e-CODEX

e-Justice Communication via Online Data Exchange

D5.6 Description of piloting outcomes

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The two main deliverables of WP5, which are the Gateway and the Generic Connector Framework, provide an exchange platform to support cross border judicial use cases. The e-CODEX project pilots are a representative set of judicial processes aimed to validate that the whole solution provide by WP4, WP5, WP6 and WP7 meets the legal and technical requirements of the judicial business area. The achieved results and experiences from the use of the Gateway and the Connector during the piloting phase with real cases are collected in this document.

History

Version	Date	Changes made	Modified by
0.1	13/10/15	Structure draft	Matías González
0.5	25/11/15	First draft for review cycle	Ferdinand Rödlich Matías González
0.9	16/12/15	Final version after review comments	Ferdinand Rödlich Matías González
1.0	27/12/15	Final editorial amendments	WP1

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List of Abbreviations

Acronym	Explanation
ASIC	Associated Signature Containers
CEF	Connecting European Facilities
CIPA	Common Infrastructure for Public Administrations
CIP	Competitiveness and Innovation Framework Programme
CTP	Central Testing Platform
DB	Data Base
DG DIGIT	Directorate-General for Informatics
DOMIBUS	Domain Interoperability BUS
DSS	Digital Signature Services
ebMS	ebXML Messaging Services
ebXML	Electronic Business using eXtensible Markup Language
e-CODEX	e-Justice Communication via Online Data EXchange
FAQ	Frequently Asked Questions
GUI	Graphical User Interface
GW	Gateway
ICT	Information Communication Technology
ICT - PSP	ICT Policy Support Programme
IT	Information Technology
MS	Member State
LSP	Large Scale Pilot
PDF	Portable Document Format
PEPPOL	Pan-European Public Procurement Online
p-modes	Processing modes
SMP/SML	Service Metadata Publisher / Service Metadata Locator
SPOCS	Simple Procedures Online for Cross- Border Services
SSL	Secure Sockets Layer

SW	Software
WP	Working Package

Table 1: Abbreviations

Executive Summary

The objective of this document is to summarize the experience of WP5 in e-CODEX pilots, not only the results from the components but also the involvement of the team and the difficulties of the piloting countries.

In general terms WP5 succeeded in providing components for the e-CODEX transport infrastructure which are being used by the piloting countries for running real life cross border judicial use cases. It cannot be denied there have being problems and difficulties, some of them already solved and for others recommendations are given.

Lessons learned collected in this document are of great value not only for e-CODEX stakeholders but also for those interested in knowing about electronic transport infrastructures experiences, in this particular case based on the ebMS 3.0 standard. However, the information provided in these pages is cannot be compared with the knowledge acquired by any person directly involved either in the national teams or in WP5.

To get a more or less clear idea of what should be done as next steps you can read the recommendations for future developments and enhancements, but if you really want to take advantage of the work done by WP5 team for the e-Justice Communications via Online Data EXchange project it can only be said: "just use it, it works!".

1. Introduction

1.1. Scope and Objective of Deliverable

This document presents the outcomes from the use of the components produced by WP5 during the piloting phase. Both client – piloting countries – and provider – WP5 – point of views are included. Experiences from piloting countries have been collected by means of a questionnaire.

1.2. WP5 General Objectives and Vision

e-CODEX is a Large Scale Project in the domain of e-Justice that aims to provide to citizens, enterprises and legal professionals an easier access to justice in cross border procedures and to make cross border collaboration of courts and authorities easier and more efficient by creating interoperability of the existing national ICT solutions.

When structuring the work of the e-CODEX project, various considerations were followed to find an optimal organizational structuring. The project aims to develop the interoperability building blocks for e-Justice services in Europe that address the horizontal issues between Member States. Furthermore, these building blocks will need to be proven in real e-Justice services in the countries involved. The project organization will thus need to support these goals properly to ensure that they can also be achieved from a managerial perspective.

Based on the initial building block breakdown[1] for the large scale pilot implementation candidates, WP5 aims to deliver the capability to bind together documents and data that need to be routed or exchanged to enable European cross-border processes in e-Justice. As an example of this reusing strategy e-CODEX signing, signature validation and ASIC creation features are provided through the Security Library based on the DSS tool, the EvidenceBuilder library has been derived from the SPOCS code and in the latest release the Dynamic Discovery Concept (SMP/SML) of the PEPPOL project has been taken.

1.3. Methodology of Work

The information collected in this document come from the experience of WP5 and piloting countries. WP5 leaders with the support of main contributors to the development and implementation of WP5 components include their input directly on this document. In order to collect inputs from piloting partners using the WP5 components a questionnaire (included as an Annex) was circulated to be filled and sent back to WP5 leaders. The answers to this questionnaire were analysed. Results of this analysis are presented in this deliverable.

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[1] For a deeper view you can read "Deliverable 5.2 Reusable Assets", chapter 4, "Transportation Building Block"

1.4. Relations to Internal e-CODEX Environment

It is clear that there are dependencies between the different WP's in e-CODEX context. The WP5 is strongly linked to WP6 that enhances the overall functionality for e-Justice Services with the "content" of the documents. Another link is to WP7 that provides the IT-groundwork and architecture for interoperability between the systems to be connected, including the security and legal aspects. Beyond that WP4 delivered the identification and electronic signature building blocks used by WP5 software modules. WP3 is defining the underlying business processes of the judicial proceedings considered within e-CODEX. Requirements resulting from these business processes have been considered for the transport infrastructure implemented by WP5.

1.5. Relations to External e-CODEX Environment

WP5 has a strong relation to all other LSPs (especially to SPOCS and PEPPOL) with regards to the transport infrastructure developed within these projects. The results, documents and expertise gained by SPOCS and PEPPOL have been considered from the very beginning. Parts of their software modules (e.g. the evidence builder) have been reused by e-CODEX. Additionally, WP5 has a strong cooperation with the e-SENS project and the CIPA framework provided by the DG DIGIT, which are reusing the WP5 e-Delivery components for their pilots.

1.6. Quality Management

Deliverable 5.6 has been provided as a first draft (version 0.5) for a commentary review weeks before the final delivery was planned. The review participants are all work package partners, piloting partners plus the External Quality Manager. The review comments gained are collected by the work package leaders and processed for the updated version (0.9) which is delivered the week before the deadline of the final delivery.

The processing of all review comments is documented in the inspection report, which lists the review comments line by line including a statement how the respective review comment has been processed. The inspection report is published together with the update document of D5.6.

1.7. Risk Management

The risks as identified in the course of the creation of deliverable D5.6 and their probability and possible impact are as follows:

ID	Description	Probability		Impact		Expected value		Response	Owner
		inherent	residual	inherent	residual	inherent	residual		
1	The MS cannot use the SW modules due to MS specific requirements or restrictions.	medium	low	high	high	high	high	reduce	WP5, All piloting MS

ID	Description	Probability		Impact		Expected value		Response	Owner
		inherent	residual	inherent	residual	inherent	residual		
2	Not all MS have installed / used the SW modules in the test environment.	high	medium	high	high	high	high	reduce	WP3, WP5 All piloting MS
2	Few MS have installed / used the SW modules in the production environment.	high	medium	high	high	high	high	accept	WP3, WP5 All piloting MS
3	The SW deliverables do not function properly in time.	medium	low	high	high	high	high	reduce	WP5

Table 2: Risks

1.8. Legal Issues

The information to be provided by piloting partners and all the information contained in this document do not include any information regarding the real cases handled in the e-CODEX pilots.

1.9. Structure of the document

The document is structured as follows:

Chapter	Description
1. Introduction	Present the document and describe the work done
2. Components produced by WP5	List of components with short description
3. Deployment & Upgrade outcomes	Collects the experiences concerning the steps and actions to install and run by the first time the e-Delivery solution
4. Test & Operation outcomes	Collects the experiences concerning the test and operation of the e-Delivery solution in the pilots
5. Recommendations for future developments and enhancements	Guidance offered from the experience of running the pilots
Conclusions	Gather the main conclusions derived from the work presented in present document

Table 3: Document Structure

2. Components produced by WP5

This chapter list the components provided by WP5 to the piloting countries. For detailed description deliverables D5.11 and D5.12 should be consulted.

2.1. e-CODEX e-Delivery Platform

2.1.1. Gateway

The Gateway of the e-CODEX project is the component which main function is to provide communication between piloting partners.

Three releases have been used during the project live: v1.4, v2.0 and v3.0. Only v3.0 will be maintained after the project is closed. It is recommended that at the end of the project all piloting countries would be using v3.0.

2.1.2. Connector Framework

The Connector of the e-CODEX project is the component which main function is the adaptation of communications and messages between the national backend system and the Gateway. The WP5 provides the generic Connector Framework which each MS can integrate with their national backend system.

Three releases have been used during the project live: v1.4, v2.0 and v3.0. Only v3.0 will be maintained after the project is closed. It is recommended that at the end of the project all piloting countries would be using v3.0.

2.2. Supplementary Developments

2.2.1. National implementation example

A National implementation example was provided by WP5 in order to serve as a reference for piloting partners when integrating the generic Connector Framework with their national backend system. It is not an operational component on its own.

2.2.2. Stand alone connector

The WP5 development "the stand alone connector" enables potential piloting partners an easy way of participation. The partner will then be able to receive secure message via the e-CODEX system without a form based backend system.

2.3. Configuration and operation components

For a right operation of the e-CODEX platform some elements should be taken into account. In particular:

- for monitoring the status and operation of the e-CODEX platform a **Graphical User Interface** is a powerful tool;
- what messages and how they will be allowed to be exchanged is defined by **p-modes**;
- partners recognize each other by the use of digital certificates to establish secure communications and the signature of messages; certificates and keys must be kept in the appropriate **Trustores and keystores**.

2.3.1. GUI – Graphical User Interface

As support for administrators a GUI called Web Admin has been developed and provided by WP5. The Web Admin enables the administrators of the GW/Connector to monitor all messages send and received and to provide statistics about the message traffic in a PDF or XML format. Also some basic health checks can be monitored like e.g. the DB connectivity.

2.3.2. p-modes

Messages between Gateways can only be exchange if there is a collaboration agreement between business partners, this is a feature of the ebMS3 standard. ebMS3 relies on so-called processing modes (PModes) to describe how messages between business partners are to be exchanged.

Within the e-CODEX Project it has been agreed on a central PMode distribution process so no partner has to take care of the PMode generation himself. Every MS will be able to download the PMode files according to his pilots from a common repository.

2.3.3. Trustores & keystores

To be able to sign evidences a keystore with certificate and private key integrated must be used. To be able to sign the secure contents of the message, a keystore with certificate and private key integrated must be used.

Within the e-CODEX Project it has been agreed on a central public keys exchange process where a responsible national contact person will be able to upload the public keys[2] of GW, Connector and SSL-Connection[3]. Trustores and keystores directories containing the public keys of GW, Connector and SSL-Connection for all piloting partners will be able available for download from a common repository.

2.4. e-payment templates

For use cases in which payment of court fees is required the user must be provided with the accurate information and the appropriate means to pay. e-CODEX should provide access to the instructions/

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[2] In pem format and using naming scheme pub.pem (public cert), RootCA.pem (cert root CA), SubCA[1-9].pem (cert sub CA [1-9])

[3] for Server and Client Authentication. Client-Authentication is just necessary if this is a requirement of one of the supported Use Cases

user guidance regarding how the payment is to be made. As a central reference for the European citizens the e-Justice Portal, in its "**Going to court**" section there are pages called "Court fees concerning European Payment Order procedure"[4] and "Court fees concerning Small Claims procedure"[5] where information about cost of proceedings is provided.

2.5. WP5 Deliverables

Following the list of deliverables produced by WP5 (D5.7 and D5.13 are to be produced later):

Name	Description
D5.1	Requirements documents
D5.2	List of standards, reusable assets to be used and missing building blocks
D5.3	Concept for Implementation of WP5
D5.4	Developed modules and building blocks = Software Code
D5.5	Document: Description of tested functions and the outcomes
D5.6	Description of piloting outcomes
D5.7	Final documentations including standards, guidelines, organisational aspects, cross-border e-Justice processes
D5.8	Update of D5.2
D5.9	Update of D5.3
D5.10	Update of D5.4
D5.11	Update of D5.3 / D5.9
D5.12	Update of D5.4 / D5.10
D5.13	WP5 Final Reports

Table 4: WP5 Deliverables

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[4] https://e-justice.europa.eu/content_court_fees_concerning_european_payment_order_procedure-305-en.do

[5] https://e-justice.europa.eu/content_court_fees_concerning_small_claims_procedure-306-en.do

3. Deployment & Upgrade outcomes

3.1.   Deployment outcomes

WP5 has built and provided a set of items for piloting countries to be able to deploy the Gateway and the Connector Framework. The different versions of these set has always included the software packages for Gateway and Connector and documentation including the installation pre-requisites and instructions on how to proceed with the setup.

The main lesson for WP5 is that direct support for piloting countries has been a particularly demanding task mainly on the configuration aspects rather than on the installation itself. Improvement of documentation has been addressed in coordination with other WPs and it should continue, especially with the focus on new partners.

Release of components

The use of a central repository (e.g. Nexus) including version control as a single provider for all participants has demonstrated to be an effective way to make available the different versions of the software items they need. It would require a figure in charge of maintaining this repository. This should be used as reference for the e-CODEX sustainability.

Application platforms

Current DOMIBUS implementation is developed to run on TomCat, is up to the piloting participant to use other platforms. Supporting other platforms would be an additional feature for future enhancements.

Configuration management

The ebMS standard do not require a central element, but the way each Gateway relates with others is controlled by configuration, specifically by the so called PModes files. These PModes should be consistent with each other, any unilateral modification could introduce problems that would prevent Gateways to successfully exchange messages. Besides, the mutual recognition of the partners is based on the use of digital certificates shared using keystores and trustores files. The solution implemented in e-CODEX is a central management of the PModes files, keystores and trustores ruled by an algorithm for update and distribution of the new configurations. The drawback for the sustainability is that someone should act as a central configuration manager.

Support and follow-up of piloting partners setup

The small number of piloting MS and their progressive setup has allowed personalized attention from WP5 and has serve as a valuable feedback for the development team. However, supporting documentation was required for newcomers and it was decided to centralize support through WP3 that help identify and quantify what were the main issues from the piloting countries.

Installation of Gateway and Connector has not been a significant source of problems; the two main areas where WP5 support had to focus were the integration of Connector with the national system and the communication between Gateways. The National implementation example have been useful

for some countries to face the integration with their national system, and the develop of a standalone connector came as a need of those piloting countries with no national system ready to be integrated with the Connector framework for the piloting phase.

Documentation

Installation instructions for a participant not familiar with the Gateway and Connector Framework were not complete enough. For a newcomer it is necessary not only to provide detailed information on the installation process, but also an introduction to the Gateway architecture, design and implementation, explaining the concept of PModes, and providing some practical examples.

3.2.   Upgrade outcomes

The different versions of Connector and Gateway have progressively added new features, while pilots could be kept running over old versions. The initial policy was that all participants should upgrade their platform to the last available version. However, as far as pilots are working properly over former versions and some partners have limited resources, they were waiting for a final version to be available. These situations created a scenario where different versions were working together. The final version has already been released, and no former version will be sustained after the e-CODEX project ends so at the end of the project piloting countries should have only v3.x component.

Nevertheless, the experience has shown that there is a high likelihood that a scenario with different versions would exist; therefore, compatibility of versions is key for a future scenario with an increasing number of participants.

Upgrade to latest version available

Each Gateway and Connector Framework release is complete and independent; there is no need to have previous versions installed. When considering to upgrade you can install the latest version available no matter which version you are currently running. The version 3.0 is considered the last version produced by WP5 in the e-CODEX project.

Planning the upgrade

Installing the Gateway and Connector Framework software components is not a difficult task. Major problems arise in the integration of the new Connector with the national system, the communications of the new Gateway with other piloting countries Gateways and in the configuration of the components. Coordinate with the e-CODEX configuration manager to update PModes, keystores and trustores and reuse the environment used with previous version checking: interfaces with national system, name of interfaces, database and communications. Consider also if you have any dependency on the national system releases and on new schemas releases.

Update before go live

A piloting country preparing to go live with its first pilot should use the latest version available (i.e. v3.0) as well as the last version of schemas for the pilot.

Retest everything again

Once the upgrade (to the latest version) is complete integration with the national system, interaction between Connector and Gateway and communication with other Gateways should be thoroughly tested. This is usually a very time-consuming task.

Support and Documentation

Conclusions on support and documentation for deployment are equally valid for upgrade.

3.3. Summary of Deployment & Upgrade outcomes

To sum up the main points to consider both for sustainability and future improvement are:

Improve documentation

(see section 4.3 where the complete reasoning about documentation has been collected)

Components to be maintained / central repository

Software components should be maintained and available to be used by any piloting participants and whoever wants to join the pilots. This point is covered by the e-CODEX sustainability plan.

central configuration manager

Maintenance of PModes is a key task that requires continuous attention, together with keeping up-to-date the digital certificate stores. This point is also included in the e-CODEX sustainability plan.

4. Test & Operation outcomes

4.1. Test Outcomes:

The overall outcome of the tests was that it really needs a long time period from the setup of the test environment till the completion of the tests. This has various reasons which are described below:

Schema test

After the setup of the connection between the partners GW's the most complex task during the tests is the check that the mappings between national Schema and e-CODEX Schema is correct. Here a lot of iterations (finding a bug, implement bug fix and retest) are necessary which is extremely time consuming.

Firewall Configuration critical issue

The configuration of the firewall has been one of the most challenging tasks during the setup of the environment. There are so many different IP's (incoming and outgoing) for one single server that it often needs up to 3 or 4 retries till the configuration worked.

Certificates

There are a lot of requirements for the certificates to be usable for the DOMIBUS SW components e.g. the URL checks.

Support

During the setup of the environment there was often a support needed by WP5 for the piloting MS. One reason was the partially poor description which has been improved a lot in version 3.0. WP5 also works on a FAQ list to improve the documentation.

Tests on Production system

Due to the complexity of the setup it would be essential to execute a quick connectivity test also on the production system. In reality it has shown that this is not possible for every MS. Therefore a requirement for future releases would be something like a heartbeat or ping method to easily test connectivity without sending a real message.

4.2. Operation Outcomes

Update of Schemas

During production it is sometimes very difficult to change the version of the used Schemas because the schemas are not always backwards compatible and the changes must be done at the same time by all piloting partners. Therefore coordination from WP3 was required.

Compatibility of versions is key success

Although there is a different strategy proposed in e-CODEX the reality shows that there is wide range of versions up and running through all piloting MS. Some partners still have version 1.4 in production. The reason for this is that resources on the MS side are very limited and there is often not the time to update GW/Connector always to the latest versions. Although the upgrade itself is not such a big task you need to retest everything and this could be very time-consuming. In order to handle such a situation it is a fundamental feature and requirement to be backwards compatible in any case.

Update of Certificates

An update of Certificates of one partner must be done at the same time by all connected piloting partners, because otherwise the connection will fail. This is a very critical task and need coordination support by WP3 as well.

Monitoring

For an efficient operation it is necessary to integrate GW and Connector into an existing monitoring environment like e.g. Nagios. Otherwise the screening of log files or processes could be a very problematic.

4.3.   Summary of Test & Operation outcomes

As a summary three main topics can be identified for future improvement of the DOMIBUS WP5 Components.

Improve documentation

The documentation is spread over many different documents and it covers not all aspects especially on the connector side. The idea is here to centralize documentation in one single document and focus it more on the needs of the newcomers to e-CODEX, which are installing the DOMIBUS Components for the first time.

Ping Method for testing connectivity

Establishing connectivity between two partner GWs needs to setup firewall, proxies, certificates and PModes correctly which is not an easy task at all. Therefore it would be very helpful to have a sort of a ping method to check quickly if connectivity works without the need of generating whole ebMS 3 messages via the connector. Such a method is also important to prove that the connectivity in a productive environment is correct, where you normally cannot send test messages around.

Standardized tests

In order to simplify and fasten the test period it would help to provide some standard test data or test messages which can be used by all MS to shorten the test phase.

JMS support

Provide on the connector level a JMS support as well in order to provide an alternative to the existing web service. Also the difficulties by lacking a DB two phase commit can be overcome in this way.

5. Feedback from piloting country / participant

WP5 received 8 questionnaires from piloting MS, which have been evaluated and below you can find a summary of the answers so far.

The operating system used by nearly all piloting MS is Linux with a variety of different vendors like SuSe or Red Hat. MySQL or Oracle is used as a DB by most of the partners. A wish for support of application platforms other than TomCat has been expressed. All piloting MS have an existing national system in place. With one exception all piloting MS did not need any changes of the national system in order to be connected to e-CODEX. However some MS need to adopt their national schemas in order to be able to map the e-CODEX schema.

For most of the countries the national implementation example of the connector was helpful for the implementation of the national connector and also the standalone connector is already used by two piloting MS.

The main problems during the setup of the connector were the poor documentation not covering all the aspects and difficulties in verifying or signing PDF Documents, because of the integration of the WP4 tool. Also the national implementation example was not available for version 1.4.

The main problems during the setup of the GW where the difficult configuration, which is spread over a various set of files, the complex PMode files, the firewall setup and the 2way SSL setup. Also establishing interoperability to GW others than DOMIBUS like the Axway was a quite challenging task. For the MS using MySQL there were some difficulties related to erroneous DB scripts. Also some problems with wrong certificates (e.g. domain name did not match) occurred and one bug fix in the backend service was necessary.

The main problems during testing were incorrect or outdated certificates and also keeping the PModes up to date. Some MS also had issues with verifying the signatures on the PDF documents. Also the debugging was not easy, due to the fact that in order to find the problem you needed always both partners and their log files.

The main lessons learned are that testing is extremely important and a main understanding of the architecture of e-CODEX is very helpful during the setup of the DOMIBUS Components. Also real life examples, better and simpler documentation and the close cooperation between the piloting partners are very important.

6. Recommendations for future developments and enhancements

According to the input received from the questionnaires and the experiences of WP5 the following areas can be identified for future developments:

6.1. Testing

As testing is a very important part of the SW lifecycle and also one of the most time consuming tasks within e-CODEX there are some improvements possible.

- Standardizing tests: By providing standardised tests for each use case and by providing examples the understanding of the business processes by the partner MS can be increased and the amount of errors can be reduced.

- Extension of the CTP and its usage: The usage of the CTP can significantly shorten the test times by finding errors in the schema mapping and also in the test setup early and without the need of other partners.

- Improve documentation: A better knowledge of the e-CODEX architecture is a key element for a correct setup of the test environment and to prevent errors found at a later stage in the testing process.

- Close Cooperation: From an organisational point of view it is important that between the piloting partners there is a close and fast cooperation to react on test requests and implement necessary changes as fast as possible.

6.2. SW Components

The following ideas for the extension of the existing DOMIBUS GW and Connector can be proposed

- JMS Support: Due to the fact that there is a variety of different national systems in place, which need different access techniques and keeping in mind the deficits of web service transactions it could be important to add an alternative to the backend web service. There are already some implementations on-going in the CEF project, which can be reused.

- Ping Method. For the setup of the production environment it is elementary to provide a ping method, because for a lot of MS it is not possible to send test message around on a productive system. If such a ping method is not available it cannot be ensured that the connectivity between the productive partner GWs works.

- Validation Modules / Business Process Error Responses: During the tests with the MS it has been shown, that the national schemas could be much stricter than the e-CODEX schemas, and also on the national side some additional business rules can be implied. This leads to errors during the processing of e-CODEX schemas which seems to be correct for the end users. Therefore it is extremely important to give the affected MS the chance to provide validation rules for the e-Justice Portal and also open the technical possibility to transport this validation error information over the e-CODEX infrastructure. An own task force has been already setup within e-CODEX addressing this topic.

- Documentation: As already mentioned in the test chapter it is important for the partners to understand the architecture of e-CODEX. Therefore the improvement of the documentation is very important. Possible extensions here are a FAQ list, one single setup and installation document for GW and Connector including all important links and references.

- Open to other LSP /projects: In order to be able to reuse DOMIBUS components for other LSPs and projects maybe also in other domains than justice, it would be important to make the DOMIBUS components more configurable like e.g. switching on/off the use of security lib, the use of the evidences and also the handling of attachments. This topic has been discussed already a lot in the context of e-SENS and CEF.

- Support for other Application platforms: Support for a variety of application platforms – other than TomCat – would be an additional feature for future enhancements.

6.3. Organisational

In order to keep the e-CODEX pilots alive and to extend the number of partners and use cases it is very important to keep the processes for distribution of PModes and certificates up and running. Any improvements and simplifications on this process should be investigated as well.

Knowledge required to operate smoothly the e-CODEX e-Delivery Platform and carry out the implementations needed to support new pilots resides within the national resources devoted to the e-CODEX project. These resources form the network that perform the close and fast cooperation that is key for the progress of the e-Delivery solution and the pilots. In that sense it would be a good idea to create a task force or group of experts for the support and troubleshooting.

Conclusion

Following an overall summary of the conclusions made is offered:

- The transport infrastructure developed by WP5 is actually providing interoperability between national systems for real life cross border judicial use cases.

- The use of open standards and platforms has avoided that specific requirements or restrictions should have prevented a piloting country to use the software components.

- No changes in national systems have been necessary (goal achieved: low impact in existing national judicial systems).

- On the other hand, in the national side, communication configuration (firewalls in particular) has been a usual source of problems.

- Main drawback has been the setup and upgrade effort, where direct support from WP5 and the National implementation example contributed to help piloting countries making their components work.

- Improvement of documentation has been addressed to help partners understand the architecture of e-CODEX, and have clear setup and installation instructions.

- Configuration is a critical issue in particular PModes generation requires a unique point of administration, together with maintaining trustores and keystores. Also the provision of the software components should be centralized in one single point.

- The version 3.0 already released is considered the last version produced, and will be the only version to be sustained after the e-CODEX project ends so at the end of the project piloting countries should have only v3.x component.

- Tests take a long time period, standardized tests would help to shorten the test phase.

- For production systems, where sending test messages is often restricted, a Ping Method to check connectivity would be a very useful feature.

- Other recommendations for future developments and enhancements are:

    - Extension of the CTP and its usage,
    - Close collaboration between piloting partners,
    - JMS Support,
    - Validation Modules / Business Process Error Responses,
    - Documentation,
    - Open to other LSP / projects,
    - Support for other Application platforms.

- The knowledge on e-CODEX components and operation acquired by the national technical teams is a very valuable asset.

I. Appendix I – WP5 piloting outcomes Questionnaire template

Questionnaire on D5.6: Description of piloting outcomes. The piloting phase shows the interoperability with environments of selected other Member States

Please send the answers back to WP5 (robert.behr@brz.gv.at and ferdinand.roedlich@brz.gv.at and jmgonzalez@isdefe.es) no later than October 27th, 2015

Country:	..
Name and e-mail of the respondent / contact person:	..
Use case(s):	..

The first set of questions relates to the (technical) implementation of the DOMIBUS Connector Framework and the DOMIBUS Gateway. If answers for more than one use case differ, please use additional questionnaire forms.
The second set of questions relates to the organizational aspects of WP5.

1. Implementation

Is your organization using both DOMIBUS Connector Framework and DOMIBUS Gateway? Please specify if you use them in a test and/or in a productive environment.
Answer:
Are the Connector and the Gateway set up in the same domain? (Y/N)
Answer:
What type of platform (Operating System, Database system) did you use?
Answer:
Do you have a national system in place or are you using the standalone connector?
Answer:
Has the national implementation example of the Connector Framework been helpful for the integration of your national system? (Y/N)
Answer:

Did integration with the Connector require changes in your national systems (Y/N)?
Answer:
If YES, please specify:
…
What where the major difficulties/challenges you encountered when setting up the Connector and how did you solve them? Please specify:
Answer:…
What where the major difficulties/challenges you encountered when setting up the Gateway and how did you solve them? Please specify:
Answer:
What are your lessons learned regarding the setup of Connector and Gateway? Please specify:
Answer:
What are your ideas on future developments and enhancements? What would be valuable to be done in addition?
Answer:

2. Organization

Do you have any suggestions for the improvement of WP5 activities (eg. number of meetings/conference calls/ etc.)? Please specify:
Answer:
How did you experience the support from WP5: overall, documentation, response to questions, advice and guidance?
Answer:
Is the documentation complete and clear? If not then please specify what is missing

Answer:
How did you experience the process of Requests for Changes?
Answer:
What kind of additional support would you appreciate from WP5?
Answer:
Additional comments you want to tell WP5:
Answer: