communication between citizens and authorities. - The Parliament has decided to provide the public services in an online environment as of 1 December 2012. 		
Decisions not to publish?			
Organisational			
Structure of public services	federated		
Ownership catalogue	Parliament (law digital mail) and Borger.dk		
Ownership services	The authorities provide the content to borger.dk, they are responsible for the content and the self-service solutions.		
Maintenance catalogue	Borger.dk		
Maintenance services	The authorities are responsible for the maintenance of the content. Borger.dk is not liable for any errors.		
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	<ul style="list-style-type: none"> - Quotes or use of text from borger.dk should be in accordance with good practice. borger.dk do not allow the use of information from the portal if borger.dk determines that the application is offensive or otherwise contrary to good practice. - The source of the imported content should be clear. - The portal is not liable for incorrect information due to errors in programs, errors in calculations, transmission errors, etc. and for damages resulting from the use of the portals. 		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed if the user wants to access the eService
Title	Yes	Output? (documents)	No
Description	Yes, practical description (what do you need to do in case that happens)	Location of the service	No
Language	Danish	Validity, creation or modification date	No
Web links to more detail	Yes, relating web links are foreseen within the description	Relations with other services	Yes

Further contact details	No, only contact details of borger.dk is available	Is the owner of the service provided?	Yes, the owner of the content is mentioned at the bottom of the page.
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services?	They provide a 'checklist' to see whether the self-service solutions is good. (see criteria point 3) A central 'content management system' is used by central editors to create the pages. The local editors can edit each page (limited to only adding web I		
Building blocks and technical architecture	- Use of digitaliser.dk (see other consulted sources)		
Relations with other public services			
Other			
Additional Comments	The website has been built by using javascripts; everything is extracted from XML documents. (see source code)		
Other consulted sources	To publish content on borger.dk		

ESTONIA

High-level analysis			
Country	Estonia		
Link to portal/catalogue	https://www.eesti.ee/eng		
Type of portal	Portal The portal is actually divided by two sections: topics and services. The topics list all the public services and provide the public with a practical and informational way. The other section contains a list of all the eServices which are provided by		
Level of portal	The public services provided on the portal concerns all levels of public administrations		
Federated	Yes, different public administrations provide the content of the portal		
Classification of services	<ul style="list-style-type: none"> - Classification of both sections is based on of life/business events. There is also a listing from A-Z available on the portal. - Different kinds of search engines are foreseen: <ul style="list-style-type: none"> - Topics - Citizens: child, person with disabilities, Pensioner, teena 		
Categories on the first level	The categories within both sections differ; the categories for the citizens within the topics are described below: Estonian republic; housing; environment; traffic; education and science; money and ownership; culture and leisure time; national defense; family; consumer protection; travelling; benefits and social assistance; the state and the citizen; foreigners in Estonia and Estonians abroad; health care and protection; using the state portal; work and employment relations; legal aid		
Complexity of further categorisation	There are only three levels defined: categories, relating sub categories and the explanation of the different public services. The descriptions within topics are more extensive than the brief descriptions within the eService section.		
Service Information Type	<ul style="list-style-type: none"> - Within the topics, the public services are described static. - Within the services, the public services contains eForms and eServices (the visitor needs to log in to access the eServices) 		
Target audience	<ul style="list-style-type: none"> - Topics are provided for citizens and businesses; - eServices are provided for citizens, businesses and other authorities. 		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption)		
Ownership catalogue	Estonian Information System's Authority; they are responsible for the coordination of the development and administration of the national information system. They help the state providing the best possible services to citizens.		
Ownership services	In the case where the portal provides the services of other organisations/institutions, then the ownership belongs to the concrete organisations.		
Maintenance catalogue	Estonian Information System's Authority		
Maintenance services	The owners of the services are responsible for the maintenance		
Content syndication (processes)	RSS feeds are available for diverse public administrations (more items are in Estonian available then in English)		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The State Information Systems Development Centre (portal administrator) is not liable for any possible loss or short received revenue due to the use or non-utilization of The services.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, to access the eServices and eForms, the user needs to login.
Title	Yes	Output? (documents)	No
Description	Yes (practical for topic, briefly for eServices)	Location of the service	Yes, if the eServices for the described public service is available then online

Language	Estonian or English (not all the eServices are translated), Russian	Validity, creation or modification date	Yes, the date of the last update is provided
Web links to more detail	Yes, reference to relating authorities are given	Relations with other services	Yes, relating topics and relating eServices are provided. Also references to relating legal documents are mentioned.
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, the relating legislations are provided with the description of the public services
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The portal consists of two important sections: the services and the topics. The section concerning the services is analysed above.		
Other consulted sources	Estonian Information System's Authority		

FINLAND

High-level analysis			
Country	Finland		
Link to portal/catalogue	http://www.suomi.fi/suomifi/english/index.html		
Type of portal	Portal		
Level of portal	All levels		
Federated	Yes, the content of the portal is based on the input of various public administrations.		
Classification of services	<ul style="list-style-type: none"> - Classification is based on life events - A-Z list is available (key words; e.g. address > Change of address notification) - Search engine is available for eServices; an search engine for municipalities is available across the portal - An overview on the 		
Categories on the first level	Housing and construction; teaching and education; families and social services; library and information services; health and nutrition; culture and communications; law and legal protection; work and pensions; public safety and order; taxation and financing; transport and travel; nature and the environment; migration; sports and outdoor activities		
Complexity of further categorisation	The categorisation is subdivided into three clearly defined levels.		
Service Information Type	The portal provides two kinds of services which are divided on distinct places: description of public services (static - see services by topic) and eServices (mostly provided on external website).		
Target audience	Citizens		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federation of the information from different portal. Suomi.fi published mainly by government agencies and institutions, and local government services.		
Ownership catalogue	Suomi.fi? (web editorial unit)		
Ownership services	Partly Soumi.fi and partly the public administrations, see maintenance services for more detail		
Maintenance catalogue	Suomi.fi?		
Maintenance services	<ul style="list-style-type: none"> - Each public body or organisation producing information for the Suomi.fi portal is responsible for the accuracy of information on its own web pages. - The content, functionality and use of the e-services and forms in Suomi.fi are the responsibility of t 		
Content syndication (processes)	Suomi.fi offers RSS feeds of public sector news, the latest links, e-services and forms in the Suomi.fi portal.		
Are rules involved on how to publish the public services			
Accountability on information (liability)	Each state or municipal authority, organisation or public body linked to the Suomi.fi portal is responsible for the provision of advisory service on the contents of their services, the processing of e-service matters, and malfunctions in the use of forms and e-services.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	Yes, applications can be downloaded and printed.
Description	Yes	Location of the service	Yes, further links mention where the service is available (online or address is available on the portal of the particular public administration)
Language	Finnish, Swedish and English. Other languages are also available (other pages)	Validity, creation or modification date	No, but the date of the latest update is mentioned
Web links to more detail	If available, yes	Relations with other services	Yes; relating eServices, topic (static public services) and

Further contact details	No	Is the owner of the service provided?	public administrations Yes, if available
Case study available	No	Legal considerations	Yes, legal documents (Acts and degrees) are mentioned if available
Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services	To connect to the services: - Links to the Suomi.fi portal may be added freely. You can get most of Suomi.fi's contents in XML and JSON using the rest-based Suomi.fi API. The contents of the Service Map are available for reuse using the application's WMS/		
	Most of Suomi.fi content is available in a machine readable format. XML is the default format in the Suomi.fi REST API but the contents are also available in JSON for easier use in browser-based applications.		
Other			
Additional Comments	A distinct section with all the eServices (concerning the public services for citizens) is foreseen for the use and support of other public administrations.		
Other consulted sources			

FRANCE

High-level analysis			
Country	France		
Link to portal/catalogue	http://www.service-public.fr/		
Type of portal	Portal		
Level of portal	National and local government agencies (forum: the Community of Partners)		
Federated	Yes (assumption) Along with Legifrance.gouv.fr and vie-publique.fr, it gives citizens easier access to legal texts and extends their knowledge of public policies. Service-public.fr is produced in partnership with national and local government agencies whi		
Classification of services	Classification based on changes in life (8 life events), also available in an A-Z list.		
Categories on the first level	For citizens: money; family; justice; interests; social - health; foreign - Europe; training - work; housing; paper - citizenship and transport. For businesses: creation - termination; taxation; sales - trade; management finance; human resources and sectors. Associations: obligations administratives; financement; ressources humaines and secteurs spécifiques.		
Complexity of further categorisation	The further division depends on the different public services. In some cases three levels are sufficient to drill-down to the wanted public service. In other cases there are further divisions. The classification is still very intuitive.		
Service Information Type	Static public services with references to the eServices. Search engine is also available.		
Target audience	Citizens, businesses, public administrations		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	federated: mon.service-public.fr (assumption) Local authorities and local services can contribute to the improvement and enhancement of the site service-public.fr as follows, they: Rebroadcast content service-public.fr through co-branding or syndication;		
Ownership catalogue	The portal was created by la Direction de l'information légale et administrative		
Ownership services	The links that are provided are checked on a regular basis, but they are not the responsibility of the portal. The owners of the public services are mentioned above the description of the service. The public administrations that provides the services is indicated as the owner.		
Maintenance catalogue	Responsible authority for the maintenance of the catalogue is 'la Direction de l'information légale et administrative'		
Maintenance services			
Content syndication (processes)	RSS are used for: news in the spotlight; last 10 news; alerts (traffic, weather, epidemics, etc.); focus on; access to the public; eGovernment; function changes in the administrations; press.		
Are rules involved on how to publish the public services	The site has been designed to meet the standards of the Référentiel Général d'Accessibilité pour les Administrations (RGAA - accessibility for persons with disabilities) and the Web Accessibility Initiative (WAI).		
Accountability on information (liability)			
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to access the eServices.
Title	Yes	Output? (documents)	Yes, applications can be downloaded and printed.
Description	Yes, detailed description on what to do. Quiet similar to the content of Your Europe.	Location of the service	Yes, the relating eServices are mentioned if applicable. If the users need to adress to somewhere else, this is mentioned.
Language	French. Information about the portal is translated in English, German	Validity, creation or modification date	Yes, the date of the last update is mentioned.

	and Spanish.		
Web links to more detail	Yes, in the cases it is applicable	Relations with other services	Yes relating public services, public administrations and related news flashes are given.
Further contact details	Yes, in the cases it is applicable	Is the owner of the service provided?	Yes on top of the page.
Case study available	No	Legal considerations	Yes, if the description has a legal basis, then the regulations are mentions on the bottom of the page.
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services	XML schemes is used to establish communications and interactions. Content management system is also used.		
Other			
Additional Comments	Together with Legifrance.gouv.fr and vie-publique.fr they provide easy access to legal documents.		
Other consulted sources	Service catalogue on mon-service.fr		

GERMANY

High-level analysis			
Country	Germany		
Link to portal/catalogue	http://www.bund.de/DE/Leistungen/leistungen_node.html		
Type of portal	Alphabatical listing of services, part of a federal portal in a separate tab		
Level of portal	Federal level including all ministries and agencies		
Federated	The information comes from the different authorities, but the method of collection is unknown. It is clearly mentioned that the central authority who is responsible for this portal does not bear any responsibility for the correctness of the information.		
Classification of services	A-Z, all high-level services offered on national level by the national institutions or other institutions on behalf of the national government		
Categories on the first level	Germany at a glance, entering Germany, living in Germany, education, working in Germany, economy and trade, administration		
Complexity of further categorisation	Only two subdivisions are defined within the english portal		
Service Information Type	Static text, 118 services in total		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?	After a decision of the Federal Authority (http://www.bund.de/DE/Service/Web-Formular/Kabinettbeschluss.pdf?__blob=publicationFile) on 9/3/2005 all Federal Authorities and Agencies are obliged to publish their eServices on the bund.de portal and provide links to the service.		
Decisions not to publish?	The implementation of the Federal Laws in Germany is explicitly the responsibility of the Länder (regions) therefore it could be interpreted that if the Federation tries to control the public services offered is an interference and a breach of the law. (A		
Organisational			
Structure of public services	Federated?, information comes from different authorities who are responsible for the content		
Ownership catalogue	The ownership of the listing is the Federal Office of Administration (Bundesverwaltungsamt), an agency of the Ministry of Interior Affairs.		
Ownership services	Ownership of the content is with the relative authorities of each service.		
Maintenance catalogue			
Maintenance services	The updates are the responsibility of the relative authorities. Process is not yet known.		
Content syndication (processes)	Mobile app RSS feeds are available for content syndication		
Are rules involved on how to publish the public services			
Accountability on information (liability)	Each state or municipal authority, organisation or public body linked to the Suomi.fi portal is responsible for the provision of advisory service on the contents of their services, the processing of e-service matters, and malfunctions in the use of forms and e-services.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	Yes, online
Language	German and English	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	No, but the other public services provided by the instance are mentioned
Further contact details	Yes	Is the owner of the service provided?	Yes
Case study available	No	Legal considerations	No

Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services?	GSB content management system		
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	In Germany there is a coordination unit for Your Europe.		
Other consulted sources			

GREECE

High-level analysis			
Country	Greece		
Link to portal/catalogue	http://www.ermis.gov.gr/		
Type of portal	Search engine-based portal		
Level of portal	municipalities (198) and national focus		
Federated	Federated (assumption)		
Classification of services	Depends, there are 3 different ways to look up the public services: via content (kind of life events), target or needs classification. The categories are used within the search engine, are used to set a filter within all the services.		
Categories on the first level	Content index City planning and land registry, civilization and free time, education and research, environment and natural resources, finance and economy, health and social care, information and communication, international affairs and European union, justice, state and public administration, people, communities and way of living, public order and defense, services for companies, transportation means, trips and tourism, work, insurance and pension Target index Citizens: aliens of greek descent, civil servants, consumers, countryside residents, disabled, immigrants, parents and children, private employees, registered - electors, students, third age, unemployed - newly entered in the work market, women, young people. Business: chambers, companies, cooperation, cultural institutions, freelancers, handcraft, industry, product trading, small and medium size companies, tourism enterprises, unions and associations, welfare organisations. My needs Buy a home, opening firms, have children, loss in family, assurer, i go to retirement, i lost my wallet, wed, go army, study, school life, travel, separation, looking for a job.		
Complexity of further categorisation	If applicable, subcategories are mentioned.		
Service Information Type	Static extended with eServices provided by the public administrations		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption)		
Ownership catalogue	Ministry of Interior, Public Administration and Decentralization (MIPAD)		
Ownership services	The public administration that provides the public services is the owner of the public service.		
Maintenance catalogue	Ministry of Interior, Public Administration and Decentralization (MIPAD)		
Maintenance services	The public administration that provides the public services is the owner of the public service.		
Content syndication (processes)	RSS feeds are available for content syndication; latest updates with abstract descriptions		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The portal provides links to other websites; MIPAD is not responsible for any erroneous information or omission within these pages. This counts also for other damages caused by the use of these links.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, to access the online service the user needs to log in
Title	Yes	Output? (documents)	Yes, applications can be downloaded and printed
Description	Yes	Location of the service	Yes, the user can select to access the online service or

			consult the information on how to apply in the conventional processing.
Language	Greek, English, French, German	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes
Further contact details	No	Is the owner of the service provided?	Yes on top of the page
Case study available	No	Legal considerations	Yes, the legal framework is mentioned
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The users has two options to apply for a certain service. The portal provides the service online (login is needed) and it provides also the conventional procedure.		
Other consulted sources			

HUNGARY

High-level analysis			
Country	Hungary		
Link to portal/catalogue	https://ugyintezes.magyarorszag.hu/		
Type of portal	Portal		
Level of portal	National		
Federated	Yes (assumption)		
Classification of services	The classification of the public services is based on life events, the subdivision of the first level defines the life events (e.g. private life > marriage, childbearing, death, etc.)		
Categories on the first level	Private life, enterprise, administration, law, finances, education, consumer affairs, social security, work, documents, properties.		
Complexity of further categorisation	The classification contains 2-3 levels it depends on what the user wants. Within the public service, you can have another subdivision, e.g. 'Additional issues of divorce' > payment of the alimentations, child's placement, contact with children, spousal al		
Service Information Type	Static		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), the description of the public services are gathered on the portal and the most of the eServices are also provided via the portal. In some cases the user is redirected to another website to start the eService (E.g. customs)		
Ownership catalogue	Ministry of National Development The content of the site is copyrighted by the Ministry of National Development, except in the case of a specific document. The sources of the documents are then mentioned.		
Ownership services	The most public services are provided on the portal by the Ministry of National Development. In the case that another public administration provides the public service; the user will be redirected to the actual eService or further contact details.		
Maintenance catalogue	Ministry of National Development		
Maintenance services	Ministry of National Development or in the specific cases the public administrations that is responsible		
Content syndication (processes)	RSS feeds are available for the latest updates		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The site editor is responsible to keep the information on the website up to date, accurate and complete. However he is not liable for any kind of damages caused by the use of the information.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to access the eServices.
Title	Yes	Output? (documents)	Yes, documents can be downloaded
Description	Yes	Location of the service	Yes, the source is mentioned
Language	Hungarian	Validity, creation or modification date	Yes, creation date and date of last update is mentioned
Web links to more detail	Yes	Relations with other services	Yes, related services are mentioned if applicable
Further contact details	Yes	Is the owner of the service provided?	Yes, the owner isn't mentioned but the source is.
Case study available	No	Legal considerations	Yes, if there are relating regulations or legal documents, they are

Service Level Agreements	No	Other	mentioned. The articles are indicated within the text and are summarised on the left side.
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services			
Other			
Additional Comments	Legislations: https://segitseg.magyarorszag.hu/segitseg/portal/jog_adatvedelem/jogszabalyok.html		
Other consulted sources			

ICELAND – BUSINESS PORTAL (1/2)

High-level analysis			
Country	Iceland		
Link to portal/catalogue	http://psc.island.is		
Type of portal	It is a Point of Single Contact, the portal provides all the information that is relevant for the business. It provides the required documentations, permits, regulations, etc.		
Level of portal	National		
Federated	Yes		
Classification of services	The classification is based on the business lifecycle phases.		
Categories on the first level	Categories of the regulations: doing business in Iceland; establishing a company; laws and regulations; map of Iceland; taxes and VAT. Classification for the online applications: accommodation and catering; animals and pets; arts, sports and recreation; construction; estate services; health and safety; personal services; professional services; retail, rental and repair; tourism; training and instruction		
Complexity of further categorisation	The online applications are subdivided in two categories.		
Service Information Type	Content on the website contains: rules on access to services, requirements for documentation, right to information, conditions on granting permits, the validity of permits and the permit procedure. (obliged by the Services Directive)		
Target audience	Businesses		
Legal			
Obligation to publish?	This website is published by means of supporting the Services Directive.		
Decisions not to publish?			
Organisational			
Structure of public services	Centralised (assumption), except the regulations; the user is redirected to the corresponding administration		
Ownership catalogue	Registers Iceland		
Ownership services	Registers Iceland?		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)			
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, the eForms can be filled in and send to the public administration.
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	Yes, all the applications are provided in an online environment. These can be saved on the computer and send afterwards to the administration.
Language	Icelandic, English	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	No

Further contact details	No	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, if applicable, the corresponding laws and regulations are mentioned
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services	Content management system - eplica		
	Adobe PDF reader and Document Delivery		
Other			
Additional Comments			
Other consulted sources			

ICELAND – CITIZEN AND BUSINESS PORTAL (2/2)

High-level analysis			
Country	Iceland		
Link to portal/catalogue	http://en.island.is/		
Type of portal	Portal, the English version is different from the Icelandic version. Also on the portal there is also a link to other languages for the multicultural centre.		
Level of portal	Tools which are of use to all public bodies have been developed on the island.is website. These i Multiple levels		
Federated	The portal is a centralisation of all the information and documents. A central group is responsible for the information creation. (assumption)		
Classification of services	Thematic, life events & A-Z list		
Categories on the first level	Business and industry; consumer issues; disabled; family; finance; health; immigrants; senior years; travel and transport; education and society; homes and housing; multicultural centre.		
Complexity of further categorisation	The classification is divided in 2 levels.		
Service Information Type	Static information is provided by the portal		
Target audience	Citizens and business		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Centralised (assumption)		
Ownership catalogue	Registers Iceland, the department of e-administration, is responsible for the development and operation of the project.		
Ownership services	A consultation committee operated by the Prime Minister's Office, consisting of members from ministries and municipalities, makes policy formulating decisions in accordance with the Icelandic Government's policies on the information society.		
Maintenance catalogue	Registers Iceland, the department of e-administration, is responsible for the development and operation of the project.		
Maintenance services	A consultation committee operated by the Prime Minister's Office, consisting of members from ministries and municipalities, makes policy formulating decisions in accordance with the Icelandic Government's policies on the information society.		
Content syndication (processes)			
Are rules involved on how to publish the public services	Netskil is software (eService) that supports public administrations to create and publish eForms for the citizens/businesses.		
Accountability on information (liability)	The Government of Iceland cannot be held responsible for any errors or omissions.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	Yes, Documents and applications
Description	Yes	Location of the service	No
Language	English, Icelandic	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, the links are mentioned at the bottom

Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services?	Epica Content management system		
Building blocks and technical architecture	STORK is used; secure identity across borders.		
Relations with other public services			
Other			
Additional Comments			
Other consulted sources			

IRELAND – CITIZEN PORTAL (1/2)

High-level analysis			
Country	Ireland		
Link to portal/catalogue	http://www.citizensinformation.ie/en/		
Type of portal	Portal		
Level of portal	National, local 8,000 service providers and agencies countrywide		
Federated	Yes (assumption), the information is gathered from various government departments and agencies.		
Classification of services	Classification is based on the needs of users for those times in life when you need information about your rights and how to apply for State services in Ireland. A search engine is also provided. The public services are also divided in an alternative way		
Categories on the first level	Social welfare; employment; education and training; travel and recreation; housing; moving country; money and tax; family and relationships; health; justice; consumer affairs; death and bereavement; government in Ireland; environment.		
Complexity of further categorisation	On the home page of the portal, the main categories are provided with underneath the most used public services and documents. The categorisation of the public services contains 4 levels that are easily to follow. Life events are also mentioned if the us		
Service Information Type	Static public service descriptions, static documents and links to apply online or dynamic documents. eServices are provided on external portals.		
Target audience	Citizens		
Legal			
Obligation to publish?	40. All Departments and agencies will ensure that they operate websites which provide up to date information, forms, leaflets, etc., together with useful links to other sites. New material will be made available electronically via websites at the same time as it is provided by more traditional means. Those that do not already provide such services will do so immediately.		
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), all the information and practicalities are gathered on the portal. Web links are provided to the related public administrations and eServices.		
Ownership catalogue	Citizens Information Board		
Ownership services	The Citizens Information Board is responsible for the public service information.. However, the links to the eServices or other documents are the responsibility of the corresponding public administration.		
Maintenance catalogue	a		
Maintenance services	The Citizens Information Board is responsible for the public service information.. However, the links to the eServices or other documents are the responsibility of the corresponding public administration.		
Content syndication (processes)	RSS feeds are available for the latest updates and a mobile versions is available		
Are rules involved on how to publish the public services	Quality standards for public service websites, including provision for the needs of people with a disability, will be incorporated into the Quality Customer Service component of the Strategic Management Initiative. The website is designed by complying as far as possible the Web Content Accessibility Guidelines 2.0 provided by the Web Accessibility Initiative.		
Accountability on information (liability)	<ul style="list-style-type: none"> - The Citizens Information Board provides information on the availability of schemes and services but is not responsible for the way in which schemes are operated and administered in practice. - The site sometimes links to external sites over which the Citizens Information Board has no control and accepts no responsibility. - The Citizens Information Board accepts no responsibility for the accuracy of the translations provided on the website. 		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	Yes, applications can be downloaded
Description	Yes, very extensive. All the practicalities are mentioned	Location of the service	Yes, the location to apply for the public service is mentioned. This can be online as physically located.

Language	English and most pages are also available in Irish. Certain key documents are available in French, Romanian, and Polish	Validity, creation or modification date	Yes, the date of the last update is mentioned
Web links to more detail	Yes	Relations with other services	Yes, this is mentioned within the text and related document or services are mentioned on the right-hand side. Useful resources (e.g. case studies, howtos, etc.) are also mentioned.
Further contact details	Yes, Citizen Information Centre	Is the owner of the service provided?	Yes, within the text the corresponding public administrations is mentioned. The actual owner of the text is Citizen Information Board
Case study available	Yes, the cases studies and checklists are available on the page of the references	Legal considerations	Yes, if applicable then the regulations and legal documents are mentioned
Service Level Agreements	No	Other	All the information about the public services are divided in several topics; for most of the time these common elements could be identified: introduction, general guidelines, how to apply and further information
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	Case studies, checklists, howtos, legislative and worksheets are available on: Citizensinformation.ie website is an Irish eGovernment initiative, and was originally established under the Government's first action plan for the Information Society. Regulations concerning the re-use of public sector information, the license for the re-use of information is also available on this website.		
Other consulted sources	Implementing the Information Society in Ireland: an action plan. This action plan indicates who is responsible for creating the public eServices (page 7 - Strand 2 - interactive services)		

IRELAND – BUSINESS PORTAL (2/2)

High-level analysis			
Country	Ireland		
Link to portal/catalogue	http://www.basis.ie		
Type of portal	Portal		
Level of portal	National		
Federated	Yes (assumption), multiple public administrations provide information about their public services. See website:		
Classification of services	The categorisation is based on the different phases within a business lifecycle.		
Categories on the first level	Starting a business; business operations and trade; taxation; expanding your business; funding; premises and environment; returns and other obligations; government tenders; legal and regulatory; employment issues; innovation and product development; closing/selling a business. How do I?		
Complexity of further categorisation	The complexity of the categorisation depends on the public service the user needs. In some cases the public service can be found after drilling-down in 3 levels, in other cases this is 5 cases. The hierarchical structure is rather complex and extensive bu		
Service Information Type	Static public services		
Target audience	Businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption)		
Ownership catalogue	The Department of Jobs, Enterprise & Innovation has created and is owner of Business Access to State Information & Services (BASIS)		
Ownership services	The responsible public administrations		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	<ul style="list-style-type: none"> - The portal refers to other website via links; BASIS is not responsible for the content of these sites or their privacy policies. - BASIS doesn't accept any responsibility for errors or omissions. - BASIS doesn't accept any liability for information that is published by any third. 		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	Not mentioned
Language	English	Validity, creation or modification date	No
Web links to more detail	Yes, it is also indicated if it is a link to the BASIS portal or to an external website.	Relations with other services	Yes, mentioned under 'Associated Documents within BASIS'
Further contact details	Yes if it is needed.	Is the owner of the service provided?	No
Case study available	Yes, an example is given within the description	Legal considerations	Yes, if applicable

Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services			
Other			
Additional Comments	The sitemap is a kind of catalogue of public services. It provides a categorised list of all the public services. Not all services are provided: <a data-bbox="428 543 1305 569" href="http://www.basis.ie/home/home.jsp?pcategory=14006&ecategory=14014&language=EN&HideDesc=">http://www.basis.ie/home/home.jsp?pcategory=14006&ecategory=14014&language=EN&HideDesc=		
Other consulted sources			

ITALY

High-level analysis			
Country	Italy		
Link to portal/catalogue	http://www.lineamica.gov.it/		
Type of portal	Portal		
Level of portal	Central public administrations (Ministries and Agencies) and local administrations (metropolitan cities, ASL, etc.)		
Federated	Yes (assumption), information is gathered from multiple administrations.		
Classification of services	Based on life events and departments of the government Each service is described and catalogued by subject area, the service recipient (individuals or businesses), paying institution, level of interactivity (calculated on the basis of scale provided by th		
Categories on the first level	Environment; house; economics and investments; business; education and training; media and information; social security; security; leisure; art and culture; citizens and public life; justice; institutions; work; social policy; health; tax; transport and infrastructure		
Complexity of further categorisation	The categorisation contains only 2 levels		
Service Information Type	Static, the portal just provides a small description and a reference to the service.		
Target audience	Citizens		
Legal			
Obligation to publish?	Article. 11 of the Legislative Decree of 27 October 2009, n. 150, defines transparency as " total accessibility, including through the instrument of the publication on the websites of government departments, the information concerning every aspect of the organization, ... Administrative activities must be guided by the principle of transparency and citizens are entitled to a complete and qualified through public sites. It is therefore necessary to ensure the maximum possible circulation of information both within the administrative system, and between the latter and the outside world, so that the work of government is the guarantor of legality. Article. 54 of Legislative Decree 7 March 2005 n. 82 "Digital Administration Code" identifies the minimum information that must be present in any public corporate websites.		
Decisions not to publish?			
Organisational			
Structure of public services	federated (assumption), information of the services are mentioned, but the actual services can be found on the public administration portal		
Ownership catalogue	Formez PA and Digital Agency for Italy		
Ownership services	Formez PA and Digital Agency for Italy are not liable for the content that is provided on the external links. The owners of those websites are responsible to secure the completeness and accuracy of the information (the corresponding public administrations).		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)	- Formez PA encourages the free and open consultation, extraction, reproduction and re-use of data and information. They allow it under the terms and conditions of the Italian Open Data License v2.0. They provide encyclopedia of Q&A in a XML/CSV format.		
Are rules involved on how to publish the public services	The website is built in compliance with the accessibility criteria set out in Ministerial Decree implementing the Stanca Law (Law 4/2004) and WCAG 1.0. The Italian government has set up guidelines to build public administrations portals. For example the use of a Content Management system to guarantee the quality of the website.		
Accountability on information (liability)	Both Formez PA and the Digital Agency for Italy are not liable for any kinds of damages caused by direct or indirect use of the content of the portal. They are responsible for providing up-to-date content, but they don't guarantee the completeness nor the accuracy. They are not liable for the content provided on the external links that are mentioned on the portal.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	No

Description	Yes, brief description	Location of the service	No
Language	Italian	Validity, creation or modification date	Yes, date of last update is mentioned
Web links to more detail	Yes	Relations with other services	Yes
Further contact details	Yes	Is the owner of the service provided?	Yes, the corresponding public administration is mentioned
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?	The Italian government has set up guidelines to build public administrations portals. For example the use of a Content Management system to guarantee the quality of the website.		
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments			
Other consulted sources	Digital Agency for Italy		

LATVIA

High-level analysis			
Country	Latvia		
Link to portal/catalogue	https://www.latvija.lv/		
Type of portal	Portal (60 eServices)		
Level of portal	National, regional, local (municipality of RIGA) public administrations and institutions		
Federated	Manual federation		
Classification of services	The classification is build according the sectors. A search tool and A-Z-list (only for eServices) are available on the portal.		
Categories on the first level	Residence, real estate, construction, geodesy, cartography; employment, labor law, occupational health and safety; finance and EU funding; protection, personality, consumer rights and government procurement; family, children, health and social service; transport, tourism, migration and consular services; education; protecting the environment; business activities.		
Complexity of further categorisation	The categorisation contains three levels		
Service Information Type	Static and eServices, the type of eServices is mentioned on the description page (face-to-face or online)		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?	Decision of Cabinet of Ministers No. 446, 13/9/2011, art. 9: All ministries and their subordinate institutions to October 1, 2011, to update the public service catalog information on the services provided by the institution.		
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption)		
Ownership catalogue	State Regional Development Agency		
Ownership services	The service providers are responsible for the descriptions of the services (provided in the section of eServices and service catalog) that are published on the portal. The agency is not responsible for the links to the portals of the public administrations and the access to the information.		
Maintenance catalogue	State Regional Development Agency		
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services	Guidelines are provided on the portal on how to build the public services. Trainings are also provided to support their efforts.		
Accountability on information (liability)	The Agency shall not be liable for any losses incurred by the user when connecting to a third party and/or use of the site.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, the user needs to log in to access the eServices?
Title	Yes	Output? (documents)	No
Description	Yes, short description is always provided on the portal, the full description can be accessed by the user (see additional comments below).	Location of the service	Yes, the description mention if the public service is an online services (links is given) or if the service needs to be done face-to-face (contact details are provided)
Language	Latvian, English and Russian	Validity, creation or modification date	No, only the creation date of the portal is mentioned
Web links to more detail	Yes	Relations with other services	No

Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, if the public service is built based on legal documents, then these are mentioned in the full description
Service Level Agreements	Yes	Other	A full description is available of the public service, this is mentioned below in 'additional comments'
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	<p>Not all the information on the portal is translated to English and Russian, especially the eServices and service directory are only available in Latvian.</p> <p>The services are presented with a short description on the portal. The full description can also be accessed by the user. This description is more extensive and contains the following metadata: name of service; service name of the holder ; service function/activity; brief description of the nature of the service; the recipient; the recipient (if the recipient is specifically defined criteria); laws and regulations governing the provision of services; service documents required; service to request the necessary forms; the service receipt (business days); with the receipt of a service-related payments ; comments (deadline for receipt of service and charges related to the term); the administrative process; appeal procedures; reminder; warning; service level authentication; living situation; service request forms; service approval; service channel; service provider; service provider service area; service provider address; service provider time; telephone, email link for information; charges; appeal body.</p>		
Other consulted sources	The State Regional Development Agency is responsible for the development of the eServices.		

LIECHTENSTEIN

High-level analysis			
Country	Liechtenstein		
Link to portal/catalogue	http://www.llv.li		
Type of portal	Portal, the portal is divided by three sections: service directory, government & administration, online environment 'Onlineschalter'. The portal is more an eGovernment portal.		
Level of portal	National		
Federated	Yes (assumption)		
Classification of services	An A-Z list is available with all the public services. Besides this list the public services are categorised according to the governments and administrations in Liechtenstein.		
Categories on the first level	All the public administrations and governments in Lichtenstein: Agency for International Educational Affairs; Office of Foreign Affairs; Office for Professional Education and Vocational Guidance; Office for Civil Protection; Office of Public Health; Office for computer science; Office of Justice; Office of Culture; Office of Communications; Office of Food Inspection and Veterinary; Office of Human Resources and Organization; Office of Social Services; Statistical Office; Office for Environmental Protection; Office of Economic; Office of Forests, Nature and Land; Office of Housing; Immigration and Passport Office; Building administration; Data Protection Office; Trade E-Government; Fachstelle public procurement; Financial control; Building Department; Information and Communication of the Government; Landeskasse; State Police; District Court; Department of Agriculture; Motor vehicle inspection; Victims Assistance Office; Pension insurance for state employees; Minutes of the Government; The Government Legal Services; Government Offices; Educational authority; Prosecutor; EEA Coordination Unit; Office of Financial Intelligence Unit; Office of Finance; Office of Equal Opportunity; Department for international financial center agendas; Office of Cultural Affairs; Office of Land Use Planning; Office of Sports; Tax Administration; Department of Civil Engineering; Civil Registry Office.		
Complexity of further categorisation	/		
Service Information Type	Static description of public services and eForms are available on 'Onlineschalter'.		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	The description is federated on the portal. (assumption)		
Ownership catalogue	National Administration		
Ownership services	The owner of each public service is mentioned within the footer; assumption is that the public administrations are the owners of the services.		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)	The portal provides RSS feeds for the last news from the Ministry of Information and Communication, news from public administration and proposals from the Parliament. The RSS can be used for content syndication of the public services.		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The National Administration of Liechtenstein does not accept the responsibility for the accuracy, correctness, completeness or quality of the information provided. They are not liable for the material or immaterial damage, caused by misuse of any electronic information or services. (Art. 10 EGovG).		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to access the eServices
Title	Yes	Output? (documents)	Yes, documents can be downloaded, for applications the user needs to login

Description	Yes	Location of the service	No
Language	German	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	No
Further contact details	Yes	Is the owner of the service provided?	Yes, this is mentioned within the footer of the page
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The portal uses diverse applications and downloadable programs (tax return).		
Other consulted sources			

LUXEMBOURG

High-level analysis			
Country	Luxembourg		
Link to portal/catalogue	http://www.guichet.public.lu/		
Type of portal	Portal, it consists of three sections: citizen portal, business portal and MyGuichet (login is needed). MyGuichet is an online environment for the public where they can perform the administrative administrations.		
Level of portal	Mainly national service. Cities can have other services with a kind of integration with guichets.lu.		
Federated	No federation		
Classification of services	Classification is based on life events/needs of the citizen or business.		
Categories on the first level	Citizens: taxation; job & employment; family; education; citizenship; transport; housing; health & social; interests. Business: starting up & development; urban planning & environment; financing & support measures; health & safety; human resources; taxation; commerce; accounting & legal obligations; international trade; business preservation & termination.		
Complexity of further categorisation	The categorisation contains three levels to navigate to the wanted public services. The levels are very intuitive and related to life events.		
Service Information Type	Each section (section per target audience) contains two parts: informative part and a transactional part (MyGuichet - online environment to deal with administrative procedures)		
Target audience	The portal is aimed to provide information for two distinct user groups: private individuals (citizens) and the professional persons (businesses).		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	The descriptions and online environment are made available on a central place (the portal) (assumption)		
Ownership catalogue	The Luxembourg State reserve the right to develop, modify or suspend the guichet.lu portal. They will not accept liability for any loss or damage relating to any changes they have performed on the portal.		
Ownership services	The CTIE (state centre for information technologies) is in charge of the guichet citoyens. The Ministry of economy (MECO) is in charge of the guichet entreprises. The owners work together with all the ministries and public agencies in order to maintain the portal.		
Maintenance catalogue	The citizens section is edited by the State Centre for Information Technologies (Ministry of the Civil Service) and Administration Reform. The business section is edited by the Directorate for Business Policy (Ministry of the Economy and Foreign Trade) to		
Maintenance services			
Content syndication (processes)	The public can use RSS feeds to register for the newsfeeds or to be kept updated about the new procedures or other updates. No further content syndication is used, except CMS is used at both sites responsible for the portal.		
Are rules involved on how to publish the public services	Renow - is the repository that defines an effective framework for the design, implementation and maintenance for all portals/websites of the public administrations in Luxembourg. They guide and assist the public administrations in setting up a qualitative portal (see section quality level and standardisation referential Renow).		
Accountability on information (liability)	The Luxembourg State accepts no liability for any loss or damage caused by (in)directly use of the portal or the service. The Luxembourg State shall use its best endeavors to ensure that the guichet.lu website is as widely available as possible. However, it accepts no liability in the event of the guichet.lu website becoming temporarily or wholly unavailable.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to access the eServices. eForms can be accessed
Title	Yes	Output? (documents)	Yes, applications can be downloaded from the portal
Description	Yes, the description is divided in multiple sections:	Location of the service	Yes, if online available then it is mentioned.
Language	Citizens section: French and German Business section: French and English	Validity, creation or modification date	Yes, date of the last update is mentioned

Web links to more detail	Yes	Relations with other services	No
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, if applicable
Service Level Agreements	No	Other	The pages are divided in multiple sections (applicable for citizens and businesses): a brief description, forms/online services, who is concerned, how to proceed; who to contact, for more information.
Technical			
What technology is used to manage the catalogue/services?	A Content management system is used to manage the service descriptions on the portal.		
Building blocks and technical architecture	ARIS is used to model the processes.		
Relations with other public services			
Other			
Additional Comments	To be able to use 'MyGuichet', the user can use a LuxTrust to comply with the safety rules		
Other consulted sources	List with all the portals of the public administrations in Luxembourg		

LITHUANIA

High-level analysis			
Country	Lithuania		
Link to portal/catalogue	https://www.epaslaugos.lt		
Type of portal	eGovernment portal		
Level of portal	National (assumption)		
Federated	federated (assumption)		
Classification of services	Classification is based on sectors		
Categories on the first level	<p>Citizens: Popular; production and trafficking; national security; culture, leisure and entertainment; migration; taxes; real estate and infrastructure; policy; registers and archives; wards, municipalities; social protection; statistics; healthcare; family; education and work; law enforcement and logistics; tourism and travel; business establishment and liquidation; agriculture and environment; other services.</p> <p>Business: Popular; production and trafficking; culture, leisure and entertainment; migration; taxes; real estate and infrastructure; registers and archives; wards, municipalities; social protection; statistics; healthcare; education and work; law enforcement and public safety; tourism and travel; business establishment and liquidation; agriculture and environment; other services.</p>		
Complexity of further categorisation	The classification of the public services contains only one level.		
Service Information Type	eServices		
Target audience	Citizens, businesses and service providers		
Legal			
Obligation to publish?	Recommendations goal - to provide state and local authorities and agencies guidance on what to consider transferring administrative services to the electronic environment (in order to provide the maximum level of maturity), and they provide the state and local authorities and institutions, providing administrative services in cyberspace.		
Decisions not to publish?			
Organisational			
Structure of public services	Most of the services are provided by the portal, if the public service is not available on the page the user will be directed to the website of the service provider. Federated (assumption)		
Ownership catalogue	Information Society Development Committee under the Ministry of Transport and Communications (ISDC)		
Ownership services			
Maintenance catalogue			
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services	<ul style="list-style-type: none"> - The portal provides formats and web services to establish data exchange, e.g. payments. This can be found on: - To connect to the State Information Resources Interoperability Platform (VIISP platform) for data exchange, the external web service needs to use a specific format (see document mentioned on the link). 		
Accountability on information (liability)			
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to access the online services
Title	Yes	Output? (documents)	No
Description	Yes, this is divided in following sections: basic information, description of service and service provider.	Location of the service	Yes, the location of the corresponding administration is mentioned and link to the online environment is given
Language	Lithuanian and English (not all the pages and services are	Validity, creation or modification date	No, but service maturity is given

	translated)		
Web links to more detail	Yes, to the corresponding public administration and the eService	Relations with other services	No
Further contact details	Yes	Is the owner of the service provided?	Yes, the service provider is mentioned
Case study available	No	Legal considerations	Yes, this is mentioned
Service Level Agreements	No	Other	Service model is used, see additional comments
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture	Service model is used to build up the descriptions of the multiple services and the portal.		
Relations with other public services			
Other			
Additional Comments	<p>Next to the focus on citizens and businesses, the portal also provides information for service providers. They have dedicated a page (for the information providers) that contains different scheme and format descriptions to establish any communication.</p> <p>The public services are described in a kind of service model, this contains several items, e.g. see paternity and maternity:</p>		
Other consulted sources	The old portal for the service providers		

MALTA – CITIZEN PORTAL (1/2)

High-level analysis			
Country	Malta		
Link to portal/catalogue	https://gov.mt/		
Type of portal	Portal, the portal is 5 sections: the government, services & information, life events, communities and about Malta.		
Level of portal	National (assumption)		
Federated	Yes (assumption)		
Classification of services	The portal provides two classifications concerning the public service: life events and communities. A-Z list is available		
Categories on the first level	<p>After these three sections the following categories are defined:</p> <ul style="list-style-type: none"> - Administrations: emergency information; law enforcement; justice; education & learning; health services; internet and communications; environment regulations; environment enforcements; A-Z list of websites; A-Z list of all forms; eForms; myBills. - Life events: pregnancy & birth; getting a passport; getting a driving license; owning a vehicle; looking for a job; starting a job; renting and purchasing property; scholarships. - Communities: youth, parents; job seekers; media & press. 		
Complexity of further categorisation	The further categorisation consists of two levels.		
Service Information Type	<p>Static public services, they describes what the user need to do and what they need to know if something takes place.</p> <p>All the eForms are available on the portal for citizens and businesses.</p>		
Target audience	Citizens (and the eForms for businesses)		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), the descriptions are provided on the portal but the services are distributed along the website.		
Ownership catalogue	Department of Information of Malta		
Ownership services	Where the website contains links to other sites and resources provided by third parties, these links are provided for your information only. They don't have the control over the content and are not responsible for it.		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)	Automated Notifications and Comments: This website offers the service of automated notification on information updates within the website. The notifications functionality allows users to choose what to be notified and when to be notified on information ch		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The Department of Information will use reasonable endeavors to ensure that the site is available 24 hours, 7 days a week. However they will not be liable if for any reason the website is unavailable at any time or for any period. The different liability rules and exceptions are explained in the terms of use (see reliance of information posted, changes to the website, security and limitations of liability).		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, eForms can only be accessed after login
Title	Yes	Output? (documents)	Yes, static applications can be downloads
Description	Yes	Location of the service	No
Language	English and Maltese	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	No

Further contact details	Yes if applicable	Is the owner of the service provided?	No
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments			
Other consulted sources			

MALTA – BUSINESS PORTAL (2/2)

High-level analysis			
Country	Malta		
Link to portal/catalogue	http://www.businessfirst.com.mt/		
Type of portal	portal		
Level of portal	National (assumption)		
Federated	Yes (assumption)		
Classification of services	The classification is based on the phases in the business life cycle		
Categories on the first level	Plan; start; run; grow; close; online service		
Complexity of further categorisation	The number of levels depends on the public service that is needed. In most cases the services are categorised in two levels, the other cases exist of three levels.		
Service Information Type	The public services are static, purely informative		
Target audience	Businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption, manual input?)		
Ownership catalogue	Malta Enterprise (ME)		
Ownership services			
Maintenance catalogue	Malta Enterprise (ME)		
Maintenance services			
Content syndication (processes)	RSS feeds are available		
Are rules involved on how to publish the public services			
Accountability on information (liability)	<p>The Malta Enterprise is not liable for the content of the portal. They are not committed to ensure up-to-date information, however they try to be as complete and accurate as possible (no warranty).</p> <p>The portal contains links to external website; Malta Enterprise is not responsible for the content that is published on that website.</p>		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, eServices can be completed online.
Title	Yes	Output? (documents)	Yes, static forms can be accessed.
Description	Yes	Location of the service	No
Language	The site is provided in English, but the portal uses Google translate to change the language.	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes, they only mention the previous and next service. Or the next public service in the sequence (e.g. requirements to open a business)
Further contact details	No	Is the owner of the service provided?	No

Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The portal uses Google translate, to translate the different pages (see box on the left side - source code).		
Other consulted sources			

NETHERLANDS – CITIZEN AND BUSINESS PORTAL (1/2)

High-level analysis			
Country	Netherlands		
Link to portal/catalogue	http://www.rijksoverheid.nl/		
Type of portal	portal		
Level of portal	National		
Federated	Yes (assumption), information comes from multiple Ministries		
Classification of services	The classifications are based on the different needs of the customer.		
Categories on the first level	Taxes; agriculture, nature and food; construction, housing and living environment; milieu, land and water; culture, sports and leisure; education and science; defense; public order and safety; government, administration and kingdom; economy and business; jurisdiction; travel, live and work abroad; family, youth and family (gezin); grants, benefits and allowances; finance; traffic and transport; health and care; jobs and career; immigration, integration and civic integration; international and development		
Complexity of further categorisation	The categorisation of the public services contains three levels which are very intuitive and clearly distinctive.		
Service Information Type	Static descriptions of the public services, the portal has a purely informative purpose. The portal foresees also static documents (pdf) and publications		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	The descriptions and documents are centralised on the government portal. (assumption)		
Ownership catalogue	Government of the Netherlands		
Ownership services	The responsible Ministry is mentioned on the pages; they are responsible for the content of the public services (assumption).		
Maintenance catalogue	Government of the Netherlands		
Maintenance services	The responsible Ministry is mentioned on the pages; they are responsible for the content of the public services (assumption).		
Content syndication (processes)	RSS feeds are available for the public, people can subscribe to current information on the portal. It is used for all news, acts, minutes, press releases, speeches, documents and publications. Open data functionalities help to distribute the information t		
Are rules involved on how to publish the public services			
Accountability on information (liability)	When reusing the content of this website it is not mandatory to refer to the source (Ministry/website). But when citing the content it should not give the impression that the government endorses the 'copied' content.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	Yes, documents can be downloaded from the portal
Description	Yes	Location of the service	No
Language	Dutch, English	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes, within the text are the relating services mentioned. The other public services within the same category are mentioned at the right.
Further contact details	Yes a general number for questions are provided	Is the owner of the service provided?	Yes

Case study available	No, but Q&A are provided at each topic	Legal considerations	Yes, if applicable then the regulations are mentioned within the text
Service Level Agreements	no	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	Each public service and category has an overview page, content page, news page, question and answer page and a documents and publications page. All these pages provide the content related to the particular public service or multiple public services within a specific category. 'Samenwerkende Catalogi', see additional comments in next fact sheet of Answersforbusiness.nl		
Other consulted sources			

NETHERLANDS – BUSINESS PORTAL (2/2)

High-level analysis			
Country	Netherlands		
Link to portal/catalogue	http://www.answersforbusiness.nl/		
Type of portal	Portals (POSC)		
Level of portal	The 'Answers for Business' portal is part of the Ministry of Economic Affairs. They work in close cooperation with the whole government of the Netherlands (these are Ministries, municipalities, provinces and water agencies).		
Federated	Yes, the information is built on the input of the other public administrations in the Netherlands		
Classification of services	The portal is divided in multiple tabs; subject, branches, fundings, taxes, legislative changes. Each tab represents other information and it supports its own subdivision of the information. The further analysis of this portal is done on the subject tab.		
Categories on the first level	Business start or stop; staff; environment; business properties; operational; product and service; international business.		
Complexity of further categorisation	The classification within the tab 'subject' contains only two levels. At the second level the user can filter down on the branch where he needs information from. Within the branch and fundings sections; the classification has three levels. Within the tax		
Service Information Type	Static description		
Target audience	Businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federation (assumption), the descriptions are gathered on the portal, but the user will be redirected to external websites if they want to gain more information.		
Ownership catalogue	The 'Answers for Business' portal is part of the Ministry of Economic Affairs. They work in close cooperation with the whole government of the Netherlands (these are Ministries, municipalities, provinces and water agencies). The portal will redirect the u		
Ownership services	Via 'Answers for business' the user can access the information of the other public administrations. These administrations are responsible for their information.		
Maintenance catalogue	Ministry of Economic Affairs		
Maintenance services	The public administrations		
Content syndication (processes)	Open data datasets (in XML) are available for distributing information		
Are rules involved on how to publish the public services	Samenwerkende Catalogi		
Accountability on information (liability)	The portal redirects the user to other public administration portals for more information. The liability for the content, accuracy, completeness of the information lies with those public administrations. The Answer for Business portal is not responsible for managing and maintaining of publications of other administrations.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, forms can be filled in and printed
Title	Yes	Output? (documents)	Yes, applications can be downloaded and printed
Description	Yes	Location of the service	No
Language	Dutch and English. Other languages are available via Google translate dropdown menu	Validity, creation or modification date	Yes, if the legal framework behind the information is active since a particular date, then the date is mentioned
Web links to more detail	Yes	Relations with other services	Yes

Further contact details	Yes	Is the owner of the service provided?	Yes
Case study available	No	Legal considerations	Yes
Service Level Agreements	No	Other	The description is divided into questions which could be applicable in the situation of the client.
Technical			
What technology is used to manage the catalogue/services?	Samenwerkende Catalogi ¹ is a standard for publishing and exchanging metadata about products and services (e.g. applying for a license or applying for a travel document). This is a referral mechanism for product information from local, regional and national		
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments			
Other consulted sources	Samenwerkende Catalogi		

NORWAY

High-level analysis			
Country	Norway		
Link to portal/catalogue	https://www.altinn.no/en/		
Type of portal	Portal, Single Point of Contact		
Level of portal	The service providers are situated on different levels of power		
Federated	Yes (assumption)		
Classification of services	The classification is based on the phases of a business life cycle.		
Categories on the first level	Before start-up; start-up and registration; operation; winding up. Guides and documents and overview of support initiatives are also provided by the portal.		
Complexity of further categorisation	The public services are divided on three different levels of categories.		
Service Information Type	700 different public forms are made available on the portal		
Target audience	Businesses (440.000 in 2009)		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), the information is gathered from different public administrations and the eForms are provided.		
Ownership catalogue	The Brønnøysund Register Centre		
Ownership services			
Maintenance catalogue			
Maintenance services			
Content syndication (processes)	RSS feeds are available for operational messages The portal provides a list with all the systems that has developed interfaces for integration with Altinn. Those systems are available for its users.		
Are rules involved on how to publish the public services	The ELMER-guidelines for public forms has been established for building user interfaces in online public forms. In ELMER 2 the usability requirements for web forms are defined.		
Accountability on information (liability)			
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, to access the eForms the user needs to log in.
Title	Yes	Output? (documents)	Yes, forms
Description	Yes	Location of the service	Yes, in an online environment
Language	English, Norwegian (Bokmal, Nynorsk)	Validity, creation or modification date	Yes, date of last update is mentioned
Web links to more detail	Yes	Relations with other services	Yes, mentioned on the bottom of the page
Further contact details	Yes	Is the owner of the service provided?	No, but contact details of corresponding administrations are mentioned
Case study available	Yes, sometimes examples are given; see 'how to calculate output and input VAT'.	Legal considerations	Yes, laws and regulations are mentioned if applicable
Service Level	No	Other	Further readings, forms and

Agreements		guides are mentioned if available
Technical		
What technology is used to manage the catalogue/services?		
Building blocks and technical architecture		
Relations with other public services		
Other		
Additional Comments		
Other consulted sources		

POLAND

High-level analysis			
Country	Poland		
Link to portal/catalogue	http://www.eu-go.gov.pl		
Type of portal	Portal The portal contains sections for businesses, citizens and public administrations. Only the section for business is described below, see additional comments for the other two section.		
Level of portal	Registrations in the in the Internal Market Information System: more than 400 Polish public administration and local self-training at central, regional and local levels (ministries, central offices, marshals' offices, district offices, offices of cities)		
Federated	Federated (assumption)		
Classification of services	Classification based on phases in the business life cycle		
Categories on the first level	News for businesses, commencing business, run a business, suspending a business, closing a business, training, access to public records (base registers), network support, FAQ		
Complexity of further categorisation	The categorisation consists of three levels.		
Service Information Type	Static descriptions and eServices are accessible via the ePUAP platform.		
Target audience	Businesses (, citizens and public administrations - limited, see additional comments)		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), the information is gathered from different sources.		
Ownership catalogue	The portal is supervised by the Ministry of Economy and the project partners are the Institute of Logistics and Warehousing and the National Chamber of Commerce.		
Ownership services			
Maintenance catalogue	The portal is supervised by the Ministry of Economy and the project partners are the Institute of Logistics and Warehousing and the National Chamber of Commerce.		
Maintenance services			
Content syndication (processes)	RSS feeds are available		
Are rules involved on how to publish the public services			
Accountability on information (liability)	Minister of Economy explained that the information published on the Internet Point in foreign languages can be translated using automatic translation of web content, with the result that the Minister of Economy is not responsible for the content of such translated information. The Minister of Economy is not responsible for any use of the information published on the website of Single Point of Contact.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, if the user wants to access the eServices, then login is required on the ePUAP platform
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	No
Language	The user can choose in the language via Google translate.	Validity, creation or modification date	Yes, data of last update is mentioned on top
Web links to more detail	If applicable yes, in the text and at the bottom of the page	Relations with other services	No
Further contact details	No, but links are given to the responsible administrations	Is the owner of the service provided?	No

Case study available	No	Legal considerations	Yes, is mentioned within the text
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture	The portal is integrated with the Electronic Platform of Public Administrations Services (ePUAP). Use of the tool Internal Market Information System		
Relations with other public services			
Other			
Additional Comments	<p>Just like Malta, the portal uses Google translate to translate the portal in different languages.</p> <p>Section citizens: this section contains information about news for the consumer, training, access to public records (base registries), consumers in the EU (general overview of the consumer rights, consumer authorities in Poland and the protection of consumers in Poland).</p> <p>Section public administrations: this section contains information provides Services Directive, news for administration training, objectives of the project (SPOCS), rules for the participation in the project, legal, support instruments.</p>		
Other consulted sources	Art. 46 paragraph. 10 of the draft law on the provision of services on Polish territory		

PORTUGAL – CITIZEN PORTAL (1/2)

High-level analysis			
Country	Portugal		
Link to portal/catalogue	http://www.portaldocidadao.pt		
Type of portal	Portal. The portal provides several sections: citizen and I, services (A-Z list) certifications online, change of address, files, news and contact us.		
Level of portal	163 organisations and public entities		
Federated	Yes (assumption)		
Classification of services	The navigation (classification) of the portal is adjusted to situations of life (live events). It is divided in two main sections: 'Citizen and I...' and 'Areas of Interest'.		
Categories on the first level	Citizen and I: my house, my job, my education, my taxes and contributions, my vehicle, my family, my security, my citizenship, my documents, my spare-time, my money, my health Areas of interest: Environment, Spatial Planning and the Rural; Consumer Support; Certificates, Licenses, and Related Records; Science, Technology and Innovation; Foreign Communities; Portuguese Communities; Culture and Media; Personal Documents; Education and Training; Employment and Professional Activities; Housing; Taxes, Customs Duties and Social Contributions; Justice and Courts; Participation and Citizenship; Savings and Investment; Social Protection; Rehabilitation and Disability; Health and Nutrition; Security and Protection; Transport Vehicles and Infrastructure; Tourism, Sport and Recreation		
Complexity of further categorisation	The categorisation contains three levels. When the user drills down to the third level, the portal will provide two sections: 'you can view these files' and 'you can perform these services'.		
Service Information Type	The citizen's portal presents more than 950 services. As mentioned before, the user can choose between to view the files or access the services. These files provides a static description of the files on the portal, the other section provides a description		
Target audience	Citizens		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), the descriptions are on centralised on this portal. The portal provides certain eServices, otherwise they provide the link to the eService on the external portal.		
Ownership catalogue	Agency for Administrative Modernisation, IP (AMA)		
Ownership services			
Maintenance catalogue	Updating the content of the portal is the responsibility of each public entity. The content of the citizen's portal is managed and updated by the editorial team of the portal in cooperation with the service providers.		
Maintenance services	Updating the content of the portal is the responsibility of each public entity. The content of the citizen's portal is managed and updated by the editorial team of the portal in cooperation with the service providers.		
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	The AMA is not liable for any loss or damage, direct or indirect suffered by any user that used the information on the portal. They are not responsible for the accuracy, quality, safety, legality and compliance to copyright. AMA cannot guarantee that a document available on this portal exactly reproduces an officially adopted text. Therefore, only the version of acts published in the Official Gazette is deemed authentic. They are not responsible for the quality or veracity of the statements contained within the referred websites or the privacy policy of those websites.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed if you want to access the eService. Dynamic forms can be accessed and printed.

Title	Yes	Output? (documents)	Yes, applications can be downloaded and printed.
Description	Yes	Location of the service	Yes, section 'where do I apply': online or in person
Language	Portuguese	Validity, creation or modification date	Yes, date of last update is provided
Web links to more detail	Yes	Relations with other services	Yes
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	Yes, if applicable see section 'applicable legislations
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The description of the services is always provided in these sections: What do I need to (description, who can apply?, where do I apply?, when can i apply?, what do I need to apply?, what is the cost?, what are the deadlines for the provision of the service? and other information); applicable legislation; contacts and related services.		
Other consulted sources	Collaboration platform, provides a way to interconnect systems of the public administrations		

PORTUGAL – BUSINESS PORTAL (2/2)

High-level analysis			
Country	Portugal		
Link to portal/catalogue	http://www.portaldaempresa.pt/		
Type of portal	Portal		
Level of portal	Diverse set of information gathered in more than 100 service providers of public administration		
Federated	Federated (assumed)		
Classification of services	Classification is based on the phases in a business life cycle		
Categories on the first level	Main subdivision: Creation, management, expansion, extinction. Areas of interest: Human Resources; Investment and Financing; Taxes and Contributions; Legislation and Regulation; Legal Documents; Social Economy; International Trade; Innovation, Technology and Quality; Environment and Energy; Studies and Economic Information; Records.		
Complexity of further categorisation	The categorisation contains three levels. The third level can forward the visitor of the portal to the description of the public service on the portal or redirect them to an external party.		
Service Information Type	Static and eServices are provided on the portal		
Target audience	Businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption). Certain eServices are provided by the portal, others are provided on external portals of public administrations.		
Ownership catalogue	The AMA - Agency for Administrative Modernisation is owner of the portal in cooperation with other public administrations. AMA is The business portal has a partnership with the Institute for Support to Small and Medium Enterprises and Investment (IAPMEI)		
Ownership services			
Maintenance catalogue	Agency for Administrative Modernisation		
Maintenance services	Agency for Administrative Modernisation, concerning the services provided by the portal.		
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	AMA is not liable for any loss or damage, direct or indirect suffered by a user while using the information of the portal. They are not responsible for the accuracy, credibility and functionality of the external websites that is referred to.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is needed to perform the eService
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	Yes, section 'Where do I apply' (online or in person)
Language	Portuguese (standard) English and Spanish (via Google translate)	Validity, creation or modification date	Yes, date of last update is mentioned
Web links to more detail	Yes	Relations with other services	Yes
Further contact details	Yes	Is the owner of the service provided?	No

Case study available	No	Legal considerations	Yes
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The structure of the public service description is quite similar to the public services within the citizen's portal.		
Other consulted sources	English version of the portal focusses on the foreign investors. (not the Google translate version)		

ROMANIA

High-level analysis			
Country	Romania		
Link to portal/catalogue	http://www.edirect.e-guvernare.ro/PISEGWeb/PISEGPortal.portal		
Type of portal	Portal - Point of Single contact is created to comply with the Services Directive regulations		
Level of portal	National (assumption)		
Federated	Federated (assumption)		
Classification of services	The first classification on the portal is the two main sections: citizens and businesses.		
Categories on the first level	Citizens: taxes, work, education, consumer protection, civil engineering, family and tourism. Other lists in citizen's section are: institutions, associations and organisations, list of services, procedures. Businesses: starting a business, financing, fiscal, closing the business, business development, human resources and opportunities. Other lists in business' section are: institutions, associations and organisations, list of services, procedures.		
Complexity of further categorisation	The classification mostly consists of two levels. Some categories are further detailed in multiple categories. (E.g. Business - Fiscal - VAT - the VAT rate in Romania; who pays, who does not, etc.)		
Service Information Type	Static descriptions, eForms (external portal) are available		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption: the description are centralised but the eForms are located at an external portal)		
Ownership catalogue	The website is made available by the PISEG project (Platform for Integration of eGovernance National Electronic System). The portal is operated by the "Digital Romania" National Centre (C.N.R.D.)		
Ownership services			
Maintenance catalogue	"Digital Romania" National Centre (C.N.R.D.)		
Maintenance services			
Content syndication (processes)	RSS feeds are available for news feeds, event feeds and general feeds. The user can also subscribe on these updates via email.		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The CNRD does not assume any responsibility for the correctness and accuracy of the information and materials posted. The information provided on the portal can be partially or completely available on the websites of other institutions; CNRD does not guarantee that content and information published by them. CNRD cannot be held liable by any person/entity for any damages of any kind resulted by direct or indirect use of the content. They are not responsible for the content/information of the other websites where this portal refers to.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, in case of an eForm, yes but on an external site
Title	Yes	Output? (documents)	No, forms can be downloaded from external site
Description	Yes	Location of the service	No
Language	Romanian, English	Validity, creation or modification date	No
Web links to more detail	Yes, links to other portals are provided	Relations with other services	Yes, documents and other relating public services are

Further contact details	No	Is the owner of the service provided?	mentioned
Case study available	No	Legal considerations	Yes at the bottom of the text (isn't the always the cases).
Service Level Agreements	No	Other	Yes, if applicable links is provided
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments			
Other consulted sources			

SLOVAKIA

High-level analysis			
Country	Slovakia		
Link to portal/catalogue	http://portal.gov.sk/		
Type of portal	Portal		
Level of portal	The portal cooperates with ministries and administrations located on different levels of power.		
Federated	Central portal of the government (CPAP) provides centralised and uniform access to information sources and public services. The user will experience that the services are centralised on the portal. But centralization is not practiced moving services on CP		
Classification of services	The user can go to the home page and choose a certain life situations, agenda or services. The life situation and agenda has a similar structure to categorise the information, although they foresee different kind of information. Within the life situations		
Categories on the first level	Citizens: citizen and state; finance and economy; business; travel and transportation; education, science and research; family and relationships; culture and sport; employment; health; housing; environment; defense and security. Business: citizen and state; business; culture and sport; health; environment; finance and economy; travel and transport; employment; housing; defense and security.		
Complexity of further categorisation	The number of levels depends on the different categorisations; this can vary between three to four levels.		
Service Information Type	Static descriptions, links to eForms are provided and static forms are provided on the portal.		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), the description and static forms are centralised. Certain eForms are still provided on external website.		
Ownership catalogue	Administrator of the CPAP is the Ministry of Finance		
Ownership services	Content managers and technical operators of this site is the Ministry of Finance of the Slovak Republic.		
Maintenance catalogue	Operators of the CPAP is the National Agency for Network and electronic services		
Maintenance services	Content managers and technical operators of this site is the Ministry of Finance of the Slovak Republic.		
Content syndication (processes)	RSS feeds are available this can be all the new information or new information of individual sections		
Are rules involved on how to publish the public services			
Accountability on information (liability)	CPAP is not responsible or liable for the unavailability of accredited certification authorities, which may result in malfunctioning of electronic services and CPAP is not responsible neither for problems with compatibility.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, login is required to access certain online services
Title	Yes	Output? (documents)	Yes, static forms are downloadable from the portal
Description	Yes	Location of the service	Yes, it is mentioned if the public service is accessible in an online environment or in person
Language	Slovak	Validity, creation or modification date	No
Web links to more detail	Yes	Relations with other services	Yes

Further contact details	No, they mention where to address to receive the public administration.	Is the owner of the service provided?	Yes, the responsible authorities are mentioned in a separate tab (above the descriptions)
Case study available	No	Legal considerations	Yes, if applicable, the documents are mentioned within the text
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The English version of the portal is also available, but therefore the user needs to log in.		
Other consulted sources			

SLOVENIA

High-level analysis			
Country	Slovenia		
Link to portal/catalogue	http://e-uprava.gov.si		
Type of portal	Portal		
Level of portal	Different levels (assumption)		
Federated	Yes, information is gathered from different functions (assumption)		
Classification of services	Classification is based on life events		
Categories on the first level	Slovenian page (language selection): Citizens: family and children; personal situation and documents; school education and youth; employment; entrepreneurship; personal finance and taxes; health care; social work, people with disabilities, development rights; elderly, while retirement; transport, driver, vehicle; environment and spatial; agriculture, forestry and nutrition; culture and sport; safety, rescue, military and weapons; state and society; death and grief; abroad, travel and visa. Legal entities (business): proprietorship; legal persons in progress; going legal entities; societies and institutions.		
Complexity of further categorisation	The categorisation contains three levels		
Service Information Type	static descriptions extended with eServices and static forms		
Target audience	The portal is made for citizens (G2C), business (G2B) and other public administrations (G2G)		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Centralisation (eServices, eTaxes, eEmployment, eDemocracy) (assumption)		
Ownership catalogue	Ministry of Justice and Public Administration		
Ownership services	The name of the owner of the public service is mentioned within the description (producer of the service).		
Maintenance catalogue			
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	In no event, Ministry of Justice and Public Administration will be liable to any user for any direct or indirect loss or inconvenience (loss of profits, business risk, loss of programs or other data equipment) the user might experience due to technical difficulties or inability to use state e-government portal or links contained on the website. They don't accept any responsibility for the content, form and change management as well as for their policy towards the website visitors.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, if the user access the eServices
Title	Yes	Output? (documents)	Yes, static forms
Description	Yes, it is divided in multiple sections (see additional comments)	Location of the service	Yes, they mention how to apply for the public service
Language	English, Italian, Hungarian	Validity, creation or modification date	Yes, date of the last update is mentioned
Web links to more detail	Yes	Relations with other services	No

Further contact details	Yes	Is the owner of the service provided?	Yes
Case study available	No, but questions and answers are provided on the pages	Legal considerations	Yes
Service Level Agreements	no	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	<p>Login is needed to access the eGovernment environment (eServices, eTaxes, eEmployment, eDemocracy) The other pages, e.g. in English could classify their public services differently. Also the descriptions of the public services are not similar.</p> <p>In Slovenian webpages the public services has defined in the following structure: name of the service; body governed by; introduction; who; area of competence; where and how; the competent authorities; the data, which can be obtained authority; additional information; fees and other costs; terms of European dictionary 'EuroVoc'; legal basis; sanctions; questions and answers.</p>		
Other consulted sources	<p>SRC - Provides the platforms for eBusiness, eGovernment, ERP- & CRM systems and document management solutions. They helped with developing the portal</p>		

SPAIN

High-level analysis			
Country	Spain		
Link to portal/catalogue	http://www.060.es/		
Type of portal	Portal		
Level of portal	Multiple public administrations on different levels are involved with this portal		
Federated	Yes, the information is centralised on the portal (assumption)		
Classification of services	Classification is based on the public administrations, sectors.		
Categories on the first level	Work; companies; educations; health, safety and consumer; traffic and transport; personal documents; culture, tourism and leisure; taxes, pensions and financial aid; environment. Areas of interest: studying at university; job search; go to the administration Theme search: working in administration; find out about procedures; find grants, scholarships and grants; search legislations.		
Complexity of further categorisation	The categorisation contains four levels.		
Service Information Type	Administration information and guidance on electronic public services Administration		
Target audience	Citizens and businesses		
Legal			
Obligation to publish?	Law 11/2007 on electronic access of citizens to public services becomes 060.es portal in the General Access Point, with the mission the dissemination of content and services. TITLE TWO > CHAPTER I > Article 10. The electronic office. This section determines the owner and responsible authority for the publication of information about the public services.		
Decisions not to publish?			
Organisational			
Structure of public services	Federated, the brief information is centralised on the portal. They provide a link to access the full description, information. (assumption)		
Ownership catalogue	Ministry of Finance and Public Administration		
Ownership services			
Maintenance catalogue	The content, organization and choice of links pages 060.es have been selected and coordinated by the Directorate General for Administrative Modernisation, Procedures and Promotion of Electronic Administration of the Ministry of Public Administration. The		
Maintenance services			
Content syndication (processes)	RSS feeds are available for: Training Grants and Scholarships; Grants and Scholarships school transport; Grants and Fellowships; The Graduation Awards; Aid to agriculture; Aid to Small and Medium Enterprises; Helps Industrial Sector; Aid to unemployed; Ai		
Are rules involved on how to publish the public services			
Accountability on information (liability)	The Ministry of Finance and Public Administration is not responsible for damages that might arise from the use of the tools and information contained in the web in relation to decisions about the initiation, development or result of administrative procedures. Such decisions must be in the centers, agencies or offices.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	No, if you want to access the eService you need to register (on external website)
Title	Yes	Output? (documents)	No
Description	Yes, briefly	Location of the service	No
Language	Spanish, Catalan, Galician, Basque, English	Validity, creation or modification date	No

Web links to more detail	Yes	Relations with other services	Yes, see section Highlights
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	The portal provides a brief description; a link to more detailed description and the actual service		
Other consulted sources	The portal provides pdf-files which contains all the public services which are offered by the public administrations.	http://www.060.es/060/appmanager/portal/desktop/? nfpb=true& pageL_abel=descargaProcedimientos	

SWEDEN – BUSINESS PORTAL (1/2)

High-level analysis			
Country	Sweden		
Link to portal/catalogue	http://www.verksamt.se/		
Type of portal	portal		
Level of portal	National (assumption)		
Federated	Centralised (assumption)		
Classification of services	Classification is based on the phases within the business lifecycle		
Categories on the first level	Considering; starting; running; developing; closing down		
Complexity of further categorisation	The complexity of the categorisation depends on the service. Some hierarchies have only two levels others consist of three or four levels.		
Service Information Type	Static descriptions, advice and tips are available on the portal. These descriptions could also refer to eServices which are provided by the portal.		
Target audience	Business		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Descriptions and eServices are centralised on the portal (assumption)		
Ownership catalogue	The portal Versamt.se is a product created by the collaboration of three government agency: the Swedish Companies Registration Office, the Swedish Tax Agency and the Swedish Agency for Economic and Regional Growth.		
Ownership services	This is mentioned on the pages bottom of the page.		
Maintenance catalogue	Swedish Agency for Economic and Regional Growth		
Maintenance services			
Content syndication (processes)			
Are rules involved on how to publish the public services			
Accountability on information (liability)	A logo is displayed of the authority that is responsible for the email service for that eServices. The responsible authority for the content of the eService is also accountable for the case management. The authority responsible for its e-services on the website are also responsible for processing the personal information submitted through the online services.		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, the user needs to log in to access the eServices (checklist can be accessed without login)
Title	Yes	Output? (documents)	No
Description	Yes	Location of the service	No, but if online a link is foreseen
Language	Swedish and English	Validity, creation or modification date	Yes, date of the last update is mentioned below
Web links to more detail	Yes, useful tools, eServices and links	Relations with other services	No
Further contact details	Yes: eServices, useful tools, links, read more	Is the owner of the service provided?	Yes, the responsible authority for the content is mentioned below
Case study available	No, but tips and tricks are mentioned below	Legal considerations	No

Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services? Building blocks and technical architecture Relations with other public services			
Other			
Additional Comments	Within the source code of the portal, Google translate is mentioned. But not sure if it is used on the page. The English version is more limited, the eServices are not accessible, less detailed information of the public services and the general pages are more detailed in the Swedish version.		
Other consulted sources			

SWEDEN – CITIZEN PORTAL (2/2)

High-level analysis			
Country	Sweden		
Link to portal/catalogue	http://www.regeringen.se/		
Type of portal	Informative portal & news portal.		
Level of portal	National ministries.		
Federated	Federation (assumption).		
Classification of services	The classification is based on the different sectors (thematic).		
Categories on the first level	Embassies, consulates and consular affairs; Work Asylum, migration and integration; Housing and construction; Democracy, gender equality and human rights; Defense, Safety and Security; Sea, water, fisheries and shipping; Health, health care, social services, social security; Communications, infrastructure and IT; Culture, Media and Sport; Law and justice; Rural Affairs, Animals and Food; Environment, energy and climate; Industry, trade and regional growth; National economy and budget; State and local government; Education and research; Foreign policy and international cooperation.		
Complexity of further categorisation	The classification consists of three levels.		
Service Information Type	Informative (static) descriptions & news bulletins.		
Target audience	Citizens (and businesses).		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption) from different ministries.		
Ownership catalogue	Swedish Government Offices		
Ownership services			
Maintenance catalogue	Swedish Government Offices		
Maintenance services			
Content syndication (processes)	RSS feeds are available for news feeds, press releases, reactions, webcasts, etc.		
Are rules involved on how to publish the public services			
Accountability on information (liability)			
Semantical			
Identification number	No	Input (eServices, name, etc.)	No
Title	Yes	Output? (documents)	No, you can print the info on the portal
Description	Yes	Location of the service	No
Language	Swedish and English, basic information in English, Finnish, Bosnian, Croatian, Serbian, Polish, French, German, Arabic, Persian.	Validity, creation or modification date	Yes? Creation & modification date is given
Web links to more detail	Yes, if available	Relations with other services	Yes, relating news posts and other informative services are given.

Further contact details	Yes, web link is given to competent ministry	Is the owner of the service provided?	Yes, the competent ministry is mentioned if available
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	No
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments			
Other consulted sources			

UNITED KINGDOM

High-level analysis			
Country	United Kingdom		
Link to portal/catalogue	https://www.gov.uk/		
Type of portal	Portal		
Level of portal	Different levels of authorities		
Federated	Federated (see picture on the homepage)		
Classification of services	The classification is build based on the needs of the citizen/business.		
Categories on the first level	Driving and transport; benefits; business and self-employed; employing people; passports, travel and living abroad; education and learning; working, jobs and pensions; housing and local services; crime, justice and the law; money and tax; births, deaths, marriages and care; disabled people; inside Government; citizenship and living in the UK;		
Complexity of further categorisation	The complexity of the categorisation really depends on the needed information. Some public services contain two or three levels. In some cases the public services is subdivided in multiple and consecutive steps.		
Service Information Type	Static descriptions of the public services, eServices are also available (e.g. getting married abroad)		
Target audience	Citizens and business		
Legal			
Obligation to publish?			
Decisions not to publish?			
Organisational			
Structure of public services	Federated (assumption), the descriptions are gathered on the website. A lot of eServices are gathered on the portal.		
Ownership catalogue	Government Digital Service has built the portal. They are part of the Cabinet Office.		
Ownership services	All the government departments' works very closely with the Government Digital Service to make sure that the information on the portal is accurate and updated.		
Maintenance catalogue	Government Digital Service has built the portal. They are part of the Cabinet Office.		
Maintenance services	All the government departments' works very closely with the Government Digital Service to make sure that the information on the portal is accurate and updated.		
Content syndication (processes)	APIs are available for developers to use and monitor the website		
Are rules involved on how to publish the public services			
Accountability on information (liability)	<p>The security of the transmission of data from the user towards the portal can not be guaranteed by Government Digital Service.</p> <p>The site provides links to other government departments, the information published on the website are not the responsibility of the Government Digital Service.</p> <p>The Government Digital Service don't provide any guarantees conditions or warranties as to the accuracy of any such third party products and do not accept liability for loss or damage incurred by users of such third party products under any circumstances.</p> <p>Disclaimer</p>		
Semantical			
Identification number	No	Input (eServices, name, etc.)	Yes, the user can request certain legal documents; therefore the user needs to pay/login to request those documents.
Title	Yes	Output? (documents)	Yes the requested documents
Description	Yes	Location of the service	Yes, online, or a link is provided to the eService on external website
Language	English and Welsh	Validity, creation or modification date	Yes, date of last update is mentioned

Web links to more detail	Yes	Relations with other services	Yes
Further contact details	Yes	Is the owner of the service provided?	No
Case study available	No	Legal considerations	No
Service Level Agreements	No	Other	
Technical			
What technology is used to manage the catalogue/services?			
Building blocks and technical architecture			
Relations with other public services			
Other			
Additional Comments	Each public service is differently structured; some provides consecutive steps, others are divided by relating country, etc.		
Other consulted sources	Data Gov provides information about the country and communities. Data Gov uses also 'Linked Data' to discover new trends, relations.		