A. Trusted Exchange Platform (e-TrustExchange)

1. CONTEXT

<table>
<thead>
<tr>
<th>Type of Action</th>
<th>Project</th>
</tr>
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<tbody>
<tr>
<td>Type of Activity</td>
<td>Reusable generic tools</td>
</tr>
<tr>
<td>Service in charge</td>
<td>DG DIGIT</td>
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2. OBJECTIVES

The goal of this project is to provide a Trusted Document Exchange Platform that re-uses the existing e-PRIOR infrastructure and to proof the cross-sector re-usability of e-PRIOR. The main objective is to provide a set of integrated re-usable components designed within a coherent architecture that implements a technical platform able to support and secure a number of business document workflows between European Commission and national parliaments, permanent delegations, local governments, businesses, citizens, other EU institutions.

This would improve - in terms of reliability, security, efficiency and capacity - the communication between European Commission and administrations, businesses and citizens.

The platform will guarantee equal treatment to all 3rd parties who need or want to exchange documents with the European Commission, and will replace, when needed and possible, notification by traditional means (via the post) with legally equivalent electronic interactions.

The action also aims at analysing the possibility to have a convergence with other initiatives which implement similar solutions for data transport and message exchange in specific policy sectors. This would allow to create synergies and to produce a future streamlined re-usable solution for Business Document/Structured Data Exchange usable cross sectors.

3. SCOPE

This action addresses the domain of Government-to-Government (G2G), Government-to-Business (G2B) and Business-to-Government (B2G) and is related to the following priority areas of the ISA programme:

- Interoperability Architecture – Building blocks
- Trust and Privacy

The scope of the project is the development of a Trusted Document Exchange Platform based on e-PRIOR in the context of document exchanges in various domains (legislative, competition, internal market and employment, etc) via the implementation of pilots to demonstrate the cross-sector re-usability and security of e-PRIOR.

The main activities are:

1. Definition of the Architecture Vision of the Trusted Document Exchange Platform, including streamline of solutions for generic document exchange platform within the European Commission. This includes in particular the analysis of convergence with other initiatives
provided by other Commission Services and Member States (see PEC project developed by France).

2. Customize and improve e-PRIOR in order to automate document workflows by exchanging XML metadata and any related attachments, such as legislative and non legislative acts in PDF, Word, etc in electronic format via a reliable and secure platform, with the respective counter parties. Envisaged recipients are permanent delegations, national parliaments, local governments, EU institutions, national competition authorities and large enterprises. This activity includes integration with back-office systems initially in the legislative and competition domains but then extended to other sectors (such as internal market and employment).

3. Configure Open e-PRIOR and make it available to the envisaged recipients as an open source client tool for exchanging documents and the related metadata. This includes a user interface to manage the exchange information and documents.

4. Gradually improve the support of standardized activities by defining meta-data specifications for identified set of exchange/activities in the envisaged domains.

5. Extension of the trust and security underlying the Trusted Document Exchange Platform toward a full implementation of end-to-end trust, respecting the basic principles of digital security (i.e. Confidentiality, Integrity, Availability, Authenticity and Non-repudiation).

6. Develop extensions allowing supporting the exchange of huge documents and "bundles" of documents.

In order to support the deployment of this Trusted Document Exchange Platform in Member States, EU Institutions or other beneficiaries, a helpdesk will be put in place and detailed documentation will be provided. This will include end-to-end support related to the document exchange specifications, including the security aspects, support for the integration into their back-office systems, explaining the supported standards etc.

The exchange of classified documents is out of the scope of this project.

4. **PROBLEM/OPPORTUNITY STATEMENT**

The needs in terms of reliable exchange of documents, which are present in various sectors and met with unsatisfactory e-mail based or ad-hoc solutions, offer the opportunity to develop and expand the Trusted Document Exchange Platform.

The development of the pilots described below will prove the usability of the Trusted Document Exchange Platform in the secured document exchange for competition, legislative sectors and others.

Instead of working on the solution of generic but abstract requirements, the approach consists in exploiting the opportunities offered by the implementation of concrete examples of use of the platform via the interoperability with real working systems having significant functional and not functional requirements. This will contribute to the expansion of the user community, to the inclusion of more potential parties and it will also allow the coverage of additional sectors / policy areas together with the progressive support of additional features.

Among the significant requirements to be supported in the document exchange we find the following:

- support of structured business documents (already implemented for e-Procurement, such as Invoices, Credit Notes, Orders, Offers etc);
- support of large not structured documents (e.g. replies to requests for information, sector inquiries or any correspondence containing large documents) between the Commission and 3rd parties (national, regional and local administrations, businesses, citizens, other EU institutions)

- support of sensitive information requiring secure handling (e.g. encryption)

- support of advanced non-repudiation features (receipt for delivered documents).

- support of bi-directional exchanges regulated by predefined conversational scenarios.

- support of broadcast / multi-recipients exchange.

As written above in many case the current solution is the use of normal emails, encrypted emails or even, because the limitations of the email, the solution simply consists in sending print-outs or CDs/DVDs by post.

The identified business cases offering the opportunity to test and extend the technical platform are described hereafter:

**e-Greffe**

E-Greffe is a workflow application which supports the decision making process of the European Commission. The e-Greffe application enables electronic management of all documents adopted by the Commission. After adoption, e-Greffe forwards electronic copies of these legislative/legal documents (e.g. directives, regulations, decisions …) to all relevant EU Institutions (e.g. European Parliament, Consilium, BCE, OPOCE, …), as well as to the permanent delegations of the member states and to the national parliaments and local governments in the EU. These documents are in the form of PDF or Word documents, accompanied by metadata describing them (in an XML proprietary format). e-Greffe uses email to send these sets of documents to the national parliaments, since this technology is the most widely available and is easy to use. Some recipients have integrated the accompanying XML descriptor files with workflow tools on their side.

The adoption of the Lisbon Treaty introduced an even greater involvement of national parliaments in the legislative process. National parliaments now have greater opportunities to be involved in the work of the EU, in particular thanks to a new mechanism to monitor that the Union only acts where results can be better attained at EU level (subsidiarity principle). These exchanges represent today more than 50,000 e-mail messages a year and this traffic is expected to grow, when copies of the Commission decisions will be addressed to the permanent delegations and national parliaments.

**EDMA - Exchange of Competition related documents.**

Currently DG COMP systems exchange information and documents with national competition authorities of each EU member state, with enterprises, citizens and other entities. The documents are exchanged in electronic format via e-mail or by regular mail. Due to the security constraints the documents must be encrypted or electronically signed in some cases.

The problem of email as transport protocol is that the size of attachments can have limitations so that the documents must be sent via multiple email messages. This overloads the Commission email server. There are no guarantees that the recipient has received the email(s) and the documents and the emails are not digitally signed. In these conditions the business processes cannot be integrated in a reliable and secure way and human intervention is required in almost all cases.
The exchange via encrypted email has also size constraints, overload of the Commission email server, does not fulfil equal treatment to all 3rd parties (since it can be used only by parties having PKI). Many outside entities wouldn’t accept encrypted attachments as there is a need and a corporate policy to scan the e-mails against viruses.

In all these cases, interoperation with other IT services like document management (EDMA - Document Management System of DG COMP) or registry systems is not possible.

A.S.A.P.

The adoption of the Lisbon Treaty introduced an even greater involvement of national parliaments in the legislative process. National parliaments now have greater opportunities to be involved in the work of the EU. In this context, A.S.A.P. (Application de Suivi des Avis des Parlements nationaux) is an application developed and operated by the Secretariat General that allows the management and the collection of National Parliaments advices on the legislative proposals of the European Commission. These legislative proposals are originated by the e-Greffe application, therefore the inclusion of A.S.A.P. in the pilots is the natural extension of the e-Greffe support.

The solution currently used by A.S.A.P. to receive advices from National Parliaments is the e-mail.

A.S.A.P. would benefit of the integration with the Trusted Document Exchange Platform by replacing the existing e-mail document transfer in a secured and trusted way and by allowing an automated treatment of structured data.

GENIS – State Aid Notification Services.

The ISA action 1.11 ”Interoperable and Generic Notification Services” (GENIS) by DG COMP aims at modernising and / or setting-up common services to support, in a generic and interoperable way, the State Aid notification processes (bi-directional data transmissions between Commission services and Member States). This action involves also Directorates General MARE and AGRI.

GENIS would benefit from the use of the e-PRIOR infrastructure for the document exchange to ensure trust and data privacy.

eQuestionnaire

eQuestionnaire is an application developed and used by DG COMP to carry out enquiries and investigations with companies, mainly in the policy areas of Mergers and Anti-Trust. It covers the full workflow of the enquiry/investigation, inclusive reporting. It handles confidential and non-confidential replies.

eQuestionnaire would benefit of the integration of the Trusted Document Exchange Platform by replacing the existing document transfer system the font office. The replacement would allow the secure transfer of structured data, larger files, and the support of groups of files.

The various back-end systems mentioned above would benefit from this integration by reusing e-PRIOR's experience in the G2G and G2B integration, reusing best practices and existing components. On the other hand they offer the opportunity to extend the features supported by the technical platform based on the E-PRIOR system to make it more generic by supporting significant functional and not functional requirements.
Since this integration is done with real systems solving real business needs, the results will also be the improvement of the quality of transmissions with member states delegations, national parliaments, local governments and EU institutions.

Additionally, this action will prove the re-usability of e-PRIOR in other sectors than e-Procurement.

**Streamlining different solutions for trusted document exchange:**

The EIIS (=“European Interoperable Infrastructure Services”) study had already identified e-PRIOR as a good candidate reusable component for Data Transport. The analysis of other similar solutions for a trusted document exchange platform would be the logical continuation of the abovementioned study and would be an opportunity to analyse the possible convergence between the initiatives for the cross-sector / cross-border document exchange.

The expected result is a consolidated Architectural Vision and this would allow streamlining the solution for exchanges between the European Commission, other EU Institutions, Member States administrations and all other types of parties currently involved in this type of interactions.

The candidate projects to be analysed and compared with e-PRIOR are EESSI (= Electronic Exchange of Social Security Information) by DG EMPL and PEC (Plateform d'échange de confiance) developed by the French "Direction Générale pour la Modernisation de l'État”

In Q1/2012 EESSI will reach the operational stage.

The infrastructure put in place in the EESSI context is meant to address cross-border communication of structured information and interoperability of information systems. Several completely independent sectors (even though all related to social security) are covered by the current system (Sickness, Accidents at work and Occupational Diseases, Pensions, Unemployment Benefits and Family Benefits).

The current infrastructure of EESSI (messaging and workflow) is already highly business agnostic and will anyway need to be reengineered to make it more reliable, efficient, ready for future traffic increase. It is also expected that with the experience of the first months of real usage in the Member States, new infrastructure requirements will be discovered.

The PEC implements solutions for secured dematerialised exchanges within the French administration. The exchange module is currently partially operational and its usefulness in the exchanges within the French administration is recognised (e.g.: costs and time savings for exchange of supporting documents, reliability, traceability). There are plans and specifications available to extend this platform to become a generalised solution to implement dematerialised exchanges in the contest of administrative procedures by adding other features (e.g.: authentication, e-signature validation, receipt notification, encryption/decryption). The used technologies and standards should facilitate evolution and portability.
### EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

<table>
<thead>
<tr>
<th>Beneficiaries</th>
<th>Anticipated benefits</th>
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<tbody>
<tr>
<td>Member States' public administrations and EU Institutions</td>
<td>Re-use of architectural aspects. In fact, the adoption of &quot;Service Oriented Architecture&quot; within which the various interactions between Commission systems (eg.: e-Greffe, ASAP, EDMA, State Aids management systems, e-Questionnaire), the e-PRIOR system and the &quot;back office&quot; of the public administration might be designed as invocation of services</td>
</tr>
<tr>
<td></td>
<td>Cost savings and improve efficiency, reduce time-to-market and ensure interoperability as handling legislative documents and follow up of legislative procedures can be automated (see business cases offered by e-Greffe and ASAP).</td>
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<tr>
<td></td>
<td>Free-to-use open source tools for national parliaments and permanent representations to send and receive electronic legislative documents and metadata (see business cases offered by e-Greffe and ASAP).</td>
</tr>
<tr>
<td></td>
<td>These tools can be used for exchanging other electronic business documents with other stakeholders (see business cases offered by DG COMP)</td>
</tr>
<tr>
<td></td>
<td>Experience, lessons learnt, specifications, tools and components published as open source reusable by any Member State or EU Institution</td>
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<tr>
<td></td>
<td>Replacement of notification by traditional means (via the regular mail) with legally equivalent electronic interactions, saving time, money and paper (green).</td>
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<tr>
<td>IT services in the Commission</td>
<td>The European Commission, because of its central position, is more and more called upon to develop distributed systems to coordinate political actions in various fields. If a generic system can be defined and later put in place, it will be a very big progress for the whole interoperability issue in Europe. This would of course also represent important cost savings since the infrastructure of such systems would then be reusable.</td>
</tr>
<tr>
<td>EU Tax payer</td>
<td>Given the potential economies of scale realised if such a generic system can be put in place, the indirect benefits for the EU Tax payer are obvious</td>
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### 5. ORGANISATIONAL AND TECHNICAL APPROACH

A Project Steering Committee will be established to provide overall guidance and direction for the project with the participation of all concerned services. Working groups will be organised with different families of beneficiaries to gather their requirements.

The action is multiannual and organised in phases. Within each phase, the integration of additional back-end systems and/or the support of additional requirements will be covered.

In fact instead of working on the solution of generic requirements which would risk being abstract, the chosen approach consists in identifying the opportunities offered by the implementation of concrete
examples of use of the platform via the interoperability with real working systems having significant functional and not functional requirements. This can actually contribute to the expansion of the user community, to the inclusion of more potential parties and it will also allow the coverage of additional sectors / policy areas together with the progressive support of additional features.

For this reason the "pilots" are chosen on the basis of:

- the significance of their functional and not functional requirements (e.g.: security requirements, complexity of the "exchange"/"conversation", volumes and size of the exchanged documents etc…)
- the type of involved parties (e.g.: EU institutions, Member States administrations, companies, citizens, NGO etc.)
- the coverage of additional sectors / policy areas.
- the "political" importance of the document exchange to support.

**Phase 1**

The inception phase of the action will cover the following:

1. Business requirements analysis and feasibility study.
   This phase will focus on establishing the business requirements for the legal decision making process and competition document management systems. The feasibility of the re-usability of e-PRIOR in this context will be assessed and the required additional developments will be analysed.

The execution phase of phase 1 will cover the following:

2. e-PRIOR system adaptations to support the legal and competition document workflows
3. Implementation of two pilot projects:
   - e-Greffe: automate the legislative document exchange workflow to support the implementation of the Lisbon Treaty
   - EDMA: automate the competition related document exchange workflow
4. Completing Open e-PRIOR user interface
5. Providing support and documentation

The deployment services are defined as an operational phase and will include both the deployments of existing functionality towards other users as well as the deployment of the new components.

**Phase 2:**

While Phase 1 is focused on proving the usability of the e-Prior components in sectors different from e-Procurement by adding a first set of additional features, Phase 2 introduces a parallelism between

- the definition of a robust architecture vision that would make the platform as the reference for cross sector business document exchange.

and
the implementation of additional features and pilots that would prove the validity of the architecture.

The execution of phase 2 will cover the following:

1. Update of the Project Charter produced during the Inception of the previous phase to reflect the support of new functionalities and review the scope to focus on the definition of the Architectural Vision

2. Definition of a formal architecture vision described in a Software Architecture Document ("RUP" artefact) resulting from the study of possible convergence or re-use with /of solutions provided by other projects implementing similar solutions for trusted document exchange. The project that have been identified as providing a similar solution for trusted document exchange are:
   - EESSI (= Electronic Exchange of Social Security Information) by DG EMPL, and
   - PEC (Plate form d'exchange de confiance) developed by the "Direction Générale pour la Modernisation de l’État"

3. Definition of a "roadmap" to be followed in a further phase that should lead to have a streamlined "unified" solution for trusted document exchange.

4. In alignment with scheduled analysis and development in E-PRIOR, study the impacts and then implement the electronic signature and electronic notification in existing pilots.

5. Implementation of additional pilot projects (included the GUI adaptation):
   - GENIS,
   - ASAP,
   - eQuestionnaire
   - additional pilot in other policy areas (Internal Market and Employment)

6. Extension of the Administration GUI to support the introduction of new features (e.g.: e-Signature)

7. Start implementing some elements of the "roadmap" described in point 3.

8. Research and analysis of new pilots in additional sectors / policy areas.

The deployment services are defined as an operational phase and will include both the deployments of existing functionality towards other users as well as the deployment of the new components.

Methodology:

The project teams will use the RUP@EC methodology for software development and ITIL for service management.

The key point of the chosen approach consists in:

1. the adoption of an incremental development which progressively makes available the support of more complex interaction and exchange of additional business documents;
2. the re-use of best practices and existing implementation as well as the reference to existing standards that have been developed already.

6. **COSTS AND MILESTONES**

   a) Breakdown of anticipated costs and related milestones

<table>
<thead>
<tr>
<th>Phase:</th>
<th>Description of milestones reached or to be reached</th>
<th>Anticipated allocations (KEUR)</th>
<th>Budget line ISA/ others (specify)</th>
<th>Start date (QX/YYYY)</th>
<th>End date (QX/YYYY)</th>
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</thead>
<tbody>
<tr>
<td>Phase 1 - Inception</td>
<td>Project Charter</td>
<td>300</td>
<td>ISA</td>
<td>Q2/2010</td>
<td>Q4/2010</td>
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<tr>
<td>Phase 1 - Execution</td>
<td>Phase 1 - Execution report</td>
<td>1,200</td>
<td>ISA</td>
<td>Q4/2010</td>
<td>Q3/2011</td>
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<tr>
<td>Phase 1 - Operational</td>
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<td>ISA</td>
<td>Q1/2011</td>
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<tr>
<td>Phase 2 - Execution</td>
<td>Phase 2 - Execution report</td>
<td>1,200</td>
<td>ISA</td>
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<td>Phase 2 - Operational</td>
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<tr>
<td>Total</td>
<td></td>
<td>3,050</td>
<td></td>
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b) Breakdown of ISA funding per budget year

<table>
<thead>
<tr>
<th>Budget Year</th>
<th>Anticipated allocations (in KEUR)</th>
<th>Executed budget (in KEUR)</th>
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<tbody>
<tr>
<td>2010</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>2011</td>
<td>600</td>
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</tr>
<tr>
<td>2012</td>
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