Deliverable D1.1

Platform requirements

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This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Deliverable abstract

This document presents the context and the strategy of creation of the OASIS Platform with regard to studies and survey made before the answer to the European call for projects and to the starting up of the project.

OASIS aims to facilitate the access to information, the use of services and their economic promotion by federating services in a unique environment that will enable public administrations to make better use of customer and businesses information and adapt public services (e-services) so they more often meet the needs of people and businesses.

The use of services of the OASIS platform will allow in the long run to create one " common good" of reusable data.

This deliverable aims to gather information both from service providers and users in order to lead the next step of architectural design. Services providers, pilot sites, and users asked for describing requirements, needs, preferences, and expectations.

The requirements have been collected and ranked according to the 4-level MSCW (MoSCoW) schema and have been categorized according to different classes of users: **Providers** (who provide access to Resources (data and/or services), **Clients** (who request and utilize/consume Resources: Public administrations, civil servants, citizens, elected people, companies, NGO ...) and **Administrators** (who have a role in configuring and monitoring the running of the system).

The result of the requirements analysis is a valuable input for the architecture design to be performed in the task T1.4 and defined in the deliverable D1.2.

Project Management Review

	Reviewer 1: WP leader			Reviewer 2: B. Thuillier		
	Answer	Comments	Type*	Answer	Comments	Type *
Is the deliverable in accordance with						
the Description of Work and the objectives of the project?	☒ Yes ☐ No		☐ M ☐ m ☐ a	☒ Yes ☐ No		☐ M ☐ m ☐ a
the international State of the Art?	☒ Yes ☐ No		☐ M ☐ m ☐ a	☒ Yes ☐ No		☐ M ☐ m ☐ a
Is the quality of the deliverable in a status						
that allows to send it to European Commission?	☒ Yes ☐ No		☐ M ☐ m ☐ a	☒ Yes ☐ No		☐ M ☐ m ☐ a
that needs improvement of the writing by the originator of the deliverable?	☐ Yes ☒ No		☐ M ☐ m ☐ a	☐ Yes ☒ No		☐ M ☐ m ☐ a
that needs further work by the partners responsible for the deliverable?	☐ Yes ☒ No		☐ M ☐ m ☐ a	☐ Yes ☒ No		☐ M ☐ m ☐ a

* Type of comments: M = Major comment; m = minor comment; a = advice

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1 - Introduction

This deliverable comes before the design of the project platform. It aims at encouraging the users' applications and requirements to define the platform specifications.

Are regarded as users of the platform all players taking part in the creation process, the services supply and their use.

These players are then service providers, public actors including decision-makers, as well as agents, companies and associations which can benefit from public services or which can offer some, and citizens.

The players involved are those present in the consortium, those targeted on the pilot sites and beyond , in meetings and seminars.

The document is organized as follows : Description of the platform scope following the web evolution, the services markets to public authorities and existing initiatives.

Will follow the requirements with the methodology to collect them and the steps to go from a usage need to technical specifications regarding the services offered in the framework of the project.

A synthesis of these requirements will eventually be made.

The requirements and results of these deliverables are at the basis of the platform architecture design as it is defined in D1.2.

2 - E-government and OASIS

2.1 Context

The evolution of the digital technologies is fast and gradually leads to the moving of the value of infrastructure and material towards the services and data. At every stage of this evolution, a phenomenon of concentration of the value took place by the action of some multinationals.

- 1st IT revolution: the individual PC (*IBM),*
- 2nd IT revolution: the software (*Microsoft),*
- 3rd IT revolution: **data**, *Google (Facebook).*

This third phase symbolises the start of a societal change towards the "Knowledge Society", which has been picking up pace over recent years, bringing revolution to the sociological, economic, environmental, political and societal spheres.

Every section of society is affected by the change resulting from the sharing of information and knowledge (Delors 1993); we are relentlessly changing from a supply-based economy to a demand-based economy in tandem with the development of the Internet and of user participation. Between the informative Web 1.0 and the collaborative Web 3.0 (Aghaei, Nematbakhsh, Khosravi, Farsani 2012), we have switched from providing information and top-down creativity to the co-construction of knowledge and co-creation, as depicted in the diagram below (*Fig. 1*).

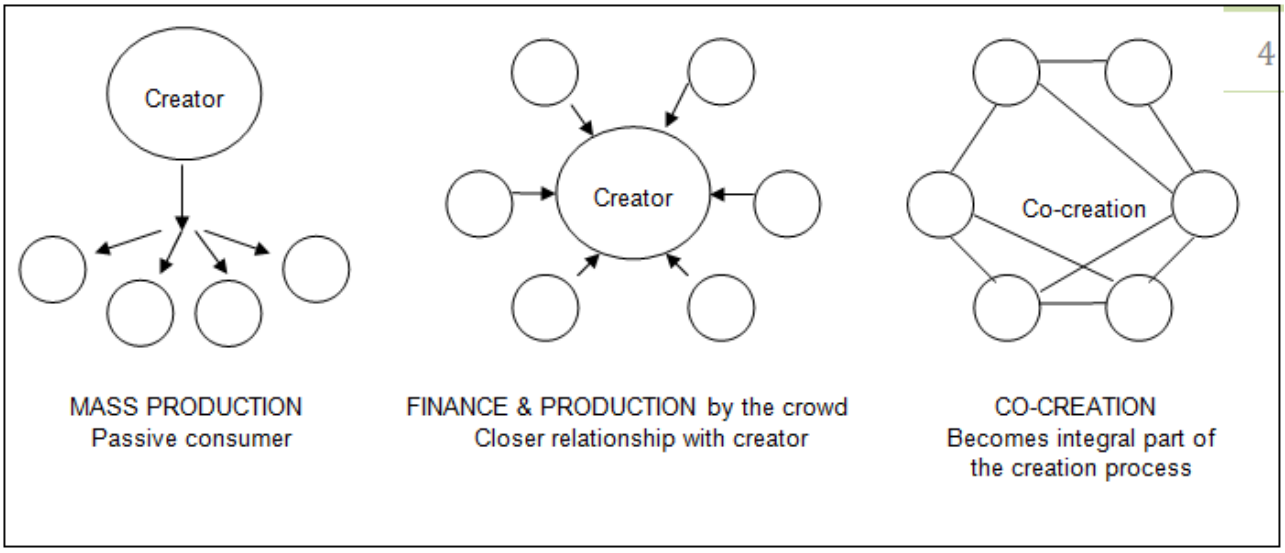

Figure 1 : Evolution of creative processes

The Web allows a combination of these three forms of communication, in real time, and this "blend" impacts upon our way of doing things, of learning and of creating at every stage of the day, whether in a professional, family or personal environment. The evolution of the Web also engenders new forms of governance, of citizen involvement, of professional organisation and production at every level of society.

The contributory economy that has developed over recent years offers many examples to demonstrate a new reality of sharing, like the upsurge in free software, Wikipedia and the power of social networks in the election of Obama, the Arab Spring or the writing of the new Icelandic Constitution.

The values of the knowledge society (Luycks Ghisi 2010), built around openness, sharing, contribution, a "win-win" economic model and the shift from a logic of "possession" to one of "access" take the specific form, for example, of:

- New forms of production partly created by "DIY" users, rather than the standardised output of producers;
- Short channels of distribution that display their everyday importance alongside long distribution channels;
- Contractualized trading is no longer the only game in town. Trade is increasingly endorsed by trust and by the logic of "gifts and gifts in exchange";
- The consumption encouraged by producers is essentially more and more stimulated by the viral nature of networks.

ICT gives these developments fluidity, making them more accessible to one and all. Thus, society is slowly being imbued with a new logic and new ways of doing things are appearing:

- **Creation of intangible value**: Knowledge + knowledge = creation of new knowledge = sources of wealth;
- **Human-centred management:** This promotes creativity and sharing with personal respect;
- **Access** to goods and services rather than possession, with the evolution of commerce towards free sharing, crowd funding and local currencies;
- **Changing the tools of production**: The brain becomes the key tool in developing creativity and innovation;
- **Evolution of measuring systems**: Intangible assets determine wealth and 50% of the NASDAQ-listed companies owe their status to their intangible value.

The evolution in the role of intangible assets recognises the new Knowledge Economy. Underpinning this is the reliability of the output that determined its value; customer relations were introduced, then HR policy and, latterly, corporate social and environmental responsibility is gaining importance when assessing products placed on the market.

These value creation processes open the way to a growth that is not only quantitative but also qualitative and…sustainable. They penetrate every sphere of society but then encounter great

resistance to change. This is the case with hierarchical political and social structures, which lack transparency and participation and which are in crisis, because citizens are becoming aware that the values of the current model and the system itself are no longer capable of meeting the new challenges, and yet many decision-makers continue to promote them.

The strong commercial concentrations represent a risk of concentration of the powers in front of the public authorities. This phenomenon of centralization was never so critical as today because it extends to the world heritage held today by Google and Facebook.

In the absence of a strong positioning on the creation and the conservation of digital public goods, the risk is to have no other alternative except for these new giants of the information. When we discuss the neutrality of the net, we should ask the question of the positioning of public authorities to guarantee the free circulation of the contents.

> *"Together with instant access to information, electronic systems for real-time participation offer a great hope: that of a transition towards a fairer, more humane society. Yet, at the same time, they represent one of the gravest threats that humanity has ever faced. Indeed, never will the risks of power being concentrated in the hands of the few have been higher; neither will the potential to achieve social rapprochement and to counter social alienation have been greater" (Joel De Rosnay, 1977).*

Given this situation, some public authorities have already started a process of opening at the level of infrastructure and services (Figure 2).

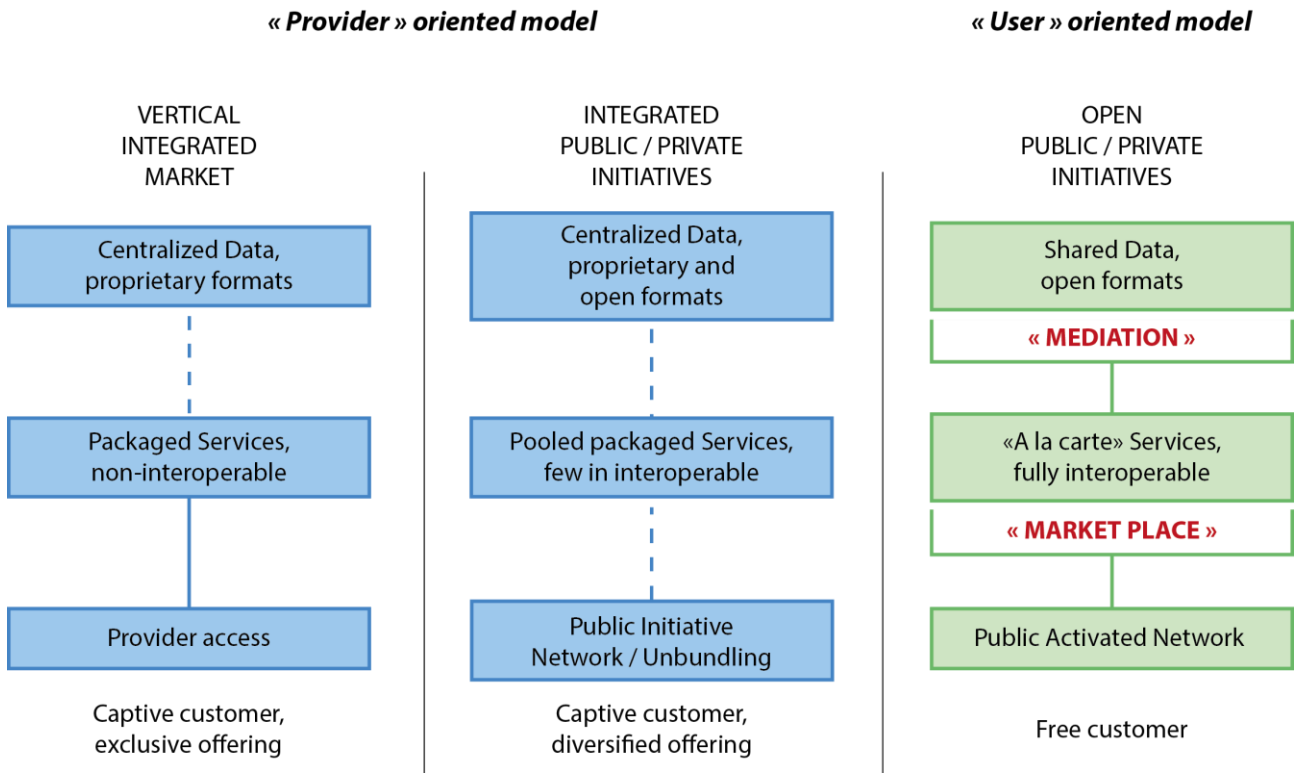

Figure 2 : Towards an open model

Public authorities have developed Public Initiatives Networks for about ten years, to guarantee an access and a wide offer to the users. These networks guarantee an equity of access and choice to the users.

Public authorities are also organized in syndicates, in state owned companies or relied on their management center to mutualize public services and dematerialization and create online services platforms. In spite of their wish of mutualization, they remain very dependent on software publishers. Tomorrow, their services and their data left to the only dynamics of these service providers, are likely to be centralized in integrated "cloud-computing", without guaranteeing the reuse of data, without any cost.

Public authorities must from now on guarantee a public heritage of data and their accessibilities for all in the same conditions. They also guarantee a sustainable economic development within their territories by basing themselves on the values of the Society of Knowledge.

The appropriation of these values for the constitution of interoperable services and reusable data requires a permanent support of local development projects towards partnerships of PPPP type (partnerships, public, private, particular). These new forms of projects associating the final user guarantee a long-term local development.

As a consequence new hybrid forms of organization emerge on all territories: Living-Lab, Third parties, coworking space, digital campings, FabLabs, ….which will contribute to the development of services, the jobs of tomorrow.

It is thus within an ecosystem where the user is at the center that it is advisable to think **e-government as a platform**.

The positioning of OASIS in the cloud is confronted with a recurrent questioning:

Since a few years, the development of "Cloud-computing" asks the question of the centralization of data and services, the loss of freedom of creation and the use of the end users'data. The idea of an applications centralized hosting which we access via a network, is as old as the pre-PC computer, with the " Time Sharing " approach. Or in the 90s with Scott Mc Nealy's speeches, Sun CEO, on the " Network Computer ", and more recently, with the ASP (Service provider application) approach. Today, we rather speak of cloud-computing, the cloud which sends back to the metaphor of Internet (Chaptal, on 2010).

This centralized approach puts ethical concerns and was strongly denounced by the freeware defenders. It presents the risk of seeing Web being transformed into an aggregate of communities. The dynamics of the open-source being built on the strength of the network, they denounce the risk of recentralization. In all his conferences Richard Stallman[3] insists on the rights of the end user

[3] Richard Matthew Stallman (Manhattan, 1953) is a renowned programmer of the American and international community of free software activist. He has launched the GNU Project and the GNU General Public License also known by the acronym GPL. He popularized the English term of "copyleft".

to keep his data, to create and to adapt services, … THE AFUL[4], faced with the exponential current of cloud-computing contributed to give a definition of what could be a" fair cloud ", within the FFII[5] workgroup which allowed the formalization. In broad outline, the " fair cloud " should respect the liberties of the users, data, competitors. Are thus considered as fair the online services which allow :

- *their users having in an open format their entire data as well as data and information necessary for the exploitation of these data by another on-line service supplier;*
- *their users having under a free license all the necessary software to implement the on-line service, to benefit from the same service on an autonomous infrastructure or run by a third party;*
- *a potential competitor offering a comparable service, excluding any legal locking preventing the possibility from offering the same service;*
- *the use of the service by all, everywhere, and without any discrimination towards a group or towards a person;*
- *their users the guarantee of the absolute secrecy and the protection of their data, even under an anonymous form. The supply to a third party of data related to the service cannot be made without an explicit preliminary agreement of the user, on a case-by-case basis.*

Nevertheless, the creation of a public patrimony of data in a "fair" environment must not be at the expense of service providers, part of the ecosystem.

The global interoperability of services is attractive for Public Authorities This interoperability process often leads to more reluctance from the software editors who mostly see risks of loss of autonomy, competition, complexity and a loss of control over the communities immaterial data heritage. The excuse of the material compatibility problems, the infrastructure limits and a 'Soviet citizen' security seems from now on despicable.

Thanks to the feedback experiences, we think that favouring the visibility of service providers is an important lever which could make some reluctances mentioned above disappear. Indeed, today, it is getting more and more complex for a provider to present his software solutions effectively to as many prospects as possible, and even if the e-administration, as a specific market had avoided this syndrome up to now, it is from now on a real stake for the new companies wishing to dash on this sector and present their different innovations.

Especially as the public services market diversifies with a multitude of on-line services which aim at the improvement of the everyday life of the citizens. We cannot any more argue in the depiction of public services by institutions only (public domain management, transport

[4] Association Française des Utilisateurs de Logiciels libres - French non-profit organization for open source softwares

[5] The FFII is a non-profit organisation dedicated to establishing a free market in information technology. FFII contributions succeeded in the relinquishment of the EU Directive on software patents in July 2005.

information, home keeping …). For the implementation of these services, the citizen will be more and more participative. So, the dematerialization of the statutory procedures, and the improvement of the internal management of the communities has to get ready for these evolutions of uses and the publishers should rather rethink their services development model by integrating a flexibility to allow the re-use of data.

The possibility of accessing to reusable data will be also incentive in the creation of new services and in the development of the initial market target of software publishers.

The presentation of a bouquet of web services on a "market place" of an open network appears as the best solution to provide visibility to new services which are going to be created over the years with the potential reuse of public data.

This new open model OASIS is a part of, will favour, on the one hand, the customer / supplier relationships and, on the other hand, the access to the market for local providers. It also considers the improvement of the service quality for public bodies, companies, citizens thanks to the interoperability gained from linked data.

Furthermore, the prevention of a drift towards a "captive" mode will allow maintaining a dynamics of qualitative overbid and thus an offer of better quality by forging an innovating character in the concerned territory. One part of the substantial economy can be put back under the shape of projects calls to maintain this dimension of creativity and innovation by reusing data which will give the territory a time beforehand in a more and more globalized competition.

We can so 'co-design' and 'co-develop' applications between partners: customer and supplier to meet the end customers ‘needs, by adopting the new modes of public / private collaboration. This will lead to the 'co-organization' of the new forms of governance, which are essential to guarantee the success of this new model in the time.

2.2 Aim and scope of the OASIS platform

With regard to the studies, it seemed important that OASIS answers the following objectives:

- Accompanying the creation of data repositories to favor their connection, their re-use in new web applications.
- Establishing mediation actions between the producers of data and the users, by favoring the implication of private companies for the creation of services using public data and co-built by the users.
- Creating an economic model which allows keeping the advantages of the mutualization already committed by other platforms of on-line public services.
- Planning hosting services for the citizens and companies, of general interest or of professional interest.
- Lowering the use costs of software for communities using them.

This is an "open" model, allowing to welcome all types of applications developed in open-source or proprietary. Since the publishers agree to respect a minimum of interoperability criteria, they will be hosted in a neutral environment, on the same tariff conditions, with the guarantee of keeping their visibility and the link with their public, professional, or particular customer.

For the user it is the guarantee to recover his data without exit cost when

changing from a provider to another or without exit cost from the OASIS platform, which is attractive.

2.2.1 OASIS is an interoperable data base

The philosophy of OASIS is situated in the intersection of the 2.0 applications web and data web (3.0). This project is based on the construction of data repositories which will allow to establish links between data of the proposed applications.

Usually segmented by business, by organization and by application, OASIS allows to break the silos of data by splitting logic and data of applications and by providing means to access, to contribute and to use these data.

Indeed, one of the objectives of OASIS is to constitute a public heritage of data, with data as open as possible with all the stakeholders having legally the right or the need to access to these data. It consists in the collaborative building of a common good.

The management of data and data repository allowing an understanding of these data by all applications is essential in OASIS. Interoperability between applications will be achieved by the use of a common description of data that mustn't be related to any specific business in order to be reused in all other sector of activity and by any kind of applications.

In addition to the storage of data and to a common data description model, the platform will have to define a language of queries on the stored data and to provide APIs to process them.

2.2.2 OASIS is a federation of services

OASIS allows to federate applications, provided as services over Internet by external suppliers, interconnected via shared data.

OASIS is the center of an ecosystem offering a wide and open range of services, giving the users the possibility of objectively choosing the services which suit them best.

OASIS will thus be composed of a single platform of federated data and services, including a complete catalogue of the available services for the end users and of available data for service providers.

Several levels of integration in OASIS will be thus gradually defined, with regard to the current market of software editors and the functional needs of the users.

2.2.3 OASIS is an advanced social network

One of the aim of OASIS is to encourage different users to contribute to the patrimony of data. This co-creation of the interoperable database will be done exclusively through the use of the federated applications whose users may be companies, public bodies, associations and citizens. Besides, company employees and civil servants are also citizens. The social network will manage the access rights in OASIS and allow users to manage their professional and personal life, relationships and relation with public and/or private organizations.

This social network thus integrates all types of real life relations between physical persons, but also integrates moral persons (communities, companies, associations, public bodies), and allows to manage the contractual or legal relations, as well as the related rights and delegations.

The features and mechanisms of this social network will be established in strong relation with the works on the management of personal data within the framework of the OASIS project (Task 1.3), as well as on the data and platform governance.

In addition to the need to propose a social network to futur new smart applications, one of its goal is to meet the user-centric foundation of the project by giving the keys to the user to create his own relationships and to define the terms.

2.2.4 OASIS takes advantage of « cloud computing »

OASIS takes advantage of Cloud Computing technologies to allow an efficient access from any Internet access, to control and to manage the required resources and their location.

The OASIS database will then be distributed over the cloud.

The cloud infrastructure and the cloud supervision will have to be managed under a comprehensive governance (Task 3.6).

2.2.5 OASIS is a smart and user friendly Graphical User Interface

On the user side, the available resources will be accessible thanks to a web portal, providing access to applications, available and qualified shared data, and tools to federate and manage applications.

The OASIS portal, the unique access point to resources, will have to provide a large set of features displayed in a user friendly manner with all the management and administration tools. The web interfaces of this portal will be detailed in the task 2.4.

2.3 Methodology

Requirements have been collected during dissemination activity on pilot sites by holding information meetings on OASIS, by making demonstration of the proposed services and exchange with end users.

Meetings were dedicated to public bodies including civil servants and elected people, gathering more than 120 participants in 13 meetings held on the five pilot sites.

Participants were duly informed about the goal of the project focusing on the five following issues:

OASIS is a ***federation of services***, ***interoperable*** thanks to ***shared data***, for an ***e-government*** towards ***cloud computing.***

These requirements also result from face to face with end users (citizens, civil servants) in informal exchanges and feedback about their daily activties and expectations.

Finally, service providers (OASIS partnets and subcontractors) were interviewed about the opportunity to share data managed so far within their applications and on the technical and functional implications of providing on-line services with remote and shared data.

In order to raise technical requirements from potential users, the adopted methodology is the one used by the W3C for its own projects and especially for the definition of platform of linked data[6].

This method has also been used with service providers of the OASIS consortium to make them express their expectations and will.

This methodology is divided into 3 steps:

- **User stories** capture statements about system requirements written from a user or application perspective. They are typically lightweight and informal and can run from one line to a paragraph or two (sometimes described as an 'epic') (Cohn 2004). The analysis of each user story reveals a number of (functional) use cases and other non-functional requirements.

The requirements collected have been ranked according to the **4-level MSCW** (MoSCoW) scheme (Business analysis guide 2009). This use of MoSCoW was first developed by Dai Clegg of Oracle UK Consulting (Clegg 2004 - Tierstein 1997)**.** The description of the four levels is as follows:

To identify the author of the requirements, we use the following notation:

- PB for Public Bodies and by extension their legal representatives: elected and IT Manager,
- CS for civil servants,
- SP for Service Providers,
- CZ for Citizen.

[6] http://www.w3.org/TR/2013/WD-ldp-ucr-20131031/

M – Must - the application must satisfy this requirement to be considered minimally functional.

S – Should - the application should satisfy this requirement to satisfy the essential needs of the users.

C – Could - the application could satisfy this requirement if there are sufficient resources.

W – Would - the application would satisfy this requirement if it were a perfect world and we could have everything we want.

- **Use cases** are used to capture and model functional requirements. Use cases describe the system's behavior under various conditions (Cockburn 2000), cataloging who does what with the system, for what purpose, but without concern for system design or implementation. A simple narrative style has been used to capture the use cases.

- **Requirements** list functional and non-functional or quality requirements, and the use cases they may be derived from.

A user story may lead to several requirements and several user stories may lead to a single requirement.

The interviews are focused on the following services to be provided and tested on the pilot sites.

		Pilot sites				
		Pôle Numérique	David Holding	EMDA	Turin Province	Blau Advisors
Services to be offered in Pilot B demonstration	"Archiland" A filing system for electronic documents	●				
	A user-centric citizen web portal of basic services	●	●			●
	"Ushahidi" A crowd-mapping application for public domain management	●	●			
	A software suite for the internal management of local public authorities (5 services)	●				●
	"INVPROM" Investment Promotion and Business Retention			●		
	"Data Collection" from Public and Local Authorities			●		
	City Planning	●			●	
	Mapping of territorial economic activities				●	●
	"OpenData" Platform that provides static and dynamic public data	●				
	Network of Alternative Tourism		●			
	Financial Management Software	●				

3 - Requirements

3.1 Archiland

The purpose of Archiland is to provide a way to archive digital documents via a web application.

The legal archiving is realized in three steps. The first phase is to set current archive documents directly into dedicated folders of an Alfresco content management system. Then, according to their legal retention period, documents are stored, in a SEDA format, successively into intermediate archive and ultimately in definitive archive with heritage value.

It uses :

- an Alfresco content management
- special meta data for current archiving
- repository for input
- method to post standard flow to third party (digital signature and so on)

Archiland deals with several kinds of contents and provides each specific classification scheme with:

- Dematerialized ACTS subject to judicial review
  - deliberation
  - annex deliberation
  - decree
- Dematerialized Procurement
  - Preliminary studies
  - notification
- Budgetary and accounting documents
  - PES procedure v2
- Pay
  - Dematerialized state of elements of pay

The following tables show the involved input and output data for the above mentioned use cases.

Process: Manage Archive's input via web application and API
INPUT DATA (required)
Documents (deliberations, arrested, annexes, etc.) - Any kind of file can be considered as a document (.doc, .docsx, .pdf, ...)

Metadata that describe each document provides as input : Duration of administrative usefulness, Communicability, DUA start date, Communicability start date, final fate. Metadata are handled via a web formula or via a xml file (PES).
OUTPUT DATA (produced)
SEDA package

Table 1 : Input and output data for the Archiland service

3.1.1 User stories

3.1.1.1 Authenticate to Archiland

[CS] US1-M. The authentication to Archiland must be the same as the OASIS platform, giving appropriate rights to agents that are qualified or not.

3.1.1.2 Documents upload

[CS] US2-S. Agents of the Public Bodies (PB) access to an upload service (can be the OASIS portal) to transmit documents to the archiving system (Alfresco folders).

3.1.1.3 Documents archive

[CS] US3-S. Through the OASIS portal, qualified agents should be alerted of documents ready to be archive (intermediate and final) regarding their typologies and the date of use.

3.1.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC1-M. Authentication and user account (US1-M)

Archiland uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

User roles (qualified agent or not) and related rights within Archiland are business data that don't need to be manage by the authentication.

This module allows the user to create an account directly if he doesn't have one already.

UC2-S. Transmission of documents for archiving (US2-S)

An Archiland API allows an OASIS user to transmit documents to be archived from the OASIS portal. The user selects the type of document, the document itself and can populate the main metadata.

UC3-S - Display archivable documents by typology (US3-S)

The archiland application provides an API to access the list of documents ready for archiving. This list is linked to the user rights and to the definition of documentary spaces it has access to.

Archiland should notify qualified agents of a document to be archived without having to open the list.

3.1.3 Requirements

3.1.3.1 Functional Requirements

FR1-M. The OASIS portal must allow users to authenticate their access to the OASIS system including the applications he is allowed to use (UC1-M).

FR2-S. Archiland must allow the OASIS users to perform archiving actions through the portal (UC2-S).

FR3-S. Archiland must provide the OASIS platform an API for the allowed users to access the data it manages (UC3-S).

FR4-S. End date of Duration of administrative usefulness should be trigger to launch a user notification (UC3-S).

3.2 Citizen web portal Service

This application consists in a portal gathering several basic on-line citizen requests on a front office (e.g.: request for a building permit, registration on voter lists, declaration of an environmental incident ...) and tools in a back-office for the pre-treatment of these requests. After validation of the requests, they are usually processed in dedicated business applications.

Process:	citizen request
INPUT DATA (required)	
Information populated by the citizens including personal data	
OUTPUT DATA (produced)	
Citizen requests with metadata describing the type of request and its status	

Table 2 : Input and output data for the citizen web portal

3.2.1 User stories

3.2.1.1 Selection of the service by public bodies

[PB] US4-S. Public Bodies aim at providing online services to their citizens. The OASIS application store should display the type of citizen requests or propose a set of citizen requests.

3.2.1.2 Service settings

[PB] US5-M. The citizen online services must be available through the OASIS portal and also on the public bodies' website.

[PB] US6-M. According to the size of PB and the type of citizen service, there may be several civil servants who have to process citizen requests. The system must allow to assign citizen requests to specific civil servants.

[CS] US7-S. The civil servants concerned should be informed that a citizen request has to be processed without opening the application.

3.2.1.3 Citizen access to the service

[CZ-PB] US8-S. Citizens can access the whole set of possible requests through the website of the PB or directly the desired form from the OASIS portal without having to authenticate.

[PB] US9-S. Citizens accessing the application may not have an OASIS account. They should be able to create their account through the application without having to go to the OASIS portal.

3.2.1.4 Citizen personal data

[CZ] US10-M. For his requests, the citizen must be able to record personal data and his digital documentation so he can reuse them for all new requests with any other PB using may be another application of on-line citizen services.

[CZ] US11-M. Stored personal data must be adapted to every citizen requests, as some administrative forms require significant level of details like the address break down into: type of road (street, avenue ...), number on the road, name of the road, name of the building, level in the building ...

3.2.1.5 Citizen request

[CZ] US12-S. On OASIS, the citizen should easily find all the requests he can do, whatever the PB who provides it. This list must be automatically updated, whenever a new type of request is proposed to this citizen.

[CZ] US13-S. Citizens should have access to their digital documents and provide them for any kind of request made by any kind of citizen portal.

3.2.1.6 Treatment of a citizen request

[PB] US14-M. According to the PB and to the type of citizen requests, these requests may be processed by different civil servants entirely in the back-office or thanks to a dedicated business application.

[CZ] US15-S. Throughout the treatment process, the citizen should be informed of the progress of his request.

3.2.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC4-M. Authentication and user account (US5-M, US8-S, US9-S, US13-S)

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

This module allows the user to create an account directly if he has not one already.

UC5-M. Management of personal data (US10-M, US11-M)

The reuse of personal data implies that data are stored securely, and that they can be accessed via applications only if authorized by the owner of these data (Privacy requirements D1.31).

In the perspective of a massive reuse of personal data by the greatest numbers of forms and applications, the granularity of information stored must be as thin as possible.

After having completed forms of on-line citizen requests, the citizen must be able to update his personal data stored in OASIS.

Consequently, application that have not the necessary granularity of the information cannot have the writing permission on stored personal data.

The OASIS system must provide an API to read, add, create personal data (under a secure user validation). The system must manage, occasionally or for a preset time, the access to a set of personal data by an application.

UC6-M. User management (US6-M, US14-M)

The application must have access and retrieve from OASIS the list of civil servants (potential users) of the PB which have selected the application, to enable the IT-Manager to assign citizen requests to concerned civil servants.

An application asks the OASIS system for a list of persons working for the PB. The system answer providing user IDs and personal data authorized by users considering the application.

The application must ask the OASIS system on behalf of a user who has delegation from the PB concerned (role of the IT-Manager).

UC7-S. Digital safe (US13-S)

The digital safe, containing user documentation, must be searchable by all types of applications (to upload and download files) with a high level of security.

The digital safe should be considered as a separate application rather than a feature of the OASIS system. Users should be able to choose between several offers.

Pending digital safe applications with advanced security level (encryption), OASIS should provide users with a storage space.

UC8-M. Available on-line citizen services on OASIS portal (US5-M, US8-S, US12-S)

Each basic on-line service should be considered as a separate application. Each of these small application is assigned to a geographic coverage related to the PB which provide these on-line services.

The OASIS portal must display the list of all on-line services available to the connected user thanks to the knowledge of his place of residence. The user will thus see and access to the on-line services provided by the PB he belongs to.

The OASIS portal must know the list of PB related to a place of residence (business functionality to be implemented in the portal). The portal queries the OASIS system to retrieve the list of on-line services provided by all the PB concerned, and display it on the portal.

Each on-line service displayed on the portal is linked to the right form of the right application.

UC9-M. User notification (US6-M, US7-S, US14-M, US15-S)

The global system (OASIS + applications) must allow the users (citizen and civil servant) to be notified.

An application may send a notification to an application in the downstream business process, passing this notification to the OASIS system which determines to which application it must be sent. The OASIS system must know business process.

An application may send a notification to a user passing this notification to the OASIS system which applies the user preferences to transmit the notification.

The OASIS portal must have access to the ongoing notifications to display them to the user.

UC10-M. Shared data and data status (US10-M, US11-M, US14-M, US15-M)

Apart from the personal data, shared data required to operate OASIS and applications are the different types and level of PB with their geographical coverage. The city is chosen as the smallest level of Public Authority. The geographical coverage is related to the city + zip code, or a group of zip codes.

In order to benefit from interoperability between different citizen portals and that citizen requests can be processed by business applications, citizen requests must be stored and shared in the OASIS system.

A processing status must be assign to citizen requests enabling the OASIS system to notify users and applications. and allowing applications to know if a citizen request has to be processed. Status are business attribute that has to be established by applications.

3.2.3 Requirements

3.2.3.1 Functional Requirements for the OASIS portal

FR5-M. The OASIS portal must know all the PB related to a city (UC8-M)
FR6-M. The OASIS portal must allow users to authenticate to the OASIS system (UC4-M)
FR7-M. The OASIS system must give access to the account creation module (UC4-M)
FR8-M. The OASIS portal must give access to the management of personal data (UC5-M)

3.2.3.2 Functional Requirements for the OASIS system

FR9-M. The OASIS system allows to store data : business data, metadata, documents, semantic, ontologies ... (UC5-M, UC10-M)
FR10-M. The OASIS system manages access rights to data (UC4-M, UC5-M, UC6-M, UC7-S, UC10-M)
FR11-M. The OASIS system allows to read data (UC5-M, UC10-M)
FR12-M. The OASIS system allows to modify and to delete data (UC5-M, UC10-M)
FR13-M. The OASIS system allows to define relationship graph between users, between entities and between users and entities (UC6-M, UC8-M)
FR14-M. The OASIS system allows to manage access right to read through these relations (UC6-M, UC8-M)
FR15-M. The OASIS system contains a standardized description of business processes (UC9-M)
FR16-M. The OASIS system determines the routing of a notification to a downstream application (UC9-M)

3.2.3.3 Non Functional Requirements for the OASIS system

NFR1-M. The authentication module must ensure that an application cannot intercept the passwords (UC4-M)

NFR2-M. The login ticket passed on must be tamper-proof (UC4-M)

3.3 Ushahidi

The Ushahidi application is composed of :

- the crowdsourcing: end users (citizens) are able to contribute by submitting a geolocated report. This report contains the following information: a title (free text), a description (free text), a category (among categories predefined by the administrator), a geo-location (GPS format), and possibly a picture. The report may be sent thanks to the Ushahidi mobile application, by SMS, by tweeter or through the user web interface.

- the administration : A web instance allowing the entity wishing to supply this service to OASIS users to set the application according to the topic at hand, to moderate the citizens reports and to display them on a map.

The following table shows the involved input and output data.

Process:	Citizen report
INPUT DATA (required)	
Information provided by citizens: • a title (free text) • a description (free text) • a category (among a predefined list) • a picture (optional) • a location (automatic with GPS or manually fulfilled) • Name of the reporter (optional)	
OUTPUT DATA (produced)	
The input data fulfilled by citizens plus the following associated metadata: • a date • the geolocated reporter • status of the report (initial) • Chanel used to submit (SMS, twitter, mobile application, web interface, e-mail)	
Static data used	

Table 3 : Input and output data for the Ushahidi service

3.3.1 User stories

3.3.1.1 Selection of the application by an OASIS user

[PB] US16-S. When selecting the Ushahidi application in the OASIS store, public bodies wish to assign automatically the service to their citizens.

3.3.1.2 Service settings

[PB-SP] US17-M. For interoperability of the reports, public bodies must benefit from existing templates (from other public bodies) with common categories per type of map.

[CS] US18-S. Civil servants should be notified of the submission of report to validate.

3.3.1.3 Citizen access to the service

[PB] US19-M. The Ushahidi user web interface displaying the map with reports is in public access, but citizens must be identified (OASIS users) if they wanted to submit a report.

[CZ] US20-S. Through the OASIS portal, the service should be automatically available to the concerned citizens, whatever the public body who provides it.

3.3.1.4 Shared report

[PB] US21-S. Geolocated reports may be reused by other applications such as GIS ones. The information to be reused should include the status of the report (validated or not by civil servants through the Ushahidi back-office).

3.3.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC11-M. Authentication and user account (US16-S, US19-M, US21-S)

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data). This module allows the user to create an account directly if he has not one already.

UC12-M. User management (US18-S, US19-M, US21-S)

When selecting the application from the OASIS store, the IT-manager should be able to assign it to one or more civil servants. The application must have access and retrieve from OASIS the list of selected civil servants.

The application must know the location (zip code + city) of the citizen to allow him to make a report.

UC13-S. Available service on OASIS user interface (US16-S, US20-S)

The back-office of Ushahidi must be accessible from the OASIS civil servant interface and the link to the front-office should be display on the OASIS interface of the citizens belonging to the public body who provide it.

When a user connects on OASIS, the portal must retrieve his location (zip code + city) to know which service to display (in case of a citizen) and the entity he works for to know the application his It-manager assigned him (in case of civil servant).

The OASIS portal must know the list of PB related to a place of residence (business functionality to be implemented in the portal). The portal queries the OASIS system to retrieve the list of on-line services provided by all the PB concerned, and display it on the portal.

UC14-M. Shared data and status (US17-M, US21-S)

In order to be reused, a citizen report must be described with understandable vocabulary including the name of the map and the categories.

The Ushahidi application must be able to update the shared reports with new ones and/or with already existing reports with a different status (they may have been validated by civil servants in the meantime). The processing status metadata inside Ushahidi is a shared data in OASIS.

UC15-S. User notification (US18-S)

The global system (OASIS + applications) must allow the users (citizen and civil servant) to be notified.

The OASIS portal must have access to the ongoing notifications to display them to the appropriate user.

3.3.3 Requirements

3.3.3.1 Functional Requirements for the OASIS portal

FR17-S. The OASIS portal must know all the PB related to a city (UC13-S)
FR18-M. The OASIS portal must know the entity the user works for (UC12-M, US18-S)
FR19-M. The OASIS portal must have access to the applications of an entity, and the related allowed users (UC18-S, UC12-M, UC15-S)
FR20-S. The OASIS portal must have access to the notification system (UC15-S)

3.3.3.2 Functional Requirements for the OASIS system

FR21-M. The OASIS system allows to store data : business data, metadata, semantic, ontologies ... (UC14-M)
FR22-M. The OASIS system allows to read and modify data (UC14-M)
FR23-M. The OASIS system allows to define relationship graph between users, between entities and between users and entities (UC12-M, UC13-S)
FR24-M. The OASIS system allows to manage access right to write through these relations (UC12-M, UC13-S)
FR25-M. The OASIS system contains a standardized description of map's name and categories (UC14-M)
FR26-S. The OASIS system determines the routing of a notification (UC15-S)

3.3.3.1 Non Functional Requirements for the OASIS system

NFR3-M. The OASIS system must work under a governance that states the standardized description of shared data (UC14-M).

3.4 Open Cimetière

The aim of OpenCimetiere is to manage burial plots, deceased people, rightful owners in a cemetery. It also handles funeral activities and helps to generate legal documents.

Burial plots can be geo-located and displayed on a dynamic map.

OpenCimetiere is an open-source (GPL) web application mostly maintained by atReal together with the city of Arles. It is part of the OpenMairie applications suite.

Process:	Someone wants to rent a burial plot
INPUT DATA (required)	
Information concerning the person : • name • surname • title • address (must be in the city)	
OUTPUT DATA (produced)	
Mail (concession act, may be stored in an OASIS Data Repository for all acts – may be stored in a Data Repository for any mail, incoming and outgoing, of the city)	
Shared data	
Cemetery information (location, shape, burial plots) and dead people	

Table 4 : Input, Output and shared data for the openCimetiere application

3.4.1 User stories

Update of a burial plot. Exposition in OASIS of Burial plots, rightful owners and deceased people. Possible use by another application.

3.4.1.1 Access to the service

[PB-CS] US22-M. On the OASIS user interface, the allowed agent clicks on the OpenCimetiere application and is automatically logged in and recognized with his access rights. He accesses the main panel and clicks on the menu and accesses the burial plots list.

3.4.1.2 Share and Update of the burial plot

[PB-SP] US23-M. The agent accesses the burial plot and updates its data. That may concern :

- deceased people in this burial plot,
- an update of the status of the construction itself, (current state of the building, deadline reached, etc.),
- an update of rightful owner informations.

The updated data is pushed automatically to OASIS Data Repository.

These data may be used by another application in order to create new services.

[SP] US24-C. As new service, reusing the shared data, it could be possible to search within a "deceased people localizer" application, where a member of the family is buried. This may be useful when someone does not know the location of the deceased person but looks for it, for example after a genealogy search.

This "deceased people localizer" would allow to make a research within all the cities that are connected to OASIS, whatever application they use. This would allow to provide a new service that wouldn't be possible otherwise.

3.4.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC16-M. Authentication and user account (US22-M)

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

UC17-M. User management (US22-M)

The application must have access and retrieve from OASIS the list of agents that have access to OpenCimetiere for the Public Body.

Some of these users must be sent to OpenCimetiere with a specific access right (Administrator) that allows it to manage other users' access profile.

UC18-M. Shared Data and personal data (US23-M, US24-C)

OASIS must provide access to data repositories. In that case, OpenCimetiere is the only data provider for Cemetery data for the dedicated Public Body. It is the only application that is allowed to insert/update/delete data in this data repository for this Public Body. The OASIS system must provide an API dedicated to applications in order to access and update data, with a security mechanism.

OASIS must manage access rights in order to respect local laws.

As shared data contain personal data (name of the dead people), their reuse must be compliant local laws.

3.4.3 Requirements

3.4.3.1 Functional Requirements for OASIS system

FR27-M. The OASIS system allows to store data (UC18-M)
FR28-M. The OASIS system manages access right on data (UC16-M, UC18-M)

FR29-M. The OASIS system allows to read data (UC18-M)
FR30-M. The OASIS system allows to modify and to delete data (UC18-M)

3.4.3.2 Non Functional Requirements for OASIS system

NFR4-M. The access and reuse of shared data containing personal data must be managed by local governance to comply local laws (UC18-M).

3.5 Open Elec

The aim of OpenElec is to manage Voter lists in the city. OpenElec handles all the activity of the electors:

- subscription to electoral roll of the city
- application for deregistration
- application for personal changes (matrimonial or address changes)
- proxy
- vote for/into a foreign country
- european voters

OpenElec is a tool dedicated to the city agent and helps to manage:

- commissions that validate the citizen requests
- links with the official services (INSEE, Prefecture)
- Processes of requests in order to apply them on the official electoral list
- Documents for elections
- Statistics

OpenElec is an open-source (GPL) web application mostly maintained by atReal. It is part of the OpenMairie applications suite.

The application can be combined with an on-line registration form provide by a citizen web portal.

Process:	pre-registration of a citizen as elector of the city
INPUT DATA (required)	
Information concerning the citizen : • name • surname • title • sex • address into the city • mail address if different • birth date • birth city • coming from city (if available) • ID Card (scan) • proof of location into the city (scan)	
OUTPUT DATA (produced)	
Elector number	
Elector card	
SHARED DATA	
Polls list : polls name and location + number of citizens attached to it	
Electors list of the city, per poll	

Table 5 Input and output data for the OpenElec service

3.5.1 User stories

Processing of a citizen request (Request to be considered as an elector of a Public Body) into OpenElec.

3.5.1.1 Pre-requisite

[PB-CS-SP] US25-M. A citizen connects to OASIS and asks to vote in the city. He has filed a form through a citizen web portal and has loaded his personal evidence (scans loaded into OASIS and stored in a secure storage).

[SP] US26-M. OASIS notified OpenElec of a request to process and OpenElec automatically retrieves the request and the related data.

3.5.1.2 Connexion of an agent in charge of the management of voter lists

[CS-PB] US27-M. An agent, member of the Public Bodies connects to OASIS using its credentials. He is identified as a member of the Public Body having an access to OpenElec if he has been allowed by the IT-manager.

3.5.1.3 Access to the service

[CS] US28-M. The agent is notified as having a pending request for OpenElec.

He clicks on the OpenElec application and is automatically logged in and recognized with his access rights. He accesses the main panel and clicks on the menu “Process web requests”.

3.5.1.4 Process and notification

[CS] US29-M. The agent checks the data retrieved and validates or invalidates the request.

The request is considered as “valid” as far as all the requested information is provided, either valid or not. The official commission analyses the request validity in a second step and accepts or rejects the request.

- If the request is not valid, it is discarded from OpenElec and a notification of invalid request is sent back to OASIS.

- If the request is valid, an internal movement is created into OpenElec for complete processing and a notification that the request is taken into account is sent back to OASIS.

- If the request is accepted then a notification is sent back to OASIS.

- If the request is rejected, a notification is sent back to OASIS with a certificate.

[CS-PB] US30-M. When the official processing date is reached, the request is processed into OpenElec. The update voter list is pushed to an OASIS data repository. This data repository may be used by other applications that will be consumer’s data. These applications will have restricted access to this data regarding local restrictions enforced by local laws.

3.5.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC19-M. Authentication and user account (US27-M, US28-M)

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

UC20-M. Management of personal data (US25-M, US29-M, US30-M)

The reuse of personal data implies that data are stored securely, and are accessed by applications only if authorized by the law in force locally (Privacy requirements D1.31).

OpenElec must have access to the personal data provided by the citizen and for which the citizen has granted the access to the public body.

UC21-M. User management (US27-M, US28-M)

The application must have access and retrieve from OASIS the list of agents who have access to OpenElec.

Some of these users must be sent to OpenElec with a specific access right (IT-manager) that allows them to manage other users' access profile.

UC22-M. User and application Notification system (US26-M, US28-M, US29-M, US30-M)

OASIS must provide a notification system that is used both from OASIS to an application and from the application to OASIS.

OASIS must provide a user notification system of pending tasks (civil servants) or information on the status of their request (citizen).

UC23-M. Data repositories and shared data

OASIS must provide access to data repositories. In that case, OpenElec is the only data provider for voter lists for the dedicated Public Body. It is the only application that is allowed to insert/update/delete data in this data repository for this Public Body.

OASIS must manage access rights in order to respect local laws.

The reuse of voter lists, including personal data, must be compliant to the local law in force.

3.5.3 Requirements

3.5.3.1 Functional Requirements for the OASIS portal

FR31-M. The OASIS portal must be able to notify concerned agents that requests are pending in an application he has access to (UC22-M).
FR32-M. The OASIS portal must notify citizens of every status of his request (UC22-M).

3.5.3.2 Functional Requirements for the OASIS system

FR33-M. The OASIS system allows to store data (UC23-M)
FR34-M. The OASIS system manages access right to data (UC21-M, UC23-M)
FR35-M. The OASIS system allows to read data (UC21-M)
FR36-M. The OASIS system allows to modify and to delete data (UC23-M)
FR37-M. The OASIS system determines the routing of a notification to a upstream application (UC22-M)
FR38-M. The OASIS system allows to have a follow up on a notification that included a process status (UC22-M)

3.5.3.3 Non Functional Requirements for the OASIS system

N**FR5-M.** The OASIS shared data must be managed in accordance with local governance to comply national legislations (UC23-M).

3.6 Environmental Incidents

This application consists in software allowing Public Bodies to manage the process of resolution of incidents reported by citizens related to the environmental services. The software may be combined with a dedicated form of the citizen portal as well allowing citizens to report such incidences.

Process:	Processing a citizen request
INPUT DATA (required)	
Information provided by citizens : • Technical key • Location (address, municipality, geo-coordinates) • Incident description (category, description, pictures) • Incident resolution (root cause, applied solution) • Reporter (user)	

Table 6 : Input data for the Environmental incidents application

3.6.1 User stories

3.6.1.1 Pre-requisite

[PB-CS-SP] US31-M. A citizen connects to OASIS and declares an environmental incident by filing a form on the citizen web portal.

[SP] US32-M. OASIS system notified the application of a citizen report to process and Environmental Incidents automatically retrieves the report and the related data.

3.6.1.2 User of the service

[PB] US33-M. According to the size of PB and the type of environmental services there are three main groups of actors in the service provision:

- Citizens: Accessing through the citizen portal informs the PB on the occurrence of the incidents.
- Civil servants acting as incident communicators: They can access to the BPM or to the citizen portal to communicate the occurrence of an incidence. They have been allowed by the IT-manager when selecting the application from the OASIS store.
- Civil servants acting as contributors to incident resolutions: they can access trough the citizen portal (they see the incidence as open) or through the BPM. They have been allowed by the IT-manager when selecting the application from the OASIS store.
- In some cases, PBs deliver environmental services subcontracting it to external companies (ECs). ECs with the concession of service provision must answer to the requests of the PB for solving and communicating the resolution of the incidence. They interact with the services through the BPM.

3.6.1.3 User account and role

[PB-SP] US34-M. All of users (except ECs) must have an OASIS account (if it does not exist prior to the participation the systems will ask Oasis to create a new one).

[PB] US35-M. The system must allow to assign citizen report to a specific civil servant.

[CS-PB] US36-S. The civil servant must contact the subcontractor if needed and then the subcontractor should be informed that a request has to be processed without opening the application (this transaction will be in the hands of the BPM exclusively).

3.6.1.4 Access to the service

[CS] US37-M. The civil servant concerned should be informed that a citizen request has to be processed without having to open the application.

[CS] US38-M. He clicks on the Environmental Incidences application and is automatically logged in and recognized with his access rights. He accesses the main panel and clicks on the menu “Process web requests”.

3.6.1.5 Treatment of an incidence resolution request

[CS] US39-M. According to the type of incidence a single instance must be treated using the correct process implemented on the BPM.

[CS] US40-M. The environmental incidences management treatment will generate notifications to the citizens, ECs (through BPM) and to the civil servants in order to let them know the need of interaction with the citizen portal or with the BPM.

3.6.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC24-M. Authentication and user account (US33-M, US34-M, US38-M)

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

UC25-M. User management (US33-M, US34-M, US35-M, US36-S, US38-M)

The application must have access and retrieve from OASIS the list of agents who have access to Environmental Incidences.

Some of these users must be sent Environmental Incidences with a specific access right (IT-manager) that allows them to manage other users' access profile.

UC26-M. User and application Notification system (US32-M, US40-M)

OASIS must provide a notification system that is used both from OASIS to an application and from the application to OASIS.

OASIS must provide a user notification system of pending tasks (civil servants) or information on the status of their request (citizen).

UC27-M. Data repositories and shared data (US31-M, US39-M, US40-M)

OASIS must provide access to citizen requests that are shared data.

OASIS must allow an application (Environmental Incidences) to modify the status of a request create by another application (Citizen Web portal).

3.6.3 Requirements

3.6.3.1 Functional Requirements for the OASIS portal

FR39-M. The OASIS portal must be able to notify concerned agents that requests are pending in an application he has access to (UC22-M).
FR40-M. The OASIS portal must notify citizens of every status of his request (UC26-M).

3.6.3.2 Functional Requirements for the OASIS system

FR41-M. The OASIS system allows to store data (UC27-M)
FR42-M. The OASIS system manages access right to data (UC25-M)
FR43-M. The OASIS system allows to modify and to delete data (UC27-M)
FR44-M. The OASIS system allows to have a follow up on a notification that included a process status (UC26-M)

3.7 Public Purchase Management

This application consists in software interacting with a citizen portal in order to manage the purchases made by a Public Body allowing to interact with the providers and to manage the purchases according to the law. The service uses two main tools (the citizen web portal and the Business Process Management Tool (BPM).

Process:	Respond to a public tender
SHARED DATA	
Information on the public tender : • Technical key • Type of process • Tender description (category of purchase, estimated price, clearing price, contractor) • Public body • Tender events • Participants (companies) • Related documents	
INPUT DATA (required)	
Information on the tenderer company : • Technical key • Name • VAT Number • Location (address, municipality, geo-coordinates) • Activities (NACE codes) • Contact person (Name, Tel, e-mail) • Legal representatives • Bid (price, related documents)	

Table 7 : Input and shared data for the Public Purchase Management application

3.7.1 User stories

3.7.1.1 Settings of the service

[PB] US41-M. Public Bodies (PB) wish to publish purchasing needs and ask the providers to bid for the purchases on their website.

[PB-CS] US42-M. All the areas of the PB take part in the purchasing processes and it is mandatory to create for each single purchasing procedure (PPr) a contracting table including:

- Technical representative of the area initiating the purchase
- A member of the board of managers
- Administrative representative

- Controller or similar
- Elected (Depending on the type of body and/or the type of purchase)

[PB-CS] US43-M. The system must allow to assign roles in the processes to specific civil servant.
[CS] US44-M. The civil servant concerned should be informed about the assignment and that a citizen request has to be processed without opening the application.

3.7.1.2 Purchase petition

[CS] US45-M. A civil servant belonging to a functional area of the PB starts a PPr by accessing to a form in the BPM that will trigger the creation of the contracting table.

[CS] US46-M. The initiator and the members must have an OASIS account.

[CS] US47-M. From the OASIS portal the members will access to the initiation of the purchase and to the related notifications.

[CS] US48-S. A civil servant should be able to reuse other previous purchases information.

[PB] US49-M. The PPr must be published also in one specific area of the PB website.

3.7.1.3 Tenderers access to the service

[PB] US50-M. Participants in public tenders should be able to access to the information of the purchase by invitation or by their own decision. The providers must be able to:

- Answer to the purchase petition
- Answer to any clarification request made by the PB during the PPr.
- Exercise their rights in order to retrieve information, access to documents of the PPr and/or appeal to the decision of the Contracting Table

[PB-CS] US51-M. These actions must generate notifications in OASIS portal.

[CZ-PB] US52-S. Tenderers accessing the application may not have an OASIS account. They should be able to create their account through the application without having to go to the OASIS portal.

[CZ-PB] US53-M. Providers should be natural or legal persons. In the case of legal persons one or more natural persons should be able to access to the data of the activities made in the platform on behalf of the legal person.

3.7.1.4 Bidding data

[CZ] US54-S. For his bids, the tenderer should be able to record data and his digital documentation so he can reuse them for all new requests with any other PB in the correspondent PPr.

3.7.1.5 Treatment of a PPr

[PB-CS] US55-M. According to the type of PPr each single instance must be treated using the correct process implemented on the BPM.

[CS-CZ] US56-S. The PPr treatment should generate notifications to the tenderer and to the members of the contracting table in order to let them know the need of interaction with the BPM.

3.7.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC28-M. Authentication and user account (US41-M, US46-M, US52-S)

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

This module allows the user to create an account directly if he has not one already.

UC29-M. Management of tender data (US42-M, US47-M, US48-S, US49-M, US50-M, US55-M)

The reuse of provided data implies that data are stored securely, and are accessed by applications only if authorized by the owner of these data (Privacy requirements D1.31).

After having populated forms of on-line PPr requests, the user must be able to update his data stored in OASIS.

The OASIS system must provide an API to read, add, create tender data (under a secure user validation). The system must manage, occasionally or for a preset time, the access to a set of personal data by an application.

UC30-M. User management (UC43-M, US53-M)

The application must have access and retrieve from OASIS the list of civil servants (potential users) of the PB that have selected the application, to enable the IT-Manager to assign the application to the relevant civil servants.

An application asks the OASIS system a list of persons working for the PB. The system answers providing user IDs and personal data authorized by users considering the application.

The application must ask the OASIS system on behalf of a user that has delegation from the PB concerned (role of the IT-Manager).

As tenderer, natural and legal persons must be described with the type of relationship in the user social graph.

UC31-S. Digital safe (US54-S)

The digital safe, containing user documentation, must be searchable by all types of applications (for upload and download files) with a high level of security.

The digital safe should be considered as a separate application rather than a feature of the OASIS system. Users should be able to choose between several offers.

Pending digital safe applications with advanced security level (encryption), the OASIS will provide users a storage space.

UC32-M. Available on-line public tender on OASIS portal (US47-M, US50-M)

The result is a single service for each PB that has a worldwide coverage. Local purchases are open to any company in the world having the required technical and financial capabilities.

The OASIS portal should display the list of all PB using online channel for managing PPr. The OASIS portal should list the current PPr belonging to the PBs using the service. The PORTAL must display the elements in the list to the correct forms belonging to the respective PBs.

The creation of a public tender triggers a new service on the OASIS user interface of companies.

UC33-M. User notification (US44-M, US47-M, US51-M, US56-S)

The global system (OASIS + applications) must allow the users (providers and civil servant) to be notified.

An application may send a notification to a user via the OASIS system which applies the user preferences to transmit the notification.

The OASIS portal must have access to the ongoing notification to display them to the user.

An application may update the notifications.

UC34-M. Shared data and data status (US45-M, US55-M)

A processing status must be assigned to PPr requests enabling the OASIS system to notify users and applications, and allowing applications to know if a PPr action request has to be processed. Status are business attributes that have to be established by applications in accordance with the different national legislation.

3.7.3 Requirements

3.7.3.1 Functional Requirements for the OASIS portal

FR45-M. The OASIS system must give access to the account creation module (UC28-M, UC30-M).
FR46-M. The OASIS portal must give access to the management of providers' data (UC29-M, UC31-S).
FR47-M. The OASIS portal must display the user (citizen/company, civil servant) notification (UC33-M).
FR48-S. The OASIS portal should display public tenders as services available to companies. (UC33-M)

3.7.3.2 Functional Requirements for the OASIS system

FR49-M. The OASIS system allows to store data : business data, metadata, semantic, ontologies ... (UC29-M, UC34-M)
FR50-M. The OASIS system allows to read data (UC29-M, UC34-M)
FR51-M. The OASIS system allows to modify and to delete data (UC29-M, UC34-M)
FR52-M. The OASIS system allows to define a relationship graph between users, between entities and between users and entities (UC30-M)
FR53-M. The OASIS system allows to manage access rights to read through these relations (UC30-M).
FR54-M. The OASIS system contains a standardized description of business processes (UC34-M).
FR55-M. The OASIS system determines the routing of a notification to the relevant user (UC33-M)
FR56-M. The OASIS system should allow the applications to create and update notifications to users (UC33-M)

3.7.3.3 Non Functional Requirements for the OASIS system

NFR6-M. The metadata model (status) of a public tender must be able to comply every national procedure (UC34-M).

3.8 Subsidy management

This application consists in a software interacting with a citizen portal in order to manage the process of award of subsidies and grants made by a Public Body. The service uses two main tools, the citizen web portal and the Business Process Management Tool (BPM).

Process:	Respond to a public tender
SHARED DATA	
Information on the subsidies : • Technical key • Subsidy description (amount, eligibility, description, intensity) • Public body (name)	
INPUT DATA (required)	
Request for subsidy : • Type of subsidy • Status • Person (Name, VAT Number) • Location • Contact person • Legal representative • Support documents	

Table 8 : Input and shared data for the Subsidy Management application

3.8.1 User stories

Public Bodies (PB) aim at interacting with users using online tools for managing the award of grants and subsidies. The OASIS application store should provide the different types of grants to be offered by the PB. Each concrete grant must appear for the citizen as a single application (citizen web portal).

3.8.1.1 Settings of the service

[PB] US57-M. According to the size of the PB and the type of citizen service, there may be several civil servants who have to process citizen/company requests. The system must allow to assign citizen/company requests to a specific civil servant. The civil servant concerned should be informed that a citizen/company request has to be processed without opening the application.

3.8.1.2 Citizen access to the service

[CZ-PB] US58-S. Citizens can access the application or directly the online service from the OASIS portal and also through the website of the PB.

[CS-CZ] US59-S. Citizens accessing the application may not have an OASIS account. They should be able to create their account through the application without having to go to the OASIS portal.

3.8.1.3 Citizen personal data

[CZ] US60-S. For his requests, the legal representative must be able to record personal data and his digital documentation so he can reuse them for all new requests with any other PB using another application of on-line citizen services.

[CS] US61-M. Stored personal data must be adapted to every citizen requests, as some administrative forms require significant level of details like the address break down into: type of road (street, avenue...), number on the road, name of the road, name of the building, level in the building ...

3.8.1.4 Citizen request

[PB-CZ] US62-M. The citizen must easily find all the applications he can do in OASIS, whatever the PB which provides it. This list must be automatically updated, whenever a new type of subsidy is offered to this citizen.

[CZ] US63-S. Citizens must have access to their digital documents and provide them for any kind of request provided by any kind of citizen portal.

3.8.1.5 Treatment of a subsidy request

[CS] US64-M. According to the type of subsidy a single instance must be treated using the correct process implemented on the BPM.

[SP] US65-S. The application should be notified of a pending request made through the citizen web portal to retrieve it from the OASIS system.

[CS-CZ] US66-M. The subsidies management treatment will generate notifications to the citizens and to the civil servants in order to let them know the need of interaction with the citizen web portal or with the BPM, and for any change of the request status.

3.8.2 Use cases

The following use cases are each derived from one or more of the user stories above. These use cases are explored in detail through the development of scenarios, each motivated by some key aspect exemplified by a single user story.

UC35-M. Authentication and user account (US57-M, US59-S)

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

This module allows the user to create an account directly if he has not one already.

UC36-M. Management of personal data (US60-S, US61-M, US61-M)

The reuse of provider data (citizen and/or legal representative of a company) implies that data are stored securely, and are accessed by applications only if authorized by the owner of these data (Privacy requirements D1.31).

After having populated forms of on-line subsidy requests, the provider must be able to update his data stored in OASIS.

The OASIS system must provide an API to read, add, create providers data (under a secure user validation). The system must manage, occasionally or for a preset time, the access to a set of personal data by an application.

UC37-M. User management (US57-M, US64-M)

The application must have access and retrieve from OASIS the list of civil servants (potential users) of the PB which has selected the application, to enable the IT-Manager to assign citizen requests to concerned civil servants.

An application asks the OASIS system the list of allowed persons working for the PB. The system answer providing user IDs and personal data authorized by users considering the application.

UC38-S. Digital safe (US60-S, US63-S)

The digital safe, containing user documentation, must be searchable by all types of applications (to upload and download files) with a high level of security.

The digital safe should be considered as a separate application rather than a feature of the OASIS system. Users should be able to choose between several offers.

Pending digital safe applications with advanced security level (encryption), the OASIS will provide users a storage space.

UC39-S. Available subsidies on OASIS portal (US58-S, US62-M)

Available subsidies must be display as a service on the OASIS portal of the user concerned. The eligibility criteria of each type of subsidies should be able to address the service to the relevant users : geographical area (for companies and citizen) and/or activity sector (for companies).

UC40-M. User notification (US66-M)

The global system (OASIS + applications) must allow the users (providers and civil servant) to be notified. Change of the request status triggers a notification from the BPM application to the OASIS system to be displayed on the user interface.

The OASIS portal must have access to the ongoing notification.

An application may update or delete the notifications

UC41-M. Shared data and data status (US58-S, US62-M, US65-S)

Shared data required to operate OASIS and applications are the different types and level of PB with their geographical coverage. The geographical coverage is related to the city + zip code, or a group of zip code.

A processing status must be assigned to subsidy requests enabling the OASIS system to notify users and applications and allowing applications to know if a subsidy request has to be processed. Status are business attribute that has to be established by applications.

3.8.3 Requirements

3.8.3.1 Functional Requirements for the OASIS portal

FR57-S. The OASIS portal must know all the PB related to a city (UC39-S).
FR58-M. The OASIS portal must allow users to authenticate in the OASIS system (UC35-M) .
FR59-M. The OASIS portal must give access to the management of providers' data (UC36-M).
FR60-M. The OASIS portal must be able to follow an display user notification (UC40-M).

3.8.3.2 Functional Requirements for the OASIS system

FR61-M. The OASIS system allows to store data : business data, metadata, ontologies ... (UC41-M)
FR62-M. The OASIS system manages access rights on data (UC37-M)
FR63-M. The OASIS system allows to read data (UC37-M, UC40-M)
FR64-M. The OASIS system allows to modify and to delete data (UC41-M)
FR65-M. The OASIS system allows to define a relationship graph between users, between entities and between users and entities (UC36-M)
FR66-M. The OASIS system allows to manage access rights to read through these relations (UC36-M)
FR67-M. The OASIS system contains a standardized description of business processes (UC41-M).
FR68-M. The OASIS system determines the routing of a notification (UC40-M)
FR69-M. The OASIS system should allow the applications to create and update notifications to users (UC40-M)

3.8.3.3 Non Functional Requirements for the OASIS system

NFR7-M. The data description model of a subsidy must be able to comply every national criteria (UC41-M).

3.9 INVPROM

This application is to be used for promoting a region online and attracting foreign and domestic investment. INVPROM websites will feature available lands and investment locations, framework legislations, development plans, infrastructure, available incentives and state aids. It is a unique type of contents management, which allows service providers to supply with information and publish it online, with extra features such as searchable incentive schemes and angel investor - entrepreneur match making.

Process:	User profil
SHARED DATA	
User details • Name • Surname • Company • Company's field of specialization • Last year's Total Annual Sales/Operations • Total number of employees • Function in the Company • Year of incorporation • e-mail • other e-mail (if any) • Tel • Fax • Web • Country • Address	

Table 9 Shared data for the InvProm application

3.9.1 User stories

3.9.1.1 Selection of the service by Service Providers

[PB] US67-C. Potential service providers include interalia Regional Development Agencies (RDAs), Chambers of Commerce and Industry, Regional Authorities, Business Associations. They are called Public Bodies.

[PB] US68-M. A Public Body must get the approval of the software owner (EMDA); EMDA informs the OASIS Portal Manager that such Public Body is an approved one, and requests the Portal Manager to grant the Public Body access to OASIS. Upon completing registration on the Portal, the

authorized staff of the Public Body will reach 'My OASIS'. There he/she shall select INVPROM among the list of available services. The Portal Manager can either allow the Public Body to make a selection out of all of the e-services on the Portal or only the ones it is approved for (the unallowed ones may appear as inactive as light grey icons).

3.9.1.2 Settings of the service

[PB] US69-M. Public Bodies can publish the contents they compose by using INVPROM on their websites or a specific domain they have acquired.

[PB] US70-S. Public Body can assign one person of their staff to develop the contents through the control dashboard of INVPROM.

3.9.1.3 Users' access to the service

[PB] US71-M. Investors and Entrepreneurs are the users of the e-service to be provided by each Public Body. Users can access the website created by using INVPROM (INVPROM powered website) through the OASIS Portal or the websites of Public Bodies.

[PB] US72-M. Users will not be required to open an account on OASIS Portal. They may or may not open accounts on each INVPROM powered website, based on their preferences.

[PB] US73-C. INVPROM will allow the Public Bodies to display the users' past activity on other INVPROM powered websites (metadata concerning the websites the investor opened an account with and submitted a request form through). The user will be informed of this while opening an account on an INVPROM powered website with a Disclaimer.

This is possible thanks to the interoperability among INVPROM powered websites, all of which will use a certain storage space on the cloud to store the data to be provided by the users.

[PB] US74-S. On the investor side, each single INVPROM powered website will be a separate e-service. Each of the INVPROM powered website shall be accessible through OASIS portal. The user can visit each website of each Public Body. The web-links shall be represented as icons (names and/or logos of Public Bodies) listed down in historically ascending order (the Public Bodies which has opened the most recent account will appear on the last row of the list).

3.9.1.4 User personal data

[PB] US75-S. Users will be required to provide only their names, name of their companies, and e-mail addresses. Further to these information, it is fully up to the preference of the user to provide his/her company's contact information, annual volume of sales/operations, details about new proposed investment (volume of investment, target sector, jobs to be created, waste to be created, preferred sites). The user will be asked to read and accept the terms and conditions in a Disclaimer page, whose contents will be provided by the Public Body.

3.9.2 Use cases

UC42-M. Authentication and account creation (US70-S, US72-M)

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

This module allows the user to create an account directly if he has not one already.

The authentication module must provide a secured password recovery procedure.

UC43-M. User management (US67-C, US68-M, US70-S)

The user of a Public Body that have delegation to select applications must ask the service provider (EMDA) an access authorization. Access to the application can be granted to a Public Body either by accepting an invitation link contained in an e-mail sent to the Public Body IT-manager or by entering an access code when selecting the application from the OASIS store.

The application must have access and retrieve from OASIS the list of civil servants of the PB allowed by the IT-manager to use the application.

UC44-S. Management of personal data (US75-S)

The reuse of provider data (citizen and/or legal representative of a company) implies that data are stored securely, and are accessed by applications only if authorized by the owner of these data (Privacy requirements D1.31).

The OASIS system must provide an API to read, add, create providers data (under a secure user validation). The system must manage, occasionally or for a preset time, the access to a set of personal data by an application.

The OASIS system should allow user to benefit from his personal data (name, surname, e-mail ...) in a professional environment.

The OASIS system should allow the user to create his organization into the OASIS social graph and to create the link his profile to this entity.

UC45-S. Public web site display as a service (US71-M, US74-S)

The publication of a web site powered by INVPROM triggers the display of this web application as a service on the OASIS user interface.

3.9.3 Requirements

3.9.3.1 Functional Requirements for the OASIS portal

FR70-M. The OASIS store must provide a system allowing users to enter an access code or to send an e-mail to the service provider (UC43-M).

FR71-M. The non-cloud version of this web-programme has a log-in page for Public Bodies. The cloud version will allow the Public Bodies to log-in the INVPROM control dashboard he/she is using through 'My OASIS' account which he will reach by logging-in on OASIS Portal (UC43-M).

3.9.3.2 Functional Requirements for the OASIS system

FR72-M. The OASIS system allows to store data to be provided by the users and the contents to be developed by the Public Bodies (UC44-S).
FR73-S. The OASIS system allows to define a relationship graph between users, between entities and between users and entities (UC44-S)
FR74-S. The OASIS system allows to manage access rights to read through these relations (UC44-S)
FR75-S. The OASIS system allows to manage access rights to modify and to delete through these relations (UC44-S)
FR76-S. Publication of a web site should launch a notification to the OASIS system to display it as a service (UC45-S).

3.9.3.3 Non Functional Requirements for the OASIS system

NFR8-M. The Service Provider must be allowed to ask the system to send his/her password or/and re-activation link to his/her e-mail address. (UC42-M)

NFR9-M. The OASIS system must be ruled by detailed Terms of Use (US75-S)

3.10 Data Collection

This application is to be used by Regional Planning Authorities for collecting information from Public Authorities (Regional offices, Provincial offices, Local Authorities, Central Authorities etc.). Regional Planners are often faced with the major problem of maintaining the stream of standardized information (data mining), which is normally scattered among different public bodies (Data Providers) in unorganized various formats.

Some authorities may have superior powers and may dictate Data Providers to comply with the data provision by using DATAColl; others may use a compromising method and sign agreements with Data Providers, which will be reckoned as partners.

Process:	User-Profil : Data collectors and Data providers
SHARED DATA	
• Organization (e-Service replicator / Data Provider) • Name, Surname of the assigned user • e-mail • other e-mail (if any) • Tel • Fax • Web • Address • Country	

Table 10 Shared data for the DataColl application

3.10.1 User stories

3.10.1.1 Selection of the service by Data Collectors

[PB] US76-M. Potential service providers include interalia Regional Development Agencies (RDAs), Regional Authorities and planning authorities, which are commissioned to collect and render data into organized data sets.

Data Collectors can use this online service to collect data from Data Providers in their Region.

3.10.1.2 Settings of the service

[PB] US77-M. Data Collectors can assign one or more staff members to take care of data collection from Data Providers.

[SP-PB] US78-M. DATAcoll allows Data Providers to fill in the active fields on the webforms. A Data Provider will be allowed to observe the inactive fields and may complete them.

[PB] US79-M Provider will be allowed to observe the inactive fields to be completed by other Data Providers. Other authorized organizations will be allowed to observe the data entered in the forms.

3.10.1.3 Data Collectors' access to the service

[SP-PB] US80-M Data Collectors can start using the e-service in their region, with the approval of Service Owner (EMDA).

[PB] US81-M Data Collectors can access the control dashboard by logging in the OASIS Portal. DATAColl will be among the available services.

3.10.1.4 Providers' access to the service

[PB] US82-M Upon an agreement to be concluded between Data Collectors and Data Providers, or Data Collector's instructions, Data Collectors assign one or more staff members to provide the required information.

[PB] US83-S Data Providers staff are not required to open account on OASIS Portal.

3.10.1.5 Published data

[PB] US84-M All data to be collected will be public metadata, which can be published and shared on public websites. This issue can be addressed in the agreement text.

3.10.2 Use cases

UC46-M. Authentication and account creation (US77-M, US83-S)

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

This module allows the user to create an account directly if he has not one already.

The authentication module must provide a secured password recovery procedure.

UC47-M. User management and role (US76-M, US77-M, US78-M, US79-M)

The user of a Data collector that have delegation to select applications must ask the service provider (EMDA) an access authorization. Access to the application can be granted to a Data collector either by accepting an invitation link contained in an e-mail sent to the Data collector IT-manager or by entering an access code when selecting the application from the OASIS store.

The application must have access and retrieve from OASIS the list of agents of the Data collector allowed by the IT-manager to use the application.

The DataColl service is seen by the IT-manager of Data Providers as an application which he is allowed to assign to his own staff.

UC48-S. Management of shared data (US77-M, US82-M, US83-S)

The OASIS system should allow user to benefit from his personal data (name, surname, e-mail ...) in a professional environment.

The OASIS system should allow the user to create his organization into the OASIS social graph and to create the link his profile to this entity.

UC49-M. Management and sharing of interoperable data (US84-M)

Some of the data collected by using DATAColl can be usable for other services to be hosted on OASIS cloud system. In that case, the same organization has to be both the Data Collector and a Service Provider in another e-service which uses the data to be supplied by DATAColl. Another option may be that the Data Collector and Service Provider are two separate organizations whose jurisdictions collide. But this time, the two organizations have to keep the partnership and make it a solid one with a framework agreement.

Since each data table will have a unique content (e.g. Google Drive) based upon the preferences of Data Collector, for each case a specific API solution should be devised. A general API to tap into from a Datacore which will be supplied by DATAColl, is an issue to think over with great care.

3.10.3 Requirements

3.10.3.1 Functional Requirements for the OASIS portal

FR77-M. The OASIS store must provide a system allowing users to enter an access code or to send an e-mail to the service provider (UC43-M).
FR78-M. The non-cloud version of this web-programme has a log-in page for Data Collectors. The cloud version will allow the Data Collector log-in the DATAColl dashboard he/she is using through 'My OASIS' account which he will reach by logging-in on OASIS Portal

3.10.3.2 Functional Requirements for the OASIS system

FR79-M. The OASIS system allows to store data to be provided by the users and the contents to be developed by the Public Bodies (UC44-S).
FR80-S. The OASIS system allows to define a relationship graph between users, between entities and between users and entities (UC44-S)
FR81-S. The OASIS system allows to manage access rights to read through these relations (UC44-S)
FR82-S. The OASIS system allows to manage access rights to modify and to delete through these relations (UC44-S)
FR83-S. Publication of a web site should launch a notification to the OASIS system to display it as a service.
FR84-M. An application could be registered in OASIS with two types of IT-manager.

3.10.3.3 Non Functional Requirements for the OASIS system

NFR10-M. The OASIS system and shared data must be ruled by detailed Terms of Use.

3.11 City planning

The aim of the application is to provide a Geographical Information System (GIS) tools to visualize, search and query information based on a map about the municipal plans of urban expansion and change.

The geographical/alphanumeric data will be used to show the areas, within the municipalities borders, illustrating the instruments and possibilities governing building activity. The level of detail may vary from municipality to municipality (layers generated in backoffice will be used). In the specific instance it will interface with the database which will provide geographical services and a series of alphanumeric datasets.

Process:	City Planning
SHARED DATA	
Geographical data in standard formats (ESRI shapefile, KML, etc...) that are associated with alphanumeric descriptive attributes of information related to urban uses for each shape : - ISTAT, int, 4 (National code of the municipality) - TOPONIMO, string, 50 (Name of the municipality) - COD_N, double, 4.2 (Type of urban use of the area – standardized code) - DEC, string, 100 (Type of urban use of the area – standardized description) - SIGLA, string, 25 (Type of urban use of the area – code) - D_PRG, string, 160 (Type of urban use of the area – description) - DCC, string, 50 (Municipal Council resolution references)	

Table 11 Shared data for the City Planning application

3.11.1 User stories

3.11.1.1 Settings of City planning

[SP] US85-M. The services of the province of Turin will be placed on a cloud infrastructure through the installation and configuration of a QGIS (Quantum GIS) server. The data updating and management will be allowed through the provision of client-side views from the QGIS project.

The QGIS project, saved on a QGIS server, provides the geographic service to show the data through the GIS tools. The standard protocol for serving georeferenced data will be a Web Map Service (WMS).

[SP] US86-M. The geographical information will be published through a WMS (Web Map Service) provided by each interested partner. A WMS is a standard protocol for serving georeferenced map images over the Internet that are generated by a map server using data from a GIS database.

A WMS server usually serves the map in a bitmap format, e.g. PNG, GIF or JPEG. In addition, vector graphics can be included: such as points, lines, curves and text, expressed in SVG.

[SP-PB] US87-M. The GIS module will be instantiated on the OASIS platform. The QGIS server will be shared with all the users of the service which will be able to point to the relevant datasets exposed through the WMS specification.

3.11.1.2 Legal issues

[PB] US88-M. Data owned by Italian public bodies must be stored in Italy.

3.11.1.3 Providing City planning

[PB] US89-M. Public bodies who wants to provide City Planning must have access to the back-office thanks to the OASIS authentication.

[PB] US90-M. The service will be accessible to citizen on a public web page without having to authenticate.

3.11.2 Use cases

UC50-M. Setting of the application (US85-M, US86-M, US87-M)

When selecting the application from the store, the public body may choose his own GIS server.

When selecting the application from the store, the public body must have access to his geo-referenced data that he can display on a map.

UC51-M. Shared data (US88-M)

The application must be able to retrieve data from different hosting companies.

The data model description must be the same whatever the location of data

The GIS module must be instantiated at every data location

UC52-M. Authentication and account creation (US89-M).

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

UC53-M. Shared data access (US90-M)

An application may require access to shared data stored in OASIS without having an authenticated user. This could be done through a "trustful" application or thanks to a generic user account acting on behalf of the public body that provide the service.

The notion of trustful application may be defined but consists in a security breach.

3.11.3 Requirements

3.11.3.1 Functional Requirements for the OASIS system

FR85-M. The OASIS architecture must be distributed over the cloud. (UC51-M).
FR86-M. The OASIS system must manage data location related to users (UC50-M)
FR87-M. The OASIS system must manage generic user account (UC53-M).

3.11.3.2 Non Functional Requirements for the OASIS system

NFR11-M. The data model must be ruled by a common governance between the different data location (US88-M)

3.12 Mapping of Territorial Economic Activities (MoTEA)

The aim of the application is to provide a Geographical Information System (GIS) tools to visualize, search and query informations based on a map about the economic activities. Inspiring model functionality and usability made available by Google. This model is based on predefined maps identified following consumer media studies, which therefore has no chance of action.

Process:	Mapping of Territorial Economic Activities
SHARED DATA	
Input data are geographic data with alphanumerical attributes; to each couple of coordinates (x, y; lat/long) are associated the alphanumerical attributes concerning the type, the address and some other specific information about the localization of the data (i.e. mapping of territorial economic activities, to each point corresponds an economic activity): - CODICE_FISCALE, string, 16 (National Insurance Number – NIN) - RAGIONE_SOCIALE, string, 50 (Business name - Firm name) - DESC_ATECO, string, 50 (Description of prevalent activity) - COMUNE, string, 50 (Name of the municipality) - INDIRIZZO, string, 30 (Address)	

Table 12 Shared data for the service Mapping of Territorial Economic Activities

3.12.1 User stories

3.12.1.1 Settings of MoTEA

[PB] US91-M. The services of the province of Turin will be placed on a cloud infrastructure through the installation and configuration of a QGIS (Quantum GIS) server. The data updating and management will be allowed through the provision of client-side views from the QGIS project.

The QGIS project, saved on a QGIS server, provides the geographic service to show the data through the GIS tools. The standard protocol for serving geo-referenced data will be a Web Map Service (WMS).

[SP] US92-M. The geographical information will be published through a WMS (Web Map Service) provided by each interested partner. A WMS is a standard protocol for serving georeferenced map images over the Internet that are generated by a map server using data from a GIS database.

A WMS server usually serves the map in a bitmap format, e.g. PNG, GIF or JPEG. In addition, vector graphics can be included: such as points, lines, curves and text, expressed in SVG.

[SP-PB] US93-M. The GIS module will be instantiated on the OASIS platform. The QGIS server will be shared with all the users of the service which will be able to point to the relevant datasets exposed through the WMS specification.

3.12.1.2 Legal issues

[PB] US94-M. Data owned by Italian public bodies must be stored in Italy.

3.12.1.3 Providing MoTEA

[PB] US95-M. Public bodies who wants to provide City Planning must have access to the back-office thanks to the OASIS authentication.

[PB] US96-M. The service will be accessible to citizen on a public web page without having to authenticate.

3.12.2 Use cases

UC54-M. Setting of the application (US85-M, US86-M, US87-M)

When selecting the application from the store, the public body may choose his own GIS server.

When selecting the application from the store, the public body must have access to his geo-referenced data that he can display on a map.

UC55-M. Shared data (US88-M)

The application must be able to retrieve data from different hosting companies.

The data model description must be the same whatever the location of data

The GIS module must be instantiated at every data location

UC56-M. Authentication and account creation (US89-M).

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

UC57-M. Shared data access (US90-M)

An application may require access to shared data stored in OASIS without having an authenticated user. This could be done through a "trustful" application or thanks to a generic user account acting on behalf of the public body that provide the service.

The notion of trustful application may be defined but consists in a security breach.

3.12.3 Requirements

3.12.3.1 Functional Requirements for the OASIS system

FR88-M. The OASIS architecture must be distributed over the cloud. (UC51-M).
FR89-M. The OASIS system must manage data location related to users (UC50-M)
FR90-M. The OASIS system must manage generic user account (UC53-M).

3.12.3.2 Non Functional Requirements for the OASIS system

NFR12-M. The data model must be ruled by a common governance between the different data location (US88-M)

3.13 OpenData

The OpenData service is a warehouse of data produced or collected by public authorities that they open to the public for reuse. Data can be separated in two categories:

1 - “Cold-data” which do not change or with a low update frequency. These data are uploaded as dataset directly by public bodies through the web interface of the platform. These data could be documents (in .odt, .doc, .pdf format), sheet files (in .ods, .xls format) with related metadata (object, author, date …). These data are publicly published, free to download, and can be reused under the appropriate license if any.

2 - « Warm data » that evolves in real time (e.g. data on public transport). In France, local authorities delegate the management of public transport to private companies. When the authority decide to open these data, it is the company that directly provides the data-flow by web-service. Users, mostly service providers, register on the OpenData platform to obtain an API-key to be allowed to connect to the company web service.

Process:	Uploading a dataset
INPUT DATA (required)	
- the file containing the dataset - additional data description (metadata): Status, type of dataset, data format, author's name, temporal coverage, use rights	
OUTPUT DATA (produced)	
- the file containing the dataset - data description (metadata): Status, type of dataset, data format, author's name, temporal coverage - additional metadata: Public body, modified date, URL	

Table 13 Input and output data for the OpenData application

3.13.1 User stories

The OpenData application will be adapted to be part of the OASIS portal.

3.13.1.1 Searching data

[PB] US97-M. Every kind of users, authenticated or not, must access on the OASIS portal to a data search engine. This engine will search both among OASIS shared data and public data sets. Users may choose categories or enter key words.

[PB] US98-S. The search result should be a list of data types with related metadata including the author/owner, the license to use , the last update, the scope of the data type, the data format or the appropriate API.

[PB] US99-M. Data sets published can be downloaded without being authenticated.

3.13.1.2 Publishing a data set

[PB] US100-M. The service is free and accessible to every kind of users.

[PB] US101-M. Users must be authenticate to publish/upload/update a data set.

[PB] US102-S. The name of the author is automatically insert into the metadata of the data set. The author maybe the user himself if he act in a personal capacity or the user + the entity he work for if he act on behalf of his entity.

3.13.2 Use cases

UC58-M. Authentication and account creation (US101-M).

An application must allow a user to create an account. OASIS account management must be called by an application and open dynamically over an application.

The application uses the OASIS authentication module and receives an ID confirming that the user is logged and allowing to identify the user (no personal data).

UC59-M. Shared data (US100-M)

The application must be able to search and retrieve data from OASIS system without authenticated user.

3.13.3 Requirements

3.13.3.1 Functional Requirements for the OASIS portal

FR91-M. The OASIS portal provide a public page with a data search engine.
FR92-S. Authenticated users will benefit from advance features like publishing data sets

3.13.3.2 Functional Requirements for the OASIS system

FR93-M. The shared data and the public data sets must share a common metadata description model.
FR94-M. The OASIS system must manage generic user account (UC55-M).

3.13.3.3 Non Functional Requirements for the OASIS system

NFR13-M. The publication of a data set and its quality is the sole responsibility of the user and /or his entity.

3.14 Network of Alternative Tourism

The service appears to be the focal point of interests of public bodies, businesses and consumers of travel services. The service is designed to allow members (government organizations, public bodies, NGOs, associations) to publish events and to organize them in calendars that may include events from other members.

Non-authenticated users can search events per key word, category ...

Published events will be stored in OASIS system and retrieve in real-time on members actions on the web interface of the application. Furethemore, the application will be able to retrieve from OASIS system events that are published thanks to other applications.

Process:	Uploading a dataset
USER PROFILE (required)	
Organization: • Type • Name • Address (zip code + city) • Legal representative • E-mail address	
SHARED DATA (produced)	
Events: • Calendar identity - unique number • Event identity - unique number • Source organisation • Name of event – Full name of event • Type of event – Here can be various types of events – sport, art, culture and etc. • Start date and time • End date and time • Recurrence • Place – exact place, address, region …etc. • Geography coordinates • Pointer(s) to the sub events • Pointer(s) to the resources – can point to internal web site or to the external one. • Pointer(s) to additional stored information – pictures, text, graphics and etc. – depends on context off information.	

Table 14 Shared data for the Network of Alternative Tourism application

3.14.1 User stories

The service is selected from the catalogue of services published on the OASIS store.

The service provides:

- A catalogue of the forms of alternative tourism
- Initiatives of governmental and non-governmental organizations associated with the forms of alternative tourism
- A catalogue of businesses offering services related to alternative tourism
- A catalog with tour packages to end users
- Calendars with events and initiatives related to forms of alternative tourism.
- Catalogues of resources to events and initiatives related to forms of alternative tourism

3.14.1.1 Setting of the service

[SP] US103-M. Each user of the service whether it's PB, business organization, travel agency or a private person works with the system in a consistent manner. The information in the system are organized in personal or public calendars of events. Information from one or multiple public calendars can be reorganized in another public or private (personal) calendar. Business organizations and companies can add their resources to the events published in calendars.

3.14.1.2 Use of the service

By public bodies

[SP-PB] US104-M. PB may be government bodies such as ministries of culture and education, the Ministry of tourism, the committees to ministries, regional administrations, municipalities and others. Government organizations determine the development of tourism and its forms through programs. The development programs are reflected in concrete forms – events, which in turn are presented in calendar forms.

For example:

The municipality of Stara Zagora city announces "Days of Opera and Ballet", which annually take place annually in the State Opera of Stara Zagora city. The event is held as a cultural initiative and serves as a base and the continuation of cultural tourism and tourist activities. The municipality relies in its cultural calendar period for the conduct of musical days. Regional historical Museum introduces the days of Opera and Ballet art in their calendar initiatives aimed at tourists and guests of the city. In this way the State organizations provide a package of initiatives and attractions that are entered in their calendars and can help travel agencies and businesses to form packages for their customers.

By business

[PB] US105-S. Business organizations can organize their own events and initiatives which constitute forms of alternative tourism and these initiatives and events must be submitted to outstanding organizations. The initiatives of the business organizations bring in personalized calendars. Business organizations can offer and initiatives in addition to the initiatives of other calendars of PB

A typical example for this are the trade exhibitions and fairs: this is an initiative of business consistent with the regional State structures. The exhibition depending on its orientation suggests forms of alternative tourism- wine, traditional cuisine, ethnography and traditional music and crafts.

By NGO's

[PB] US106-S. Associations, clubs and sport organizations can organize their own initiatives as forms of alternative tourism. Such forms can be coordinated with government organizations not only within one region. Initiatives, which are that of alternative forms of tourism are Moto sports competitions, cycling tours, hang-gliding, and other forms. The initiatives can be organized individually by NGO's or jointly with State organizations. These initiatives like all others are displayed in the calendars of the organizations concerned.

By Travel agencies

[PB] US107-S. Travel agencies can assemble their calendars from the initiatives of Government, business and non-governmental organizations in packages that can be provided to final customers. There are no restrictions on the choice of initiatives and their association to the calendars of travel agencies.

By Citizen

[PB] US108-S. Each user (citizen) can view the calendars of others, to choose a package of events from another calendar and put it in his own calendar. Citizens can compile individual packages with events or choose ready package of any tourist agency or NGO's.

3.14.1.3 Access to the service

[SP-PB] US109-S. Each participant must be registered in OASIS with a username / password. Each user can create an unlimited number of calendars, events, articles and other information. Each user has full rights to manage his own information – add, edit, delete, and publish. Each user has reading permissions on published information from other users. Users can link information from other users to their own resources.

3.14.2 Use cases

UC60-M. Authentication and user account (US109-S)

The service is part of OASIS and the users of this service must be registered in the platform. The service itself will not register users, but will allow access to the users already registered in OASIS or to the authentication module for the creation of an account.

The „Alternative tourism" works with public data entered and published by organizations (events). This means that these data do not constitute personal information and are not subjected to special protection.

UC61-M User management (US104-M, US105-S, US106-S, US106-S, US107-S, US108-S)

User management is performed by both Oasis and the application : according to the type of user, the application allows him to create events, to organize events in calendars, to add resources to an event and to create packages of calendars. The user type information (citizen, public body, company...) must provided by the OASIS platform.

UC62-S. Provision of the service (US104-M)

The ATN service is offered in the system of OASIS as a separate application. This application can be distributed in two ways:

- Centralized – the application is multitenant. Accessible to all geographic areas and members of OASIS. Data processing application are centralized in the data core of OASIS.
- Decentralized – copies of the application are installed locally on a geographical basis and are managed by local SP. Data processing application is centralized in the data core of OASIS.

In a first phase, as the service is provided only on the Bulgarian pilot site, a single instance of the application is enough to address users concern, covering their geographical area of interest.

UC63-S. User notification (US105-S, US106-S, US107-S, US108-S)

This service should benefit from a global notification system allowing all end users to be notified on their OASIS user interface without having to open the application.

Notification of users of the service concerns the addition of new data records from one of the participants in the service, change and/or deletion of events from public calendars, new messages in blog systems and etc.

UC64-M. Shared data (US104-M, US105-S, US106-S, US107-S, US108-S)

Calendars and resources related to events are businesses data that remain inside the application. On the other hand, events, as public data, has to be shared within OASIS system with other applications. The ATN should also be able to retrieve events created thanks to other applications and validated by public bodies for on-line publication.

This requires a common data model to describe an event and a common metadata model to qualify the type of event (cultural, touristic, promotional, political ...).

UC65-M. Data right management (US104-M, US105-S, US106-S, US107-S, US108-S)

Events shared within the OASIS system must be readable by everybody (all users of all applications), but modifications and deletation are allowed only to their author (entity).

3.14.3 Requirements

3.14.3.1 OASIS system requirements

FR95-M. The OASIS system allows to store data provided by users. (UC64-M)

FR96-S. The OASIS system should allow to search for data provided by other applications (UC64-M)

FR97-M. The OASIS system allows to manage access rights to modify and to delete data (UC65-M)

FR98-S. The OASIS system should allow to recieve and transfer notification to users according to their personal interest (setting inside the application) (UC63-S)
FR99-M. The OASIS system must provide a unique authentication system. (UC60-M)

3.14.3.2 Non Functional Requirements for the OASIS system

NFR14-M. The OASIS system must organize collaboration and mediation between service providers to reach a common data model covering users needs. (UC42-M)

3.15 Financial management

The financial Management inside Public Bodies is at the centre of information flows. It manages the financial transactions related to the management of the public domain, to the purchasing of equipment and materials.

Process:	**Invoice entry**
SHARED DATA	
Third party file - Name of the company - Company national code (SIRET) - Legal form - Type of activity (NAF national codes) - Address - Phones - E-mails - Name of the Legal Authorized Representative - Position of the Legal Authorized Representative - IBAN account	

Table 15 Shared data for the Financial management application

3.15.1 User stories

[PB-CS] US110-S. Information related to third parties (companies, associations) should be shared with other local public bodies as they often resort to the same companies. For a medium public body, the third party file may list around 200 organizations.

[PB-CS] US111-C. Information related to third parties (companies, associations) could be shared with other application with read right for all users and with write right for public bodies to ensure data quality. Users of the application should be notified of changes and should be free to accept modifications.

[SP] US112-M. The third party file contain the IBAN account of companies. The other information can be shared and completed thanks to other services but IBAN account may be shared only with the public bodies that use this financial management software.

[CS] US113-W. Some civil servants work part time in several very little municipalities. It would be convenient for them to be able to manage their different activities with the same user account.

3.15.2 Use cases

UC66-S. Shared data (US110-S, US111-C, US112-M)

The information on third parties have been already identified as data used by other applications (MoTA, Invprom, Datacollection) and that need to be shared.

The sharing of these data requires to manage different access right according to the type of data and to the type of user.

UC67-C. Data mediation tools (US111-C)

Shared data may be critical data for some applications. History of modifications should be stored in OASIS. The author of modification should be stored enabling application to warn users about the changes.

Accept a data modification implies a notion of data quality. The quality level can be defined according to the type of entity to which the author of the modification belongs to.

UC68-W. User account and user profile (US113-W)

The graphical user interface should allow users to manage the different applications they used in their different life situation, without having several accounts. A user account should be able to manage different contexts meaning several relationships between the user and different entities.

3.15.3 Requirements

3.15.3.1 Functional Requirements for the OASIS system

FR100-S. The OASIS system should be able to manage data access rights according to the applications (UC66-S)

FR101-S. The OASIS system should be able to manage data access rights according to the user (UC66-S)

FR102-C. The OASIS system should be able to store data history (UC67-C)

FR103-C. The OASIS system should be able to trace as metadata the author of data modification (UC67-C)

FR104-C. The OASIS system should be able to propose a qualification of data relying on the contributor (UC67-C)

FR105-W. The OASIS system allows to define relationship graph between users, between entities and between users and entities (UC68-W)

FR106-W. The OASIS system allows to manage access right to read through these relations (UC68-W)

3.15.3.2 Non Functional Requirements for the OASIS system

NFR15-S. - In addition to mediation tools for applications, the OASIS system should organize mediation on shared data between user entities.

3.16 The OASIS portal requirements

The OASIS portal is a particular application in the OASIS ecosystem because it gives access to all the other applications and resources. It is the user interface to access, use data andapplications, to create relationships with users and/or entities and to manage personal data.

In addition to the user stories related to the use and the adaptation of the federated applications, the following requirements were expressed directly by end users.

3.16.1.1 Functional Requirements for the OASIS portal

FR107-S. The OASIS portal should allow user to link his personal account to the entity he work for to manage simultaneously private and professional life.

FR108-W. The OASIS portal should allow to test applications before their selection.

FR109- S. The OASIS portal should allow to note and comment application

FR110-S. The OASIS store should provide detailed information on the provider

FR111-S. The portal should be accessible on different type of device such as tablets

FR112-M. The portal must be compatible with different browsers and their different versions.

FR113-S. The OASIS portal should provide search engine to find applications

FR114-M. Through the OASIS portal, users must be able to know at any time the applications that have access to his personal data.

FR115-M. Users must be able at any time to revoke the access to his personal data.

FR116-M. For security measures, relationships between users and entities has to be validated in both ways.

FR117-M. Existing relationships must be broken when anyone of the two parties revoke it.

FR118-S. Through the OASIS portal, providers should be able to manage users of his applications and benefit from statistics of use.

FR119-C. User should be able to select their preferred means to be notified (SMS, e-mail, OASIS GUI...)

FR120-S. IT-manager should be able to create groups of users to easily assign them the access to services.

FR121-S. Local public services should be displayed automatically on the user interface according to the location entered in his personal data.

FR122-S. The OASIS portal should include a test environment for the adaptation or the creation of applications.

FR123-M. The OASIS portal must provide detailed information on available data and their conditions of use.

3.16.1.2 Non Functional Requirements for the OASIS portal

NFR16-M. Terms of use must be explicite on who and where are stored personal data.

NFR17-M. Terms of use must explain the rôle and responsibility of the platform manager and service providers.

4 - Synthesis

The collected and analyzed user stories from public bodies, civil servants, citizens and service providers point of views, allowed to establish the functional and the non functional requirements of the platform.

These requirements are the main inputs to design the functional architecture.

Data stored in OASIS

The shared data in OASIS are populated by users or generated by the federated applications.

We can distinguish the following type of shared data:

- personal data that compose the user profile require strong and sharp security mechanism. These data may be reused by applications only under the express consent of their owner.

- data related to the description of organizations (Public Bodies, companies, associations).These data are used to create links with users and can be used for the registration of these organizations on the platform, for the setting of applications or as basic data treated by applications.

- collaborative data reused by different type of applications. Mechanisms of collaboration and mediation on collaborative data must be implemented.

- data shared between applications dedicated to a specific workflow of a business process.

Data stored in OASIS - Requirements	
Data managed in the social graph : • Person management • Organization management • Group management • Relationships management between organizations / persons • Family home management • Management of underage users	FR13-M, FR17-S, FR18-M, FR23-M, FR105-W, FR106-W.
Data managed by the OASIS application store (catalog) : • Service providers • On-line applications • Data sets • Applications price	FR19-M, FR48-S, FR84-M, FR109-S, FR110-S

• Categories • Notes and user review	
Collaborative and shared data : • Data model • Metadata model • Data storage Data quality • Dedicated onthology • Data moderator Data historization	FR9-M, FR21-M, FR25-M, FR27-M, FR33-M, NFR11-M, FR93-M NFR13-M

Data Access rights

Total management of security (authentication, management of rights, privacy, availability, integrity)

Users will benefit from a strong authentication system and secured procedures, to access use provide and share the OASIS resources and features according to their role.

Interlinking mechanism guaranteeing data privacy of everyone but also the real identity of the physical and moral person the relation is established with

Unidirectional relationship (ie: a relation of an entity A towards an entity B can be defined without imposing a relation of B towards A)

Data acces rights - Requirements	
Authentication system : • Unique authentication system • Possible double authentication procedure • Secured password recovery procedure	FR6-M, NFR1-M, NFR2-M, FR7-M, NFR8-M
Access rights managed by the social graph : • Delegation • Unidirectional links • Nodes and links privacy • Link creation • Role and context management	FR14-M, FR24-M, FR105-W, FR106-W, FR107-S, FR116-M, FR117-M
Data access rights : • General access rights on a container • Access rights on a data type • Access rights on a data scope	FR3-S, FR10-M, FR11-M, FR12-M, FR22-M, FR28-M, FR29-M, FR30-M, FR34-M,

• Access rights for a user/a group • Access rights according the context	FR35-M, FR36-M, FR87-M, FR114-M, FR115-M

Tools to federate applications

One of the main tools to federate application consists in the notification system. It allows them to be part of business process or to send information to users

Three ways are available: from application to OASIS system, from OASIS system to applications and to users.

A log file management, providing statistics of use to service providers

A development environment for service providers to test their applications and beta-test them by potential users

Tools to federate applications - Requirements	
Notification system : • Event notification by an application • Service notification by the OASIS system • Management of data status • User notification	FR4-S, FR15-M, FR16-M, FR20-S, FR26-S, FR31-M, FR32-M, FR37-M, FR38-M, FR39-M, FR40-M, FR44-M
Log management : • Event registration (audit) • Event classification • Statistics of use	FR118-S
Development environment	FR122-S

OASIS Governance

La The most innovative part of the project since it must articulate a comprehensive governance defining data models, principles of data collaboration, technical evolutions and local governance whose role is to organize the collaboration under local laws in force.

OASIS Governance - Requirements	
Cloud hosting : • Under European law • Distributed by geolocalized	FR85-M, FR86-M
Governance : • General governance (data model) • Local governance (local law, data collaboration)	NFR3-M, NFR4-M, NFR5-M, NFR7-M,

• Terms of Use	NFR9-M, NFR10-M, NFR11-M, NFR12-M

OASIS portal

A key component of the platform as it gather all user access to resources (data, applications, services). The project includes many innovative issues (a social graph with user context, collaboration on data, European governance ...) which requires a highly intuitive ergonomics for a wide adoption of the platform while keeping the user at the center.

OASIS portal - Requirements	
User friendly interfaces to get informed, access and use all the available resources and features, available on every kind of devices, with language management	FR111-S, FR112-M,
An application store with search engine, ability to filter results, in the appropriate language	FR108-W, FR109-S, FR110-S, FR113-S
System of evaluation of the applications by the users, and mediation between the users and the suppliers	FR109-S, FR102-C, FR103-C, FR104-C
A personal work environment displaying : • targeted services (local public services and shared services), according to the user location or role • services selected from the store, • a notification centre, • service consumption, billing history • user profiles and personal data • a social graph creator allowing users to link his account with another one, • contexts to manage several role in one account	FR107-S, FR119-C, FR120-S, FR121-S
A digital safe allowing complete dematerialization of procedures	FR9-M
A data store	FR122-M
Detailed information sheet describing every resources (services and data)	FR109-S, FR110-S

5 - Conclusion

This document gathers user and functional requirements, categorizes them according to the MoSCoW schema and analyses them to evaluate their impact over the design of the OASIS platform. The adopted method led to numerous requirements that must be addressed, but it's the result of crossing expectations from different stakeholders who will be involved in the use of the platform at different level.

These specifications will guide both the design of the architecture and the technological choices described in the details in the D1.2 and D2.1 deliverables. Requirements will be again considered at the end of the design step in order to evaluate which one has been fulfilled and how they have been tackled.

The OASIS project, which aims at capitalizing on the data produced by any software and at favoring the re-use of the data by every type of players, is an example of a virtuous circle. Its principles of opening, interoperability, construction of a common good of distributed data and services, are potentially a vector of local development, via the connection between data, services, public and private organization and citizens. Its technical characteristics based on the access to data repositories with APIs, will be evolutionary towards a web of data.

This project is also based on a strong mediation around the data, and on an approach of the decision-making support by means of the connection of the data and their exploitations by multiple actors who will wish to join to it. Finally, it is the change of economic models, governance, management and coordination models that underlies this project. This issue will be addressed in WP3 on the business model and Governance.

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