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Interoperability essentials

Research on Spanish Policies and Practices

WP 3: Research on National Policies
and Practices

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WP 3: Research on National Policies and Practices

Version 1.0 (Final Deliverable 3.4)

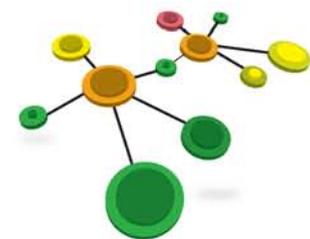
State of the Art National Report

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ABBREVIATIONS

AIS	–	Administrative Information System
AEAT	–	State Tax Administrations Agency
AGE	–	General State Government
CECIR	–	Portal of the Interministerial Commission of Remunerations
CPD	–	Data Processing Centers
CSAE	–	Higher Council for eGovernment
CTT	–	Technology Transfer Center
DGIAE	–	General Direction for the promotion of eGovernment
eID	–	Electronic National Identity
eDNI	–	Electronic National Identity
ENI	–	National Interoperability Framework
ENIS	–	National Interoperability and Security Framework
EPA	–	Active Population Survey
ESI	–	Electronic Signatures Infrastructures
EU	–	European Union
ICT	–	Information and Communication Technology
INE	–	National Institute of Statistics
IT	–	Information Technology
LAECSP	–	Law on Electronic Access to Public Services for members of the Public
MAP	–	Ministry of Public Administration
NIF	–	National Interoperability Framework
NTI	–	Technical Standards for Interoperability
OBSAE	–	eGovernment Observatory of the Central Government
PA	–	Public Administration
PAe	–	eGovernment Portal
PTS	–	Electronic Payment Service
REC	–	Common Electronic Register
SETSI	–	State for Telecommunications and Information Society
TSA	–	Time Stamping Authority

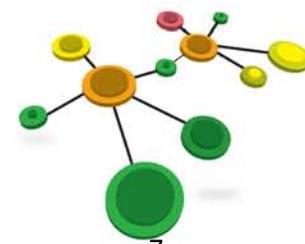
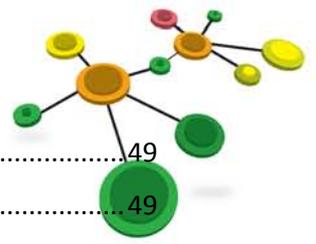


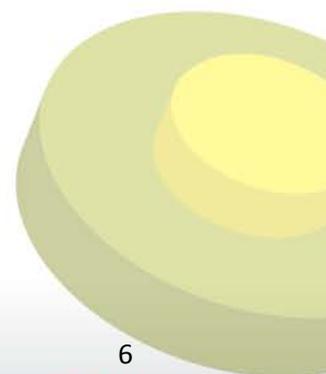
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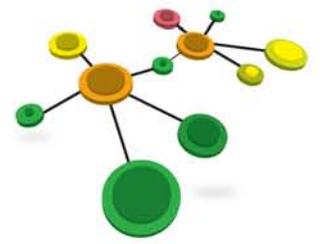
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INTRODUCTION

The aim of this document is to identify and summarize the national aspects and peculiarity in the field of interoperability for the partners' Countries (strategic frameworks, laws, regulations, implementation, specific requirements, organizational aspects, technical aspects, case studies, best practices, etc.).



The template is composed of five sections. Each of them is designed to receive and analyse all data considered preparatory to the final filling of the national dossier provided by the project and to prepare the learning materials for the course aimed to create a consistent common level of competence in the area of interoperability of online services.

Some sections require the filling out of open fields to answer, which, depending on the complexity of the latter are specifically limited to particular indications.

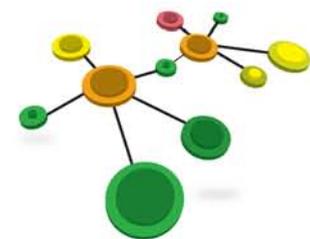
The first part of the template, related to more general information on the partner's Country in question, tends to make a rough estimate of the situation of citizens, companies and public administrations in order to identify the features of each Country involved in the project to understand dimensions and background of the state of automation in the PA.

The second section focuses in particular on the regulatory and legal aspects that already exist or will help to create a list of legal changes on online services interoperability of each Country involved.

The third section focuses on the organizational aspects and the effects they have on PA structures and on the performance of the services provided. In addition, the goal is also to analyse the changes that have produced some valuable innovations.

The fourth section deals with the technological aspects, not only with the identification and exploitation of the best solutions in the field of innovation processes within the PA, but at the same time serves to detect unsuccessful attempts, analysing the strengths and weaknesses of a given action taken in each case.

The final section includes a detailed description of a success example of a best practice and an in progress experiment of interoperability in each Country.



1. STATISTICS ABOUT SPAIN

1.1. COUNTRY

Name of the Country

Spain

Comments

Spain is a decentralized country, composed by 17 Autonomous Regions and two Autonomous Cities.

Others information

According to the "eGovernment" UN 2010, the development of online services in our country has been a very important development and improvement in recent years. Occupying position 39 in 2005, Spain happens to be at the ninth position in eGovernment in 2010 (having climbed 11 places since 2008).

The comparative report eGovernment Services in European Union countries (December 2010), certifies that in Spain the level of availability and sophistication of the 20 e-services provided as basis by Member States clearly outperforms the EU average, with rates of availability and sophistication of electronic services 95% and 98% respectively. Spain occupies the 8th place in terms of full availability of services.

The e-Accessibility Monitoring Survey, conducted between 2010 and 2011, has placed Spain as European leader in the field of accessibility of websites of the European Public Administration.

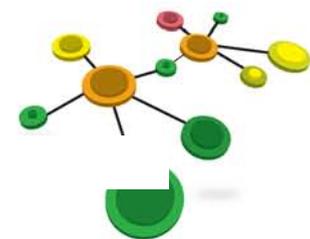
1.2. POPULATION

Population

Total	Men	Women
47.190.493	23.283.187	23.907.306

Comments

61.9% of Spanish households have broadband connection to the Internet, 9.3% more than in 2010.



1.3. PUBLIC ADMINISTRATIONS

Estimate of public organizations on the national territory

- 13 ministries (12 + Ministry of Presidency);
- 17 Autonomic Regions and 3 Autonomic Cities;
- 50 provinces;
- 8.116 municipalities;

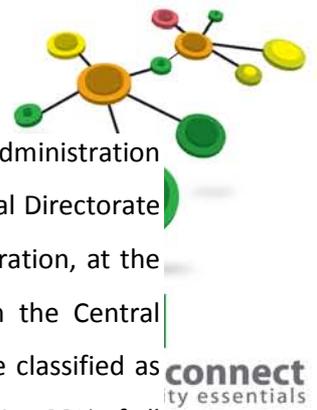
Number of employees in the Public Sector (thousands): 3220,6

Employees distribution between the different levels of administrations (Active Population Survey – EPA- third trimester 2011)

	Total 2011TIII (thousands)
Total	3220,6
Central	545,7
Social Security	40,1
Autonomous Regions	1807,5
Local	658,7
Public institution and entity	156,2
Others	9,4
No answer	2,9

In Spain, the providers of eGovernment are:

- General State Government, departments and agencies;
- Autonomous regions and associated bodies;
- Local Administrations;
- Public bodies suppliers of services:
 - hospitals
 - universities, colleges and Institutes
 - public Libraries
 - police stations and offices
 - courts.



The most direct effect of Law 11/2007 has been a significant increase in public administration procedures available on the Internet. According to information provided by the General Directorate for the promotion of eGovernment, Ministry of Territorial Policy and Public Administration, at the end of 2010 online 99% of high impact procedures and 92% of all procedures in the Central Government were already fully accessible online. The procedures used by citizens are classified as "high impact" procedures and adapted to the Law that is totally accessible online, covering 98% of all the processing that citizens do with the Central Administration (State level).

1.4. COMPANIES

Estimation of the firms in the Country (thousands): 3250,6.

Percentage of companies listed on the web: Survey on the Use of ICT and e-commerce in enterprises (2010-2011): 97.4% of Spanish companies with 10 or more employees are connected to the Internet. 99.4% of them are connected by Broadband (fixed or mobile).

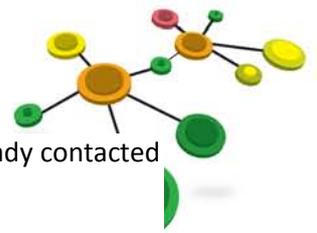
- Two of three companies with 10 or more employees have a website;
- 84% of companies interact over the Internet with Public Administrations, 13.9 points higher than last year;
- Nearly one out four companies makes purchases through e-commerce;
- 67% of Spanish companies with Internet connection have a website, representing an increase of 5% over the previous year.

90.7% of companies use their website for publicity, while 59.5% do it to facilitate access to catalogues and price lists.

Other information:

The DGIAE (General Direction for the promotion of eGovernment) highlights some data referring to the distribution of electronic processing front of face to face processing, both by citizens and businesses: 51% of citizens use electronic processing and 82 % of businesses.

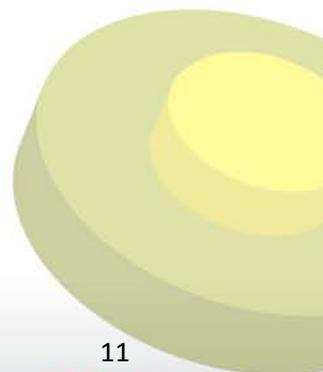
eGovernment and citizens: According to the Ministry of Interior it has already issued more than twenty million electronic national identity cards (eID). Furthermore over 92% of procedures with the Central Administration are available on the Internet, according to the Ministry of Territorial Policy

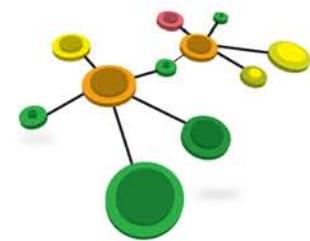


and Public Administration for 2010. 23.8% of the population aged 15 and over has already contacted the Public Administration over the Internet.

Interaction of small and large companies with eGovernment: In companies with ten or more employees with Internet access, 70.1% have interacted with the Administration in this way over 2009, according to survey INE 2010. This percentage is 2.3 points higher than the figure recorded the previous year (67.8%) and 3 points two years ago. Among the larger companies by number of employees there is a higher percentage of those who have contacted government agencies online. In fact 96.2% of companies with 250 or more workers interact with Administration, while for companies with 10 to 49 workers the percentage is 66.6%. 64% of companies with 10 or more employees use the Internet to obtain information and forms or application forms of general government.

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2. REGULATORY AND LEGAL FRAMEWORK

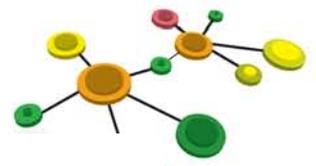
2.1. LEGISLATION - ESSENTIAL ELEMENTS

- Law 11/2007 of 22 June [1], on electronic access to Public Services for members of the public (Ley de Acceso Electrónico de los Ciudadanos a los Servicios Públicos (LAECSP).
- Law 56/2007 of 28 December [2], Measures to Promote the Information Society (Ley de Medidas de Impulso de la Sociedad de la Información).
- Law 18/2011 of 5 July [3], regulating the use of information and communication technologies in the Administration of Justice.
- Royal Decree 1671/2009 of 6 November [4], which partially develops Law 11/2007 of 22 June regarding citizens' electronic access to public services.
- Royal Decree 3/2010 of 8 January [5], regulating the Spanish National Security Framework in the field of eGovernment.
- Royal Decree 4/2010 of 8 de January [6], regulating the Spanish National Interoperability Framework in the field of eGovernment.

2.2. LEGISLATION - A BRIEF DESCRIPTION

Law 11/2007 of 22 June: the adoption of this Law has produced a major turning point regarding the modernization and improving citizens' electronic access to public services. The mains aims of this Law are:

1. to obligate by law the Spanish Administrations put online all public services in order to facilitate the exercise of rights and the performance of duties by electronic media;
2. to facilitate access by electronic media for the public to administrative information and procedures;
3. to create the conditions of confidence in the use of electronic media, establishing the measures necessary for the preservation of the integrity of fundamental rights;
4. to bring the Public Administrations closer to the public and to promote administrative transparency;
5. to contribute to improve the internal functioning of Public Administration bodies;
6. to simplify administrative procedures and to provide opportunities for participation and greater transparency.



Law 56/2007 of 28 December: This Act is part of the package of measures that constitute the Plan 2006-2010 for the development of Information Society and convergence with Europe and between Autonomous Regions and Cities, Plan Avanza [7], approved by the Government in November 2005.

Plan Avanza (strategy plan) includes among its measures the adoption of a number of policy initiatives aimed at removing barriers to the expansion and use of information technology and communications and to ensure the rights of citizens in the new society information.

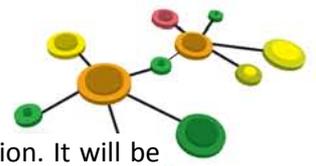
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This law introduces a series of policy innovations in electronic billing and strengthening the rights of users and, furthermore, undertakes the necessary changes in the legal system to promote the momentum of the information society.

Law 18/2011 of 5 July: regulates the use of ICT in the Administration of Justice; recognizes the rights of citizens, the rights and duties of legal practitioners in its relations with the Administration of Justice by electronic media. Also creates the judicial electronic office, treats the electronic processing of court proceedings and, finally, addresses the cooperation between public bodies with legal responsibilities and provides legal range to the Judicial Interoperability and Security Framework, which will take into account the Spanish National Interoperability and Security Framework.

Royal Decree 1671/2009, of 6 November: This royal decree is intended to provide the complementary measure necessary in order for the Government of Spain to ensure the effective exercise of those rights recognised by Law 11/2007 of 22 June. This decree partially develops this Law, regarding data transfer, virtual offices and general access point, identification and authentication, electronic registers, Electronic communications and notifications, Electronic documents and Electronic copies.

Royal Decree 3/2010 of 8 January: regulates the National Security Framework within the eGovernment scope. This royal decree is limited to establishing the basic principles and minimum requirements which allow the adequate protection of information and services. This requires including the scope and procedure to manage the electronic security of systems that process information from Public Administrations within the scope of Law 11/2007 of 22 June 2007.



The National Security Framework is made up for the adequate protection of information. It will be applied by Public Administrations to ensure the access, integrity, availability, authenticity, confidentiality, traceability and preservation of data, information and services used in the electronic means they control in the performance of their powers.

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Royal Decree 4/2010 of 8 de January: regulates the Spanish National Interoperability Framework (Esquema Nacional de Interoperabilidad - ENI) within the eGovernment scope. This royal decree only establishes the criteria and recommendations, together with specific necessary principles, that allow and favour the development of the interoperability in Public Administrations in a global perspective within the scope of Law 11/2007, of June 22, with the aim to achieve a common regulatory denominator.

With these two Royal Decrees the first phase of development of Law 11/2007 is practically completed.

2.3. SUBJECTS INDICATED OR INVOLVED

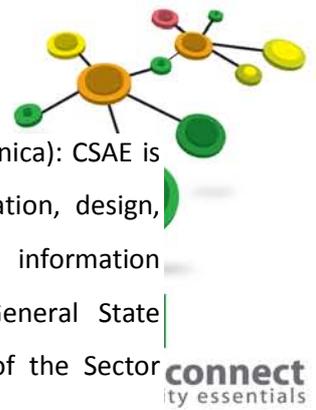
Organizational Model [8]

Spanish Ministry of the Presidency: General Direction for the promotion of eGovernment.

Ministry of Territorial Policy and Public administration: is responsible for the development of eGovernment in General State Administration, as well as cooperation with other public authorities in this issue.

The Autonomous Regions and local authorities are responsible for developing eGovernment in their respective fields.

The Ministry of Industry, Tourism and Trade is responsible of policies to boost the Information Society, will support and complement the efforts of those. All measures in eGovernment are promoted by the Ministry of Territorial Policy and Public Administration and Ministry of Industry, Tourism and Trade.



Higher Council for eGovernment – CSAE (Consejo Superior de Administración Electrónica): CSAE is the body under the Ministry of Public Administration, responsible of the preparation, design, development and implementation of policy and strategy of the Government's information technology and the promotion and implementation of eGovernment in the General State Administration. Furthermore, adopts the technical standards under the proposal of the Sectoral Committee of eGovernment (Comité Sectorial de Administración Electrónica).

It is the body responsible for intergovernmental cooperation. Its functions are to avoid duplication of resources, providing a substrate common professional public employee in the ICT sector, to work for cooperation between government bodies and as a means to address inter-organizational projects and facilitate internal information exchange with citizens and businesses and assist in the dissemination of best practices.

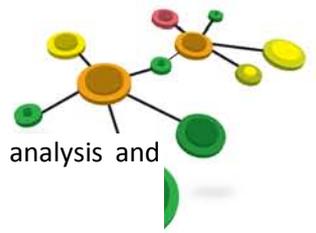
The following organizations are functionally dependent on it:

- eGovernment Ministerial Committees (Comisiones Ministeriales de Administración Electrónica);

Instruments for internal coordination of each department on Information Technologies and eGovernment (regulated by article 8 Royal Decree 589/2005). Chaired by the Deputy Minister and have the composition determined by their respective regulatory standards according to the peculiarities of each department. Their main functions are:

- prepare the strategic plan at department level, based on the proposals of public bodies and agencies involved, and rise, through its President, for his report by the CSAE;
 - monitor, within the department, the conformity with the guidelines and monitoring CSAE's agreements;
 - disseminate reports in relation to contracting in information technology;
 - coordinate the collection, aggregation and integration of information required by the eGovernment Observatory, following the procedures defined for it by the Permanent Commission of the Higher Council for Electronic Administration (CSAE), and to ensure the accuracy and completeness of the data his department.
- Technical Committees: working groups to execute CSAE's functions.

Sector Committee of eGovernment (Comité Sectorial de Administración Electrónica): His activity is part of the work of the Public Administration Sector Conference, which was created to promote common actions and projects whose aim is the cooperation between administrations and improving



the quality of public services, including in the field of eGovernment with research, analysis and proposal of measures, strategies, objectives and guidelines.

The main objective is to ensure compliance with the purposes and principles of Law 11/2007 on citizens' electronic access to public services, and to strengthen cooperation and inter-governmental collaboration in this area, putting efforts on: technological harmonization of systems to facilitate exchanges of information between public administrations and in works aimed at ensuring software portability, interoperability and security of systems and developments as well as the reusability of solutions, projects and services.

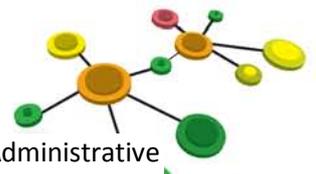
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The Committee is a body composed of the managing directors responsible for the eGovernment of the Autonomous Regions and the Central Government represented by the CSAE. The Committee has actively participated in the development of the law 11/2007 on citizens' electronic access to public services and the National Interoperability Framework and Security and Interconnect Project all government registers.

This Committee will provide a forum for sharing ideas, standards, technology and projects to facilitate the implementation of new interoperable services.

General Direction for the promotion of eGovernment - DGIAE (Dirección General para el Impulso de la Administración Electrónica):

- promotion and evaluation of actions developed in eGovernment;
- the development, promotion and implementation of technology systems of managing human resources, development of information systems and management of the Central Personal Register;
- the planning and implementation of projects aimed at facilitating the access of citizens and businesses to public services through the adaptation of governance processes to the use of electronic means, the implementation of information systems and standardization of services, procedures; information to citizens;
- the identification, design and project development and eGovernment programs whose implementation is in the field of Central Government and public bodies or others Public Administrations, in order to improve efficiency;
- the planning and development of information programs to citizens and businesses, integration and dissemination of administrative information and public services through the



various channels available to drive the electronic media, managing the Center Administrative Information and General Access Point and the standardization of the application of the corporate image.

Standing Committee of the Higher Council for Electronic Administration (Comisión Permanente del Consejo Superior de Administración electrónica). It has been established under Royal Decree 589/2005 of 20 May, which restructures the corporate bodies responsible for eGovernment. It is the body of technical support to the Higher Council for eGovernment (CSAE). Its main function is performance analysis and technical preparatory work as a basis for making decision by the CSAE.

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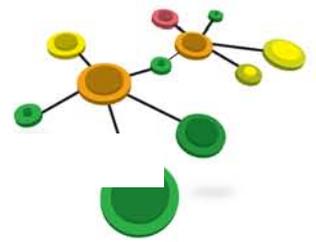
Who can impulse the interoperability in the Public Administrations?

Technology Transfer Center – CTT [9] is a portal that offers a comprehensive directory of applications and aims to encourage the reuse of solutions for all levels of government. This portal reports on projects, services, standards and solutions being developed in the field of eGovernment, building a large base of technical knowledge in the field of eGovernment. Its main objectives are:

- create a common repository for reuse software in public administrations;
- create a common knowledge base of information on the various technical solutions (standards, services, infrastructure, development, etc);
- provide dedicated and independent spaces in which any administration can publish their ICT project and even manage the evolution of this project;
- create a space to share experiences and cooperate in the field of eGovernment services between administrations.

Red.es [10] is the Public Enterprise under the Ministry of Industry, Tourism and Trade (MIT & C) in charge of promoting the development of Information Society in Spain and implement projects under the Plan Avanza2 (see “Main instruments activated and/or used” part) according to strategic priorities of the Secretary of State for Telecommunications and information Society (SETSI), working with regional governments, provincial governments, local authorities and the private sector in information technology and communication (ICT).

- Red.es computerizes and digitizes all bodies of registration and courts of Peace for individuals and institutions' electronic access to the Civil Registry;
- facilitates and boosts citizens' Internet access in disadvantaged rural and urban areas with poor access to ICT through telecentres and networked libraries;
- we work for various government and public services to be networked infrastructure.



Entities specialized in Free Software and Open Standards

CENATIC [11] is the National Reference Center for the Application of Information Technologies and Communication Technologies based on open sources. It is the only national strategic project to promote knowledge and use of open source software, being opened to public administrations, companies, universities, innovation centres and users and developers of such technologies.

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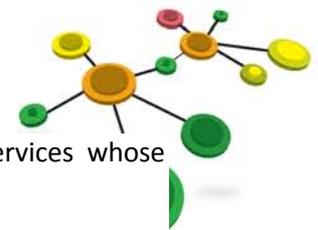
According to Law 56/2007 of 28 December on Measures to Promote the Information Society about “Technology Transfer Society”, CENATIC, in collaboration with the autonomous centers of reference and Transfer Center Technology (CTT) between Public Administrations of the Central State Government, is responsible for the enhancement and dissemination between private entities and citizens in general of all open source applications by the government. Also, CENATIC advised on general legal, technology and methodology best practices for the release of software and knowledge.

Entities specialized in Safety and accessibility

INTECO [12] has created the Reference Center on Accessibility and Web Standards in order to allow web pages belonging to the Central Government, to be viewed and used by more people, regardless of their own limitations, or their environment, checking the degree of accessibility and standards compliance, providing support and training to the AGE, conducting studies and developing an observatory area of R+D+i, to ensure compliance the proposed guidelines and their adaptation to the Law Society Services Information and Equal Opportunities, Non-Discrimination and Universal Accessibility for persons with disabilities.

INTECO has been given through the Avanza Plan missions to lay the groundwork for coordination of public initiatives around information security, encourage applied research and specialized training in the field of safety in the use of ICT and become the reference Center for Information Security at the national level.

General Directorate of Patrimony [13]. The Directorate General of Purchases is the unity, framed by the Directorate General of Patrimony, responsible for the management and operation of centralized purchasing system for goods and services in common use (SAC) and acquisitions in connection with equipment and systems for information processing, are the responsibility of the Directorate General.



Centralized procurement system is a model specific procurement of goods and services whose special characteristics are likely to be used generally by all departments.

These are called goods and services of common use among others and have the following characteristics:

- multiplicity of similar models;
- multiple suppliers;
- no compatibility problems;
- acquisition by the recurrent different administrative units;
- associated with the operation of services.

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2.4. MAIN INSTRUMENTS ACTIVATED AND/OR USED

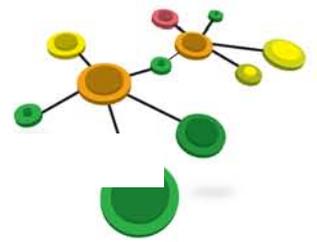
TOOL 1

SARA Platform (Red SARA) [14] Common Communications Infrastructure (SARA network) is a private communications network that enables secure transfer of all government, avoiding having to build specific network connection required between agencies. The network interconnects all government ministries and all the Autonomous Communities, and almost 50% of Local Authorities. It is integrated into the European network TESTA eGovernment, which serves to connect the resources of all Member States of the European Union.

Article 43 of Law 11/2007 establishes the obligation to create a communications network interconnecting the Spanish government with each other and with other networks of the European Institutions and other Member States to exchange information and services between them. The SARA network allows the interconnection of government, facilitating the exchange of information and services between them. SARA Network is an essential tool to further advance the development of eGovernment, which ultimately means better service to citizens.

SARA Network provides the Communications Network of the Spanish public administrations. The executive body is the Secretary of State for Public Administration; General Directorate for the Promotion of eGovernment; Projects Division eGovernment.

Participating bodies: Ministry of Territorial Policy and Public Administration; Ministries, Autonomous Communities and Local entities.



TOOL 2:

eGovernment Portal - PAe (Portal de Administración Electrónica) [15] is a new portal of the Central State Government which makes a point of access for eGovernment services available in Spain. The PAe describes itself as “a reference center that is a gateway to all information on status, development, analysis, news and initiatives from around the administration, content and services from diverse sources, making the aggregator of opinion, participation and dynamic engine of the whole community with interests in different areas”.

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ity essentials

Its aim is to bring together and centralize the full range of initiatives, reports, indicators, news, etc., managed by different bodies on eGovernment. It allows:

- work with all levels of government, so as to generate relations aimed at increasing the value that each provides in eGovernment;
- being a leader in eGovernment, introducing new forms of internal and external participation, encouraging feedback and Public Administration approach to stakeholders;
- portal intends to be the single point of care for citizens, businesses and government, coordinating the efforts of content, technology and people to achieve the single point of eGovernment information.

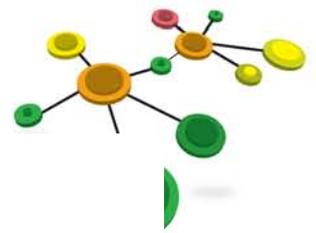
TOOL 3:

"eAdmon: All services in your hand" is a mobile application developed by the Ministry of Territorial Policy and Public Administration. The application combines the two trends in the access to electronic services, mobility and interaction within social networks, making it a more accessible and open public administration.

TOOL 4:

eSignature: Electronic signatures are an instrument to allow verification of the origin and integrity of messages exchanged through telecommunications networks, providing the basis to avoid foreclosure, if appropriate measures are taken based on electronic dates.

Also, the Ministry provides a Services Platform for validation and multi-PKI eSignature “@signature”, with the primary objective of offering a certificate validation, eSignature, disengaged of applications and thus promote the implementation of eServices for the citizen.



TOOL 5:

Electronic ID (eDNI). According to Law 11/2007 on Electronic Access of citizens to public services, individuals may use the electronic signature systems incorporated into the national identity document in their relationship with Public Administrations.

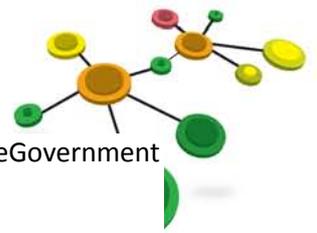
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2.5. NATIONAL INTEROPERABILITY FRAMEWORK

The National Interoperability and Security Framework (ENIS) - Royal Decree 4/2010 of 8 January (Ministry of the Presidency) is the binding instrument of interoperability provided by Law 11/2007.

The ENIS pursues the creation of the necessary conditions to ensure an adequate level of organizational, semantic and technical interoperability of systems and applications used by Public Administrations that permits the exercise of rights and the fulfilment of duties through the electronic access to public services; it also pursues providing benefits in terms of effectiveness and effectiveness. In order to create such conditions, the National Interoperability Scheme introduces the common elements that have to guide the action of the Public Administrations regarding interoperability. Particularly, it introduces the following principal elements:

- the specific principles of interoperability are defined;
- the dimensions of interoperability, organizational, semantic and technical, are taken into account, as they were explicitly mentioned in article 41 of Law 11/2007;
- common infrastructures and services are recognized to be relevant instruments that contribute to the simplification and propagation of interoperability and that facilitate multilateral interactions;
- the concept of 'reuse' applied to applications of Public Administrations, associated information and to other objects of information, given the fact that together with 'share' and 'collaborate' is relevant for interoperability, and all of them are recognized by EU policies;
- the interoperability of electronic signature and electronic certificates;
- preservation of the electronic document, considering the effect of time in interoperability;
- finally, a series of technical guides and instruments for interoperability are created, in order to facilitate the implementation of the Framework.



The responsible of its implementation is the General Direction for the promotion of eGovernment (DGIAE - Ministry of Presidency).

2.6. EGOVERNMENT ROADMAP, COUPLED WITH GOALS, VISION AND STRATEGY



The roadmap is a multilevel strategy: Strategic plans at National, Regional and Local level. All of them are defined under the National Interoperability Framework criteria.

National Strategic Plan: PLAN AVANZA describes the "Policy Cooperation and Coordination between public administrations with the private sector" and "Promoting Policy Special Projects".

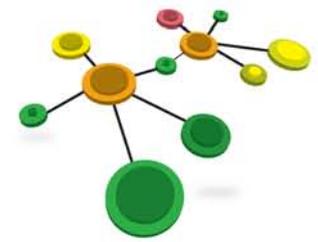
Plan Avanza 2: The Government has approved the 2011-2015 Strategy Avanza 2 to place Spain as a leader in the use of advanced ICT products and services. The 2011-2015 strategy focuses its effort on ten goals, among which is to generalize eGovernment and strengthen the field of digital content.

COMMON PLATFORM SERVICES: Develop shared services for joint use by the general government, ensuring interoperability of services and general government freeing the individual development of the same (including, among others, identification, notification, registration, payment and electronic file).

Infrastructure Security Policy: Creating Shared Service Centres between administrations for the management of new services such as management and security monitoring, support centers, and other storage systems, capable of developing a culture of cooperation and sharing and to move towards integrated management of all ICT systems of the AGE

Interoperability - RECOMMENDATIONS AND STANDARDS: Design and develop a common management architecture program with private sector participation, to ensure interoperability of solutions and results in a set of recommendations and standards for general government.





3. ORGANIZATIONAL ASPECTS

3.1. ORGANIZATIONAL ADVANTAGES OF ONLINE SERVICES INTEROPERABILITY – FOCUS ON PA VS CITIZENS-BUSINESS RELATIONSHIP

Transparency

The general legal provision on e-administration in Spain is, without doubt, the Law 11/2007 which equates access to information and government services by civil society (citizens and businesses) in a virtual environment and traditional access effective to date. Law 30/2007 is the specific rule on contracting and, as is apparent from its preamble, seeks transparency in the contracting conducted by the public sector.

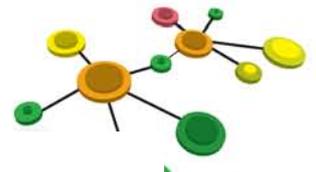
In this sense it is interesting to highlight a good practice in Catalonia - Gencat 2.0 [16] is redefining the eGovernment portal based on transparency and the implementation of large-scale services, which are being tested as forms of participation characteristic of web 2.0. It is a political project based on demand and citizen involvement that uses a shared service centre for all departments and related agencies.

In general, interoperable service platforms developed by Administrations aim to make available to the public information and real-time data on their performance, activity, decisions, plans and intentions.

Monitoring of responsibilities

In the previous section we presented a picture of responsibilities distribution between institutions and ministries which provides a clear picture of Government institutions responsible for eGovernment at all and for interoperability particularly. In any case, the two main institutions responsible of the eGovernment development in Spain are:

Higher Council for eGovernment (CSAE): is the body under the Ministry of Public Administration, responsible of the preparation, design, development and implementation of policy and strategy of the Government's information technology and the promotion and implementation of eGovernment in the General State Administration.



General Direction for the promotion of eGovernment (DGIAE) is responsible for:

- the promotion and evaluation of actions developed in eGovernment. Also, the development, promotion and implementation of technology systems of managing human resources, development of information systems and management of the Central Personal Register;
- the planning and implementation of projects aimed at facilitating the access of citizens and businesses to public services through the adaptation of governance processes to the use of electronic means, the implementation of information systems and standardization of services, procedures; information to citizens;
- the identification, design and project development and eGovernment programs whose implementation in the field of Central Government and public bodies or others Public Administrations, to improve efficiency;
- the planning and development of information programs to citizens and businesses, integration and dissemination of administrative information and public services through the various channels available to drive the electronic media, managing the Center Administrative Information and General Access Point and the standardization of the application of the corporate image.

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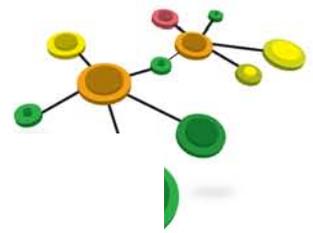
Validation and better data management

Online services help to validate and manage the data stored in the State information systems. Citizens can update their information using online services and such action allows actualizing the information in State information systems more quickly. In addition, different State institutions can interact between each other, which in this case saves pupil? time, resources required to process specific requests and so, expenses.

Uniqueness of data processed

Management of Data Processing Centers (CPD) [17]: the purpose of this Web application is to reach a single information point where it is to collect any useful data on the computers located in Central Services' CPD of the Ministry of Public Administration.

The main objective is to centralize information from servers and associated equipment that each unit independently managed, so that although the maintenance of their equipment remains the responsibility of each region, data can be shared quickly and comfortable. It also aims to optimize the management of computers to include documented information on procedures, services and policies for backups of each server.



Administrative load reduction (Time savings)

Replacement System Certificate on paper is constructed in order to prevent citizen has to file their paperwork, data Administration may know. The certificate is replaced by an exchange of data between administrations which is done electronically, quickly and with standardized legal safeguards described in RD 263/1996.

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Main benefits for the citizen:

- avoid displacements;
- he/she exercises his/her right not to provide information that is already held by the administration;
- cost and time savings by not having to collect the certificates in paper and electronic;
- increased agility of resolution procedures.

Administrative load reduction (Costs savings)

The Action Plan for Reducing Administrative Burdens in Spain (June 2008) sets out the actions and timetable to meet the goals set by Europe, and sets as priorities the reduction of administrative burdens by 30% by 2012 and reduce them on businesses in the rules, adopted to from January 1, 2009. One of the lines of action of the Plan is to reduce burdens by promoting measures for the development of eGovernment.

Of note is the reduction of costs involved in automation public and administrative procedures online, resulting directly in reducing the burdens associated with the activities of administration. The progressive reduction of these charges and the use of eGovernment depicted in General State Administration, since 2008, have saved more than 4,300 million euros. In the coming years, Governments have set the challenge of reducing administrative burdens for businesses and citizens by 15,000 million.

In this sense, a study estimates that a face transaction costs businesses and citizens € 80, while the same procedure conducted by electronic means implies a cost of 5 Euros. The difference multiplied by the number of procedures offers result in savings of billions of euros.

Better accessibility to online services (multilingual systems, easily of access and querying)



Red 060 portal [18] creates a single point of access for citizens. With this portal they can access services of the three administrations levels (national, regional and local): Common Electronic Registration, without having to know which service corresponds to a specific management or particular step. Three products: Web 060, Telephone 060 and Office 060.

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Red 060 defines a new model of customer service in the participating State, Autonomous Regions and Local Authorities articulating a joint bid service that transcends competence. The portal is managed by the Ministry of Territorial Policy and Public Administration with the cooperation of other governments.

The common electronic registry became operational on December 31, 2009 in the general access point, www.060.es, and supports any kind of written or electronic communication request addressed to the Central State Government or its agencies.

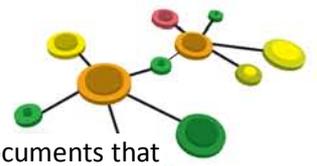
The integrated network of citizen service is fully established and evolving. There are 1,739 service offices in person to register and file management, telephone 060 serves over 1,920,000 calls annually, and the portal 060, www.060.es, is the entry point to nearly 4,000 e-services.

Single-Window system from the Services Directive [19], thus fulfilling the European Directive 2006/123/EC and the Law 17/2009 of 23 November. This single window facilitates, by electronic means, the free establishment of service activities and exercise.

Better accessibility to documents

The Ministry of Presidency wants to create an Electronic Archive to extend and standardize the use of solutions for document and electronic file registration.

Purpose: The widespread use of technologies produces more and more documents in electronic form. Effective management of electronic documents or digitized file is an essential precondition for effective policy of public access to documents of the Administration. It is important to adopt rules defining the conditions of validity and the conservation of these documents, electronic or digitized, when conditions are not already established in other provisions. These policies should apply to all administrative levels and the inter level.



Law 11/2007 recognizes the right of citizens to obtain electronic copies of electronic documents that are part of procedures that have the status of interested and conservation of electronic documents that contain administrative acts affecting rights or interests of individuals must be maintained in media of this nature.

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The project aims to develop common guidelines and management guidelines to facilitate the exchange of documents, electronic files or archive them, agreed to by all the ministries.

The objectives of the projects are:

- the establishment of an inter-ministerial group to develop proposals for the regulation implementing the Law on paper records and electronic archiving;
- study of best practices document, file and mail file;
- guide to the implementation of Law 11/2007 on the management of electronic documents, electronic records and electronic archiving;
- study of components to a solution of electronic file sharing;
- definition of metadata describing electronic documents within the electronic file inter-ministerial group. This specification documents will be in the recommendations of the ENI (National interoperability scheme).

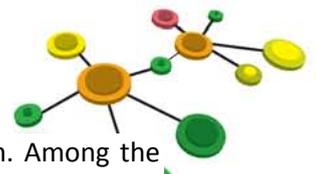
Reusing of existing IT infrastructures, services and their monitoring (report, statistical analysis, etc.)

The Center for Technology Transfer (CTT) [20] encourages the reuse of solutions for all levels of government. It has 2 technology environments in which to work according to different needs:

- CTT-PAe environment or CTT's home directory, in which it is possible to find an initiative, project and/or reuse service in each administration;
- the environment of the forge-CTT is a collaborative development environment for applications of Public Administrations, in which administrations, businesses and individuals can participate actively. It features downloads, documents, news, forums, registrations of incidents, bugs, suggestions, surveys, task distribution, mailing lists and source code management.

Homogeneity / compliance of online services' front-end provided by public organizations

The homogeneity / compliance of online services' front-end, provided by public administration is ensured by the www.060.es portal. The portal www.060.es is the national gateway of public administrations, a reference for citizens and companies, where they can find access to electronic



services and other information related to the activity and administrative organization. Among the contents included, is the access to electronic services of the government (State Administration, Regional Administration and Local Government) through an arrangement by subject, by profiles and vital statistics.

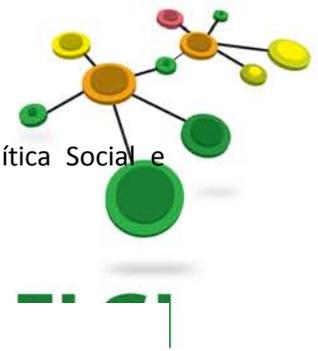
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From the portal www.060.es it provides access to the Common Electronic Register which permits the submission of any applications, documents and communications addressed to the Central Government and its agencies.

Within Law 11/2007 of 22 June [21], on electronic access to Public Services for members of the public, Electronic Offices are made available, through which citizens can access to deal with the Public Administration. The Electronic Office for the 060.es, known in the law 11/2007 AP-General is in the directory <http://sede.060.gob.es>, in it is collected the Directory of Electronic Offices.

Almost all of the departments provide their own unique front-end with custom design which differs from one institution to another. For example the following institutions with their homepage addresses can be listed:

- Ministry of Foreign Affairs and Cooperation (Ministerio de Asuntos Exteriores y de Cooperación) [22];
- Ministry of Justice (Ministerio de Justicia) [23];
- Ministry of Science and Innovation (Ministerio de Ciencia e Innovación) [24];
- Ministry of Culture (Ministerio de Cultura) [25];
- Ministry of Defense (Ministerio de Defensa) [26];
- Ministry of Economy and Finance (Ministerio de Economía y Hacienda) [27];
- Ministry of Education (Ministerio de Educación) [28];
- Ministry of Public Works (Ministerio de Fomento) [29];
- Ministry of Industry, Tourism and Trade (Ministerio de Industria, Turismo y Comercio) [30];
- Ministry of Interior (Ministerio del Interior) [31];
- Ministry of Environment and Rural and Marine (Ministerio de Medio Ambiente y Medio Rural y Marino) [32];
- Ministry of Territorial Policy and Public Administration (Ministerio de Política Territorial y Administración Pública) [33];
- Ministry of Presidency (Ministerio de la Presidencia) [34];



- Ministry of Health, Social Affairs and Equality (Ministerio de Sanidad, Política Social e Igualdad) [35];
- Ministry of Labour and Immigration (Ministerio de Trabajo e Inmigración) [36].

The only homogeneity of such services is the way how they are represented in the portal. Each service has its title, brief description, instructions and link to start the service.

Capability to provide and manage online payment services by online outlays

Payment Gateway: State Tax Administration Agency (AEAT) has made available to the Ministry of Public Administration (MAP) a payment gateway that can be used by the departments of Central Administration in need.

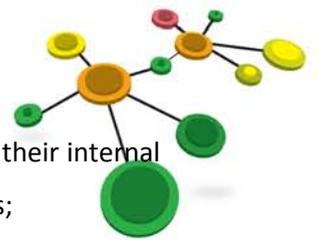
Payment Gateway via the Internet: Electronic Payment Service (PTS) [37] provides to administrators, government agencies and financial institutions a common, standardized and secure electronic payment which allows concepts of administrative debt (taxes, public fees, etc.), with all legal guarantees. The service offers two payment options: Direct payment by citizens / businesses and Payment by Batch Representatives (managers, notaries, etc.).

Customer satisfaction, feedback analysis to identify or define better services

From the website www.060.es, Offices 060 portal of citizen attention and services, where citizens can obtain information and guidance about the services offered by government, there is a tab called "Interact with Administration" that offers opportunities for communication and participation to citizenship, and collects complaints, suggestions and resources to the Administration: Complaints and suggestions of citizens to the General State Administration; Complaints and suggestions of citizens to the Autonomous Communities; Claims and complaints from telecom users; Tax Reporting; Complaints to Ombudsman and Reporting to the Inspectorate of Labour and Social Security. On the other hand, citizens dispose of a Contact mailbox: Contact forms with the Ministries; Mailbox General State Administration; Joint Electronic Register.

Citizens collaboration and e-participation

1. One of the eGovernment Portal (PAe) pillars is collaboration, participation and partnership, and therefore offers, both administrations and citizens and businesses, an environment in which to address those issues of concern or curiosity in eGovernment, providing a platform where members can exchange experiences and knowledge, or work for common development. These



collaborative spaces offer the opportunity not only to establish a dialogue through their internal forums, but also share queries related documentation and set opinion consultations;

2. a good practice could be a PLATFORM FOR CITIZEN PARTICIPATION FOR MOBILE made by RIGEL Company for Seville city hall. Interaction between administrations and citizens and fostering the integration of citizenship management processes at all levels. The system ensures maximum penetration through the optimum use of mobile phone, which is widespread among all segments of our population;



also, the AGE (General State Administration) is present in social Media. The Social media and social networks are a meeting place, where Internet users spend more and more time. Agencies and ministries have initiated an approach to them, coming to meet citizens where the citizens are. Thus, the eGovernment Observatory of the Central Government (OBSAE) [38], in charge of monitoring information related to electronic public services and their indicators broadcast the latest news of eGovernment on its OBSAE Twitter.

Multi-channel PA services

Red 060 (Network 060) is a portal (multi-channel services) that creates a single point of access for citizens. With this portal they can access services of the three administrations levels (national, regional and local): Common Electronic Registration, without having to know which service corresponds to a specific management or particular step. Three products: Web 060, Telephone 060 and Office 060.

Red 060 defines a new model of customer service in the participating State, Autonomous Regions and Local Authorities articulating a joint bid service that transcends competence. The portal is managed by the Ministry of Territorial Policy and Public Administration with the cooperation of other governments.

The Common Electric Register of the General Administration (REC) [39] is a generic record in which you may file any application, written communication to the Central Government and its public agencies. REC allows the submission of applications, documents and communications every day of the year, 24 hours a day.

3.2. ORGANIZATIONAL ADVANTAGES OF INTEROPERABILITY OF ONLINE SERVICES – FOCUS ON PA VS PA RELATIONSHIP

Improved circulation / exchange / delivery of data and information between PA organizations

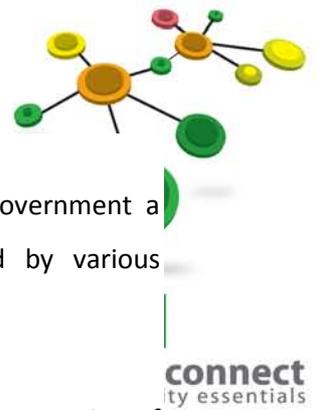
The communications network of Public Administration (SARA) interconnects in a private and secure framework all government departments, all autonomous regions and over 1,800 municipalities, which is providing coverage to about 70% of the Spanish population.

To ensure compliance with article 6 of Law 11/2007 in which is defined the associated rights of citizens in the use of electronic media with Administrations, particularly the right, at p. 2.b), "not to provide information and documents held by Public Administrations, which use electronic media to collect it, with citizen consent in case of personal data, may be sent and collected electronically."

For example, the intermediation platform of administrative certificates has collected in 2011 more than 19 million hits and electronic checks of National Identity Card and certificates of registration, thus preventing the citizen to have to bring these documents. Nor does he/she provide more than 60 administrative certificates provided electronically from Social Security, Inland Revenue, Land Registry and other agencies.

Responsibility

The law (Law 11/2007 of 22 June, on electronic access to Public Services for members of the public (LAECSP) [40] provides for the principle of responsibility and quality on the accuracy and authenticity of the information and services offer by the government through electronic media: *"The establishment of an electronic venue comes as the responsibility of the owner as to the completeness, accuracy and updating of the information and services that can be accessed through the same (...)."* Each Public Administration determines the conditions and tools for creation of electronic venues, subject to the principles of advertising, responsibility, quality, security, availability, accessibility, neutrality and interoperability. In any case, it should ensure the identification of the owner of the site, as well as the means available for the formulation of suggestions and complaints.



Validation / data processing

The validation platform @firma of digital certificates that offers to all levels of government a platform to validate electronic signatures and certificates which are supported by various administrations, including the Electronic ID.

Validation platform signature @firma [41] is a solution technology based on the implementation of the Platform and signature validation. It is a solution based on free software, open standards and Java Web server Apache, JBOSS, Solaris OS / Linux, AXIS, etc..

Uniqueness of data processed

Data brokering platform: is the solution for data exchange between administrations, which ensures the citizen's rights not to provide any data already held by the administration, right enshrined in Article 6 of Law 11/2007. The citizen only needs to give his consent to the applicant organism collecting the data through the platform. The citizen has to show a photocopy of identity card, residence data, unemployment data, cadastral data, etc.

Administrative load reduction in terms of costs and time savings

In general Institution's function optimization with e-service integration gives following advantages:

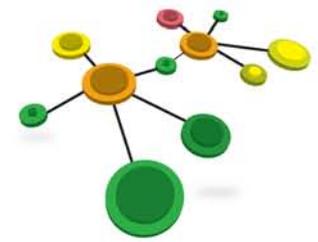
- 1) automate and accelerate many internal processes, simplifying everyday employee work through quality and efficiency improvement;
- 2) faster and better communication between institutions and between institutions and citizens;
- 3) more efficient service and request reception;
- 4) plan for staff workload shifting to back-office work and only when necessary attracting full-service process.

As an example of cost-saving: "Substitution of certificates on paper". This system is constructed in order to prevent citizens from having to file their paperwork, which data Administration may know. The certificate is replaced by an exchange of data between administrations which is done electronically, quickly and with standardized legal safeguards described in RD 263/1996.

Benefits for Administration:

- possibility to complete the electronic processing;
- saving in administration costs by not having to store or process roles;
- save time by avoiding handwritten signatures and the presence of staff;





- gives a simple and effective service to citizens;
- improved image among the public.

Documents' accessibility

SIR: Interconnection system of registrations. SIR is the technological infrastructure of Public Administrations PPPA that converts paper documents submitted by the public in electronic documents, allowing secure electronic exchange between offices and agencies.

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The SIR permits the implementation of electronic single window concept. The obligation to interconnect their offices AGE registration set out in Article 24.4 of Law 11/2007 of June 22, Electronic Access of Citizens to Public Services.

Benefits for Administrations:

- improved management of the registration offices;
- improved response time of administration in the beginning of the proceedings;
- improved control and monitoring of transfers between registrars.

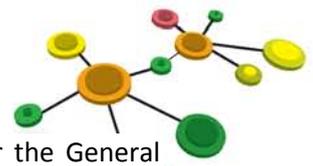
Benefits for Citizens:

- incorporating trace mechanisms;
- the citizen service will be more homogeneous.

Reusing of existing infrastructure and systems

Reuse of Public Sector information is the use by persons or entities, of information created or safeguarded by public sector bodies, for commercial purposes or not. The project APORTA [42], part of the Plan Avanza 2 and promoted by the Ministry of the Presidency and the Ministry of Industry, Tourism and Trade, aims to promote a culture of reuse in Society and Administration and spread their social and economic value.

Reuse of Public Sector information has a considerable economic potential, as it allows developing new products, services and markets. It promotes economic development and job creation in the digital content industry. Additionally, the provision of public information by the government increased administrative transparency, having a reinforcing effect of democratic values and enabling citizen participation in public policy.



In March 2010, APORTA Project provides "beta" Catalogue of Public Information for the General State Administration, which allows access from a single point to different Administration websites that offer public information resources. The aim of the catalogue is to provide to citizens and businesses the identification and access of public information available and, thus promoting the reuse of the same.

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Homogeneity / compliance of online services' front-end delivered between public organizations

SIR (Interconnection System of Registrations) [43] comes in the first phase as a system for unobtrusive registration of offices' interconnection and integrates the efforts made by various public agencies for the efficient exchange of electronic registrations among all Spanish territory.

One of the main benefits is the provision of a more homogeneous citizen service. This will be integrated with existing services developed by autonomic and local administrations to grow the network of administrative cooperation.

Definition and adoption of precise expertise

One of the factors for ensuring of definition and adoption of precise expertise in the interconnections between public administrations is the obligation of publishing of various information exchange formats of the different public administrations.

Both, Law 11/2007 and Article 10 of Real Decree 4/2010 set the obligation for Public Administrations to publish data models and associated encodings exchange through Centre for Semantic Interoperability of the Administration (CISE) [44].

This entails different implications:

- 1st, establish an informative framework at national level, to all administrations;
- 2nd, the need to publish and publicize the formats used in different applications that could serve as data exchange. This entails that the body which is the creator of the software application or online services, is the ideal for calibrating and balancing the need to publish the different exchange formats in order to share data with other administrations.

This has disclosed, within the security determined, the data formats that could be exchanged between administrations. That is, the creator of the service through its development and implementation is well aware about:



- if the service is susceptible to exchange information using XML formats;
 - the conditions to be met by different receivers of such information. Indeed, what are the potential customers and technical requirements must be met;
 - what data structure can be obtained from the service, and as you build the data exchange.
- To do this, it's enough to know the different XSDs consisting of service.

The ultimate goal should be the xml file sharing with a number of fields defined. For the implementation of the different XML, XSDs are used as a template to validate the different XML. It's enough knowing the XSDs for the validation of the xml included.

Consequently, it starts to publish and disseminate all the XSDs of different electronic services / applications / electronic media etc, so that the information exchanged can be automatically interpreted by applications that were not involved in its creation.

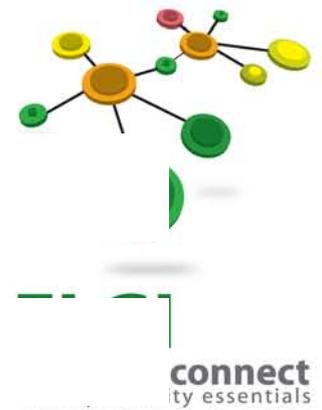
The objectives of CISE are to gather and to disseminate different exchange messages. An exchange message is defined as the minimal structure of information, with ability to define a basic operation that can be deployed on a server.

The CISE project is not born independently but due to the development of SEMIC.EU. The implementation at European level of semantic interoperability has been developed in recent years focusing all its efforts on finding a common forum where institutions can exchange different ideas, formats and interoperability tools that work with national initiatives.

3.3. CHANGES IN ORGANIZATIONAL STRUCTURE AND LOGISTICS AS CONSEQUENCE OF AUTOMATIC PROCESSES

The main milestone in the organizational changes in the structure of service provision of the Spanish Government has been the Modernization Plan [45]. Some measures or actions have already been described in previous pages.

The Modernization Plan is a proposal supported by the Ministry of Public Administration for 2006-2008, which through various measures aims to strengthen and modernize the administration to make it match the needs of citizens.



It is composed by the following issues:

- two legislative initiatives:
 - basic Statute for Civil Servants and
 - eGovernment Act.
- three action plans:
 - plan special measures for the AGE and the reform of the Peripheral Administration;
 - plan of technological modernization and administrative simplification of the AGE;
 - plan of measures to promote transparency and participation in the GSA.

16 main measures:

- measures of organizational improvement:
 1. Peripheral administration reform
 2. Monitoring the quality of public services;
- measures of public improvement:
 3. Basic status of public employees;
 4. Special plan of measures to AGE;
- measures of citizen relationship improvement:
 - Administration 24 hours:
 5. eGovernment Act;
 6. Digital service plan associated with the electronic ID;
 - Simplification of citizen formalities:
 7. Integrated office network (Red 060);
 8. Paperless citizen's procedures;
 9. Replacement of documents by applicant's statement;
 10. Redesign of AGE procedure with citizens;
 - Streamlining administrative procedures:
 11. Redesign of staff management procedures;
 12. Online processing system for Ministers and Officials;
 13. Inter-administrative network management;
 14. Aid for modernization of local Administrations;
 - Transparency, participation and quality:
 15. Public consultation on draft legislation or government decisions;
 16. Creation of discussion forums.

3.4. RE-ENGINEERING OF ADMINISTRATIVE INFORMATION SYSTEMS: PROCESSES AND ORGANIZATIONAL ASPECTS

Example of process reengineering (redesign and standardization of procedures): Handling Guide for Families and Procedures.

A concrete example of an Andalusia Administration's project: w@ndA project [46] addresses the requirement to meet the requirements of any processing, for which within the conceptual basis w@ndA is proposing to develop standardization work and modelling in the concept of family proceedings, family proceedings meaning "not arbitrary grouping of procedures under the criteria of similarity in the basic scheme of processing, input and output documents and information."

As a prelude to the development of the Guidelines for Treatment of Families, families were given defined procedures. To do this, they began by establishing an initial classification, taking into consideration any process whose processing was determined in the implementing rules. Processing Guide for Families focuses on the elements common to all registrations and each of the families of procedures. These concepts are based on guidelines, which contain the simplified schemes of all-type procedures that take place in the area of the Andalusia Administration.

A family contains a simplified scheme of administrative procedures, including processing, input and output documentation, basic information for processing and information to provide to citizens.

The methodology is composed by 8 main steps:

1. definition of inventory procedures and/or typology (to identify the family):
 - determine the scope of work (number of procedures by type, time constraints, etc.);
 - if multiple procedures, identify the relationship between them and establish a prioritization;
 - take into account aspects such as: types, topics, target audience of the procedures, etc.
2. identification of partners of the procedures. It is essential to identify adequate interlocutors for each procedure;
3. presentation of the needs work;
4. collection of documentation (and/or file);
5. analysis of documentation;

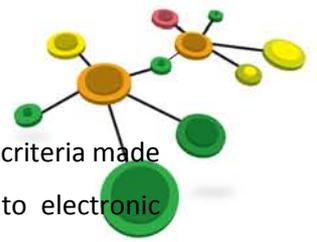
6. preparation of the proposal: an evaluation of the documentation should proceed to develop the proposed procedure. To develop such proposal should always start with the guidance processing of corresponding family. The handling guidance consists of several sections: Pattern of family, Outline of processing procedure, List of improvements, Summary information on the procedure, detailed analysis of the data processing procedure, Basic information for citizens, Information management, Annexes...;
7. proposal submitted to the managers of the procedure;
8. validation of the proposal by managers and Administrative Organization.

3.5. CERTIFICATION PROCESS FOR INTEROPERABILITY

The Digital Certificate is a digital document that contains, among others, its identifying information. Thus, the certificate allows you to identify the Internet and exchange information with other people with the assurance that only you and your partner can access it. This service requires you to have a standard personal digital certificate X.509 v.3 installed in your browser.

The policy of electronic signatures and certificates in the field of Central Government and its public bodies, as provided in Article 24 of Royal Decree 1671/2009, partially developing Law 11/2007, is composed by guidelines and technical standards applicable to the use of certificates and electronic signatures within its scope. Article 18 of Royal Decree 4/2010 for regulating the National Interoperability Framework, states the electronic signatures policy and certificates of the Central Government, and will provide an interoperability framework for authentication and mutual recognition of electronic signatures within its scope. It also states that this policy may be used as reference by other public authorities to define policies to recognize certificates and signatures within their areas of competence.

An electronic signature policy contains a set of standards for electronic signatures, organized around the concepts of generation and signature validation in a particular context (contractual, legal, legal), defining the rules and obligations of all stakeholders in this process. The goal of this process is to determine the validity of electronic signatures for a particular transaction, specifying that the information should include the author in the process of signature generation, and the information should check the verifier in the validation process thereof.



The signature policy of the State General Administration represents the set of common criteria made by this administration and its associated or subordinate public bodies in relation to electronic signatures.

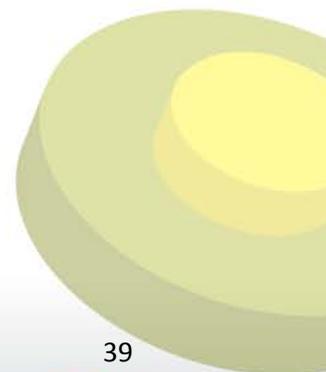
- includes the rules on electronic signatures, organized around the concepts of generation and signature validation;
- includes standard and interoperable profiles of new forms of identification of citizens and public administrations of Law 11/2007: based certificates, electronic seal and public employee;
- allows boost of confidence in electronic transactions;
- defines the rules and obligations of all parties involved in a signing process;
- used to determine the validity of electronic signatures for a particular transaction.

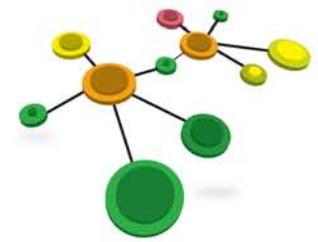


Policy for electronic signatures and Administration certificates

- Resolution of 19 July 2011 (BOE of 30 July [47]), the Secretary of State for the Public Service, by approving the Technical Standard for Interoperability of Policy for Electronic Signature and Administration certificate;
- Technical Standard Application Guide of Policy for Electronic Signature and Administration Certificate [48].

Text in English [49]





4. TECHNOLOGICAL ASPECTS

4.1. ANALYSIS OF ADMINISTRATIVE INFORMATION SYSTEMS THAT MEET INTEROPERABILITY REQUIREMENTS



1. BADARAL [50]

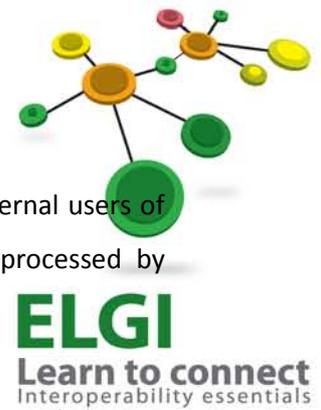
BADARAL is a support tool for Human Resources managers of AGE, implemented in an integrated information system with the Central Register of Personal and CECIR Portal [51] (Portal of the Inter-ministerial Commission on Remunerations: a workspace for HR managers of ministerial departments and the Executive Committee of the Inter-ministerial Commission on Remunerations - Features: presentation, study and resolution of proposed amendments to Labour Relations of employees and civil servants of CECIR level.

BADARAL is an information system that covers a variety of features that cover the tasks of staff management in the area of AGE. To bring staff drives the information through registration documents; to streamline the procedures associated with administrative acts; to improve the quality of data on staff.

Technical description: The BADARAL application is supported by three-tier Web architecture with Oracle technology platform.

- a first layer, based on a thin client, communicates with the application requests through http, https;
- a second layer, which shall consist of the Application Server, which incorporates all the Application Logic, so maintenance is much easier and faster, to be included in a single point. Furthermore, this intermediate architecture is fully optimized for access to the database;
- a third layer consisting of the Database Server, where the data schema of the application and the information repository are located;

The most important part of this architecture is the core layer where the Application Server as it is here where you can deploy all types of applications to streamline the management of staff AGE.



2. DOCELWEB [52]

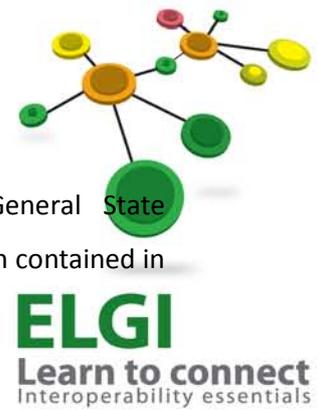
Portafirmas (digital signature service) address under web architecture available to internal users of the Budget Administration and external users that require it for documentation processed by applications of the Budget Administration.

This is a web application developed in Oracle Java environment with the following characteristics:

- from the point of view of architecture, it is used the Model-View-Controller (MVC) with a front controller in charge among other tasks of authentication and authorization of users and navigation and menus. This application is based on an internal Framework (called FRACC), which also provides exception management, configuration management, Web services infrastructure and based services for data access;
- for signing documents a Java Applet is used that is sent to the client. The Applet allows the selection of certificates and the signature on the client, but the generation of the abstract, and whether the document signed in XAdES-BES form, occurs in the server with an exchange of AJAX calls. This allows, among other things the size of the Applet to be comparatively small (660 kb total size) without requiring prior distribution, and to allow the signing of documents relatively large (10 MB or more);
- for tasks related to electronic signatures an internal platform IGAE (called SGIFE) is used, which also allows online validation, sealing and completed to XAdES-A and long-term custody documents;
- the application allows the management of signature requests that have been discharged, both within the application, and from other applications using Web services. To do this, the application itself provides a web service that enables the discharge, status query or cancellation requests. In addition, a review of the application by the user invokes a web service DocelWeb notification that lets you download the application and appropriate documents signed.

Standards: DocelWeb allows the signing and validation of documents that follow the ETSI TS 101 903 standard (XAdES). Moreover, in its development, has been used:

- Standard J2EE;
- Persistence using SQL;
- Web Services using WSDL with SOAP Message Exchange (versions 1.1 and 1.2) and MTOM (SOAP Message Transmission Optimization Mechanism);



3. BASIC [53]

BÁSICAL system has been developed by the General Intervention of the General State Administration to provide software support to the operations and all other information contained in the Basic model Accounting Information System for Local Government.

BÁSICAL system implementation is based on a three-tier architecture:

- database: Layer to access data through stored procedures and Transact-SQL functions that canalize any treatment of the data.
- business: Layer that encapsulates the application logic by implemented classes on the Framework.NET.
- web Interface: Layer of presentation of data to the user through ASP.NET pages, controls, AJAX and Web services.

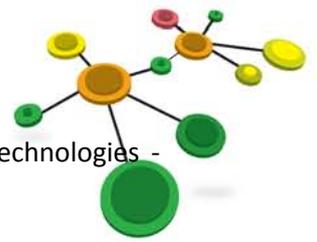
4.2. STANDARDS AND TECHNICAL RULES FOR IMPLEMENTATION (FOCUSED ON ONLINE SERVICES)

Applicable standards

Public administrations will use open standards and, where appropriate and complementary, standards that are widely used by citizens, in order to ensure independence in the choice of alternative technologies by citizens and public administrations and adaptability the advancement of technology, so that:

- a) the documents and eGovernment services that the public organs and entities issuers available to the public or other public authorities will meet at least available via open standards;
- b) the documents, electronic services and applications made available by Public Administrations to citizens or other public authorities shall be viewable, accessible and functionally operable under conditions to satisfy the principle of technological neutrality and avoid discrimination of citizens because of their technological choices.

Open standards applicable, to collect and identify different regulatory and technological tools necessary for development of management systems that support electronics. The standards are grouped in: - Technology application layer - Security Technologies - Transport Technologies and Network - Technologies for IP videoconferencing - Mobile Technology - Transport Technologies Voice over IP networks - Technologies of accessibility and usability - Technologies services Web -



Technologies for the identification - Technologies for data integration - Semantic Technologies - Information storage media - Programming languages - Process Flow Technologies.



STANDARD 1

XML (Extensible Markup Language) is a Data Integration Technology in the link "models and data integration" of the interoperability chain. XML is presented as a proper standard for public information markup, taking into consideration its potential to solve most of the present interoperability problems. It is concluded that XML provides an ideal way to develop interoperable services in the public arena. At the same time, it is stated that XML cannot be considered as a solution by itself, so co-operation among different government levels is needed in order to develop schemas and common standards that can be used and shared by all public organisations in the development of information products and services.

As for informational interoperability, we know that efficiency in the recovery of public information is conditioned by aspects of structuring information structure (markup language) and knowledge representation (metadata). In this sense, XML is a real breakthrough, because its potential benefits are capable of making syntactic and semantic interoperability real.

STANDARD 2

ISO/IEC 29500:2008 Information technology - Document description and processing languages: Office Open XML File Formats (OOXML - Office Open XML) [54].

ISO/IEC 29500-1:2008 is an open standard in the link "Multi-channel accessibility, integrate y secure", of the interoperability chain. It defines a set of XML vocabularies for representing word-processing documents, spreadsheets and presentations, based on the Microsoft Office 2008 applications. It specifies requirements for Office Open XML consumers and producers that comply to the strict conformance category.

STANDARD 3

ETSI TS 102 023 Electronic Signatures and Infrastructures (ESI); Policy requirements for time-stamping authorities. The time stamping service allows you to issue time stamps for electronic documents from Bodies that provide the service. A time stamp is an electronic signature by a Time Stamping Authority (TSA) that allows us to demonstrate that the data provided have existed and have not been altered since a specific point in time (from a reliable source of time).

As an example, the TS@ 2.0 is a technology platform based on J2EE, which provides validation and time stamping. The stamps can be generated in binary format following the standards and XMLTimeStampToken RFC3161. In addition to the validation , resealing allows sealing of old stamps.

The TS@2.0 is based on the following technology standards:

- Programming language: Java 1.5.0.15;
- RFC 3161 "Internet X.509 Public Key Infrastructure Time Stamp Protocols" standard defined by the Internet Engineering Task Force (IETF) protocol for Time Stamp;
- CEN-CWA14172-Part 8: Time-stamping Authority services and processes;
- IETF RFC 3628 Policy Requirements for Time-Stamping Authorities (TSAs);
- XML Timestamping Profile of the 2 OASIS Digital Signature Services (DSS) to see. 1.0.
- ETSI TS 101 861 Time stamping profile;
- Cryptographic API used to generate labels IAIK 1.3.1_08;
- 1.3.8 with Struts Framework using Struts-Tiles, Struts-Validator and Struts-Taglib;
- JSP with JSTL 2.0 tags;
- Hibernate as persistence engine;
- Oracle 10g;
- Apache Axis 1.4 and SOAP webservices interface of @sign, meeting the specifications of WS-I Basic Profile and WS-I Security Profile;
- Log4 as manager logs.

4.3. IS THERE AN OFFICIALLY ADOPTED LIST OR REGISTRY OF STANDARDS RELATED TO INTEROPERABILITY

The standards catalogue is under construction. It will be elaborate in the framework of the Interoperability Technical Rules (NTI).

The Standards Catalogue:

- a) will include the set of standards defined in Annex structured according to different categories;
- b) will address the application of the criteria set out in Article 11 of Royal Decree 4/2010 of 8 January [55];

- c) will collect the minimum standards required for interoperability and the implementation of other Technical Standards for Interoperability;
- d) will indicate for each standard rightful status within the cycle of life, values applicable 'Allowed' and 'In abandonment'.

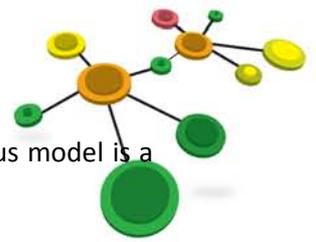
A Draft resolution of the ministry of government by adopting the standard technical interoperability standards catalogue is available in the following link [56].

4.4. EXISTING METHODOLOGIES IN THE MANAGEMENT OF IT SERVICES

Technical Standards for Interoperability (NTI). NTIs are guidelines to implement various technologies. Those are generally functional descriptions on how to carry out certain features from user applications or public administrations. Instead of describing interoperability, it describes functionality:

- Electronic Signature Policy and Administration Certificate: Develop guidelines and general requirements for the development and implementation of electronic signature policies based on certificates;
- scanning documents: Include the main rules for scanning paper documents;
- requirements for connection to the communications network of the Spanish Public Administrations: Set the conditions under which any organization shall access the SARA Network;
- procedures authentic copy and conversion of electronic documents, as well as from paper or other physical media to electronic formats: Collect the requirements governing the generation of authentic copies in electronic form and electronic document conversion at functional level, detailing how these processes reflect the structure of the electronic document and its metadata;
- creating new data models.

In the case of electronic document and electronic file, it goes further and describes technical devices for interoperability. The fastest way to achieve interoperability is to impose that everyone uses the same standard. The imposition of the same model is good, simple and cheap for those who impose and it seems that this is the way that aims to achieve interoperability in Spain. The problem is context. What we mean by "everyone". If we refer only to the realm of Spain, the solution is perfect,



but in a higher context in a European context, set against impositions as this consensus model is a disaster for business and government.

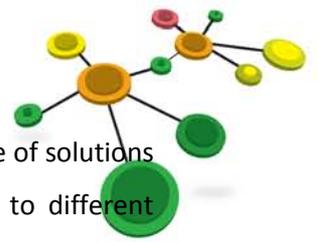
The elements on which patterns have been identified are:

- electronic document: It consists of a set of XSD schemas that define an electronic document and its contents, its metadata and signatures. Four schemes have been defined:
 - documentoENI.xsd
 - metadatosDocumentoEni.xsd
 - contenidoDocumentoEni.xsd
 - firmasEni.xsd
- electronic file: As in the case of the electronic document, XSD schema set defines the concept of electronic record.
 - ExpedienteEni.xsd
 - IndiceExpedienteEni.xsd
 - IndiceContenidoExpedienteEni.xsd
 - MetadatosExpedienteEni.xsd
 - firmasEni.xsd



Not yet developed the NTI are the following (under construction):

- catalogue of standards: There should be a list of open standards or "widely used" to establish relations between citizens and public administration or between administrations;
- data brokerage Protocols: Specification brokering protocols to facilitate data integration and reuse of services in public administrations and which will apply to providers and consumers of such services;
- list of data models that have the common character of the administration and those relating to matters subject to exchange information with citizens and other administrations;
- data model for sharing of seats between the Entities Registry: functional and technical aspects for the exchange of registry entries, error handling and exceptions management annexes, technology requirements and format transformations;
- Policy Electronic Document Management: Aims to define the responsibilities, programs, processes and management controls management documents and electronic repositories.



On the other hand, the Center for Technology Transfer (CTT) aims to promote the reuse of solutions for all levels of government. CTT works in 2 technological environments according to different needs:

- the CTT-SAP environment or directory CTT initiatives, in which administrations can find an initiative, project or / and service for reuse. In this environment there is information available on all the initiatives contained in the CTT and different options to download or collaborate in them are offered;
- the setting of the forge-CTT is a collaborative development environment for administrations' applications in which administrations, companies and individuals can actively participate. It features downloads, documents, news, forums, records of incidents, bugs, suggestions, surveys, mailing lists and source code management.



The CTT [57] is the answer to Article 46 of Law 11/2007 of June 22, on electronic access of citizens to public services and Article 17 of Royal Decree 4/2010 of January 8, which regulates the National Interoperability Framework in the field of eGovernment.

4.5. IS THERE A NATIONAL CLEARING-HOUSE OF DATA ELEMENTS AND XML-CONSTRUCTIONS AND IF NOT, IS THERE ANY WORK IN THIS DIRECTION

The Ministry of Industry, Tourism and Trade, through Red.es, founded the National Center for the Application of Information Technologies and Communication Technologies (ICT) based on open sources. CENATIC is a State public foundation formed to promote projects of open source software aimed at better implementation of interoperability measures. Furthermore in order to promote reuse and facilitate interoperability, CENATIC is responsible for the enhancement and dissemination of all applications that are declared open source by Public Administrations.

4.6. AUTHENTICATION TOOLS FOR ELECTRONIC IDENTIFICATION INTEROPERABILITY (SMART CARDS, BIOMETRIC ACCESS SYSTEMS, ETC.)

Common Services of eSignature: suite of products related to electronic signatures to promote and facilitate the implementation of signature and authentication systems in Public Administration. Among the services provided by the General Directorate for the Promotion of Electronic

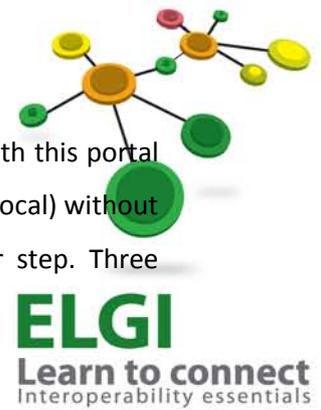
Administration, it has created a suite of products related to electronic signatures to promote and facilitate the implementation of signature and authentication systems in Public Administration, encouraging the reuse of solutions with the primary purpose of offering a certificate validation, electronic signatures and security, disengaged of applications in order to promote the implementation of electronic services for citizens.

- @Signature (@firma) is a validation platform of certificates and signatures of the Ministry of Territorial Policy and Public Administration;
- client @Signature is a signature generation applet in different formats;
- time-stamping authority of the Ministry of Territorial Policy and Public Administration;
- validate is a web application for end user of signatures and certificates validation;
- Portafirmas is a component for signature integration in organizational workflows;
- Spain collaborates in Stork project (European project) for pan-European recognition of electronic identities;
- policy of Signature and certificates provides the guidelines and technical standards applicable to the use of certificates and electronic signatures in the General State Administration.

4.7. TOOLS FOR UNATTENDED ACCESS TO SERVICES AND INFORMATION IN PUBLIC PLACES (INFORMATIVE KIOSKS, PUBLIC ACCESS POINTS, ETC.)

eGovernment Portal (PAe) is funded to centralize and bring the initiatives closer, also reports, indicators, news, etc. managed by different agencies on eGovernment. Its objectives are:

- to work with all levels of government, so as to generate relations aimed at increasing the value that each provides in eGovernment;
- to be a leader in eGovernment, introducing new forms of internal and external participation, encouraging stakeholders' feedback to Public Administration approach;
- to consolidate the PAe as a single point of attention for citizens, businesses and administrations, coordinating the efforts of content, technology and people to achieve the single point of eGovernment information;



Red 060 (Network 060) is a portal that creates a single point of access for citizens. With this portal they can access the services of the three administrations levels (national, regional and local) without having to know which service corresponds to a specific management or particular step. Three products: Web 060, Telephone 060 and Office 060.

4.8. ACTIVATION AND DELIVERING OF SERVICES WITH A WEB 2.0 LOGIC

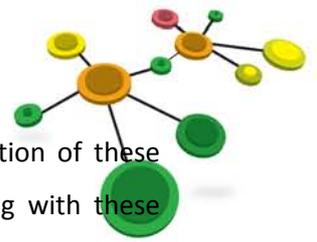
The Web portal Red 060 provides a single window to the businesses and citizens to access all online services of national, regional and local. The main benefits are: easy communication for the user with the web. It is a Multilanguage website, with intuitive interface to make procedures, finding the information, etc. easier.

4.9. ONLINE SERVICES DIRECTORY AND/OR SEARCH ENGINE PLATFORM FOR PA ONLINE SERVICES

REUSE AND TECHNOLOGY TRANSFER: Directories of Reusable Applications. The Central Government maintains the directory for free reuseable applications which may be accessed through the Technology Transfer Center. Public administrations link directories for free reuseable applications and equivalent instruments of European Union level to each other. Public Administrations have to take into account the solutions available for free reuse that can satisfy all or part of the needs of new systems and services and the improvement and updating of those already in place. Public Administrations seek publication of the application code, under development or completed in the application directory for free reuse in order to promote actions to share, reuse and collaborate for the benefit of improved efficiency.

4.10. RE-ENGINEERING OF ADMINISTRATIVE INFORMATION SYSTEMS: TECHNOLOGICAL ASPECTS

The technological process of the re-engineering of the Administrative Information System (AIS) consists of a following sequence of actions:



1. analysis of the type and quantity of indispensable Document Registers; registration of these registers in the Register of registers and data; adjustment of AIS for processing with these registers;
2. establishment and maintenance into AIS of Classification schemes for following types of information objects: users; documents; tasks; personal data; nomenclatures;
3. establishment of Departmental nomenclature of types of documents for concrete administration; adjustment of AIS for processing with this nomenclature;
4. establishment of Departmental nomenclature of stages of services and procedures for concrete administration; adjustment of AIS for processing with this nomenclature;
5. establishment of Departmental nomenclature of schemes for storage of documents for concrete administration; adjustment of AIS for processing with this nomenclature;
6. creation of Interfaces between AIS and “external environment” by specialized application, integrated into the AIS, such as:
 - module for Web-application;
 - module for integration with the Communication Client of the Unified Environment for Electronic Documents Exchange (UEEDE);
 - module for e-Mail exchange;
 - module for reception of documents stored on magnetic of other external media;
7. interface modules for connection with other specific systems of this administration – the regulations of the e-Governance Law do not prescribe any special requirements for these connections. The administration has an alternative between direct communication (i.e. the method of components call) and communication based on messages. The advantages of the second one are related to the ability to separate components one from another;
8. establishment of internal rules for processing with the AIS adapted to the specifics of the particular administration;
9. creation of profiles for access of various groups of employees to the resources of the AIS.



4.11. WEB-SERVICES ADOPTION

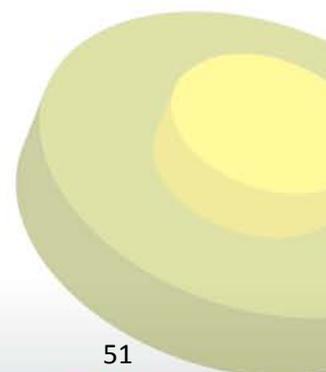
The PAe is a single point of attention for citizens, businesses and administrations, coordinating the efforts of content, technology and people to achieve the single point of eGovernment information.

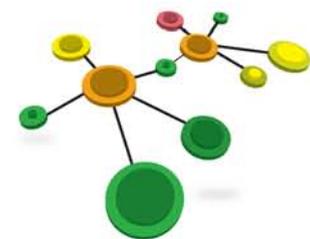


Service of interconnection and data exchange between administrations of Madrid Region in order to ensure inter/intraoperability between general government, preventing the citizen from submitting documents already held by government. There are three modules in the technological architecture of the tool:

- module ICDA_WEB: See manual of certificates, both external and internal, where the user only accesses the procedures for which it has been authorized;
- module ICDA_WS: ICDA_WEB linked Web Service and other applications to launch inquiries;

Module ICDA_ADMIN (Administration): Allows high new certificates (including response schemas (xsd) data representation (xsl) and path of the keystore with a certificate signing request).





5. BEST PRACTICES AND SYSTEMS ON TRIAL

5.1. BEST PRACTICE

Interoperability Interface, Basque Government [58].

Basque Government, Department of Innovation and eGovernment.

Target: Any Public Administration

In 2005, the Basque Government completed the implementation of the Technology Platform for e-Administration, PLATEA. This platform provides to different applications of the Basque Government, the necessary systems for the digitization of administrative procedures according to Law 11/2007.

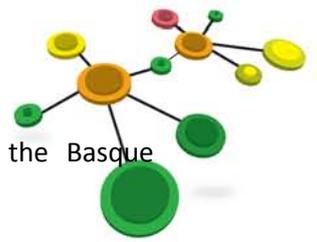
One of the services provided by the infrastructure is Validation and Third, that facilitates interoperability, both internally, between applications of the Basque Government and externally, with County Councils, Central Government and Local Government.

Objectives:

- to facilitate the integration of data and certificates obtained through interoperability, the easiest way possible;
- to have an accessible alternative and flexible platform enabling integration in the processing of registrations;
- to provide to official staff, who handles personnel registrations, of an easy and affordable tool to access these data and certifications obtained by the methods of interoperability;
- to avoid to Citizens, the production of documents held by general government, consistent with the requirements of Law 11/2007.

Main challenges and key issues for implementation:

- the main difficulties have not been technological in the implementation of the interoperability solution but the coordination with other development teams both internally, in the Basque Government, and externally, with the Central State Government or the Provincial Councils;
- the key aspect of the implementation has been managing a work environment service-oriented (SOA) where it was important to define carefully all the possibilities of integration



between applications and technology infrastructure for eGovernment of the Basque Government (PLATEA).

Technology integration between different systems both internally and externally has been done through web services using communication protocols through SOAP over HTTP, communication protocol based on XML, using digital signature mechanisms for assuring the authenticity, integrity and non repudiation according to W3C standards protocols. In addition, for external data transmissions all the messages are digitally signed. Communications are encrypted using the HTTPS protocol.



5.2. SYSTEM ON TRIAL

KOBLI [59]

Target: Citizens.

Spanish Ministry of Culture; Directorate General for Library Coordination.

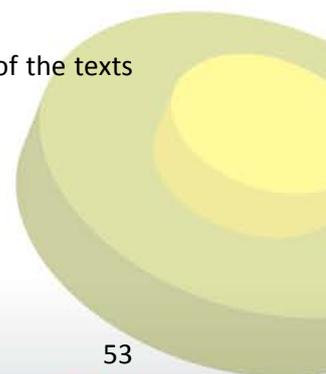
KOBLI is an Integrated Management System for Libraries, based on KOHA. KOBLI disposes of modules for cataloguing, circulation, serials, acquisitions, web OPAC (public interface) and a digital repository. It also features a web administration interface.

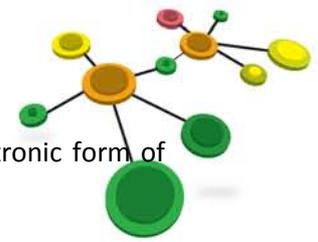
The goal is to provide an integrated library management system to the Libraries of the General State Administration (AGE), which are lacking it or have an obsolete one, and by extension allow free downloading for any library.

It aims to reduce the percentage of libraries without automation; the GSA gets on 40%. The advantages of KOHA-KOBLI over other systems are: extensive use of standards that facilitates interoperability and participation in cooperative projects, the free cost of the license and the variety and improvement of software companies to other proprietary systems.

Model of organization of administrative activities in accordance with interoperability

An autonomic Project of Internal management of Administration: online use processing of the texts published in the Official Gazette of Aragon (BOA), removing the diskette [60].





The project was to develop a system allowing the automatic management and electronic form of the whole process of editing, publishing and electronic signature of the BOA.

From a functional standpoint, the application consists of two modules:

- the internal module, which includes on one hand:
 1. online processing of rules and notices issued by the Government of Aragón;
 2. editing, layout, approval and signature of the Bulletin;
- and the external module, through which individuals and businesses will access different government (municipal, university, etc.). Through the external module, the system allows:
 1. ads publication on the Internet, for which it is necessary to have a valid digital certificate. Thus it is not necessary to go to the Government of Aragon to insert the ad;
 2. the online payment: Allows for electronic payment of ads without having to go to a bank. The user can choose to go in person to the bank to pay for the ad, or can choose to pay for the ad electronically.



The MVC design pattern has been followed (Model View Controller) whose paradigm consisted in divide applications into three parts controller, model and views. Therefore they chose a three-tier architecture (presentation, business logic and database).

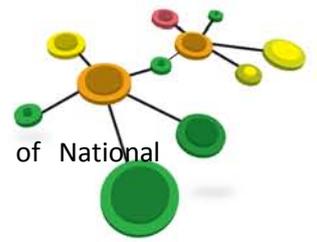
The presentation layer is the layer that is displayed to users, and that shows the result of the actions taken. The components used are AJAX, Struts and Display-tag.

The business logic layer is the one responsible for collecting the data, processing it and sending the results to the presentation layer. This layer is developed with the latest generation of business logic that allows a reliable, lightweight persistence. To develop this layer the following components are used: Spring, IoC (Inversion of Control) Dependency Injection; connectors for all types of services: Transactions, Connections, Web Services, Motor Persistence, etc. pring and DAO.

The database layer is developed with Oracle technology based on an Oracle Database 10g and connecting through spring.

Model, method or a tool for business process interoperability

CODICE [61] is a set of interoperable components and electronic documents for electronic public contracting in accordance with applicable international rules and standards (target: General State



Administration (AGE). Responsible agencies and performers: General Directorate of National Property and Ministry of Economy and Finance.

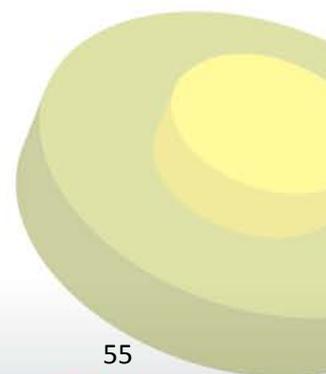
The project aims to ensure interoperability, both of the subsystems of electronic trading with each other (procurement platform, electronic registration of companies, electronic catalogues, electronic auction systems, etc) and with the information systems of economic actors involved in recruitment processes and those of their own organs of public administrations.



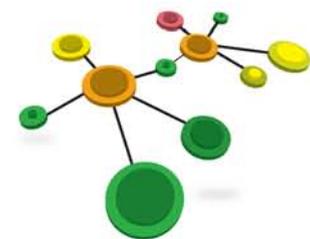
Advantages:

- electronic documents exchanged in a tender process have been standardized to enable interoperability among actors involved in the adjudication process;
- using the same specification by different contracting authorities and economic operators will facilitate the development of electronic trading systems;
- the use of reusable components allows the automation of business processes, reducing costs and timing errors in the process of adjudication.

Version 2.0 of the specifications CODICE is in development, to be incorporated in UBL 2.1, as a step towards alignment with international standards in the field of e-procurement. Version published in [62]

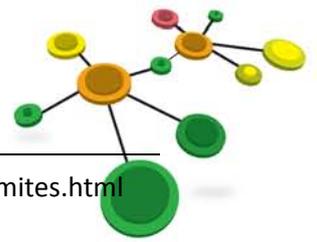


INFORMATION SOURCES

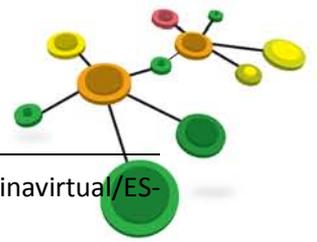


ELGI
Learn to connect
Interoperability essentials

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