
***Technical description of target eGov infrastructure
for delivering PEGS***

***Specific contract n°5 based on ENTR/02/20-
EGOVERNMENT (Contract IDA.20040539)***

PEGS Infrastructure - Requirements Synthesis Document

Version 3.1

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1 INTRODUCTION

1.1 OBJECTIVE

The objective of this project is to define the high level architecture needed to deliver pan-European e-Government services (PEGS).

To this end, three major deliverables are prepared:

- a document giving the functional requirements for this architecture;
- a document on technology and market trends relevant for the delivery of PEGS;
- a document describing the technical infrastructure needed for the delivery of PEGS.

The purpose of this document is to describe the functional requirements for the technical infrastructure (PEGS Infrastructure).

To help in defining these requirements, the EC has asked the Member States for reference documents.

The original idea was that this requirements document should be a synthesis of these reference documents, as well as of other documents related to the subject.

Although these documents gave us an idea of the issue, they were only partly helpful in the definition of requirements at a pan-European level.

Therefore we have extended the approach to define the requirements, see chapter 2.

The next paragraph gives the reference documents provided by the Member States, as well as other documents consulted.

1.2 CONSULTED DOCUMENTS

1.2.1 Member States Reference Documents

- MS.1. Lomake.fi, Description of the Finnish electronic forms service
- MS.2. De Elektronische Overheid; Netherlands
- MS.3. Base registers in Finland, Rekisteripooli, Helsinki 2003
- MS.4. One stop shop for companies reporting to authorities (TYVI); Extract from OECD e-GOVERNMENT STUDIES e-GOVERNMENT IN FINLAND; 2003; 6.1 Case study 1: G2B broker system for reporting business data to government (TYVI)
- MS.5. SHS Version 1.2 Architecture; The Swedish Agency for Public management, oct 2003
- MS.6. Information on the Hungarian Government Backbone Network
- MS.7. The State Citizen Certificate; Finland

1.2.2 Other Documents

- OD.1. Report on the conclusions of the European Commission Interchange of Data between Administrations (IDA) Conference; "Pan-European eGovernment Services for Citizens & Enterprises: The Role of IDA"; Brussels, 19th – 20th September, 2002
- OD.2. DECISION No 1720/1999/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 July 1999 adopting a series of actions and measures in order to ensure interoperability of and access to trans-European networks for the electronic interchange of data between administrations (IDA)

- OD.3. EUROPEAN INTEROPERABILITY FRAMEWORK FOR PAN-EUROPEAN EGOVERNMENT SERVICES, IDA working document - Version 4.2 – January 2004
- OD.4. Study on stakeholder requirements for pan-European e-Government services, End of phase 1 report, version 1.1, 27/7/2004
- OD.5. Enterprise Architecture – A driving force; Bartel Meersman, DIGIT/B/2;
- OD.6. Orientation paper s-TESTA Call for Tender; Call for Tender No ENTR/04/011; 23/03/2004
- OD.7. e-Government Interoperability Framework; Version 6.0; 30 April 2004; Office of the e-Envoy
- OD.8. European Public Administration Network eGovernment Working Group; Key Principles of an Interoperability Architecture
- OD.9. Delivering e-Enabled Public Service Reform; The Framework for e-Government; A BuyIT ICT Best Practice Initiative
- OD.10. The Role of eGovernment for Europe's Future; Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions; Brussels, 26.9.2003 COM(2003) 567 final; {SEC(2003) 1038 }
- OD.11. UK – Channels framework; Delivering government services in the new economy; Office of the e-Envoy
- OD.12. SAGA Standards and Architectures for e-government Applications Version 2.0; KBSt Publication Series ISSN 0179-7263 Volume 59 December 2003; Federal Ministry of the Interior, Unit IT2; Berlin, Germany
- OD.13. UK, eGIF; e-Government Interoperability Framework; Office of the e-Envoy
- OD.14. Infra Services – a Swedish Way to Facilitate Public E-services Development
- OD.15. White Paper on Enterprise Architecture, Denmark
- OD.16. Architecture Guidelines For Trans-European Telematics Networks for Administrations; Version 7.0
- OD.17. ADAE ; Le cadre commun d'interopérabilité des systèmes d'information publics ; Dossier d'introduction; Version 2.1 (Septembre 2003)
- OD.18. A bridge CA for Europe's Public Administrations ; Feasibility study ; Final report ; July 2002
- OD.19. Requirements for IDA eLink; Version 1.1, October 31, 2003

1.3 SCOPE OF THE PROJECT

The project deals with the support infrastructure that needs to be put in place to achieve interoperability at pan-European level.

Many Member States have already implemented national interoperability frameworks and middleware that allows the integration of different administrations at national, regional and municipal level.

The PEGS Infrastructure project is defining the additional components that are needed to support e-Government services at the pan-European level.

Since it allows to link up national middlewares, it can be seen as a “middleware of middlewares”.

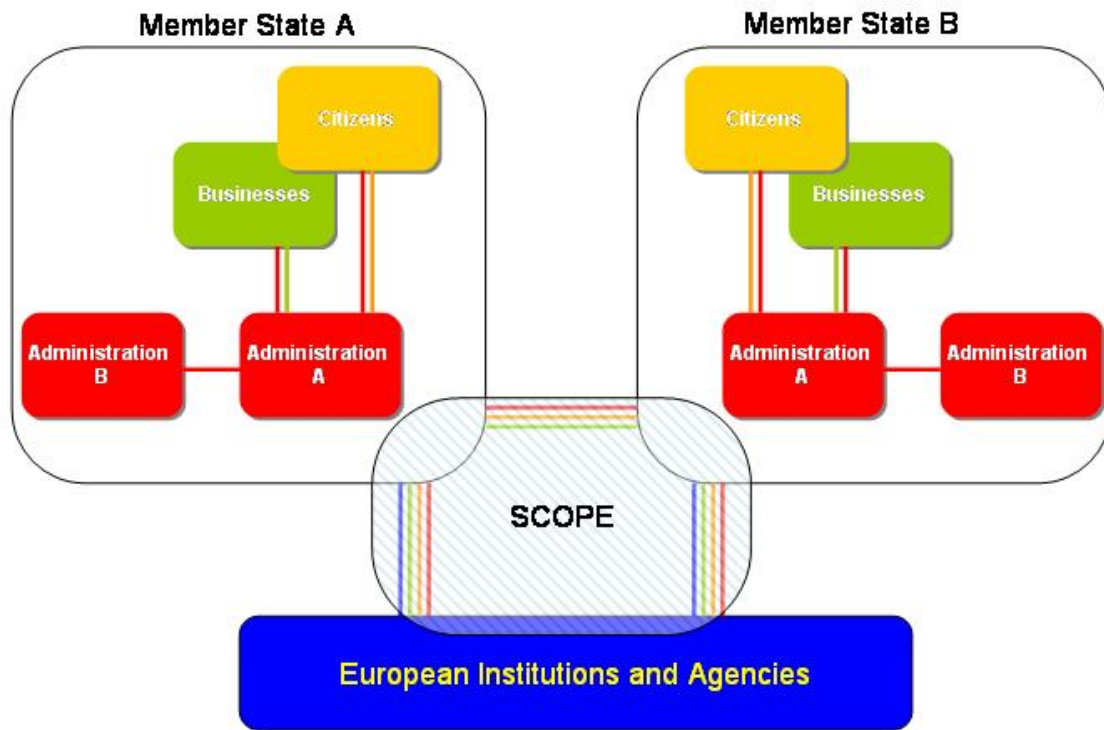


Figure 1 Scope of the project – “Middleware of middlewares”

The technical infrastructure is concerned with the pan-European level of the services. In line with the principle of subsidiarity, it does not interfere with the internal workings of administrations and EU Institutions. It will be up to each Member State and EU Institution to take the necessary steps to ensure interoperability with the pan-European level.

The PEGS Infrastructure will provide the necessary mechanisms to facilitate this interfacing.

The project is dealing with the architectural aspects of the infrastructure. It does not cover implementation.

However, where possible, we will point to implementation issues.

2 APPROACH

The requirements as presented in this document are a combination of two approaches:

- 1) a deduction of requirements based on the documents consulted;
- 2) a definition of “generic” services which are needed to implement pan-European e-Government services

This latter approach is detailed in this chapter. As this approach is based on the Integrated Architecture Framework (IAF), we first start with a discussion of this framework.

The next figure gives an overview of this framework.

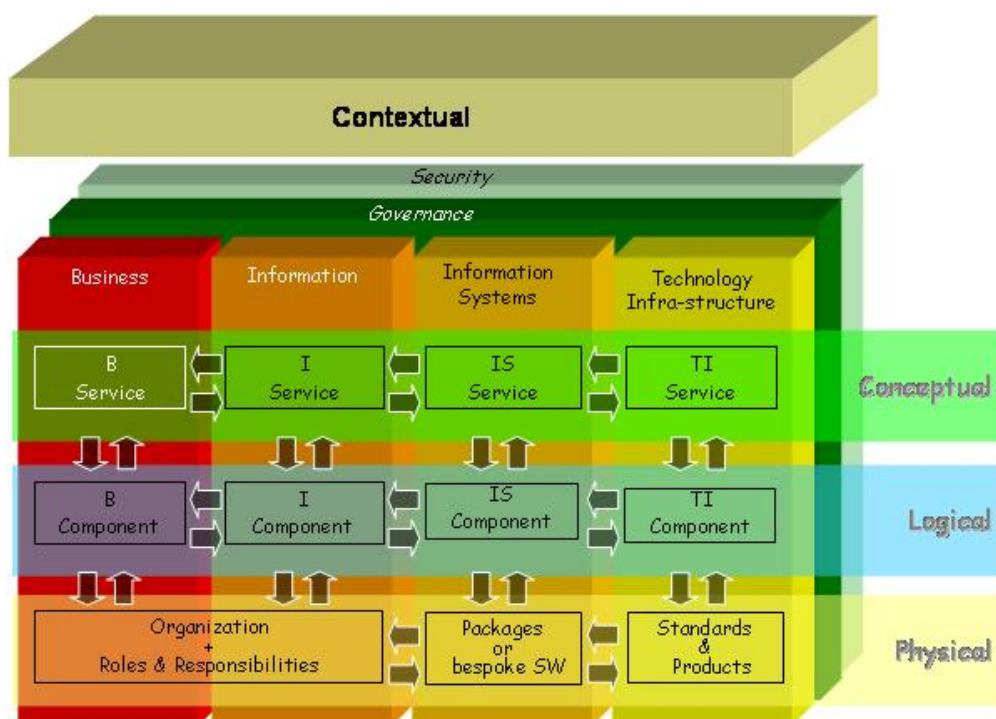


Figure 2 The Integrated Architecture Framework (IAF)

The IAF addresses four architecture Aspect Areas: Business, Information, Information Systems and Technology Infra-structure. There are strong interdependencies between each of these aspect areas. For example, the business structure determines the information structure that, in turn, prescribes the structure for IS, which determines the technology infrastructure structure. Ideally all aspect areas have to be incorporated in the architecture design.

There are two specialized Aspect Areas in IAF: Governance and Security. Both emphasize quality aspects of the architecture. They need to address all other aspect areas by nature and thus are positioned in another dimension.

Furthermore IAF recognizes four levels of abstraction: contextual, conceptual, logical and physical.

The first, contextual, is for answering the “*why*” question and to provide context information and key principles that support the value proposition for the architecture to be developed.

The conceptual level addresses the “*what*” aspect of architecture design. It defines the services that are required and what is required from each service.

The logical level derives “*how*” the customer needs can be realised, showing how components interrelate and where components ‘implement’ services.

The last, physical, level addresses the “*with what*” aspects of architecture design and defines the standards, products (catalogues), guidelines, etc. for further development and implementation.

2.1 SPECIFIC APPROACH USED IN THE DEFINITION OF THE PEGS ARCHITECTURE

In an attempt to describe the context we first defined the principles which will govern the new architecture for the delivery of PEGS. Principles are guiding statements about fundamental beliefs, truths, rules and qualities that guide objectives and the decision making process. These principles were deduced from documents and refined during a debate with delegates of the Member States on October 19th, 2004. These principles are defined in chapter 3.3.

To determine the functional requirements, we have considered a representative set of e-Government services that are eligible for cross-border extensions. For these PEGS we have defined the basic services¹ needed to support them and needed to conform to the principles defined. We have mapped these services against the principles they support.

This approach has lead us to the definition of a number of services that the PEGS Infrastructure needs to provide. We have complemented this list of services with additional services that were identified through analysis of the reference documents.

This list of services is given in chapter 4.

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¹ The term “service” is here to be understood as in the context of Service Oriented Architectures. In IAF terms they are the Business Services, Information Services, Information System Services and Technical Infrastructure Services that have to be provided by the PEGS Infrastructure.

3 CONTEXT

3.1 GENERAL

For the sake of this project we use the research definition of PEGS that was given in the project “Study on stakeholder requirements for pan-European e-Government services”. (OD.4)

Pan-European eGovernment Services (PEGS) are cross-border public sector services supplied by either national public administrations or EU public administrations, provided to European businesses and citizens by means of interoperable trans-European telematic networks between public administrations.

At the moment of this study there is not yet a clear view on which precise pan-European e-Government services will be provided, and when. It is however clear that many different types of e-Government services with different characteristics can (or will have to) be provided. These services can be one-way services (information gathering or information feeding), full transactional services; they can be performed asynchronously or be fully interactive; they can involve multiple communicating parties; they can be simple or very complex processes.

It is clear that all this complex functionality cannot be provided at once and that a very progressive approach has to be taken.

This means that the architecture will have to be very flexible and scalable in order to cope with growth in service types to be supported, number of users and volume of transactions.

3.2 INTEROPERABILITY ASPECTS

Reference OD.3 considers three aspects of interoperability:

- Organisational interoperability;
- Semantic interoperability;
- Technical interoperability.

In this Architecture study we will concentrate on these interoperability aspects and specify which functionality has to be provided on each of these layers.

In fact we first discern another level of interoperability (which could also be seen as a special case of technical interoperability), which we have called trivial interoperability:

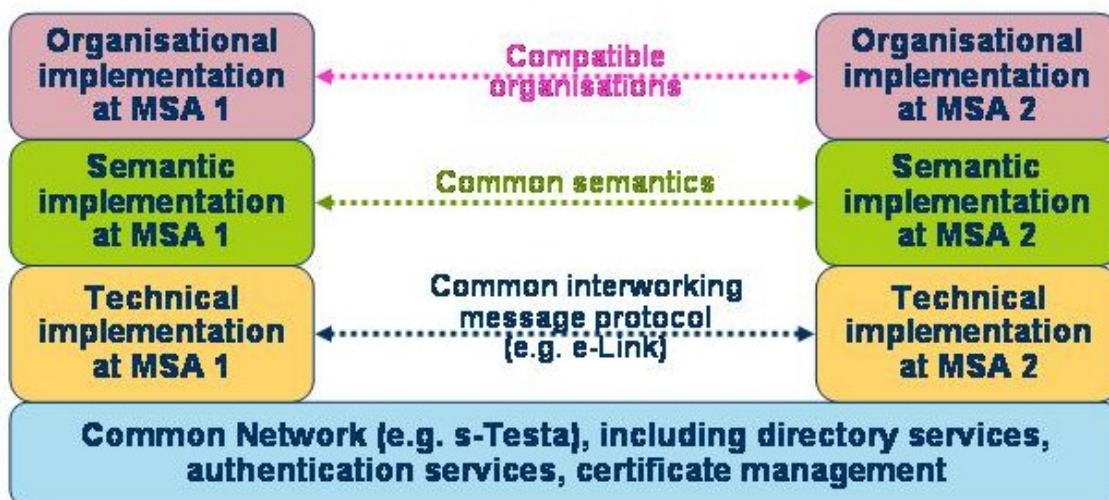


Figure 3 Trivial Interoperability

It is the case where information disseminated by a Member State Administration (MSA) can technically be processed by another MSA without any externally relevant restrictions. In this case the different administrations have compatible organisations, use common semantics and common inter-working protocols, which do not require conversions by 3rd parties and they share the same network infrastructure.

This could be seen as a highly standardised environment which is a trivial case of the technical interoperability.

- Technical interoperability

This aspect of interoperability covers the technical issues of linking up computer systems and services. This includes key aspects such as open interfaces, interconnection services, data integration and middleware, data presentation and exchange, accessibility and security services.

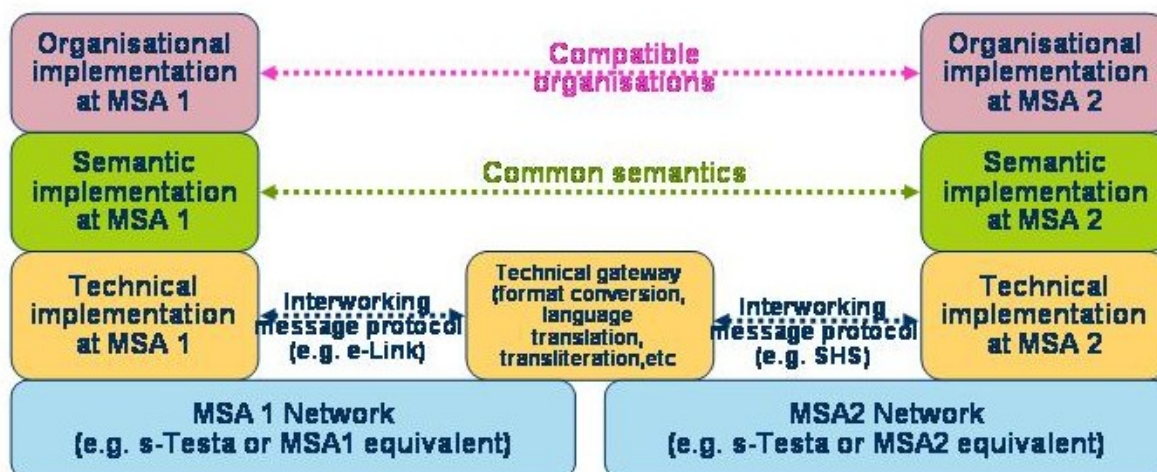


Figure 4 Technical Interoperability

The information disseminated by one MS Administration can be processed by another MS Administration after applying generic conversion logic. This conversion logic converts an input message into an equivalent output message without any required understanding of the content.

- Semantic interoperability

This aspect of interoperability is concerned with ensuring that the precise meaning of exchanged information is understandable by any other application not initially developed for this purpose. Semantic interoperability enables systems to combine received information with other information resources and to process it in a meaningful manner.

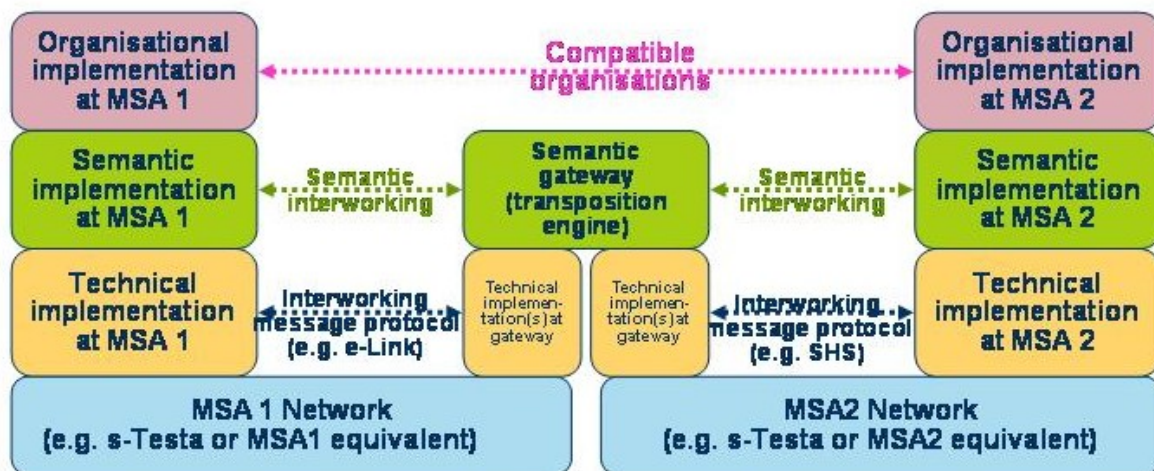


Figure 5 Semantic Interoperability

Information disseminated by a MS Administration cannot be processed by another MS Administration unless contextual conversion (business) rules are simultaneously applied. As a result an equivalent message can be forwarded to another MS Administration.

- Organisational interoperability

This aspect of interoperability is concerned with defining business goals, modelling business processes and bringing about the collaboration of administrations that wish to exchange information, but that may have a different internal organisation and structure for their operations. Moreover, organisational interoperability aims at addressing the requirements of the user community by making services available, findable, accessible and user-oriented.

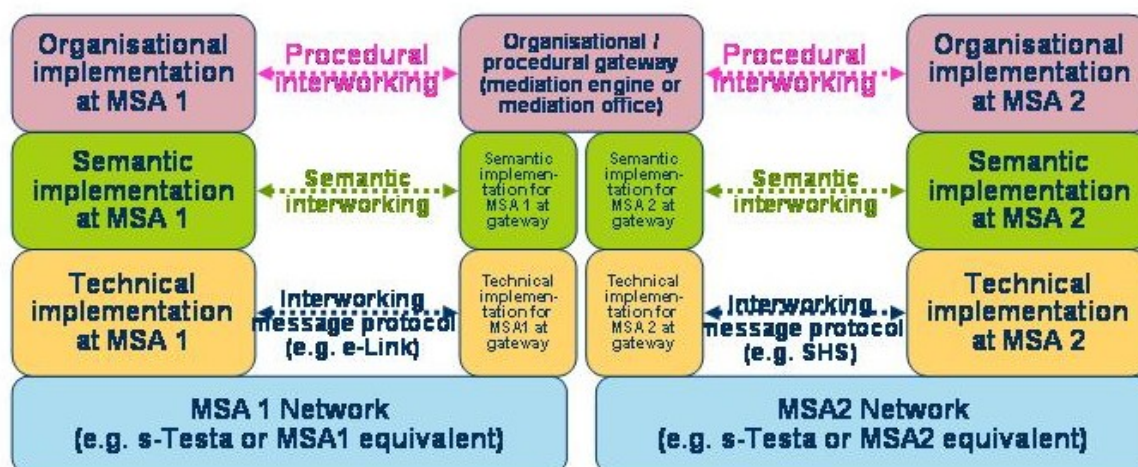


Figure 6 Organisational Interoperability

Information disseminated by a MS Administration cannot be replaced by an equivalent message to another MS Administration. However it is possible to trigger status changes in another MS Administration as to simulate the effect of the processing of the message by that other MS Administration.

3.3 PRINCIPLES

We have defined a number of principles that are guiding in the development of the PEGS Infrastructure. These principles are based on available information.

We present here just the definition of the principles and – if necessary – an indication of consequences.

In the architecture document, a more detailed description of rationale and consequences will be given.

3.3.1 Four freedoms

Pan European E-government services shall contribute to and support the principles of free flow of goods, persons, capital, and services within the European community.

This is a fundamental principle for the EU. A number of other principles are derived from this fundamental principle. It has also important consequences on the PEGS infrastructure: the technical infrastructure should not pose additional barriers to the realisation of the four freedoms.

3.3.2 Subsidiarity

Governance and operational autonomy shall be implemented at the most decentralised level that is appropriate for the service at hand.

3.3.3 Transparency

Pan European e-Government services shall be provided in such a way that any complexity arising from the involvement of administrations from multiple Member States, is hidden to the citizens and businesses using the services.

3.3.4 One stop shopping

Public authorities across Europe shall inter-work and co-operate in a way to minimise the effort of citizens and businesses of supplying information already supplied to other public authorities for the same purpose.

3.3.5 Trust

Pan European E-government services shall strictly apply all legal protection of citizens and businesses, including confidentiality, privacy, openness of public information, integrity and non-repudiation.

3.3.6 Multilingualism

Pan European e-Government services will be available in any official language of the community without restriction.

3.3.7 Multiple velocity

Member States or individual administrations within Member States have the freedom to commit to an individual timescale for implementing pan European e-Government services at a community wide scale.

3.3.8 Performance

Pan European e-Government services shall have predictable performance in any circumstances, including operation across Member States.

3.3.9 Stability

Pan European e-Government services shall be available around the clock at sufficient capacity regardless of implicit technical complexity.

3.3.10 Consistency

Fulfilment of pan European e-Government services must be consistent across the European Union, regardless of the Member State in which the services are initiated and the access channels that were used.

3.3.11 Perennity

Records and archives kept by Pan European E-government services shall withstand decay of electronic media and obsolescence of access equipment.

4 FUNCTIONAL REQUIREMENTS

In this chapter we give a description of the services that the PEGS Infrastructure must provide and that we derived during the analysis of representative PEGS. These services describe **what** needs to be put in place and as such they represent the requirements for the future architecture.

We have classified these services according to the interoperability layers they support. It is noteworthy, but no coincidence, that there is a nearly one-on-one mapping between the Aspect Areas of IAF and the defined Interoperability layers:

- Business services are found in the Procedural layer;
- Information services are found in the Semantical layer;
- Information System services are found in the Technical layer;
- Technical Infrastructure services are found in the Trivial layer.

Furthermore we have defined the services that are needed in the **Security** and **Governance** aspect areas.

We also used another characterisation, or taxonomy, that could provide an alternative classification for these services. This taxonomy makes the following distinction between services:

- § **National services:** Services that are provided to citizens or enterprises at national level, but which may be of interest to citizens/enterprises of other Member States and will have to be changed or expanded to become PEGS.
- § **Communal services:** Services which are provided by the EC
- § **Supporting services:** Services which are not intended as primary services of government but which support and enhance primary services.
- § **Interworking services:** Services which are needed to bridge differences in implementation of national services. These services are needed when a data interface is not enough to establish interoperability.

In the next chapters we will document the identified services for each interoperability layer and for the Security and Governance aspect areas.

For each service we give:

- A short **description**;
- The **principles** this service supports;
- Some examples of **use cases** in which this service is used;
- The **taxonomy** of the service;
- Possible **relations with other services**;
- The architecture **aspect area**.

4.1 ORGANISATIONAL INTEROPERABILITY LAYER

Following is a set of services which are needed in the organisational layer.

4.1.1 Case prioritisation

Description	For some PEGSs rules have to be defined which unequivocally determine the priority that should be given to the handling of a specific case across Member States.
Principles	Performance
Use Cases	Declaration to police
Taxonomy	Communal
Relations with other services	
Aspect area	Business

4.1.2 International payment service

Description	Existing national administrations may not be capable to handle international payment transactions on behalf of their operations. A national front-end banking account would disguise the international payment as a national payment. The service itself would just do the international transaction using standard Euro-banking services.
Principles	Subsidiarity Transparency Consistency
Use Cases	Move to another Member State Public libraries
Taxonomy	Interworking
Relations with other services	
Aspect area	Business

4.1.3 Financial equalisation

Description	Under the principle of the four freedoms, a citizen/business getting in contact with another Member State's administration, should not pay more for an e-Government service than a citizen/business of that Member State. To achieve this, financial clearing services may be required in order to allocate differential charges elsewhere.
Principles	Four freedoms
Use Cases	Moving to another Member State; Setting up a business in another Member State;
Taxonomy	Communal
Relations with other services	
Aspect area	Business

4.1.4 Workflow

Description	Workflow allows combining different steps to be performed, possibly across borders. In the case of the PEGS infrastructure, a workflow service will be needed at the level of the procedural gateway where there is no simple mapping of processes. The workflow allows the mapping of different process steps, calculation of the expected response times and the monitoring of the results.
Principles	One stop shopping
Use Cases	Moving to another Member State
Taxonomy	Supporting
Relations with other services	
Aspect area	Business

4.1.5 Replacement procedures

Description	If mere transposition of needed documents at the semantic level is not possible, replacement procedures may have to be defined to get the required data.
Principles	Transparency One stop shopping
Use Cases	Moving to another Member State
Taxonomy	Interworking
Relations with other services	Consult list of (transposed) document types Transpose data
Aspect area	Business

4.1.6 Deadlock detection and resolution

Description	To avoid situations where two services are waiting for each other.
Principles	Performance
Use Cases	
Taxonomy	Interworking
Relations with other services	
Aspect area	Business

4.2 SEMANTIC INTEROPERABILITY LAYER

Following are a set of services that have to be provided by the semantic layer.

4.2.1 Cross-border identification

Description	When citizens/business are the subject of interaction between Member States, they need to be identified unequivocally.
Principles	Trust
Use Cases	
Taxonomy	Inter-working
Relations with other services	
Aspect area	Information

4.2.2 Combine information across borders

Description	It should be possible to combine information about citizens and businesses that is stored in multiple administrations, also when these administrations are located in different Member States, and potentially use different languages, differing indexing methods and different business object consistency.
Principles	One stop shopping Consistency
Use Cases	Application for pension; Moving to another Member State; Setting up a business in another Member State; ...
Taxonomy	National
Interoperability layer	Semantical Technical Trivial ²
Relations with other services	Access to remote data Exchange of sensitive records Exchange of administrative records
Aspect area	Information

4.2.3 Consult list of (transposed) document types

Description	When performing a pan-European e-Government service, citizens, businesses and administrations may have to provide certain documents from one MS to the other. They should have an easy way to find out which documents are needed (possibly data needs of one MS need to be
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² Depending on the case. We have classified this service in the highest (i.e. semantic) layer. When considering implementations that start with the lower interoperability layers, (a subset of) this service should also be implemented. This remark may also hold for other services.

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	transposed in document types recognized by the other MS)
Principles	Transparency Multiple velocity: in a fully transparent, one stop shopping environment, it would be possible to apply for all needed information in one step. As long as this is not realised, a list of needed documents should be presented. Because of possible differences in document types used, a transposition may be necessary in comparable and acceptable documents from the other Member State.
Use Cases	Moving to another Member State (show the documents that are needed when moving)
Taxonomy	National
Relations with other services	Transpose data Find information on procedures to follow
Aspect area	Information

4.2.4 Management of metadata

Description	The functionalities to create, maintain and consult the metadata on PEGS, exchanged data, data formats, conversions, etc.
Principles	Transparency
Use Cases	...
Taxonomy	Communal
Relations with other services	
Aspect area	Information

4.2.5 Local identification of citizens

This is different from the cross-border identification: here we deal with the local identification of a person in another Member State.

Description	When a person stays in another Member State and gets in contact with a local administration, he/she should be identified in an analogous way as is done for local residents.
Principles	Transparency
Use Cases	Hospitalisation in another Member State ...
Taxonomy	Supporting
Relations with other services	Cross-border identification
Aspect area	Information

4.2.6 Transpose data

Description	In order to exchange certain data between MSAs a semantic transposition of this data needs to be performed.
Principles	Transparency

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Use Cases	Moving to another Member State ...
Taxonomy	Supporting
Relations with other services	Combine information across borders Exchange of administrative records
Aspect areas	Information

4.2.7 Transposition of deeds

Description	The transposition of legal documents in the legal framework of another Member State such that they reflect the legal dispositions that are in place in that Member State.
Principles	Transparency
Use Cases	Start business in another Member State ...
Taxonomy	Supporting
Relations with other services	
Aspect area	Information

4.2.8 Coupling of call centres

Description	When services are provided cross-border there may be a need to interlink call-centres of different Member States.
Principles	Consistency One stop shopping
Use Cases	Move to another Member State ...
Taxonomy	Interworking
Relations with other services	
Aspect area	Information

4.2.9 Legal process facilitation

Description	Citizens or businesses should have the same rights in another MS as the citizens/businesses of that Member State. This implies that they may need services to support them in legal matters ³ .
Principles	4 freedoms Multilingualism
Use Cases	...
Taxonomy	Inter-working

³ Legal representation by a lawyer is not meant here. Only the transposition of legal steps in one Member State into equivalent legal steps in another Member State. . In a sense it is a service a lawyer should want to use to be equally effective across Member State borders.

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Relations with other services	
Aspect area	Information

4.2.10 Yellow Pages

Description	MSAs with a need to exchange information with MSAs in other Member States will, except for common cases, not have the knowledge to determine in which case what type of conversion, adaptation or gateways are needed to inter-work. This ignorance will be aggravated when partial implementation, with changes over a time period (due to the multiple speed principle) inhibits straight inter-working across the appropriate type of gateway, when needed. A “semantic directory” service will solve this problem.
Principles	One stop shopping Transparency
Use Cases	...
Taxonomy	Communal
Relations with other services	
Aspect area	Information

4.3 TECHNICAL INTEROPERABILITY LAYER

Following is a set of services that have to be provided by the technical layer.

4.3.1 Information available in multiple languages

Description	Information made available by a Member State Administration to its citizens and businesses, should also be provided in other official EU languages ⁴ .
Principles	Multilingualism
Use Cases	
Taxonomy	National Communal ⁵
Relations with other services	Monitor outcome of a public service Find information on procedures to follow
Aspect area	Information System

4.3.2 Message formats dictionary

Description	In order to be able to send messages in a format that is acceptable for a specific MSA, the PEGS infrastructure must include a table of supported message formats.
Principles	
Use Cases	...
Taxonomy	Supporting
Relations with other services	
Aspect area	Information System

4.3.3 Monitor outcome of a public service

Description	Citizens and businesses must have the possibility to know what the outcome is of the execution of a public service. They must understand the outcome and be able to validate if all legal regulations have been correctly applied.
Principles	Trust Consistency
Use Cases	Declaration to the police; Application for pension; ...
Taxonomy	National
Relations with other	

⁴ This service is different from the translation services. It deals with providing standard information, forms and instructions in the language of the user.

⁵ For services and information provided by the EC. Also “standardised core data elements” and their translation which would be defined in a EC repository.

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services	
Aspect area	Information

4.3.4 Find information on procedures to follow

Description	Citizens, businesses and administrations should have an easy way to find what procedures apply for a specific e-Government service, which authorities to contact, etc.
Principles	Transparency Performance
Use Cases	
Taxonomy	National Communal: <ul style="list-style-type: none"> - for services delivered by the EC - for services which are common across the EU. There may be a federation between the information on communal and national level, so that users can be redirected from common information to country specific information.
Relations with other services	Information available in multiple languages
Aspect area	Information System

4.3.5 Exchange of administrative records

Description	Exchange of data between administrations of different Member States, including reformatting, language translation, conversion of measures and currency.
Principles	One stop shopping Performance Consistency
Use Cases	Hospitalisation in another Member State (exchange of insurance information); Application for pension ...
Taxonomy	National
Relations with other services	
Aspect area	Information

4.3.6 Submit declarations in own language and alphabet

Description	When getting in contact with administrations, it should be possible for citizens and businesses to do this in their own language and alphabet.
Principles	Multilingualism
Use Cases	Register birth in another Member State ...
Taxonomy	National

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Relations with other services	Information available in multiple languages
Aspect area	Information

4.3.7 Integration of GIS

Description	It should be possible to produce geographic maps with consistent information of areas/regions across borders between Member States
Principles	One stop shopping
Use Cases	Disaster relief across borders Regional governance Fauna management ...
Taxonomy	National
Relations with other services	
Aspect area	Information system

4.3.8 Real-time / neartime translation service

Description	The translation of information between any pair of official EU languages in urgent exchanges by means of automated translation engines.
Principles	Multilingualism
Use Cases	Declaration to police Hospitalisation in another Member State (translation of medical records) ...
Taxonomy	Supporting
Relations with other services	
Aspect area	Information system

4.3.9 Delayed / official translation service

Description	The legally binding translation of information in non-urgent exchanges between any pair of official EU languages.
Principles	Multilingualism
Use Cases	Start a business in another Member State Apply for pension (notifications translated in language of applicant) ...
Taxonomy	Supporting
Relations with other services	
Aspect area	Information system

4.3.10 Perform unit conversions

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Description	For pan-European e-Government services between Member States using different units (such as currencies), a conversion between units, quantities and/or amounts must be performed.
Principles	Transparency
Use Cases	Apply for pension ...
Taxonomy	Supporting
Relations with other services	
Aspect area	Information system

4.4 TRIVIAL INTEROPERABILITY LAYER

Following is a set of services that have to be provided by the trivial layer.

4.4.1 Portal service

Description	A portal service gives the possibility to combine information from different MS Administrations and EC Institutions on the desktop.
Principles	One stop shopping Multiple velocity
Use Cases	Moving to another Member State; Setting up a business in another Member State; ...
Taxonomy	Communal Supporting
Relations with other services	Consult list of (transposed) document types Find information on procedures to follow
Aspect area	Information system

4.4.2 Connectivity

Description	Every MSA with a need to read, write, publish or subscribe to data that are also relevant for MSAs in other Member States must be connected to a common transport network, with sufficient bandwidth, either directly, by means specified by the operator of the common transport network, or indirectly by means of a national transport network that is connected to the common transport network
Principles	Performance Stability
Use Cases	...
Taxonomy	Inter-working
Relations with other services	
Aspect area	Technical Infrastructure

4.4.3 Adressing

Description	Every MSA, each department within that MSA, and each civil servant working on behalf of that MSA should be addressable to all MSAs that provide PEGS, either by name, or by content
Principles	
Use Cases	...
Taxonomy	Inter-working
Relations with other services	
Aspect area	Technical Infrastructure

4.4.4 Bulk-data transfer

Description	Any MSA should be capable to send data to other MSAs without a restriction on the volume of the data
Principles	
Use Cases	Transfer of statistics information ...
Taxonomy	National Communal
Relations with other services	
Aspect area	Technical Infrastructure

4.4.5 Location of “authentic” physical documents

Description	The location (Member State and Administration) of “authentic” physical documents must be determined across Europe. Also, when for some reason such documents have to move, the new location has to be determined.
Principles	Transparency Consistency
Use Cases	Appeal against a decision
Taxonomy	National
Relations with other services	
Aspect area	Information

4.4.6 White Pages

Description	All persons ⁶ , businesses and authorities with access rights to e-Government services for which authentication is required, must be
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⁶] Citizens, business representatives , authorised civil servants

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	registered in a communal (distributed) directory, or in a national, sub national or sectoral directory that is linked to by the communal directory
Principles	
Use Cases	...
Taxonomy	Communal National
Relations with other services	
Aspect area	Technical Infrastructure

4.4.7 Redundancy

Description	Each MSA that can be involved in PEGS with critical performance requirements, must be connected by at least two independent access channels to the transport infrastructure, which have no resources in common.
Principles	Performance Stability
Use Cases	...
Taxonomy	Supporting
Interoperability layer	Trivial
Relations with other services	
Aspect area	Technical Infrastructure

4.5 SECURITY

4.5.1 Mutual identification and authentication of authorities involved

Description	The (local) administrations that are involved in the fulfillment of specific pan-European e-Government services should be mutually identified and authenticated as the proper authorities for the specific exchange.
Principles	Subsidiarity Trust
Use Cases	...
Taxonomy	Supporting
Relations with other services	

4.5.2 Role identification

Description	Besides the identification and authentication of persons, their role should be asserted so as to make sure that they are authorized to execute the service and process the specified data. When there is no exact match in role definition between different Member States, a transposition needs to be performed. (This may be dependent on the specific service – e.g. it could be that exchange of medical information is in one Member State restricted to physicians, while in others it may also be performed by other medical staff.) (other roles: recognition of notary, ...)
Principles	Subsidiarity Transparency Trust
Use Cases	Hospitalisation in another Member State; Start business in another Member State; ...
Taxonomy	Supporting
Relations with other services	Identification Authentication

4.5.3 Access to remote data

Description	Administrations must have access to remote data such as to preserve the consistency of public services.
Principles	Consistency
Use Cases	Moving to another Member State: when a citizen applies for a certain right, the local administration should be able to control if the citizen is eligible for such rights based on information in his MS of origin or other Member States. ...
Taxonomy	National

Relations with other services	Combine information across borders
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4.5.4 Accreditation

Description	The authorisation and approval granted to a system to process EU classified information in its operational environment ⁷ . Less formally, this could be defined as the formal recognition that an information system has the required security protection mechanisms for the protection of classified information in place.
Principles	Trust
Use Cases	...
Taxonomy	Communal
Relations with other services	

4.5.5 Profile transfer

Description	All profile data about users ⁸ of PEGSs that are marked for communal use will be transferred between implementations of PEGS across Member States, with automatic transposition of semantics.
Principles	Trust
Use Cases	...
Taxonomy	Supporting
Relations with other services	
Aspect area	Information

4.5.6 Monitor the use of personal data

Description	Services that allow the citizen to monitor and control the use that is made of his/hers personal data.
Principles	Trust
Use Cases	...
Taxonomy	National
Relations with other services	Monitor outcome of a public service Exchange of sensitive records

4.5.7 Exchange of sensitive records

Description	In some circumstances sensitive records (such as medical information)
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⁷ COMMISSION DECISION of 29 November 2001 amending its internal Rules of Procedure to define the COMMISSION PROVISIONS ON SECURITY. A similar regulation exists for the Council, which is also binding on the Member States.

⁸] Citizens, representatives of businesses, call centre agents or civil servants

	must be exchanged between authorized parties. Therefore information should be classified such that proper access rights can be transparently given across Member States.
Principles	One stop shopping Trust
Use Cases	Hospitalisation in another Member State ...
Taxonomy	National
Relations with other services	Role identification Monitor the use of personal data

4.5.8 Confidentiality

Description	Services to guarantee the privacy of sensitive data (such as medical records). Confidential data should be properly encrypted when handled outside the seclusion of the intended audience.
Principles	Trust
Use Cases	Hospitalisation in another Member State ...
Taxonomy	Supporting
Relations with other services	

4.5.9 Integrity

Description	Services to guarantee that the content of a record – even when it has to be translated (language, units, currency, character set, segmentation) is not changed between sender and receiver.
Principles	Trust
Use Cases	...
Taxonomy	Supporting
Relations with other services	

4.5.10 Non-repudiation

Description	Service to guarantee that no ambiguity can exist whether a transaction took place or not and who authorised it.
Principles	Trust
Use Cases	...
Taxonomy	Supporting
Relations with other services	

4.5.11 Authentication

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Description	Service to unambiguously get proof of the identity of a person (either citizen, business representative or civil servant), or a resource available to the PEGS infrastructure, or a MSA authorised to use the PEGS infrastructure.
Principles	Trust
Use Cases	...
Taxonomy	Support
Relations with other services	

4.5.12 Identification

Description	Service to allocate co-operative resources to the same requester.
Principles	Trust
Use Cases	...
Taxonomy	Support
Relations with other services	

4.6 GOVERNANCE

4.6.1 Monitor progress of a public service

Description	Citizens and businesses must have the possibility to monitor the fulfilment of a public service, also when this service extends cross-borders.
Principles	Trust Performance
Use Cases	This service may be used in all cases where demands are made, the fulfilment of which takes some time, e.g. an application for an old-age pension. The service could be used by citizens and business; or by public servants and call-centres.
Taxonomy	National
Relations with other services	Monitor SLA's

4.6.2 Monitor SLA's

Description	It should be possible to monitor the SLA's that are applicable for a given service. ⁹
Principles	Performance
Use Cases	...
Taxonomy	National
Relations with other services	Monitor progress of a public service

4.6.3 Manage SLA's

Description	Services to add and maintain SLA's for specific PEGS.
Principles	Performance
Use Cases	...
Taxonomy	Support
Relations with other services	

4.6.4 Error Reporting

Description	Adequate reporting on problems with the normal execution of a PEGS.
Principles	Trust
Use Cases	...

⁹ This is a service which should be available for citizens, businesses and civil servants so they know when results may be expected. It should also be available to applications to monitor automatically the execution of certain services.

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Taxonomy	Support
Relations with other services	

4.6.5 Transaction management

Description	Services to assure the integrity of data exchanges and related work (e.g. database updates) across borders that have to be treated as a unit of work.
Principles	Trust Consistency
Use Cases	...
Taxonomy	Inter-working
Relations with other services	

4.6.6 Monitoring and measurement

Description	Services to measure and monitor different components and characteristics of the PEGS Infrastructure; such as volumes, performance, availability...
Principles	Performance
Use Cases	...
Taxonomy	Support
Relations with other services	

4.6.7 Tracking and tracing

Description	Services to trace messages within the PEGS Infrastructure. These services are needed for problem support and solving.
Principles	Trust Performance
Use Cases	...
Taxonomy	Support
Relations with other services	

4.7 ADDITIONAL REQUIREMENTS DERIVED FROM REFERENCED DOCUMENTS

Reading of the documents that were provided to us reveals that most of the requirements that are presented or implied in these documents are already treated above.

Some possible additional requirements or clarifications are given below.

4.7.1 Information processes supported

Although the exchange of (different types of) data is already mentioned as a required service, we want to clarify here the information processes that should be supported. In fact, all types of information process mentioned in the IDA Architecture guidelines (ref. OD.16) are supported, i.e.:

- Data collection;
- Data exchange;
- Data dissemination;
- Data sharing;
- Alert.

4.7.2 Electronic forms service

Some Member States have implemented an electronic forms service (see e.g. ref. MS.1). A comparable service could be provided on a pan-European scale, for forms that can be standardized, e.g. E-forms.

On pan-European scale, this would be more complicated than on national level. We not only have to cope with different languages and alphabets, but also differences depending on Member States involved.

Indeed, although we are talking about “standardised” forms, sometimes differences exist for each Member State.

The forms service should recognise this and present the user only those possibilities applicable for the case at hand.

By nature, this would be a communal service.

4.8 BACK-OFFICE INTEGRATION

In order to achieve full one stop shopping, it should be possible to combine PEGS in a transparent way. This would mean that when for example a person wants to move to another Member State, he can just launch a service (“Move to MS A”) and that automatically all needed formalities are executed: the back-offices of the relevant authorities do all the inter-working that is needed.

As long as such integration is not yet available, other procedures may have to be followed, such as:

- front-office integration (see Portal service)
- get a list of all formalities that are needed (see Find information on procedures to follow and Consult list of (transposed) document types).

4.9 CONCLUSION

In this document we have defined a number of services that have to be provided by the different interoperability layers of the PEGS Infrastructure. There is no guarantee that these services define the functionality for each layer at 100%. However, we believe that, through the combined approach of (tentative) PEGS analysis and reference document synthesis, we have defined a set of requirements that represents the vast majority of needed functionality.

The architecture document will specify what the different architectural solutions are for the requirements presented here.

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