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**COMMUNICATION FROM THE COMMISSION TO THE COUNCIL
AND THE EUROPEAN PARLIAMENT**

Interoperability for Pan-European eGovernment Services

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Interoperability for Pan-European eGovernment Services

Today eGovernment is at the heart of the EU's drive for economic, social and environmental renewal. Its contribution to improving the development and implementation of public policies is well-established, and recently particular attention has been attached to the part it plays in improving the competitiveness and innovation of European economies.

Much progress has been made on eGovernment at all levels of public administration in Europe. While this momentum must be maintained, more attention now needs to be paid to developing the cross-border dimension of eGovernment, for which interoperability assumes even higher priority. Closer collaboration between administrations from different Member States will support the emergence of better services for European citizens and businesses and more efficient implementation of EU policies.

Increased collaboration necessitates improved communication between a growing number of administrations in the public sector, a challenge that calls for a joint effort by Member States and the Community. The aim of this communication is, therefore, to raise the attention of Member States to the work that needs to be undertaken to achieve pan-European interoperability of eGovernment services. In the light of the range of issues that need to be addressed, it proposes priorities and a first set of actions. This communication calls on the Council to address the requirements identified and to lend its support to the measures that will meet them.

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1. INTRODUCTION

1.1. Background

Strengthening the competitiveness of European economies requires modernisation of the public sector in Europe and improved interaction between the associated organisations:

– The single market relies on modern and efficient public administrations which facilitate the mobility and seamless interaction of citizens and businesses.

– Modern public administration has to be built upon sophisticated ICT infrastructure and streamlined eGovernment processes. Only then will it be able to deliver the cost-efficient, transparent and convenient services needed to seize the opportunities offered by the information society.

The benefits of eGovernment and, in particular, of cross-border eGovernment services in this respect are undisputed[1]. Accordingly, the proposed Directive on services in the internal market[2] explicitly highlights the interrelation between eGovernment infrastructure and the mobility of businesses. It requires the Member States to set up the interoperability infrastructure necessary to provide mobile businesses with single points of contact for completing the administrative procedures related to mobility.

Other EU policy areas too need to be supported by increased information-sharing between administrations. Policy objectives cannot be attained without increased cooperation between administrations, supported by information technologies, whether in the area of justice and home affairs or of external relations and security policy.

The interoperability of eGovernment services[3], based on standards, open specifications and open interfaces, has become a crucial, crosscutting task. In the eEurope Action Plan[4], it was explicitly recognised as a precondition for the implementation of European eGovernment services, and Member States restated its importance at the Ministerial Conference held in Como in July 2003: "Cooperation required to develop pan-European services depends in part on the interoperability of information and communication systems used at all levels of government."

This means that, although Member States are responsible for the interoperability of their own systems, interoperability at European level, which is needed in order to implement common EU policies and priorities, requires cooperation and coordination at European level. The issue of such interoperability should therefore remain high on the EU agenda on electronic services of public interest (in the area of eGovernment but also others like health or education), notably as part of the new strategic framework "i2010[5] - A European Information Society for growth and employment" and the various related initiatives and programmes. i2010 explicitly addresses interoperability as one of the four main challenges for the creation of a single European information space and essential for ICT-enabled public services.

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[1] See inter alia COM(2003) 567 final of 26 September 2003 "The role of eGovernment for Europe's future" and SEC(2004) 346 of 18 March 2004 "Commission staff working paper on the interoperability of digital interactive television services".

[2] Proposal for a Directive of the European Parliament and of the Council on services in the internal market COM(2004) 2, submitted by the Commission).

[3] For the purpose of this communication, interoperability is defined as "the ability of information and communication technology (ICT) systems and of the business processes they support to exchange data and to enable information and knowledge to be shared", see "European Interoperability Framework for pan-European eGovernment Services", version 1.0, published in November 2004, http://europa.eu.int/idabc/en/document/3473/5585.

[4] "eEurope 2005: An information society for all. An Action Plan to be presented in view of the Sevilla European Council, 21/22 June 2002", COM(2002) 263 final of 28 May 2002, http://europa.eu.int/information_society/eeurope/2005/all_about/action_plan/index_en.htm.

[5] 2005 "i2010 – A European Information Society for growth and employment", COM(2005) 229 final of 1 June, http://europa.eu.int/i2010.

1.2. Challenges: Pan-European services for citizens and businesses

The achievement of interoperability for eGovernment services is a continuous process in which new partners and new technologies need to be integrated constantly:

– eGovernment services are delivered at all levels of government. Interoperability must be ensured between local, regional, national and European administrations to provide seamless service.

– The integration of the new Member States is a major task which is already under way.

– More and more citizens going online will expect and demand efficient and simplified electronic access to information and services.

– Technologies and market products are evolving. While new ways of ensuring interoperability are emerging, the increasing potential to enrich eGovernment services means that interoperability is becoming an issue where previously it was not.

– Advances made by Member States in establishing their own eGovernment programmes and policies mean that many choices have been made with regard to implementation. Integration of heterogeneous elements and processes is becoming a major task.

– Pan-European specifications are sparse, and no systematic exchange of know-how and best practice yet exists.

The growing number of players, the growing complexity of the relationships, and the related IT systems necessitate consistent architectures, common policies and standards as well as continuous and extensive coordination efforts between EU institutions and Member States. With the rollout of pan-European services this complexity will increase.

1.3. Scope of the communication

A basic approach to European interoperability has been drawn up, and the foundations are in place:

– A first version of the European Interoperability Framework (EIF) for pan-European eGovernment Services[6] and its associated Architecture Guidelines has proposed policies, standards and specifications to support partners of European eGovernment doing business with each other.

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[6] The "European Interoperability Framework for pan_European eGovernment Services" is a working document of the IDA programme, http://europa.eu.int/idabc/en/document/3473/5585. It has been subject to extensive stakeholder review and discussion, but it does not constitute official European Commission policy,.

– eGovernment-related research and development programmes have completed related studies and initiated pilot projects.

– In the context of advisory consultations on national eGovernment initiatives for eEurope 2005, approaches to interoperability have been recommended[7].

– The Information Society Technologies Research, Technological Development and Demonstration Programme (IST RTD), Trans-European Networks Programme for e-Services (eTEN) and the programme for Interoperable Delivery of European eGovernment Services to Public Administrations, Businesses and Citizens (IDABC) jointly contribute to identifying, validating and implementing pan-European services[8]. IDABC has finalised a survey on pan-European services with the relevant stakeholders[9].

However, in view of the limited resources, efforts to develop cross-border eGovernment services have to be prioritised. Secondly, the long-term sustainability of the measures to support interoperability required by these services needs to be ensured.

This communication therefore:

– sets out the basic requirements for implementing pan-European interoperability of eGovernment services;

– outlines priorities in a structured set of policies and measures for achieving interoperability of eGovernment services in the pan-European context;

– proposes further action as first steps to fill in this framework.

2. IMPLEMENTING PAN-EUROPEAN INTEROPERABILITY FOR EGOVERNMENT SERVICES

2.1. Benefits of eGovernment interoperability

Interoperability is a prerequisite for the delivery of eGovernment services across national and organisational boundaries. Interoperability facilitates communication, interaction and transaction between different entities or partners. It enables organisations to retain their independence while allowing information and transactions to pass across their boundaries.

2.2. Dimensions and requirements of eGovernment interoperability

Three key areas of interoperability will have to be considered when implementing eGovernment services - the organisational, semantic and technical:

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[7] See CoBrA recommendations of 25 October 2004:
http://europa.eu.int/information_society/activities/egovernment_research/doc/cobra_recommendations_for_eGovernment_beyond2005.pdf.

[8] Decision 2004/387/EC of the European Parliament and of the Council on the interoperable delivery of pan-European eGovernment services to public administrations, businesses and citizens (IDABC).

[9] Forthcoming: Survey of stakeholder requirements for pan-European eGovernment services.

– <u>Organisational interoperability</u> is about being able to identify the players and organisational processes involved in the delivery of a specific eGovernment service and achieving agreement among them on how to structure their interactions, i.e. defining their "business interfaces"[10].

– <u>Technical interoperability</u> is about knitting together IT systems and software, defining and using open interfaces, standards and protocols in order to build reliable, effective and efficient information systems.

– <u>Semantic interoperability</u> is about ensuring that the meaning of the information exchanged is not lost in the process, that it is retained and understood by the people, applications and institutions involved.

Coordination efforts are needed in and across all three areas.

2.3.   The governance of eGovernment interoperability

The approaches and solutions for interoperability will differ, depending on the eGovernment services concerned and on the environment in which the services are implemented. Achieving interoperability for given areas at European level has to be seen as a step-by-step process and needs to be supported as such.

The related coordination efforts will have to be supported by administrations at all levels. Policy and technological considerations determine where responsibilities lie.

The principle of subsidiarity requires public intervention at the most efficient level considering the objectives pursued: this will often be at Member State level. However, considering the scale and scope of the services and the coordination of measures supporting pan-European interoperability, a number of measures need to be taken at EU level.

In this regard, the coordination of eGovernment interoperability agreements within a specific policy area falls within the responsibility of that area, whereas commonly applicable rules and elements must be defined across policy areas. Consequently, semantic schemes for the exchange of taxation data or health statistics will have to be defined by taxation and health administrations. However, commonly used elements, such as descriptions of goods, institutions or natural persons in general, or technical rules, such as the use of secure transport protocols and interfaces, will have to be organised horizontally across all areas and, where relevant, synchronised with work addressing similar interoperability challenges in business.

2.4.   Legislation

National eGovernment programmes have encountered legal hurdles when trying to restructure and simplify processes for more efficient interaction with their customers. These problems are likely to be multiplied at pan-European level.

Changes to national legislation may be required in order to achieve organisational interoperability for pan-European eGovernment services. Impact assessments for

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[10]   As defined in the EIF.

legislative proposals – including from the EU - might have to address constraints for electronic services.

The Commission has launched a study (under the Modinis programme in the context of eEurope 2005) into legal and organisational barriers to eGovernment.

3. ADDRESSING INTEROPERABILITY REQUIREMENTS

3.1. Achievements

3.1.1. *Policies and standards for pan-European interoperability*

A first version of the European Interoperability Framework for pan-European eGoverment Services was published, as an IDA (Interchange of Data between Administrations) working document, in November 2004, suggesting general guidelines for the delivery of pan-European eGovernment services. Based on the premise that each Member State has, or is in the process of developing, its own national Government Interoperability Framework (GIF), the EIF focuses on supplementing, rather than replacing, national eGovernment interoperability frameworks by adding a pan-European dimension. The EIF makes recommendations, defines generic standardisation requirements with regard to organisational, semantic und technical aspects of such interoperability and offers a comprehensive set of principles for European cooperation in eGovernment.

3.1.2. *Projects and studies*

The R&D programmes on eGovernment, IDA, eTEN as well as the individual policy areas have implemented a substantial number of projects harnessing and promoting eGovernment interoperability. Among others, the IDA programme has produced European specifications for eProcurement, and eLink, the middleware for secure data exchange between administrations and their communication partners. eTEN has set up a pan-European pilot system for processing standardised registration data for use by businesses. Tax administrations, customs, health, social security and statistics have already gone a long way towards interoperability and standardisation in their sectors – partly with the support of the Commission. The R&D programme is exploring interoperability in emerging areas such as mobile eGovernment services.

3.2. Action required

3.2.1. *Setting priorities*

Efforts to address interoperability requirements for eGovernment services must concentrate on policy areas of priority. Against the background of the economic climate in the EU and the importance of bringing real benefits to citizens, the expected effects on competitiveness and employment, innovation and contributing to European citizenship must be among the selection criteria. Cross-border company registrations and the interoperability of European eProcurement are examples of high-priority areas. The need to reduce the administrative burden on enterprises in the EU is also taking on new urgency. Seamless collection of pan-European statistics is a step into the future. In the field of social security and job offers, cross-border services will facilitate the mobility of citizens.

3.2.2.   Policy documents and guidelines

Reactions after the publication of the first version of the European Interoperability Frramework for pan-European eGovernment Services (EIF) demonstrate that a more profound understanding of eGovernment interoperability and its impact is needed. The EIF will have to evolve in line with policy requirements and technological changes. It needs to be supplemented with recommendations on specific standards and applications, which can be provided by the Architecture Guidelines and equivalent documents, to be produced by the IDABC programme. Future, more refined versions of the EIF, will be formalised in the light of policy guidance obtained from consultations and studies in the various EU programmes concerned, including the i2010 initiative. In the longer term, a stable governance organisation may need to be established.

The EIF needs to be supplemented by a revised edition of the well-established IDA Architecture Guidelines which approach eGovernment interoperability from a more technical and pragmatic viewpoint. Based on the concept of a well-built architecture, together they will offer guidance on how to implement and integrate available generic eGovernment components and network infrastructure.

3.2.3.   Encouraging collaboration between administrations

In some policy areas such as customs and taxation, trans-European information exchanges have become common-place and have lead to the emergence of sector-specific agreements on interoperability. However, an effort is required to achieve interoperability at all layers of government. The Commission proposes to bring together stakeholders and carry out validation and deployment projects for the implementation of interoperable service solutions with the support of the eTEN programme. R&D projects and Modinis studies are expected to provide inputs. In addition, IDABC will continue to promote and facilitate collaboration by European public administrations in support of EU policies.

The stakeholders for the identified areas need to be brought together at European level - across Member States and different administrative levels – in order to:

– take stock of the existing services and service components in the different Member States,

– define service- or sector-specific action plans on how to achieve and benchmark interoperability,

– identify the horizontal interoperability layer to be addressed at European level,

– agree on the level of eGovernment interoperability to be achieved and the approach to be taken,

– agree on reusable or scalable model solutions to be implemented jointly.

To support implementation of this coordination policy, the initial guidance provided by the European Interoperability Framework (EIF) needs to be complemented by related fora and institutionalised coordination processes at European level.

3.2.4.   *Management of generic elements*

Experience with national interoperability programmes and standardisation processes shows that the identification and definition of common elements and core components is crucial for the efficiency of information and transaction. The worldwide acknowledged standard of the postal address is one evident example: thanks to this standard alone letters are sure to reach their destination regardless which country the recipients live in.

While the administrations involved in information exchanges specific to their sector should agree on the aspects that concern them exclusively, recurring aspects and cross-border interoperability issues need to be decided at EU level. Appropriate coordination processes with Member States have to be put in place and may need to be backed up by a responsible management entity. This task may be delegated to one or more Member States, but it could also be handled by an institutionalised process at European level.

3.2.5.   *Standardisation*

Due to its characteristics of openness and inclusiveness ICT standardisation can provide a major support to the achievement of interoperability at the network, service and application levels. A greater effort is therefore required to carry the public sector's eGovernment standardisation requirements into the European (CEN, CENELEC and ETSI) and international standardisation bodies[11].

Under the eEurope standardisation Action plan, the European standardisation organisations, in particular CEN and ETSI, in co-operation with relevant stakeholders and public administrations, have initiated a standardisation programme aiming at the identification and implementation of eGovernment standardisation priorities with the view to increase interoperability. The European standardisation organisations are invited to continue the effort and to carry them further under the i2010 initiative.

3.2.6.   *An architecture for cross-border delivery of eGovernment services*

To be economic and effective, implementation of the infrastructure required for the delivery of pan-European eGovernment services will have to be guided by an overall conceptual architecture, based on standards. Such architecture will leave it to the players responsible to define individually the components they want to implement

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[11]   This is supported at the policy level by COBRA recommendations, the resolutions of the 43rd meeting of the Directors-General for Public Administration of the European Union on 22 and 23 November 2004 (http://www.eipa.nl/) and a strategy paper on "Rethinking the European ITC Agenda: Ten ICT-breakthroughs for reaching Lisbon goals", The Hague 2004, initiated by the Dutch presidency, http://www.pwc.com/Extweb/pwcpublications.nsf/docid/EC6DE73A846581CE80256EFD002E41FB/$ file/pwc_rethinking_european_ict_agenda.pdf.

and, at the same time, will ensure the coherence of the whole scheme. The Commission will establish common concepts, principles and guidelines for the delivery of pan-European eGovernment services through the IDABC programme, in cooperation with the RTD and eTEN programmes.

3.2.7. *Common infrastructure to support eGovernment interoperability*

Online information platforms, registries and repositories will facilitate organisational and semantic interoperability of eGovernment services, providing pointers to where information can be accessed, under which conditions and how to interpret it. The purpose of this infrastructure will be to bridge the differences between national approaches. The Commission will encourage exploration through the RTD programme, and the validation and implementation of this infrastructure through the eTEN and IDABC programmes. Organisation and financing for the long-term operation of this infrastructure will need to be assessed.

3.2.8. *Common elements*

Common elements and core components which can and should be used by interoperability partners at European level will have to be identified. Agreements on their specifications should be coordinated, published and maintained between the competent authorities and, where appropriate, with the involvement of recognised standardisation bodies. A contribution is expected to be made by learning from good practice across the EU and internationally.

3.2.9. *Establishing coordination and maintenance*

The implications of the coordination and maintenance tasks required for the implementation of pan-European interoperability need to be assessed[12]. Such tasks would include:

– coordinate the pan-European agreements about common specifications, standards and rules across policy areas;

– support the coordination of agreements within policy areas;

– safeguard the sustainability of these agreements by delivering technical and organisational support for the accessibility, maintenance and further development of these specifications and rules.

IDABC will assess the possible organisational models and present the implementation options by mid-2006[13].

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[12]   See also EPAN, "Key Principles of Interoperability Architecture", prepared under the Irish Presidency 2004, http://www.reach.ie/publications/downloads/PrinciplesofInteroperability.pdf.

[13]   See Article 10.8 of Decision 2004/387/CE adopting the IDABC programme, OJEU L 144, 30.4.2004 (s. Corrigendum in OJEU L 181, 18.5.2004, p. 25).

3.2.10. *Knowledge, good practice and compliance*

Adherence to the common guidelines and recommendations will be crucial for the achievement of eGovernment interoperability. Conformity is strongly coupled to knowledge, and an effort is required to raise awareness of the guidelines and standards that have been agreed upon. eTEN, IDABC and the eGovernment-related activities in the IST programme and in the eEurope Modinis programme are already promoting the spread of knowledge and good practice. These efforts will be stepped up.

3.2.11. *Encouraging the development and spread of interoperable eGovernment solutions*

The public sector relies to a great extent on the development of eGovernment solutions in the private sector. The eTEN and IST programmes provide opportunities for encouraging the development of such solutions. A wealth of open source software components is available, and sharing of these solutions between administrations will be encouraged through the IST, eTEN and IDABC programmes.

3.2.12. *Research*

In the IST RTD programme, interoperability in eGovernment is being explored in innovative service delivery settings (such as mobile or multi-channel services) that are applicable at any level (local, regional, national, European), as well as for emerging future pan-European services. Particular attention is being given to issues connected with back-office integration, semantics, essential facilities, such as cross-border electronic identity management and authentication, as well as to secure environments for eGovernment. Exchange of insights gained from these RTD projects is facilitated through an Interoperability Observatory[14]. Accompanying studies and actions have been put in place or are planned to address issues such as electronic identification and authentication in eGovernment, local and regional interoperability, and linkage to the exchange of good practices.

4.   CONCLUSIONS

This communication builds on the understanding that Europe needs cross-border government services in order to increase the competitiveness of its economy and the mobility of its citizens and businesses. It argues that:

– interoperability, meaning the capability to connect information processing systems and workflows and to understand and reuse information from other organisations, is a prerequisite for improving the conditions for a competitive and innovative Europe;

– the implementation of eGovernment services interoperability at pan-European level requires common strategies and substantial investments in collaboration and

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[14]   http://www.egovinterop.net/

operational infrastructure by all parties concerned, based on a long-term vision of sustainable pan-European eGovernment services;

– eGovernment interoperability is therefore a European challenge that needs to be addressed by the European institutions in close cooperation with Member States. The issue of governance needs to be addressed not only in the pan-European context but also in policy areas and across sectors;

– priorities for the implementation of eGovernment interoperability have to be determined on the basis of anticipated benefits for the Union's economy and for social cohesion in Europe;

– resources for initial investments and long-term sustainability of the measures required for the delivery of cross-border services have to be assessed and secured.

On the basis of this communication, the Commission will formulate proposals to create favourable conditions for the establishment of interoperable pan-European services. This will be done within the context of the i2010 initiative where an "eGovernment action plan" is being prepared, and of the IDABC programme, where mechanisms to ensure the financial and operational sustainability of the IDABC infrastructure services need to be defined before 31 December 2006[15].

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[15] See article 10(8) of decision 2004/387/EC of the European Parliament and of the Council of 21 April 2004 on interoperable delivery of pan-European eGovernment services to public administrations, businesses and citizens (IDABC)