



## COMPETITIVENESS AND INNOVATION FRAMEWORK PROGRAMME ICT Policy Support Programme (ICT PSP)

### Towards pan-European recognition of electronic IDs (eIDs)

ICT PSP call identifier: ICT-PSP/2007/1

ICT PSP Theme/objective identifier: 1.2

### Project acronym: STORK

Project full title: Secure Identity Across Borders Linked

Grant agreement no.: 224993

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## D6.6 STORK Evaluation Report

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<b>Deliverable Id :</b>	<b>D6.6</b>
<b>Deliverable Name :</b>	<b>STORK D6.6 Evaluation Report</b>
<b>Status :</b>	<b>FINAL</b>
<b>Dissemination Level :</b>	<b>Public</b>
<b>Due date of deliverable :</b>	<b>December 31<sup>st</sup> 2011</b>
<b>Actual submission date :</b>	<b>December 23<sup>rd</sup> 2011</b>
<b>Work Package :</b>	<b>WP6.6</b>
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#### **Abstract:**

Work Package 6.6 was responsible for delivering an evaluation of the WP 6 pilots. The evaluation of the pilots answered the question if:

- a) the plans of the pilots focus on the right targets of the project (ex ante),
- b) the execution of the pilots takes place according to the defined plan and (mid term),
- c) the results of the pilots match the promised outcomes (ex post).

The results of the ex ante and midterm evaluations formed important feedback for the pilots and pilot management and were taken up in the further planning and execution of the pilots. This report gives insight in the methodology and process followed, summarizes the findings at the different stages and gives input for further work on cross border interoperability of electronic identities.

Project co-funded by the European Community under the ICT Policy Support Programme

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## History

<i>Version</i>	<i>Date</i>	<i>Modification reason</i>	<i>Modified by</i>
0.1	October/11	Content page	Robert Sierat, Nathan Ducastel
0.2	12/12/11	Initial Draft	Robert Sierat, Nathan Ducastel
0.3	15/12/11	Draft	Robert Sierat, Nathan Ducastel
0.4	16/12/11	Draft	Robert Sierat, Nathan Ducastel
04	18/12/11	Review	Roger Wannee (Capgemini)
0.5	19/12/11	Draft including Chapter 6 and QA comments	Robert Sierat, Nathan Ducastel
0.6	20/12/11	Draft including NL MoI comments	Robert Sierat, Nathan Ducastel
0.6	21/12/11	Review	Roger Wannee (Capgemini)
0.7	22/12/11	Draft including QA comments	Robert Sierat, Nathan Ducastel
0.7	23/12/11	Review	Alberto Crespo Garcia, Pilots Coordinator (Atos)
0.9	23/12/11	Draft including wp6.6 QA comments, wp6 management comments	Robert Sierat, Nathan Ducastel
1.0, Final	23/12/11	Finalization	Roger Wannee (Capgemini)

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## List of abbreviations

<i>Abbreviation</i>	<i>Explanation</i>
AT	Austria
Atos	Atos Origin S.A.E.
DG INFSO	Information Society and Media Directorate General
DoW	Description of Work
EC	European Commission
ECAS	European Commission Authentication Service
eGov	Electronic Government
eID	Electronic Identity
eIDM	Electronic Identity Management
EU	European Union
GA	General Assembly
ICT	Information and Communication Technologies
IDABC	Interoperable Delivery of European eGovernment Services to public Administrations, Business and Citizens
LSPs	Large Scale Pilots
MS	STORK Member State
MW	Middle Ware
PEPPOL	Pan-European Public eProcurement On-Line
PEPS	Pan European Proxy Service
QAA	Quality Authentication Assurance
SAML	Security Assertion Markup Language
SMEs	Small/Medium Enterprises
SPOCS	Simple Procedures Online for Cross-border Services
STORK	Secure idenTity acrOss boRders linKed
WP	Work Package

## Executive summary

All pilots succeeded in reaching the objectives as set out in the Description of Work. The All versus All scenario made the pilots over-perform when it comes to the number of partners in each pilot as well as the number of services offered, this was a valuable addition to the agreed work. Together the pilots have proven the technical applicability of the STORK infrastructural solution for cross border authentication. At the same time they made clear that unsolicited use of the services is not yet evident. The pilots have gathered a wealth of valuable information regarding issues for future take up to ascertain the STORK infrastructure can be embedded in organizational and legal facilities allowing a full, trusted solution valuable to service providers and citizens across the EU Member States.

Starting at the end of 2009, the Evaluation work package has worked with the STORK pilots to achieve the best possible results. The past two years, including the enlargement stage, the pilots have proven that the electronic identity cross border interoperability layer works with real life services.

Work Package 6.6 was responsible for delivering an evaluation of the WP 6 pilots. The evaluation of the pilots answered the question if:

1. the plans of the pilots focused on the right targets of the project (ex ante),
2. the execution of the pilots took place according to the defined plan (mid term), and
3. the results of the pilots matched the promised outcomes (ex post).

The results of the ex ante and mid term evaluations formed important feedback for the pilots and pilot management and were taken up in the further planning and execution of the pilots. This report gives insight in the methodology and process followed, summarizes the impact of the work package and reconstructs the conclusions at the different stages. While performing the Evaluations work package the value of leaving an agenda for the future became more and more clear; therefore a concluding chapter deals with achievements and the need for further work, after STORK, on cross border interoperability of electronic identities.

The evaluations of the pilots were undertaken with the help of an underlying methodology. This methodology is based on general methods for auditing, reviewing and evaluating ICT pilots. This methodology makes it possible to compare the results of the different evaluations of the several pilots: ex ante, mid term and ex post. The methodology was agreed with the STORK consortium.

Following the findings, the conclusions and suggestions of the Evaluations work package (WP6.6) impacted the pilots in a positive way. In collaboration with the Project Management, Pilot Management and Quality & Risk Management, the pilots succeeded in including the Benefits Logic methodology thinking, leading to a solid trail from objectives to success as well as the use of comprehensive common criteria. Adapting the Use, Learn and Value principles for good ICT pilot management helped the pilots to extract important lessons learned and increase the value of their work, besides the testing of the functional use of the cross border authentication infrastructure. Two other areas of substantial impact were the awareness of the importance of expectations management and the importance of thinking from a business value perspective. The expectations gap deals with the alignment of the actual realized solutions and the external expectation hitherto. The business value perspective brought more emphasis on the service providers experiences in STORK.

# 1 Introduction

Starting at the end of 2009, the Evaluations work package has worked with the STORK pilots to achieve the best possible results. The past two years, including the enlargement stage, the pilots have proven the working of the electronic identity cross border interoperability layer with real life services. In the process the pilots gathered a wealth of information.

The Evaluations work package has assisted the pilots by performing regular individual checks, ex ante, mid term and ex post, leading to suggested individual and overall improvements for the STORK pilots, this has contributed to their success and well documented achievements. The Evaluations packages hitherto, amongst others, introduced the Benefits Logic methodology and the Use, Learn and Value principles for pilot documentation and thinking.

The evaluated pilots are<sup>1</sup>:

- *Cross-border authentication platform for electronic services (WP6.1)*. The goal of this pilot was to unify the different approaches for eGovernment or citizen portals on a common service architecture. Typical services which could be provided by such a portal are an authentication and identity provider, secure e-mail communication without spam, distribution of documents, support of workflows between different authorities and a secure storage space for documents.
- *SaferChat (WP6.2)*. The main objectives of this pilot were to build a platform for safer online environment where people can communicate on-line using their eIDs and demonstrate its use. Whereas the focus was at providing an environment as safe as possible for children, it was expected that the project results would be beneficial to all users.
- *eID Student mobility (WP6.3)*. The main objective of this pilot was to facilitate students' mobility across Europe. Focus was on enabling foreign students to get access to on-line administrative services offered by participating Universities using their national eID.
- *eID Electronic delivery (WP6.4)*. The objective of this pilot was to demonstrate cross-border electronic delivery based on the existing domestic infrastructure. It is essential for eGovernment and requested by the Services Directive to be able to transact administrative procedures fully electronically. In this context recognition of electronic documents was indispensable.
- *Change of address (WP6.5)*. This pilot tested the electronic process of address change of EU citizens that move abroad to other Member States.
- *ECAS-STORK integration (WP6.7)*. This pilot focussed on the availability of services through the European Commission Authentication System (ECAS), using the STORK solution and therewith enabling national credentials to be used for ECAS authentications.

A special position was held by the ECAS-STORK integration pilot (WP6.7) which joined at a later stage. Although this pilot participated fully in STORK, the evaluation was done separately by the same team, following the same methodology but under a different commissioning party. This assignment came directly from the European Commission, DGIT. However, the researchers were free to share the reports produced and use the findings and lessons learnt for this report.

In chapter two the execution of the evaluations work package is elaborated upon. Chapter three focuses on the overall impact of the evaluations work package to the STORK pilots. Chapter four, five and six focus on the overarching findings of the ex ante, mid term and ex post phases of the evaluations. Chapter seven captures the achievements of STORK regarding interoperability and suggestions for an agenda for future efforts. In the annex the internal project plan is included.

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<sup>1</sup> DOW v2 page 14



## 2 Execution of the Evaluations work package

### 2.1 Objective

Following the STORK Description of Work, Evaluations (WP6.6) was responsible for delivering the evaluations of the STORK (WP6) pilots. The evaluation of the pilots answered the question if:

1. the plans of the pilots focussed on the right targets of the project (ex ante);
2. the execution of the pilots took place according to the defined plan and (mid term);
3. the results of the pilots matched the promised outcomes (ex post).

Evaluating the pilots was part of improving the results and quality of the pilots. The results formed important feedback for the pilots and pilot management and were taken up in the further planning and execution. Evaluations did not take the form of formal audits and/or gave input to management go/no go decisions. Nor did the evaluation bear any direct connection to funding arrangements.

Evaluations has looked at the pilots as environments where testing and learning takes place regarding the cross border interoperability in real life services situations. Success was therefore not dependent on the success of the offered service (which was beyond the influence of the project) but defined in terms of the actual reaching of stated objectives and their success criteria.

### 2.2 Methodology

The evaluations of the pilots were undertaken with the help of an underlying methodology. The methodology was based on general methods for auditing, reviewing and evaluating of ICT pilots. This made it possible to compare all the results of the different evaluations of the different pilots: ex ante, mid term and ex-post.

The methodology supported the professional judgement of the evaluators and allowed for traceable and evidence based findings. The methodology was recognized and supported by the pilots undergoing the evaluations, this was assured through the process mentioned above.

The methodology was based on important pillars for project evaluation and management:

- The OGC toolkit including the Prince2 methodology for project management and the related Gateway review methodology for Projects and Programmes;
- The CEN ISSS WS/BII Evaluation Guidelines – WG 4 which developed in cooperation between CEN and PEPPOL, the Large Scale Pilot regarding interoperable eProcurement.

Generally, the methodology included following the trail from Objectives to Outcomes:

- Evidence based: plans, reports, interviews;
- Traceable;
- Pareto rule (80-20%), focused on the fulfilment of Outcomes.

The criteria used were either derived directly from the project Description of Work (DoW), the pilot plans, or general methods for evaluation and project management. The assessment of the pilots included professional judgment which includes a check on: completeness, coherence and correctness (accepted standard for evaluation and auditing).

The evaluation followed the following steps:

- First, an ex-ante evaluation of all the pilots was executed. This evaluation looked at: a) the defined set-up of the pilot and, b) the management of the pilot. For this activity results from the ex-ante pilot reviews on behalf of the quality control was used. This quality

control looked at the overall pilot architecture that was used as a result of the outcomes of the studies done on upcoming technologies, process flows and common specifications.

- Second, to guarantee a solid execution of every pilot in terms of planning, management and the use of necessary resources, mid-term evaluations took place on every pilot.
- Third, to evaluate the outcomes of the pilot against the goals upfront defined, an overall ex-post evaluation of every pilot was undertaken. These ex-post evaluations addressed the realized outcomes of every pilot against the planned outcomes.

The following “features” formed the guideline for WP6.6 with regards to the pilot contribution towards the overall STORK objective. The features are interpreted as follows:

Feature	Interpretation WP 6.6 for pilot evaluation
Distributed architecture	Not applicable, part of WP5 (intrinsic to the STORK solution)
Transparent	Pilot transparency leads to STORK transparency; sharing experiences, lessons learned and best practices throughout the pilot and also between pilots.
Safe	Using the interoperability solution does not present dangers to the end user, service provider or eID provider involved. What are the measures taken to guarantee that this is the case?
Multiple access channels	Different types of eID credentials tested in the pilots
Scalable	Connecting additional countries and/or service providers (tested scalability in the pilot, not of the model (WP5))
Sustainable	Out of scope for WP6, is part of WP7
Uses Open specifications	Not applicable, part of WP5
Easy to use	Two dimensions: 1) Ease of integration of the solution for a user (service provider); 2) Ease of use for the end user (citizen/or business) using the solution (country chooser etc.);
Citizens and businesses	The solution is tested by both citizens and businesses

*Table 1 Features for WP6.6 evaluation*

## 2.3 Scope

With learning and improvement of the pilots as the goals of the Evaluations work package, it is important to note that the evaluations work package held a relative outsiders position in the project.

Interventions only took place according to the preset schedule of evaluations; suggestions were made to the management of individual pilots and WP6. Outside these interventions and suggestions WP6.6 did not participate in any management, planning or QA activities as to guarantee an objective position and therewith maximum impact and effect.

Early on in the execution of WP6.6, it was noted that there were discrepancies between the suggestions made in the reports from the external reviewers to STORK and the Description of Work. This issue was brought to the attention of the Executive Board where it was decided that WP6.6 would explicitly limit itself to the Description of Work as a reference.

During the execution of WP6.6 it was suggested by pilot partners to widen the scope of WP6.6 to include all of STORK activities, as well as to include WP5 activities. Due to the available resources and expertise, this was decided against. Even though WP6.6 included STORK overall *features* in its methodology such as ‘scalability’ and ‘easy to use’ (also see paragraph on methodology).

The leading reference for the pilot evaluations was always the latest available version of the Description of Work (two versions were used during the process, 16.6 and 2.1), the evaluations tested against the objectives and descriptions given in this document. The Description of Work was further elaborated upon in the different individual pilot deliverables that were cornerstones for the evaluations; ex ante: the detailed plan, mid term: the mid term report, ex post: the final report.

Due to delays in the pilot deliverables most evaluations have taken place on the basis of mature drafts of the documentation mentioned, with the clear exception of the DoW (which was mature by definition). The maturity of the drafts differed across pilots and across phases. Especially the ex post evaluation was to a large extent based on the interviews, because of the status of the written reports. No test was performed on the service solutions themselves after the ex ante phase. Working with the mature drafts did have an unexpected benefit, the evaluations were used to improve the final deliverables (documents) which were underlying to the evaluation.

## 2.4 Process

The Netherlands Ministry of the Interior and Kingdom Relations (NL-MoI) was pilot leader for WP6.6. It subcontracted consultancies Verdonck, Klooster en Associates (VKA) en The Centre of Expertise (HEC) to assist in the execution of the work package under its leadership. Execution of the work package took place between December 2009 and December 2011, with a final presentation to the STORK external reviewers to follow in February 2012 (planned). The team consisted of:

- NL-MOI : Jan Timmermans and Carlo Luijten;
- VKA: Robert Sierat and René van den Assem;
- HEC: Kristel de Nobrega, Evert-Jan Mulder, Martin de Graaf (internal QA) and Nathan Ducastel (project lead for HEC/VKA).

During and shortly after the General Assembly meeting in Bled, WP6.6, so requested, indicated that a possible extension of the running time of STORK until December 2011, could be covered within the present arrangements. The only change it meant for WP6.6 was the execution of the ex post evaluation, this was postponed until October/November 2011.

Using a methodology that was accepted and understood by the pilot leaders and WP6 management was essential to the success of WP6.6. evaluations. Based on generally accepted principles and methodologies as explained above, the methodology was formally accepted a month after the Turin General Assembly meeting early 2010, following a silent procedure. The methodology was part of the internal project plan, WP6.6 - v1.0. When the ex ante evaluation came closer, additional explanation was wished for by the pilot leaders and management. This lead to WP6.6 participation in the May 2010 WP5-WP6 meeting in Madrid and an appendix to the project plan with a further elaboration of the methodology, inserted in the final WP6.6 project plan, v1.1. From then on the methodology and process to be followed per phase was elaborated upon during the general assembly meeting before the actual evaluation phase started. To ascertain the understanding of the chosen methodology by the external reviewers, this was presented to the external reviewers in the January 2011 meeting.

Building a relationship with the pilot leaders was essential to maximising WP6.6 impact. Therefore the ex ante evaluations were held in person at the premises of the pilot leaders. This included interviews with pilot leaders, identity providers, service delivery organisations, technical experts and pilot participants (using phone or Skype). The mid term evaluation took place on the basis of telephone interviews with different actors in the pilots. The ex post evaluations focus on the actual success of the pilots versus the objectives, this was done in a workshop held by WP6 management and QA as well as through telephone interviews with the pilot leaders.

Each phase of evaluations resulted in a report per pilot, which were shared for learning purposes amongst management and all pilots; only after the individual report was agreed upon by the

respective pilot leader. No reports were refused by pilot leaders, nor did any dispute arise regarding findings and conclusions. Following the individual reports of each phase, an overarching report in the form of a Power Point presentation was made and presented during the relevant STORK General Assembly Meeting.

## 2.5 Collaboration

Close collaboration with the pilot leaders during the evaluation periods made it possible to be effective and efficient in the execution of the evaluations. A trust relation, based on expertise and mutual understanding, helped to better absorb evaluation findings and suggestions in the pilot execution. The pilot leaders proved to be open to suggestions and willing to improve. This deserves respect and compliments.

Besides the collaboration with the pilot leaders and participants an excellent working relationship was developed with the WP6 Pilots Coordination (Atos) and Quality & Risk Management (Capgemini). After initial settlement of roles and scope we found an effective way of using each other's expertise and resources in achieving the best possible results. Project Management and Q&R have worked together to absorb and implement many of the suggestions made by the Evaluations work package and have done an excellent job in doing so.

Quality Assurance (part of Q&R Management) and the WP 6.6 Evaluations were closely linked but had a different objective and role in the process. The WP6.6 Evaluations focused on whether the plans of the pilots put the right focus on common criteria for benefits realization and therewith evaluate the fulfilment of the pilot objectives and the project (STORK) objective. In short, Evaluations judged whether the pilots proved the concepts of WP5, and assured the fulfilment of the STORK objectives; Quality Assurance monitored whether the deliverables have been produced following the right procedures as well as a check on content.

## 3 Impact

Due to the timing of this deliverable, at the very end of the project, its main purpose is to elaborate on the impact of the Evaluations work package. It will do so focussing on the overarching impact on the STORK pilots. The full overarching reports per phase have been added as an attachment. Individual reports per pilot, per phase are available as internal deliverables. The final round of evaluations has led to issues achieved by STORK pilots and to be solved after the STORK pilots lives; these are elaborated on in chapter 7.

Starting point for the Evaluations work package was the objective of STORK: *The implementation of an EU wide interoperable system for recognition of eID and authentication that will enable businesses, citizens and government employees to use their national electronic identities in any Member State.*<sup>2</sup>

### 3.1 Content

The Evaluation work package made valuable contributions to the way in which the pilots perceived their own assignment and objectives, within the scope of the STORK Description of Work. Through these contributions the learning form the pilots became more diverse and rich. These lessons learned are captured in the Final Reports of each individual pilot.

#### 3.1.1 Benefits logic

Pilot leaders initially struggled with a consistent trail from objectives to success factors and indicators, thereby making it difficult to objectively draw conclusions on the Use, Learn and Value aspects of the individual pilots and the pilots as a whole. In the final phase of the pilots running a Benefits Logic methodology was adopted successfully by the pilot leaders.

During the running phase of the pilots, and under the guidance of Pilot Coordination and Q&R Management these trails were developed, resulting in clearly stated success factors and indicators. Due to the late stage in which these were developed, a risk was that the success factors and indicators would be self fulfilling. Special attention was given by Pilot Coordination and Q&R Management to prevent this. Working on the Benefits Logic methodology, helped the pilot leaders to review their activities and see their efforts in their context.

As a onetime exception, the Evaluations team has given an opinion on the methodological approach outside the scope of work package 6.6. On request, an opinion was given regarding the Benefits Logic set-up as developed by the pilots in close collaboration with &R Management and WP6 management.

#### Opinion

- Appreciative of effort by WP6 leadership and QA to lead the pilot leaders in the uptake of the benefits logic;
- Appreciate the generic approach which enables comprehensive monitoring and management of results;
- Noted take up in D6.x.5 and amongst pilot leaders;
- Recognition of the common criteria and appreciation of the SMART results and metrics approach;
- Recognize and appreciate the format and look forward to studying content during the ex post evaluation;
- Approach is promising and essential for successful ex post evaluation, it fits the evaluation

<sup>2</sup> DOW v2 page 13

methodology; the benefits logic enables assessment of results versus the overarching STORK objectives;

- Audit principles Set up is fit for use; Existence seems promising due to acceptance and take up; Working will be assessed during ex post evaluation.
- Timing of benefits logic does not allow for corrective measures if results of the methodology do not fully fulfil the expectations.

### 3.1.2 Technical versus business value

One of the first interventions focussed on the awareness of the pilot leaders with regards to the way in which they had set up their detailed plans. These held a particular bias towards the technical testing of the interoperability layer, while, to some extent, neglecting the business (societal) value of their respective projects.

Especially the ex ante review raised awareness in this respect. Closer inclusion of lessons learned regarding the business value and the service providers perspective to the project helped to have a better understanding of their side to the interoperability of eID's. This also fed into the thinking on sustainability, elaborated upon in WP7 and fed by the pilots.

### 3.1.3 Expectations gap

Evaluations realized during the execution of its activities that the expectations raised in the outside world, also by external promotion from outside STORK, and the actual achievements of the individual pilots may hold a mismatch. Re-use of STORK infrastructure in other Large Scale Pilots (LSP's) can be achieved but will involve additional efforts.

The STORK pilots have proven technical interoperability - and in a number of cases also legal, semantic and organisational interoperability. However, outside the technical interoperability, obstacles still exist that cannot be solved within the scope of STORK and require a different effort. To prevent disappointment clear communication regarding the considerable achievements of the pilots was called for.

This issue was taken up at both the management level of STORK including other work packages (especially WP7) as well as in the input provided by the pilots through the planned reporting.

### 3.1.4 Lessons learning and Agenda setting

Within the context of STORK not all interoperability issues could be *solved* leading to a smooth cross border operation of electronic identities by citizens and businesses in all circumstances. Awareness was created that the pilots will generate valuable lessons learned that can be translated in actions for the future beyond the running time of STORK.

Following this observation it was suggested that the pilots pay attention to the structured generation of lessons learned and issues pending that should be addressed after the STORK lifetime and ensure a stable, smooth interoperable eID environment in future. Part of this was the elaboration of the European Interoperability Framework, differentiating between levels of interoperability: technical, semantic, organisational, legal and the political context.

**Recommendations**

- **Expectations management** is of the essence. This requires a shared consortium view on post STORK MS vision, strategy and actions.

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## 3.2 Format

Besides suggestions on content an important advise was given with regard to format. Following the understanding of a pilot as an experimental learning environment (a successful pilot may exist of a failed service) the CEN/PEPPOL workshop delivered a framework for pilots. This existed of Use, Learn and Value.

### 3.2.1 Use, Learn and Value

Differentiating between Use, Learn and Value aspects helped to extract lessons learned and came to a better pilot understanding. Within the WP6.6 methodology these were used as follows:

- *Use*: whether the solution and its services are usable (does the interoperability solution work on a small scale; which barriers are being encountered);
- *Learning*: whether the pilot helps to prepare the stakeholders for the future (f.i. collecting and distributing lessons learned/ feedback loop);
- *Value*: whether the pilot improved efficiency or effectiveness of the organizations involved (do the pilot service providers experience added value).

This approach to evaluating the pilots was adopted by the pilot leaders, WP6 management and Q&R Management resulting in final reports following this generally accepted format, enriching the extraction of lessons learned from the pilots and therewith adding value to STORK.



## 4 Ex Ante

This chapter narrates the quest and conclusions of the Ex ante phase of evaluations. It focuses on the overarching findings and conclusions; individual findings and conclusions have been shared in internal deliverables with the pilot leaders.

### 4.1 Introduction

The ex ante evaluation answered the question: *Did the plans of the pilots focus on the right targets of the project?* This question was broken down in three key questions:

- *Were pilot objectives consistent with pilot Key Success and Performance indicators, products and activities and plans?* – This question answered whether the pilot is set up in a coherent and consistent way which may be expected to yield the result necessary to test the STORK interoperability solution.
- *Did the pilot adhere to general pilot principles?* – this answered whether the pilots are truly set up as pilots, with the intent to test Use, Learning and Value. The CEN/PEPPOL evaluation guidelines made these concepts operational.
- *Were the pilot objectives related to the STORK objectives, including the objectives defined by WP5?* – This questions dealt with the necessity to link the pilots to the STORK overarching objectives and the main criteria set for the STORK solution.

The evaluation used these three questions to apply its methodology and come to conclusions for the individual pilots and the pilots as a whole. There were no deviations from the methodology or process which included physical meetings with the pilot leaders on location and telephone interviews with pilot participants. The main documented base for the evaluations were the mature drafts of the “detailed plans (d6.x.1)”

All individual findings were tested with the pilot leaders for factual inconsistencies. All conclusions were discussed and did not raise any substantial debate. The overall findings and conclusions were at the discretion of the Evaluation team, they have been presented in the STORK General Assembly meeting in Stockholm on July 1<sup>st</sup> 2010. The Power Point presentation used, forms the overall report.

### 4.2 Key findings

The findings in the ex ante phase were categorized following the three questions, resulting in a conclusion answering the main question “whether the pilots focus on the right targets of the project”.

#### 4.2.1 Consistency

*Are pilot objectives consistent with pilot Key Success and Performance indicators, products and activities and plans?* This question focussed primarily on the relation between the pilot activities and the objectives as agreed in the Description of Work. Furthermore it focussed on the relation between the objectives of each individual pilot and the planned activities, outcomes, performance indicators and success criteria.

The evaluation has shown that the objectives of all pilots were consistent with the Description of Work. At the same time all pilots could make improvements with regards to the trail from objectives to success criteria. A benefits realisation plan (from a services perspective), critical values for success, learning objectives was missing for all pilots whereas it holds great value in assisting pilot leaders and project management. These could be repaired within the scope of the objectives as stated.



## 4.2.2 General pilot principles

The Evaluation team has used the interpretation of ICT pilots as that they are meant to test the given solution. In the case of STORK this happened in a production environment with potential real users for a solution to provide cross border interoperability for electronic identities ('infrastructure'). At the same time this means that even a failed service might prove a valuable pilot.

Keeping this in mind, the CEN PEPPOL approach to pilots states that they should contribute in the areas of Use, Learn and Value. Looking at the pilots from this perspective, pilots had a bias towards the "Use" aspect. Testing procedures and technical interoperability were well represented in the detailed plans, other levels of interoperability were addressed at the pilot level where possible. How to structurally document captured learning (lessons learned, best practices) from the pilots was underrepresented. Pilots did underline the need to focus on learning and expressed the interest to improve. The value aspect, focussing on the actual service delivery using the infrastructure tested, was also less presented. Here the pilots also stated the difficulty to give service providers clarity about the availability of the infrastructure beyond pilot live.

## 4.2.3 Relation to STORK

A second aspect the Evaluations focused on, was whether the pilots contributed to the overall features of the STORK solution as documented in the DoW. Some of these features (e.g. distributed architecture and use of open specifications) are implicit in the chosen solution as was realized in WP5. Others could be tested in the pilots, such as ease of use, scalability, user friendliness, safe, multiple access channels, citizens and business. The sustainability of the solution became subject of WP7 efforts and was not highlighted in the Evaluations. Regarding the use for citizens and businesses, STORK decided to only focus on citizens, even though two pilots have the outlook on future use by businesses (SME's), therewith this criteria was fulfilled by all pilots.

There was no evidence of an overall pilot strategy regarding the testing of the infrastructure. The pilots seem to have been formulated on the basis of opportunity rather than on testing different aspects of the solution for cross border eID's. This resulted in a certain overlap in the testing of the solution. At the same time, addressing different potential user groups, the learning experience was enriched regarding the value of the solution at hand.

A General risk, also mentioned by all pilots, was the lack of real end users. The milestones during the production phase of the pilots have mostly been defined in minimal terms. The lead time of the pilot was not always linked to the objectives. Some pilots introduced a service solution that needed to compete with an existing process (6.3, 6.2) but seemed more complex.

Scalability, especially cross border, was assisted by the so called Quality Authentication Assurance (QAA) scheme that was adopted and further developed in STORK. The scheme rates authentications to four levels, level four being the strongest. The pilots were dominated by QAA level 4. Testing via real users of lower QAA levels is limited although the test protocol does include the lower QAA levels; QAA level application in the pilots was agreed between pilot participants but were not based on a services analysis or services risk assessments (using the QAA norm) that might allow other (lower) QAA levels for certain services offered.

Other findings included:

- Integration of the interoperability layer at service providers level was experienced as relatively easy;
- Attribute provision by a third party was tested in two pilots (6.1 and 6.5);
- PEPS and MW solutions were both tested in the pilots, even though a strong focus was on with the PEPS solution;

- The security self assessments were a sufficient basis for the pilot phase of the project. The usability of the security self assessment method for service delivery beyond STORK pilot life was not guaranteed.

### 4.3 Conclusion and suggested improvements

In the end the Ex ante evaluation answered the question: *Did the plans of the pilots focus on the right targets of the project?*. The evaluation team concluded that all pilots were on track and focussed on the right targets of the project.

However:

- “the trail from objectives to success factors could be improved (making use of benefits logic);
- Learning from the pilots was too one-sided in the present set-up. Valuable experiences for interoperability of eIDs in Europe could have been lost;
- The pilots seemed to test the full scope of the technical interoperability solution developed in STORK (with a bias to QAA level 4 solutions);
- The service providers perspective of the pilots would be more dominant in the coming year of pilot operation, this received limited attention in the documentation that the pilots provided for the evaluation.”<sup>3</sup>

Based on these conclusions suggestions were made to management and pilot leaders for future improvement. The suggestions were to:

- Formulate the outlines for the STORK ‘inheritance’:
  - Define formal documented learning, from a technical (WP5) and services (WP6) perspective including all results from STORK (f.i. QAA norm);
  - Gather structured input for a post STORK agenda from a technical, semantically, organisational, legal and policy perspective;
  - Identify what is needed (resources) to keep the STORK solution available.
- Formulate a perspective/vision on the continuation of STORK to give clarity to service providers using the solution.
- Make maximum use of the pilot production phase to optimize documented and digestible learning in all different aspects of the project.

Besides these formal suggestions, remarks were made regarding the documentation of STORK decisions and their subsequent take-up in the deliverables. The Evaluation team also noted that they had observed the need for more unified leadership for the period to come as to extract the full potential of STORK realization and learning.

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<sup>3</sup> Overarching presentation WP6.6 Ex Ante evaluations (Stockholm General Assembly)

## 5 Mid term

This chapter narrates the quest and conclusions of the mid term phase of evaluations. It focuses on the overarching findings and conclusions; individual findings and conclusions have been shared in internal deliverables with the pilot leaders.

### 5.1 Introduction

The Mid Term evaluation looked into the question: “*Did the execution of the pilots take place according to the approved plans?*”

This question was broken down into two approaches:

- *Check the realization of products and their contribution to the achievement of objectives according to scheduled KPI's (% completed)* – This regarded the actual progress of the pilot against the planned progress, and;
- *Check plans and progress with regard to scope* – Did the progress relate sufficiently to the scope and did it yield the outcomes that are expected vis-à-vis STORK objectives?

The mid term evaluation was executed on the assumption that the results from the ex ante evaluation(s) have been used to improve the pilots and the overall completeness and consistency. The mid term evaluation looked into whether or not this was the case.

The evaluation used these two questions to apply its methodology and come to conclusions for the individual pilots and the pilots as a whole. There were no deviations from the methodology or process which included telephone meetings with the pilot leaders and pilot participants. The main documented base for the evaluations were the mature drafts of the “mid term progress reports”.

All individual findings were tested with the pilot leaders for factual inconsistencies. All conclusions were discussed and did not raise any substantial debate. The overall findings and conclusions are at the discretion of the Evaluation team, they have been presented in the General Assembly meeting in Bled on February 1<sup>st</sup> 2011. The Power Point presentation used, forms the overall report.

### 5.2 Key findings

The nature of the mid term evaluation differed from the ex ante evaluation, it focused on progress rather than relevance. The findings however were more elaborate, also from the understanding that the ex ante evaluation was the last moment to substantially impact the actual execution of the pilots since the ex post evaluation was planned close to the end of the project running time.

The findings were organized according to scope and progress, the two questions and complemented by findings regarding the pilots ambitions. Also, findings regarding use, learn and value were shared.

#### 5.2.1 Scope, progress and ambition

Regarding scope, all pilots were still consistent with the Description of Work, the enlargement that took place was delayed due to organisational issues outside the influence of the pilot leaders.

With regards to progress it became clear that the pilots had performed the tasks as planned, but that a coherent benefits logic, explaining the trail from objectives to outcomes and success including clear measurements, was still missing. Adjustments to better include the aspects of use learn and value were limited.

All pilots were still mainly focused on research and proofing/improving the conceptual working of the STORK infrastructure. The pilots did provide for lessons learned for sustainable and viable services after pilot live and therefore the added value of real live piloting seemed insufficient. Partly this related to the fact that the objectives of the pilots, as agreed in the DoW, mainly

focused on the usability of the STORK infrastructure solution and not on learning and value aspects.

Pilots were not pro-actively involved in creating and maintaining viable and sustainable services after pilot live, there were no overarching activities planned with regard to this subject within the STORK project.

All pilots lacked real live (unsolicited) users. User feedback was not processed into statistical information (by means of quantitative indicators as well as categorization of the content).

## 5.2.2 Use, Learn and Value

### *Use*

- In general all pilots were operational and working in a full production environment; This being said, not all participating countries in each pilot were operational. Interoperability issues at different levels are behind these imperfections. A few examples (which were being worked on) included:
  - Legal interoperability beyond the pilot phase regarding eDelivery exchange between Slovenia and Austria;
  - Trust, how to deal with security self assessment in future?;
  - Attribute of the certificate issue between Austria and Luxemburg (legal/ technical).
  - Cost issue beyond pilot live for German authentications (pay per use vs budget financing).

Solving of several technical issues was in progress.

### *Value*

Several pilots offered services with procedures that were perceived by users as too complex and time consuming, therefore these services had a low potential viability beyond pilot life;

Service providers, foreseeing substantial benefits of offered services, requested a clear vision on extended support after STORK project live.

Benefits for the use of services to service providers and users – in terms of e.g. efficiency improvement or cost reduction) were not clearly defined nor was benefits realization part of pilot plans; Also related performance indicators for measuring benefits realization were lacking (also see external review remark p.8 item 4);

Therefore there was no measurable outcome from the pilots registered against pre defined target values. This could lead towards ‘self fulfilling pilot success’.

### *Learning*

- Within the pilots, knowledge was gathered on the technical operation of the STORK infrastructure. There were no planned activities within the pilots for elaborating this knowledge into guidelines, references or instruction materials for new pilot participants/member states or interested institutions after pilot live;
- Participants of the pilots (the choice in pilots) were acquired by means of opportunity and not by consideration to achieve a maximum proof of the success with regards to the general pilot principles (e.g. diversity in QAA levels, maximum combination of PEPS – MW or maximization of potential users of services).

## 5.3 Conclusion and suggested improvements

The mid term evaluation set out to answer the question: *Did the execution of the pilots take place according to the approved plans?* The evaluation team concluded that the pilots executed the pilots according to the approved plans. At the same time it made some important notes:

*Regarding Progress:*

Using a narrow interpretation of the DoW, pilots were on track and have mostly achieved their goals already;

The added value of the duration of one year of providing services in the real live pilot seemed limited due to the lack of activity (*note: this was later countered by the 'All vs All scenario, the enlargement*);

Learning has taken shape in the form of the mid term progress reports; a structure to consolidate this learning for appropriate follow-up was lacking;

Progress related to enlargement has been significantly delayed due to administrative issues, leading to reduced value during project lead time (*note: this was later countered by prolonging STORK running time*).

*Regarding Scope*

There seemed to be a growing discrepancy between STORK planned outcomes and external expectations;

The lack of real life, unsolicited users, and identified benefits outside technical use, posed a threat to the project;

A clear vision on the mitigation to the risks caused by absence of users was not developed;

Shift from use to value, operationalized through a shift from technique to service provision, was not realized (ex ante suggestion), therefore value was difficult to measure or prove.

*Regarding take-up of ex ante findings and suggestions*

Good take up of the Use, Learn and Value framework and generating lessons learned at individual pilot level;

Limited uptake of the suggestions to make benefit realization plans (shift of focus towards services);

Limited improvement in defining measurable success criteria and target values, resulting in lack of measurable outcome and progress.

Following these conclusions, the Evaluations team suggested to pay special attention to the expectations gap that seemed to rise between external expectations and STORK deliverables.

This was taken up by Project Management and WP7. It was also suggested to increase the cross pilot coordination, beyond the technical coordination that is provided by WP5 and WP6 (STORK Project Management), to reach full potential of the pilots by guiding and supporting the individual pilot leaders to organize their experiences.

Finally the issue of clarity for the maintenance of the cross border eID infrastructure beyond pilot life was mentioned as a important criteria for commitment from service providers using the infrastructure.

#### Observations 'en marge'

- The STORK solution will be re-used in other pilot projects such as SPOCS and eCodex and impacts the Digital Agenda. This puts extra strain on documenting the exact status and possibilities of STORK including what it can't do. This should be part of expectation management.



## 6 Ex Post

This chapter narrates the quest and conclusions of the ex post phase of evaluations. It focuses on the overarching findings and conclusions; individual findings and conclusions have been shared in internal deliverables with the pilot leaders.

### 6.1 Introduction

The ex post evaluation answered the question: *Did the results of the pilots match the promised objectives?*

To establish this, two checks have been performed:

- *The results of each pilot matched its promised objectives* – A turn around trail was followed from results to objectives. Were the results in accordance with the objectives stated at the beginning? Or have objectives been altered along the way based on decisions of the consortium? And if so, what were the grounds and argumentation for these alterations?
- *The results of all pilots matched the promised objectives defined by STORK and WP5* – Were the combined results of the pilots in accordance with the testing that was foreseen for the STORK solution and did the results of the pilots in total indeed prove the value and applicability of the STORK solution?

The ex post evaluation used these two questions to apply the methodology and come to conclusions for the individual pilots and the pilots as a whole. There were no major deviations from the methodology or process which included telephone meetings with the pilot leaders and pilot participants. The main documented base for the evaluations were the mature drafts of the “final reports”. The mature drafts were available but their maturity differed amongst pilots, leading to delays in realization of internal deadlines. Because of the delays, the ex post findings were mainly based on the interviews - where possible supported by the documentation. This limits the evidence base for the validity of the findings.

The overall findings and conclusions are at the discretion of the Evaluation team, due to the timing of the deliverables and the delays experienced they have not been presented to the pilot leaders and consortium other than in paper form.

### 6.2 Key findings

#### 6.2.1 Matching (promised) objectives

- All pilots eventually used a clear Benefits Logic method to make the trail from objectives to SMART (Specific, Measurable, Attainable, Relevant and Time Bound) results, which were the basis for answering the ex post evaluation questions: *Did the results of the Pilots match the promised results? And Did the results of all pilots match the promised objectives defined by STORK and WP5?*
- The Benefits Logic method was connected to Common Criteria (based on ISO 9216 attributes) which were related to the Pilot’s Use, Value and Learn. From these Common Criteria factors (Functionality, Interoperability, Security, Maintainability, Scalability/ Flexibility, Reliability/Maturity, Portability, Business Value and Usability/ Comprehension/Accessibility) the SMART results were derived thereof.
- The Benefits Logic method supported in formalising the achievements of each pilot and helped to translate the pilot’s goals into SMART results, substantiated on objective evidences, avoiding, thus, as much as possible “self-fulfilment temptations”.
- The Benefits Logic method supported a mutual basis for the evaluation of pilots success towards common objectives and success criteria.



## 6.2.2 Use, Learn and Value

### *Use*

- STORK succeeded to deploy a full operational cross-border environment of eID authentication with live services. The running of the pilots has assessed the correct operation of the whole STORK infrastructure at any of these stages (development, pre-production and live running).
- All Pilots succeeded in getting their services fully operational and deployed in a production environment.
- All pilots reached an extremely high number of credentials, STORK countries and cross-border services for optimal technical interoperability. Awareness of differences in legal, semantical and organizational aspects has increased with all STORK pilots. This proves to be challenging for national and pan-European legislation. STORK most certainly performed a wake-up call for discussing and solving these issues nationally and giving input to a possible Europe-wide solution of these aspects.
- All pilots, as well as the STORK project in total, declared the insistent requirement for offering cross-border eServices. Operating these services and the STORK eID interoperability infrastructure demonstrated a sensible environment where strictly defined governance and support structures were essential for the performance of the eGovernment services.
- A common issue for all pilots was that the number of users (as well specific user groups engaged by pilot partners as external - unsolicited - users), giving feed back to the pilots, were relatively low. Nevertheless, all pilots received useful feedback for service improvement. A more aggressive marketing accompanied by a general take-up of eID usage might bring the benefit of these services for all stakeholders to a greater extent.

### *Learn*

- During the running phase of all pilots, experiences were made with regard to the European Interoperability Framework v2.0 layers of interoperability (Technical, Semantical, Organizational and Legal). SMART metrics clearly demonstrated the extent to which the learning related success criteria are met and what barriers are to be addressed.
- Service provider feedback mainly focused on problem solving of upcoming errors and problems. Also trust in general and handling of different QAA levels are addressed in service provider feedback.
- User feedback focused on missing user interfaces in own language, unclear user guidance by portals and better general information on available services.
- Collected feedback to pilots demonstrated that the STORK solution has proven to be stable, manageable by citizens experienced with eID.
- The on-boarding of services onto the STORK interoperability framework was essential for its success.



### Value

- European citizens have been able to use their own country-issued credentials for access to services that are running abroad, and this has been possible without moving from their own house.
- A diversity of QAA levels was supported at several portals. Security self-assessments were an ad-hoc arrangement made by STORK MS to establish a trust basis valid for a piloting context.
- Legal issues have to be tackled in some MS's in laying a necessary foundation for cross-border acceptance of eID. This goes beyond the current mesh of trust established between MS and might also stir activities on EU level.
- Integrating STORK into a service requires a need from the service owner to look beyond his national understanding of eID and personal attributes. STORK pilots identified differences (on all interoperability levels) which were not trivial to understand for service providers. The MS integration packages should not forget to include a comprehensive manual on how a person can be identified using STORK and which specialties are to be observed.
- All STORK pilots demonstrated the functionality of the QAA model and proved interconnections through all technological interoperability models available in STORK (PEPS-PEPS, PEPS-MW, MW-PEPS and MW-MW). A valuable opinion base was gathered by the pilots.

## 6.3 Conclusions and suggested improvements

### *Conclusion of the pilots evaluation*

- Based on the established proceedings of all pilots towards the defined goals and related criteria (as been evaluated by SMART benefits), the conclusion of the ex-post evaluation is that all pilots matched the promised results.
- The results of all pilots were in accordance with the original objectives stated in D6.x.3 Detailed Planning documents of the pilots.
- Furthermore the results of all pilots supported the promised outcome defined by STORK and WP5. The result of the pilots was in accordance with the testing that was foreseen for the STORK solution and proves the value and applicability of the STORK solution.

### *Suggested improvements beyond the STORK Large Scale Pilot*

- A quicker pick-up of using a clear Benefits Logic method from the very beginning of pilots lifecycle might bring an earlier focus on benefits realization, beyond the viewpoint of technical and operational issues.
- A more aggressive marketing accompanied by a general take-up of eID usage might bring the benefit of all pilot services for all stakeholders to a higher level.
- Establishing a comprehensive and durable Trust scheme including procedures that will enable the objective establishment of trust levels.
- Differences in legal and organizational interoperability aspects prove to be challenging for national legislation. There is a great need for Trans-national and National dialogue that will benefit all MS.
- Extending the STORK infrastructure beyond the current list of MS's should be of utmost importance and at least cover the EU.

## 7 Achievements and suggestions for future take up

Chapter seven has a different status from the other chapters. Its content is not based on formal evaluation with an underlying methodology, desk study and interviews. Chapter seven highlights achievements and challenges from the perspective of the pilot leaders as expressed in a workshop facilitated by the Evaluations team, during a meeting with the pilot coordination, Q&R management and pilot leaders.

### 7.1 Introduction

During the ex ante evaluation, the Evaluations team suggested to think about the STORK 'inheritance'. What does STORK leave behind and what needs to be further explored after STORK?

Knowing that, STORK, as a concentrated effort of the Member States with support from the European Commission, does not take place in a vacuum. Further Large Scale Pilots under the CIP ICT PSP are planned for and will focus or use cross border interoperable eID's. This is pushed by the idea of the Digital Single Market, and more specifically f.i. the Services Directive.

Also in the policy arena cross border eID is on the agenda with the revision of the eSignatures Directive and the council and parliament decision on eID's as stated in the Digital Agenda and the eGovernment Action Plan 2011-2015.

As a starting point for our contribution to the discussions, the Evaluations team has worked together with the pilot leaders, Pilot Management and Q&R Management to extract the achievements and challenges for cross border interoperable eID in the EU. We have done so through an interactive session with the pilot leaders, using the European Interoperability Framework as the methodological framing.

Focussing on technical, semantic, organisational and legal achievements and challenges of STORK gave insight in what STORK can be proud of and which barriers are still to be tackled. These are highlighted (without the pretence to be complete) in the following paragraphs. These personal statements were made in the context of informal workshop and do not therefore imply a commitment on their accurateness from the STORK MS or the STORK Consortium.

### 7.2 Technical

The most important achievement of STORK is the realization of a proven, flexible, infrastructure that allows for both PEPS and MW countries to connect their national eID infrastructure with different tokens and attributes, of different QAA levels, to other countries National infrastructures. The technology used in the different countries is hidden away and does no longer hamper cross border use.

It is an expandable infrastructure, accepted and used; using on open standards. The infrastructure supports, besides eID's, digital signatures and attribute exchange. The common code is stable and allows for multiple installations. The protocol is easy to implement, also when using Open Source Software (OSS).

It herewith complies to many of the features that were described for the infrastructure and that drove the STORK project: The infrastructure is based on a distributed architecture, using open standards and suited for OSS (whereas many of the services in the pilots also use OSS and have contributed to the OSS society). It is transparent also in the sense that users are aware of the data they are interchanging when authenticating cross border. The infrastructure is safe to the extent that the testing has not resulted in any problems regarding credentials being falsely accepted. The infrastructure allows for many different credentials and implementations, including MW/PEPS, QAA 1 to 4, mobile, card and soft token solutions. The infrastructure has proven to be scalable. The enlargement and more service providers joining the project (f.i. in SaferChat and Student Mobility pilots) have shown this. The pilots state that service- and eID providers indicate that

connecting to the infrastructure is relatively easy. At the same time different implementations of the country PEPS are in existence, based on the common specifications, at least Belgium and Sweden have their own version.

The current infrastructure still has its challenges. There is a number of issues regarding security, the security self assessments that are the basis of the relationship between partners, work well in a pilot phase with services of relatively low risk. However, it is unclear if this will hold in a production environment with critical services. In short, there is a lack of an interoperable trust assurance.

An issue around usability includes language. The understandability of steps and screens (messages in user language, error messages, how to obtain support), and optimizing the time it takes to successfully authenticate are aspects to continue improving.

Common test features, facilities and guarantees are lacking and the complexity does not allow for fast error detection if needed, this is an issue of time as well as capacity. Scalability (and reliability) in terms of very large numbers of parallel users was not tested in the pilots although the platform has been designed and implemented considering this.

### 7.3 Semantic

Semantic interoperability deals with the meaning of terminologies and standards in different contexts; Is A, A in another system and do we interpret it in the same way.

In STORK a common interpretation of the Quality Authentication Assurance levels was reached. This has substantial take up in the participating Member States.

With regards to semantic interoperability STORK has achieved a common set of attributes including specifications, meaning, understanding and format. On top of that STORK achieved a simple model for translation of attributes from source to destination which has the potential of being expanded. Service providers have been able to adapt to these attributes, proving their working in practice. STORK also achieved a uniform solution amongst partners regarding for instance “names”.

The flip side of semantic interoperability is that in some cases the perennity of the identifier cannot be ensured and that the identifiers are non persistent. It is not easy to reconcile ID attributes, this can become more complex when trying to express representational mandates and extended attribute sets.

In spite of work on attributes, some attributes are still considerably different (f.i. eIdentifier); also, the number of attributes available for service providers differs greatly between Member States.

Handling and integration of exotic cases and their representation is still an issue as well as the fact that there is a lack of alignment of identified aspects/attributes and no common identification and lack of identified aspects/attributes authenticated.

### 7.4 Organizational

Infrastructure is being maintained and problem solving is organised to a sufficient level for current use. Agreements have been reached for the project phase regarding problem solving and communications. Maintenance of the generic solution is guaranteed by ISA programme for the coming two years.

On the other side a number of weaknesses present themselves in the current state of affairs. The current security self assessments applies for the current services but may not hold for a future up scaling. QAA levels are not independently or objectively assessed; The QAA levels are not guaranteed by independent audit or verification. Change management for certificates has not yet been organised, at a wider scope organised service management is lacking.

## 7.5 Legal

In the area of legal interoperability the best achievements as stated are the fact that the STORK solution allows its users to authorize the processing of personal data, linked to this fact is the generally positive report received from WG29.

Legal issues were identified. Excluding the legal barriers from the execution of the pilots allowed for the success in other areas; notwithstanding the fact that for large take up and deployment of cross border authentications, they will need to be solved in the future. The services were thus implemented without changes to legal scenarios in MS's. On the positive side, the pilot leaders do indicate that legal barriers with regards to the identifier are solved in most countries and that data protection rules are similar in most countries.

Legal barriers are diverse. Since legal issues were declared out of scope of STORK, interoperability is not achieved full and complete, a set up for a legal framework has not been written as a project legacy. Challenges identified by the STORK pilots include:

- Legal certainty for cross border operations requires an EC framework: revision of directives and eID/eAuthentication directive. At present this common framework for interoperability eID is lacking (Lack of EU legislation on authentication);
- Need for qualified signatures in some MS's;
- Liability issues resulting from trust are not addressed;
- Transfer of data cross border;
- Privacy regulations for SP's. Consent for data processing would need to be improved if model is extended with new attributes;
- National laws and requirements sometimes make usability/ user friendliness the worst aspect of the solution (AT portal/ ES credential);
- No central server allowed in some countries limiting possibilities (AT / DE);
- National laws sometimes limit the use of credentials in foreign countries.

## A. Appendix – Project plan WP6.6 final v1.1

### COMPETITIVENESS AND INNOVATION FRAMEWORK PROGRAMME ICT Policy Support Programme (ICT PSP)

#### Towards pan-European recognition of electronic IDs (eIDs)

ICT PSP call identifier: ICT-PSP/2007/1

ICT PSP Theme/objective identifier: 1.2

#### Project acronym: STORK

Project full title: Secure Identity Across Borders Linked

Grant agreement no.: 224993

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## WP 6.6 Project Plan

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<b>Deliverable Id :</b>	N/A
<b>Deliverable Name :</b>	WP 6.6 Project Plan
<b>Status :</b>	1.1 final
<b>Dissemination Level :</b>	Public
<b>Due date of deliverable :</b>	N/A
<b>Actual submission date :</b>	N/A
<b>Work Package :</b>	6.6
<b>Organisation name of lead contractor for this deliverable :</b>	NL MOI
<b>Author(s):</b>	Robert Sierat, Nathan Ducastel
<b>Partner(s) contributing :</b>	N/A

#### Abstract:

Work Package 6.6 is responsible for delivering an evaluation of the WP 6 pilots. The evaluation of the pilots answers the question if a) the plans of the pilots focus on the right targets of the project, b) the execution of the pilots takes place according to the defined plan and c) the results of the pilots match the promised outcomes.

Project co-funded by the European Community under the FP7 ICT Policy Support Programme

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## History

<i>Version</i>	<i>Date</i>	<i>Modification reason</i>	<i>Modified by</i>
0.1	02/15/10	Initial Draft	Robert Sierat, Nathan Ducastel
0.2	02/24/10	As discussed during meeting 23 Feb with NL MoI	Robert Sierat
1.0	01/04/10	Results consultation STORK objectives	Nathan Ducastel
1.1	08/06/10	Included Annex 3 – clarifications terminology	Nathan Ducastel

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## Executive summary

Work Package 6.6 is responsible for delivering an evaluation of the WP 6 pilots. The evaluation of the pilots answers the question if a) the plans of the pilots focus on the right targets of the project, b) the execution of the pilots takes place according to the defined plan and c) the results of the pilots match the promised outcomes.

The evaluations of the pilots will be undertaken with the help of an underlying methodology. This methodology is based on general methods for auditing, reviewing and evaluating of ICTpilots. This methodology makes it possible to compare all the results of the different evaluations of the several pilots: ex ante, mid term and ex-post.



## 8 Scope and objectives

### 8.1 Goals

The goal of this WP is to evaluate the pilots of WP6. The evaluation of the pilots answers the question if:

- a) the plans of the pilots focus on the right targets of the project,
- b) the execution of the pilots takes place according to the defined plan and
- c) the results of the pilots match the promised outcomes.

The evaluations of the pilots will be undertaken with the help of an underlying methodology. This methodology is based on general methods for auditing, reviewing and evaluating of ICTpilots. This methodology makes it possible to compare all the results of the different evaluations of the several pilots: ex ante, mid term and ex-post.

### 8.2 Description of work

To execute the evaluations, the following activities will take place: An ex-ante evaluation, a midterm review and an ex-post evaluation of every pilot. First, an ex-ante evaluation of all the pilots will be executed. This evaluation will look at:

- a) the defined set-up of the pilot and
- b) the management of the pilot.

For this activity results from the ex-ante pilot reviews on behalf of the quality control will be used. This quality control looks at the overall pilot architecture to be used as a result of the outcomes of the studies done on upcoming technologies, process flows and common specifications. Second, to guarantee a solid execution of every pilot in terms of planning, management and the use of necessary resources, mid-term evaluations will take place on every pilot. Third, to evaluate the outcomes of the pilot against the goals upfront defined, an overall ex-post evaluation of every pilot will be undertaken. These ex-post evaluations will address the realized outcomes of every pilot against the planned outcomes. These evaluations will be input for the ex-post review on behalf of the quality control of the pilots.

### 8.3 Methodology

WP6.6 evaluates the WP6 pilots vis-à-vis the overall goals of STORK and especially the results of WP5. The evaluations focus on the ability of the pilots to proof the concepts delivered in WP 5 which should allow for an interoperable cross border system of electronic identification of citizens and businesses (especially SME's) for e-services and following the deliverables of the Description of Work (including later agreed changes) agreed with the European Commission. To be able to evaluate the pilots individually, in relation, and over time, a clear cut methodology is essential. This methodology will support the professional judgement of the evaluators and allow for traceable and evidence based findings. Secondly, the methodology will be recognized and sufficiently supported by the pilots undergoing the evaluations.

## STORK Objective

Test an interoperability solution for eID's based on existing solutions in the member states, including the development of process flow and common specifications. The solution should support the cross border delivery of e-services.

The solution has the following features:

- ✓ Distributed architecture
- ✓ Transparent
- ✓ Safe
- ✓ Support multiple access channels for maximal accessibility
- ✓ Scalable for possible take-up in the EU (a.o. proven via enlargement)
- ✓ Sustainable
- ✓ Uses Open specifications
- ✓ Easy to use
- ✓ For citizens and businesses (especially SME's)

Pilots additional objective: Acceptance of produced solutions, prove scalability (enlargement)



The evaluations take place *ex ante*, mid term and *ex post*. The questions to be answered in the evaluations are (from the Description of Work - DoW):

- *Ex ante*: the plans of the pilots focus on the right targets of the project?
- *Mid Term*: the execution of the pilots takes place according to the defined plan?
- *Ex post*: the results of the pilots match the promised results?

The evaluations are focussed on the fulfilment of objectives of the pilots. *Ex ante* and *ex post*, a check is included against project (STORK) objectives.

The starting point for the evaluations is the most recently agreed Description of Work (DoW) and the detailed plans for the pilots in WP 6. To be able to evaluate the pilots individually, in relation, and over time, a clear cut methodology is essential.

The methodology supports the professional judgement of the evaluators and allows for traceable and evidence based findings. The methodology is recognized and supported by the pilots undergoing the evaluations, this was assured through the process mentioned above.

The methodology is based on important pillars for project evaluation and management:

- The OGC toolkit including the Prince2 methodology for project management and the related Gateway review methodology for Projects and Programmes;
- The CEN ISSS WS/BII Evaluation Guidelines – WG 4 which developed in cooperation between CEN and PEPPOL, the Large Scale Pilot regarding interoperable eProcurement.

Generally, the methodology includes following the trail from Objectives to Outcomes:

- *Evidence based: plans, reports, interviews*
- *Traceable*
- *Pareto rule (80-20%), focused on the fulfilment of Outcomes*

The criteria used are either derived directly from the project DoW, the pilot plans or general methods for evaluation and project management. The assessment of the pilots include professional judgment which includes a check on: **completeness, coherence and correctness** (accepted standard for evaluation and auditing).

The methodology will be supported by a number of matrices which will be used as tools during the evaluations. These are attached in annex 2.

### 8.3.1 Ex Ante

The ex ante evaluation asks the question: Do the plans of the pilots focus on the right targets of the project?

This question is broken down in three key questions:

- ***Does the pilot adhere to general pilot principles?*** – this answers whether the pilots are truly set up as pilots, with the intent to test Use, Learning and Value. The CEN/PEPPOL evaluation guidelines make these concepts operational. They have been included in annex 1;
- ***Are the pilot objectives related to the STORK objectives, including the objectives defined by WP5?*** – This questions deals with the necessity to link the pilots to the STORK overarching objectives and the main criteria set for the STORK solution.
- ***Are pilot objectives consistent with pilot Key Success and Performance indicators, products and activities and plans?*** – This question answers whether the pilot is set up in a coherent and consistent way which may be expected to yield the result necessary to test the STORK interoperability solution.

### 8.3.2 Mid Term

The Mid Term evaluation looks into the question: “Does the execution of the pilots take place according to the approved plans?”

This question is broken down into two approaches:

- Check the realization of products and their contribution to the achievement of objectives according to scheduled KPI's (% completed) – This regards the actual progress of the pilot against the planned progress, and;
- Check plans and progress with regard to scope – Does the progress relate sufficiently to the scope and does it yield the outcomes that are expected vis-à-vis STORK objectives?

The Mid Term evaluation is executed on the assumption that the results from the Ex Ante evaluation(s) have been used to improve the pilots and the overall completeness and consistency.

### 8.3.3 Ex post

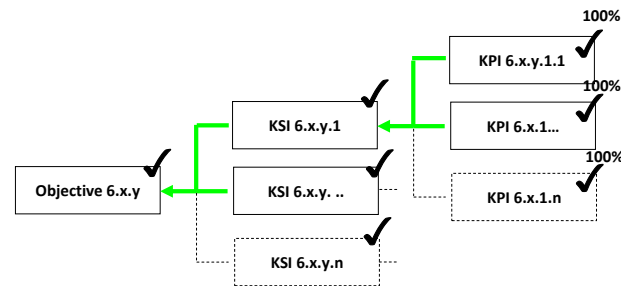
The Ex Post evaluation answers the question: Do the results of the pilots match the promised objectives?

To establish this, two checks will be performed:

- The results of each pilot match its promised objectives – A turn around trail will be followed from results to objectives. Are the results in accordance with the objectives stated at the beginning? Or have objectives been altered along the way based on decisions of the consortium? And if so, what were the grounds and argumentation for these alterations?
- The results of all pilots match the promised objectives defined by STORK and WP5 – Are the combined results of the pilots in accordance with the testing that was foreseen for the STORK solution and do the results of the pilots in total indeed prove the value and applicability of the STORK solution?

### Methodology - Ex post evaluation check #1

- The results of each pilot match its promised objectives



## 8.4 Assumptions

The methodology is developed based on the following insights:

- To be able to assess when the ex ante evaluations can take place, it is necessary to set a standard. The proposed moment for the Ex Ante evaluation of each individual pilot is when the documentation (minimal the detailed plan) has been finalised and before the pilot goes life.
- Once an individual pilot is evaluated and the evaluation has been discussed with the pilot leader, the evaluation will be informally shared with the other pilot leaders for learning purposes.
- Once an evaluation cycle (ex ante, mid term or ex post) is completed, an overarching analysis is made and the results and recommendations are discussed in the WP committee meeting and sent to the Executive Board. The executive board then decides on the follow up to the recommendations.
- Quality assurance and the WP 6.6 Evaluations are closely linked but have a different objective and role in the process. The WP6.6 Evaluations focus on whether the plans of the pilots put the right focus on usability and therewith evaluate the fulfilment of the pilot objectives and the project (STORK) objective. The Quality assurance of STORK focuses on whether the products are developed to specifications:
  - The assurance of compliancy to standards of quality (e.g. formats, risk assessments);
  - Following the process and procedures agreed;
  - Advising on which standards to follow and giving practical guidelines.
- In short, Evaluations is concerned with whether the pilots proof the concepts of WP 5 and assure reaching the objective of STORK.

## 8.5 Results and planning

The pilot evaluations will result in 15 evaluations:

- 5 ex-ante evaluations. These will be executed within 2 months before the start of the pilot and will be ready at the start of the pilot (mth 16).
- 5 mid term evaluations. These will be executed 6 mths after the start of the pilots and be ready two months after (mth 24).

- 5 ex-post pilot evaluations. These will be executed within 2 mth after the finish of every pilot. In general all pilots will at least be operational for 12 mth. It is to be expected that the ex-post evaluations can be finished within mth 30 and 36.

Once an individual pilot is evaluated and the evaluation has been discussed with the pilot leader, the evaluation will be informally shared with the other pilot leaders for learning purposes;

Once an evaluation cycle (ex ante, mid term and ex post) is completed, the results and recommendations are discussed in the WP committee meeting.

When all pilots have been evaluated ex ante, mid term or ex post, an overarching analysis is made. This analysis, together with the individual evaluations, is discussed in the WP committee meeting and sent to the Executive Board. The executive board then decides on the follow up to the recommendations.

### External deliverables

D#	Deliverable Name	Due Date	Delivered (Y/N)	Actual / Forecast delivery date	Comments
D6.6	Overarching ex-ante, mid term to ex-post analysis over all of the 5 pilots	M36	No		Formal deliverable to Executive Board

*Table 1: Overview external deliverables*

### Internal project deliverables (not to be formally delivered to executive board)

D#	Deliverable Name	Due Date	Delivered (Y/N)	Actual / Forecast delivery date	Comments
D6.6.0.1	Table of Contents of the evaluation report (including description of methodology, evaluation process, findings and conclusions) for ex-ante evaluation of each individual pilot	M15	No		Only for internal project purposes
D6.6.0.2	5 individual ex-ante pilot evaluations	M16	No		Only for internal project purposes
D6.6.0.3	Overarching ex-ante evaluation over all pilots	M16			Only for internal project purposes
D6.6.0.4	Table of Contents of the evaluation report (including description of methodology, evaluation process, findings and conclusions) for mid-term evaluation of each individual pilot	M23	No		Only for internal project purposes
D6.6.0.5	5 individual mid-term pilot evaluations	M24			Only for internal project purposes
D6.6.0.6	Overarching mid-term evaluation over all pilots	M24			Only for internal project purposes
D6.6.0.7	Table of Contents of the evaluation report (including description of methodology, evaluation process, findings and conclusions) for ex-post evaluation of each individual	M29			Only for internal project purposes

D#	Deliverable Name	Due Date	Delivered (Y/N)	Actual / Forecast delivery date	Comments
	pilot				
D6.6.0.8	5 individual ex-post pilot evaluations	M30 - M36			Only for internal project purposes

*Table 2: Overview internal project deliverables*

## 9 Risk management

Nr	Threat	Consequence(s)	Measure(s)				Comments
				Chance	Impact	Risk	
1	<i>Poor acceptance of the WP6.6 evaluation methodology</i>	<i>Ineffective execution of pilot evaluations</i>	<i>Insure commitment by strong emphasis on formal procedures for decision making</i>	L	H	M	
2	<i>Late start of WP6 pilots</i>	<i>Ex-ante, intermediate and ex-post sequence of evaluation not feasible if due date of pilots remains fixed.</i>	<i>Emphasis on STORK project management</i>	H	H	H	
3	<i>Findings and recommendations of the WP6.6 pilot evaluations are not adequately adopted by the pilot leaders</i>	<i>Learning process not realized, Reduced outcome of pilots</i>	<i>Provide feed back to pilot leaders after each individual pilot review. Provide feed back on each evaluation cycle (ex ante, mid term and ex post) to the WP committee meeting</i>	L	H	M	
4	<i>Assembled individual pilot objectives are not complete/consistent/coherent with overall STORK objectives</i>	<i>Pilots in total do not fully prove the value and applicability of the STORK solution</i>	<i>Strong notification of ex ante evaluation findings towards WP committee</i>	L	H	M	
5	<i>Shifting and /or expanding pilot objectives</i>	<i>Objectives of pilots unattainable, Reduced outcome of pilots</i>	<i>Maintain clear definition of objectives as starting point for evaluation, Appropriate change management procedures</i>	L	H	M	

## Annex 1 – Criteria to evaluate Pilots\*

### Use

- √ Impact
- √ Sustainability<sup>x</sup>
- √ Scalability
- √ Flexibility /Openness
- √ Forward compatibility
- √ Trust
- √ Usability of interoperability model
- √ Usability of Governance model

### Learning

- √ Feasibility
- √ Lessons learned
- √ Optimizing interoperability model
- √ Optimizing Governance model

### Value

- √ Costs/benefits – Does the interoperability model contribute to social EU benefits?<sup>+</sup>
- √ Intrinsic innovative value

\* Based on CEN/PEPPOL evaluation guidelines

x Scope of this criterion depends on formal interpretation of new DOW with regard to sustainability

+ Actual application of this criterion depends on follow up of recommendations en comments in the external review report of 2-3 December 2009



## Annex 2 – Tools for the evaluations:

### Ex Ante: Does the pilot adhere to general pilot principles?

Pilots WP 6.x	Use	Learning	Value
a. Pilot 6.1	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞
b. Pilot 6.X	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞

### Ex Ante: Are the pilot objectives related to the STORK objectives, including the objectives defined by WP5?

Pilot Objectives WP 6.x	Use and Feed back loop to Common Specifications (WP5)	Test an interoperability solution for eID's based on existing solutions in the MS								
		Test functioning of a distributed architecture	Test transparency	Test safe use	Test support for multiple access channels	Test scalable for further take up	Test the ease of use	Uses Open specifications where possible	Test potential sustainability	Test potential use of businesses (esp. SME's) and Citizens
a. Objective	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞
b. Objective	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞

**Ex Ante, Mid term and Ex post: Are pilot objectives consistent with pilot Key Success and Performance indicators, products and activities and plans?**

Pilot Objectives WP 6.x	Key Success factors and Key Performance indicators	Products	Activities and plans
a. Objective	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞
b. Objective	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞	Text explaining/ reference 😊 / 😐 / 😞

**Ex ante, Mid term, Ex post: Do the pilots add up to a complete and coherent assessment of the proposed interoperability model on the indicators agreed?**

Pilot	Test an interoperability solution for eID's based on existing solutions in the MS								
	Test functioning of a distributed architecture	Test transparency	Test safe use	Test support for multiple acces channels	Test scalability for further take up	Test the ease of use	Uses Open specifications where possible	Test potential sustainability	Test potential use by businesses (esp. SME's) and Citizens
a. Pilot 6.1	<p><b>Do the pilots add up to a complete and coherent assessment of the proposed interoperability model on the indicators agreed?</b></p>								
b. Pilot 6.2									
c. Pilot 6.X									

## Annex 3 – Clarifications Terminology Memo

**To:** WP6 leaders  
**From:** WP 6.6 leader Mol-NL - Nathan Ducastel/ Robert Sierat/ Kristel de Nobrega  
**CC:** STORK Consortium  
**Date:** May 16<sup>th</sup> 2010  
**Subject:** Clarification WP 6.6 (Pilot Evaluations)

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### 1) Preamble

April 1<sup>st</sup> 2010 the final version of the methodology for WP6.6 was distributed to the STORK consortium. Following a number of questions and the request by the project management to further clarify the methodology during a face to face meeting, WP6.6 presented the methodology during the joint WP5/ WP6 meeting in Madrid (May 4<sup>th</sup> 2010).

The explanation of the methodology during this meeting was such that the pilot leaders agreed to start the planning of the ex ante evaluations and continue with the methodology as presented in its final version. The pilot leaders asked to elaborate on some of the terminology used in WP6.6 methodology.

This memo gives this further explanation on the items requested. It does *not* address *all* elements of the methodology.

### 2) Pilot principles: Use, Learn and Value

One of the questions that WP6.6 tries to answer is whether pilot 6.x adheres to general principles that may be expected of a pilot within a project. These principles ensure the pilot's value vis-à-vis the project as a whole. The principles are:

*Use*: whether the solution and its services are usable (does the interoperability solution work on a small scale; which barriers are being encountered);

- *Learning*: whether the pilot helps to prepare the stakeholders for the future (f.i. collecting and distributing lessons learned/ feed back loop);
- *Value*: whether the pilot improved efficiency or effectiveness of the organizations involved (do the pilot service providers experience added value).

WP6.6 will see whether the STORK pilots address these issues.

### 2) STORK Objectives

The WP6.6 methodology for the ex ante evaluations includes the question: “*Are the pilot objectives related to the STORK objectives*”. To support the answering of this question a Power Point sheet was included in the methodology stating the STORK objective and the features of the proposed solution, following the Description of Work:

### STORK Objective

Test an interoperability solution for eID's based on existing solutions in the member states, including the development of process flow and common specifications. The solution should support the cross border delivery of e-services.

The solution has the following features:

- ✓ Distributed architecture
- ✓ Transparent
- ✓ Safe
- ✓ Support multiple access channels for maximal accessibility
- ✓ Scalable for possible take-up in the EU (a.o. proven via enlargement)
- ✓ Sustainable
- ✓ Uses Open specifications
- ✓ Easy to use
- ✓ For citizens and businesses (especially SME's)

Pilots additional objective: Acceptance of produced solutions, prove scalability (enlargement)



Discussion started on what was called “features” in the sheet presented. Pilot leaders wanted to know the exact interpretation of each feature and remarked that several features are outside the scope of the pilots or are inherent to other work packages. They also mentioned some features have been abandoned earlier in the process (although not formally documented).

WP6.6 uses the pilot objectives as the starting point to answer the question whether pilot 6.x links to the STORK objective. The “features” help to direct the interviews and the analyses of the detailed plans of the pilots. The features are understood as follows:

Feature	Interpretation WP 6.6 for pilot evaluation
Distributed architecture	Not applicable, part of WP5 (intrinsic to the STORK solution)
Transparent	Pilot transparency leads to STORK transparency; sharing experiences, lessons learned and best practices throughout the pilot and also between pilots.
Safe	Using the interoperability solution does not present dangers to the end user, service provider or eID provider involved. What are the measures taken to guarantee that this is the case?
Multiple access channels	Different types of eID credentials tested in the pilots
Scalable	Connecting additional countries and/or service providers (tested scalability in the pilot, not of the model (WP5))
Sustainable	Not applicable, part of WP7
Uses Open specifications	Not applicable, part of WP5
Easy to use	Two dimensions: 1) Ease of integration of the solution for a user (service provider); 2) Ease of use for the end user (citizen/or business) using the solution (country chooser etc.);
Citizens and businesses	The solution is tested by both citizens and businesses