



COMPETITIVENESS AND INNOVATION **FRAMEWORK PROGRAMME**ICT PSP Fifth Call for proposals 2011 - Pilot Type A

Towards a single European electronic identification and authentication area

ICT PSP call identifier: CIP-ICT-PSP-2011-5 ICT PSP Theme/objective identifier: 4.2

Project acronym: STORK 2.0

Project full title: Secure idenTity acrOss boRders linKed 2.0

Grant agreement no.: 297263

D5.3.1 Technical & Business Objectives and Specifications

D 5.3.	Deliverable Id :
Pilot Technical & Business Objectives and Specification:	Deliverable Name :
Fina	Status :
PU	Dissemination Level:
31 st March, 2013	Due date of deliverable :
8 th May, 2013	Actual submission date :
WP 5.3	Work Package :
InfoCamero	Organisation name of lead ontractor for this deliverable :
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Abstract: The document defines the objectives of the STORK 2.0 Public Services for Business Pilot (Pilot 3); it establishes the main pilot goals and expresses the functional requirements placed on the STORK 2.0 infrastructure by the Pilot 3 Use Cases. These include descriptions of the eID Management services to be offered by STORK 2.0 and tested by the pilot implementations in each MS, the attributes for authentication (eID) and authorisation (powers of representation or mandates) handled by these services, and the roles of the different actors and STORK 2.0 partners that contribute to the STORK 2.0 infrastructure in each MS. The main pilot goals are also linked to success criteria which will contribute to the future definition of Pilot evaluation metrics.

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History

Version	Date	Modification reason	Modified by
0.1	20/12/2012	Draft ToC	ATOS
0.2	04/03/2013	Initial draft	InfoCamere
0.3	08/03/2013	Partner contributions	All pilot 3 partners
0.4	27/03/2013	Incomplete draft	InfoCamere
0.5	08/04/2013	Quality Revision of Draft	ATOS
0.6	22/04/2013	Additional Partner contributions	All pilot 3 partners
0.7	26/04/2013	Quality Revision of Draft	ATOS
0.8	29/04/2013	Complete draft	InfoCamere
0.9	30/04/2013	Quality Revision of Draft	ATOS
0.95	02/05/2013	Final version of the deliverable	InfoCamere
0.98	06/05/2013	Final quality review	ATOS
1.0	08/05/2013	Final reviewed deliverable	

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List of abbreviations

AP Attribute Provider

A-PEPS Attribute Provider PEPS

AT Austria
BE Belgium

BR (official) Business Register

C-PEPS Citizen IDP PEPS

EE Estonia

EUGO network of PSC experts

FR France
GR Greece

IdP Identity Provider

IS Iceland
IT Italy

LT Lithuania
LU Luxembourg
MS Member State

MSC Member State Council

NL Netherlands

PEPS Pan-European Proxy Service

PSC Point of Single Contact

PT Portugal

QAA Quality Authentication Assurance

SI Slovenia SK Slovakia

SP Service Provider

S-PEPS Service Provider PEPS

STORK 2.0 Secure idenTity acrOss boRders linKed 2.0

V-IdP Virtual Identity Provider

WP2 Existing Infrastructures and Resources

WP3 Legal and Trust Analysys

WP4 Common Specifications and Building Blocks

WP5 Pilots

WP6 Pilots Evaluation

WP7 eID as a Service Offering

WP8 Marketing, Communication & Dissemination

Executive summary

The present deliverable identifies the objectives of the STORK 2.0 Pilot 3, Public Services for Business Pilot; it describes the functional requirements of the general Use Cases as well as the concrete services to be offered for piloting. The document analyses the individual goals of the pilot services from both technical and business perspectives in order to link goals to strategic policy and also to practical success criteria (Chap. 2) which will be used to evaluate the Pilot services during the running phase of piloting.

The document analyses (Chap. 3) the Pilot functional requirements including descriptions of

- the eID Management services to be furnished by STORK 2.0and tested by the pilot service implementations in each MS,
- the attributes and process flows for authentication (eID) and authorisation (powers of representation or mandates) handled by these services
- the roles of the different actors and STORK 2.0partners that contribute to and make up the STORK 2.0infrastructure in each MS.

Attributes, in particular, are reviewed (Chap. 4) from both the perspective of the Service Providers and their requirements as well as from the supply-side, that of the Attribute Providers that will be part of the STORK 2.0 national infrastructure. Some requirements regarding the notion of an extended QAA (the level of authentication security) as applied to the new attribute assertions regarding legal entities and their representatives are indicated (Chap. 5).

The document also contains a description (Chap. 6) of some additional STORK 2.0 platform services built in the common interoperability layer and requested by Pilot 3 (digital signature function and aggregation of attributes).

A crucial part of the project is the planning of the piloting phase. Real-life services are going to be used by real users and policies to promote the use of the former must be taken into account. An overview of the user engagement strategy and some indications of marketing and dissemination activities have also been included in the document (Chap. 7).

Finally, relationships of WP5.3 with other workpackages in STORK 2.0 have been addressed (Chap. 8) and a set of general conclusions obtained after the first year of the project has been compiled.

1 Introduction

This report provides the business and technical objectives and the technical specifications for the Public Services for Business pilot. It defines the scope of the pilot and analyses the service use cases which feed the design of STORK 2.0 eID management functions and which furnish the context for the integration of the STORK 2.0 cross-border eID-interoperability platform with each country's pilot services. The business objectives of each of the pilot services are identified in order to create specific pilot goals which are used to define success criteria and metrics which will be used to evaluate the pilots.

Independently of the specific Pilot services that each country implements, the STORK 2.0 infrastructure will be strictly concerned with the cross-border exchange of authenticated identity and role attributes of the businesses and businesspersons involved in the services. In particular, the STORK 2.0infrastructure will provide cross-border eID interoperability services to enable and support the actors and authorities who directly provide the operations of electronic identification, authentication and authorisation of foreign end-users of public services for businesses. Special attention is paid to these actors – the service providers, the ID providers, and the attribute providers who furnish information on legal entities and on the persons (both natural and legal) that represent legal entities, the actual end-users of the services.

Additional considerations are made regarding non-functional aspects of the STORK 2.0platform and "Circle of Trust", such as service levels, in particular, the levels of Quality Authentication Assurance, QAA, of eID and other attributes, data privacy, anonymisation and the use of digital signatures.

The two broad eGovernment Use Cases mentioned in the DoW are "Enrolment to public registers" and "One-stop-shop Business Service Portals and Points of Single Contact". Enrolment in public registers refers to public, administrative registration services which are part of the requirements on businesses wishing to operate in specific economic sectors or product/service areas. These services usually implement national and/or European law and are applicable to domestic and foreign businesses. One-stop-shop Business Portals and Points of Single Contact, on the other hand, usually embrace a wide variety of services which for the present analysis was broken down into more specific business-oriented services or "sub-use cases" which are listed in table 2 of section 2, below.

It was quickly verified that even within the same sub-use case the service details – the information treated, the procedure flows, legal and organisational constraints - varied greatly from one country to another since the services are aimed at different types of businesses or different sectors of the economy. Therefore, all of these basic pilot services were carefully analysed to identify only those requirements which were strictly related to cross-border eID processes and the exchange of attributes needed for the authentication and authorisation of (foreign) end-users of the services. All other requirements or details of the specific service procedures were excluded from the analysis, being judged more suitable for implementation by the service provider (SP) as part of service fulfilment or at the national infrastructure level. For more information about the terms and operations considered central to the STORK 2.0eID management the reader may consult the brief definitions included in the Appendix [Chapter 11].

What emerged from the analysis was the realisation that from an eID management point of view, the Use Cases defined in the DOW, and their sub-use cases, were all very similar and

were based on two "common functional use cases" which underlie – in a completely transversal way – all of the Pilot 3 services.

The first "common functional use case" corresponds to the basic process flow identified in WP4 as "Authentication on behalf of" (see [15]). The STORK 2.0 added-value of this functionality consists in providing the authentication of the end-user using the national identity provider of her/his own country of origin, and the gathering of the available attributes concerning her/his powers to represent another person or Legal Entity that is the subject of the Pilot service, a Public Service for Business. This functionality will be required as a necessary feature integrated in all pilot services.

The second "functional use case" arises in several service contexts, but always involves a STORK-authenticated end-user who, in order to fulfil the service at hand, must furnish validated identity attributes of a natural person who is not physically present. Some typical situations in which this service arises occur when one person mandates powers of representation to another person, or when a company administrator assigns company roles or powers either in the same company or in a newly created legal entity. Similarly, services dealing with employee registration may require such handling of identity data for persons not physically present. This will be an optional feature to be implemented by some of the pilot services (still to be determined in the pre-running planning phase).

These common functional use cases will be briefly described in Chapter 2 and will receive a more complete specification in Chapter 3.

1.1 Scope and objectives of the deliverable

The present deliverable defines and describes the business service objectives of the STORK 2.0 Public Services for Business Pilot, Pilot 3. This means establishing the functional requirements and their high-level specifications which will be the basis for the implementation of the STORK 2.0 platform for cross-border eID interoperability and, in each pilot Member State, the integration of the national infrastructures for eID management and the eGovernment service portals through which pilot services are accessed.

Special attention is given to the Use case actors and the information they exchange, and to non-functional aspects such as data privacy, consent-driven eID management and the identification of mechanisms which will contribute to the governance and sustainability of the STORK 2.0infrastructure.

Additionally, service objectives must be described in a sufficiently concrete way so as to lead to the identification of specific goals and success indicators which will be used in the next planning phase to define implementable metrics which will be applied throughout the pilot running phase to monitor the successful deployment and take-up of STORK 2.0 services.

1.2 Methodology (of analysis and design)

As already mentioned, and as illustrated in the previous Table1, all piloting countries, and therefore a majority of Pilot 3 partners, will act in the role of Service Provide (SP) in the piloting phase. Some countries have partners in other specific roles (IDP and AP) and SPs in some countries will also act as IDPs and/or APs.

The initial engagement of partners focused on gathering a wide range of information about the SP service in each MS, its policies and objectives, actors, its demands on the STORK 2.0 cross-border infrastructure aimed at creating eID interoperability, potential risks and benefits. This information provided the input for the successive analysis producing the preliminary Milestone 5-3-1. Phone conferences, email, and bilateral communications were the principal means work was divided and carried out.

The main result which emerged from the start of the analysis was the general commonality of requirements among the entire group of pilot services. Different national implementations and different stages of maturity (in all senses – technological, national infrastructure, national legislation, market readiness) defined different degrees of complexity of eID services and different degrees of engagement with the STORK 2.0infrastructure, but the basic problems and requirements were largely the same from country to country. In particular, the two broad DOW use cases which were intended to differentiate between styles or complexity of the platforms for offering Public Services for Business, showed total overall similarity with respect to the purely cross-border eID-interoperability requirements they place on the STORK 2.0 infrastructure. Apparently, the need for public administrations to integrate their services, to adhere to international standards, to aim for the same objectives in terms of service quality and availability, have reduced the impact of the otherwise different national or local (ministry or department) implementations.

Thus, all pilot countries will require the core STORK 2.0 service of "Authentication on behalf of" i.e., the authentication of the end-user with verification of his/her powers to act on behalf of another legal or natural person.

The successive phases of analysis and service requirement specification focused on areas such as: definition of functional variations in the handling of powers (mandates), organisational differences in the group of actors involved in the services and in the future phases of piloting, evaluation of risks and assessment of benefits involved in service deployment. Moreover, the individual data requirements and integration requirements – the impact on SP legacy systems and procedures – was and still is being evaluated in order to correctly assess the viability of STORK 2.0services both before and during the running phase of piloting.

In order to refine the results of M5.3.1 and produce the present document, the Pilot 3 group continued to interact among itself and with other WPs – legal (WP3), technical (WP2 & WP4), market (WP7 & WP8) and coordination and monitoring (WP1 & WP6) – through face-to-face meetings and workshops, phone conferences, email and document sharing.

The current state of work has begun to address a central issue of the next phases of pilot planning and piloting, the engagement of a sufficient mass of actors in and around the national STORK 2.0infrastructure and the actions to ensure the involvement of a significant number of end-users to provide a useful evaluation of the services. These issues are addressed in preliminary fashion, in Chapter 7, below.

1.3 Quality Management

This document was shared and has been agreed by all participants. A preliminary draft was proposed with the contributions of the different partners involved in the pilot and electronically submitted to the whole group for revision.

Its contents have been checked by:

- Pilot partners: AT, NSSO, RIK, NL-MEAI, SK-MOF, SI-MIPA
- InfoCamere has edited and checked the whole document prior to QA.
- ATOS, as WP5 coordinator and partner in charge of Quality Management

A first version of the document was also submitted to ATOS for quality assessment and several review remarks were issued by ATOS team and incorporated to the final document.

Beyond that acceptance criteria have been defined which allow a measurement of the deliverable. The following Table 1 provides acceptance criteria for this specific deliverable:

Acceptance criteria	Norm	Process	Priority
Conform to STORK 2.0template	• Final Template issued by ATOS on 20-12-2012	Check against template by ATOS	High
Language & Spelling	• English (UK)	Review by IC	High
Deliverable in coordination with all partners	 The deliverable was iteratively developed in coordination with all partners. Decisions on content were taken using several conference calls, e-mail discussions and face-to-face meetings. 	Checked by IT-IC	High
Consistency with description in DoW	 D5.3.1 was developed as public deliverable according to content and scope defined in final version of DoW. Requirements were developed using conference calls as well as e-mail discussions. ATOS checked consistency with respect to DoW. 	Coordination among all partners and review by IT-IC and ATOS	High
Contents is fit for purpose	 Requirements were developed using conference calls as well as e-mail discussions. ATOS checked internal consistency and coherence of contents. 	Checked by IT-IC, ATOS	High
Delivered on time	• Pilot Technical & Business Objectives and Specifications (M12).	Checked by ATOS	High

Table 1: Acceptance criteria list for the deliverable

Legend:

- Acceptance criterion a description acceptance criterion
- Norm a description of the norm that is applied to measure conformance
- Process a description of the process that is used to test conformance
- Priority the priority to meet a acceptance criterion (Low = nice to conform to, Medium = important to conform to, High = necessary to conform to)

2 Overall Pilot Scope

As established in the STORK 2.0 Description of Work the objectives of the Pilot 3 activities are to implement, demonstrate and test cross-border eID interoperability for both persons and legal entities, including the handling of powers of representation, or mandates, between such entities. The work package tasks will be performed in existing public services of the Member States and Associated Countries. Thus, for the implementation of STORK 2.0 interoperability, the Pilots will not develop new applications or new administrative procedures for businesses, rather they will use a selection of eID-based services currently offered at different types of eGovernment portals, including the Points of Single Contact (PSC) which implement the EC Services Directive (2006/123/EU, [4]). Typically, company representatives, professionals or other individuals interested in working or doing business abroad go to the STORK 2.0 pilot portals for one or more of the following services:

- Registration of a company in a sectorial register of another country in order to engage in business abroad (DoW Use Case #1);
- Simple notification of service provision abroad as foreseen by the Services Directive (DoW Use Case #2);
- Registration of new legal entities (especially branch offices or secondary companies) in the official Business Register of another country (DoW Use Case #2);
- Requests for special permits, licenses, registrations, authorizations, declarations, etc. specific for economic activity sector or other product or service (DoW Use Case #2).

	UC #1 Enrolment in register	UC#2 - One-stop-shop Business Service Portals and Points of Single Contact		als and	
Country / Service Provider		Services Directive Procedures	Company Other Registration Service		Additional descriptions
AT/AT				Х	Business Service Portal access with single sign on to further business-related services
BE/NSSO	x				Limosa employee activity declaration
EE/RIK	Х				Company registration by legal representatives of foreign companies (PSC is separate portal, www.eesti.ee)
FR/ANTS			Х		Registration of branch office in France
GR/HMI		х			Apply to offer services in Greece
IS/SKRA		Х			Apply to offer services in Iceland

	UC #1 Enrolment in register	UC#2 - One-stop-shop Business Service Portals and Points of Single Contact		als and			
Country / Service Provider		Services Directive Procedures	Company Registration	Other Service	Additional descriptions		
IT/IC	х				Enrolment in Min. of Health and Min. Environ. company registers		
LT/LT-IS		Х	х		Apply to offer services in Lithuania; application for additional permits and licenses		
LU/TUDOR			Х		Company registration		
NL/NL-MEAI	Х				Farmer registration service		
PT/AMA				Х	Company role management (in Business Register)		
SK/SK-MOF		Х			Notification of service activity		
SI/SI-MIPA			Х		Registration of a "sole trader"		

Table 2: Summary of Pilot 3 SPs and services

When a company or other legal entity must use a service like those in Pilot 3 it is usually the legal representative, or another business or legal professional mandated by the legal representative, who takes care of all the necessary "paperwork", that is, goes online and becomes the end-user of an eGovernment service. This leads to the identification of the first common functional use case to be piloted by all the Pilot 3 services.

Common Functional Use Case #1. "Authentication and validation of authorisation to access service on behalf of a legal entity": a legitimate representative of a foreign business or other legal entity wishes to access a Pilot 3 service in order to act on behalf of that business or entity.

Primary scenario: A natural person with eID established in a foreign country wishes to access, for the first time, one of the STORK 2.0Pilot 3 services on behalf of a business (or other legal entity). The STORK 2.0infrastructure will assist in authenticating the identity of the end-user with the appropriate IDP in the end-user's country of origin. The existence of the business must also be verified and the necessary business attributes gathered from the Business Register (BR) or from some other indicated Attribute Provider for legal persons, again in the end-user's country of origin (other possibilities are discussed as variations). Finally, the end-user's authorisation to represent the business must be verified at the Business Register or with additional information gathered from the appropriate mandate authority¹. After receiving the confirmation and consent of the end-user, all the personal identification, legal entity identity and powers information will be sent to the SP.

¹ Note that the use of "role certificates" – i.e., eID instruments which in addition to personal identity information carry information about the person's powers to represent legal entities – is becoming more widespread and should soon be established as standard at the European level. This information will enrich, but not necessarily substitute the information on powers gathered from Business Registers and other sources.

Variations on the scenario.

Two-step authorisation to access service. Although it is generally assumed that key
information provided through STORK 2.0is in an automatically processable format, in
some cases the final authorisation to use the pilot service may require a back-office
administrative procedure that is off-line and manual. This is often due to one of two
causes: a lack of clear semantic interoperability (for example, in the description of
powers to represent or in the company status) or because of the need to read and
interpret free text fields.

Thus, the initial visit of the end-user may produce only a partial registration at the SP or at the eGovernment portal which houses the pilot service. Once the end-user authorisation is granted the SP can notify the end-user by email of his/her new status and include whatever link is appropriate to enter gain access to the procedure or even to complete the registration, if necessary.

After authorisation has been granted, successive attempts to access the service may once again require the same authentication of the end-user's identity and formal validation of her/his right to represent the legal entity, but, if there has been no change in the basic information STORK 2.0 provides, and no expiration of rights, then the first authorisation to use the service should remain valid and the end-user can directly enter the service.

- 2. To establish the end-user's right to represent the company it might be necessary to verify a chain of mandates passing through a series of legal entities and natural persons. Moreover, the power to represent might require a joint authorisation which would in turn limit the effective operation of the end-user. These cases will be further evaluated during piloting; STORK 2.0 will not implement specific solutions to support them in the near term.
- 3. An additional variation arises considering the wish for some SPs to simplify the enduser interaction by assisting the indication of represented entity by providing the user with a drop-down list of choices of companies. This list is the result of a query to the Business Register for the legal entities that are represented by the end-user immediately after the personal authentication has been performed. Presented with this list, the end-user will be given the following alternatives: choose one of the listed companies, change the indicated or default country of origin of the represented legal entity and repeat the query on the Business Register, or to just insert manually the full legal entity identifier as in the primary scenario. It might also be necessary to indicate a different Business Register and/or Mandate Provider. These variations require a more flexible, modular implementation of the STORK 2.0services for "Authentication on behalf of" than as described in the first version of the process flows analysed by WP4 and reported in Draft deliverable D4.2, [15].
- 4. Again, to improve end-user experience, the pilot imagines an SP that offers several STORK-enabled services, some of which require the simple STORK-1 authentication of personal ID information and others requiring "Authentication on behalf of". If a user is already authenticated, then his/her request for a service requiring "Authentication on behalf of" should not, if possible, require a second authentication, that is, unless the user explicitly requests a switch in eID. As in the previous variation, a more flexible, modular implementation of the STORK 2.0services for "Authentication on behalf of" would be sufficient to handle this case.

It might be useful to list a further variation in which a user who has already been authenticated to act on behalf of one business now wishes to act on behalf of a

- second business (always at the same SP the pilot is not suggesting to implement a single-sign-on). As above, it would be convenient for the end-user to avoid, if possible, repeated authentication of personal eID. This is useful for a businessman with several related companies or in the case of a business professional, such as an accountant or notary, representing several clients.
- 5. Another process variation occurs when the country of registration of the represented legal entity is different from the end-user's country for personal ID authentication. Although in general, there are difficult issues with the connection of multiple identities across MS borders Pilot 3 feels that it is entirely appropriate and consistent with STORK 2.0 goals and operations to interrogate a national business register using personal identifiers from another MS (or their STORK 2.0ID-pseudonyms). In the primary scenario this means using the end-user's home country identifiers to interrogate (via the C-PEPS and A-PEPS) an Attribute Provider in a third MS identified by the end-user as the country of registration of the represented entity. This is particularly relevant for those STORK 2.0Pilot 3 countries whose services will include just such registrations of foreign persons using their own national personal identifiers (such as EE, FR LU, PT, SI).

The following figure indicates a typical configuration (but not all the possibilities) of the actors involved in this use case and their lines of interaction. Additional process details will be furnished in Paragraph 3.2.1, below.

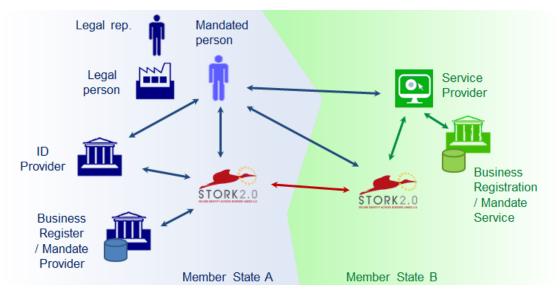


Figure 1: Actors and data flows for "common functional use case 1"

Observations: In over half of the different MS services offered in Pilot 3, the pilot service itself involves the establishment or the assignment of powers to represent a legal entity. For example the company registration procedure of Use Case #2 (in FR, LU and SI and for UC#1 in EE) involves naming a responsible person, a legal representative of the company being registered with the Business Register. Other services are directly concerned with Mandate Management, either at a central level in the case of official Attribute Providers (in AT and PT) or at a local level, limited to the specific "ad hoc" delegation of powers that occurs at eGovernment portals (in IT and NL). Analogous situations arise when the service deals with other personal qualification attributes such as in the employee registration service of UC#1 (BE). These are all examples of the general situation in which the end-user is called upon to insert identity data for another natural person who is not physically present. In such cases

problems of data privacy and even of data quality arise, and the STORK 2.0 infrastructure could help the SP manage these problems, as indicated in the second common functional use case, below.

Common Functional Use Case #2. "Nomination of a natural person for powers or company role": A previously authenticated legal representative of a foreign business accesses a pilot service and in using the service or its accessory functions must submit to the SP certain sensitive or reserved identity information regarding another natural person not physically present, for example, to delegate company representation powers or to otherwise specify the role or relation of another person to the company being represented.

Primary scenario: The pilot assumes that a legal representative of a foreign company has gained access to a pilot service (through the first common functional use case, Authentication on behalf of) and is involved in the process of service fulfilment. For any of a number of reasons (such as those cited in the observations, above), depending on the specific eGovernment service, it may be necessary to insert the identity attributes of a third party, a natural person, not physically present.

At this point STORK 2.0 could be called on to provide two separate services. First, since the Identity Attributes of a natural person may be subject to privacy regulations, in particular, to limitations on the cross-border transmission of certain data, it may be necessary to activate the appropriate C-PEPS to handle the gathering and anonymisation of sensitive data (in particular, using STORK 2.0 ID-pseudonyms). Additionally, as a second benefit of STORK 2.0, the quality of the data entered could be checked through the C-PEPS and corresponding IDP. In case of incorrectly inserted data, the C-PEPS could give the end-user the immediate opportunity to correct the problem, thus catching simple errors which in a future session might block the authentication of the newly mandated or nominated person and would require the first end-user to return to the service for correction. After performing these operations, the C-PEPS would send the correct and anonymised data back to the SP to complete the service.

Variations on the scenario. The same basic situation presents itself in other service variations, for example, when updating the legal representative in a register, or when dealing with services that handle other company qualifications like being an employee. From the STORK 2.0point of view these do not represent significant differences in process flow.

IMPORTANT NOTE: An initial legal analysis by WP3 together with STORK 2.0 service considerations of WP4 have indicated that implementing a "remote validation of ID attributes" as requested by this functional use case could open the STORK 2.0 infrastructure to abuse by persons seeking to discover and unlawfully appropriate valid identity attributes. It has been suggested that the scenario be handled through service-side workarounds involving, for example, a two-step procedure such as the following: The first end-user would complete all of the steps of the pilot service EXCEPT for the submission of the personal Identity attributes of the second, absent person. The service would then send a link to the first enduser who would communicate this link to the second person instructing him to follow the link and perform the required actions. These actions would include an ordinary STORK-1 authentication with the C-PEPS and IDP of the second person's home country to supply the personal identity information required by the service but that the first end-user was not allowed to submit. The second person would then explicitly or implicitly accept or reject the terms of the service (for example, accept or reject the assignment of powers) and the service would be fulfilled. In the interest of maximising security, a final notification link could be sent by email to the first end-user who would have the possibility of checking and confirming the transaction or indicating otherwise in the event that a misuse of the service had occurred.

The following figure indicates a typical configuration (but not all the possibilities) of the actors involved in this use case workaround. Additional process details of this 2-step workaround will be furnished in Paragraph 3.2.2, below.

In an effort to enhance as much as possible the benefits of using the STORK 2.0platform, Pilot 3 partners will continue to discuss and evaluate alternate ways to solve the above problem, for example, with procedures involving the validation of the second person's personal identity information based on his/her digitally signed request.

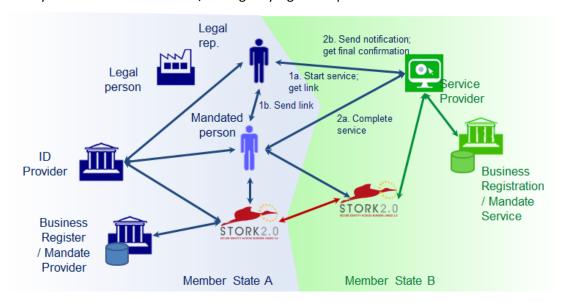


Figure 2: Actors and data flows for workaround for "common functional use case 2"

2.1 Technical & Business Goals

The STORK 2.0 infrastructure must provide the necessary eID management services to permit foreign persons and companies (or other legal entities), through their authorised representative, to access the online services for businesses as easily as do domestic or national users of these services – that is, using a national eID management system to gain access to online services abroad.

Concrete objectives of the pilot (as seen in the first column of Figure 3, below) can therefore be summarized as follows:

- Adapt or extend existing online Public Services for Businesses (enrolment in official registers or some of the services offered at the one-stop shop Business Services Portal or PSC) to cross-border services based on the exchange of identity attributes of the legal representative of the business (or legal entity) or of some other duly mandated person.
- Encourage the use of Public Services for Businesses by foreign users and legal entities by promoting the enlargement of the STORK 2.0circle of trust to directly include Attribute Authorities for legal persons, such as Business Registers and other institutional Mandate providers.
- Demonstrate and validate the effectiveness of STORK 2.0 facilities for user control of eID and strong data protection as extended to Public Services for Businesses and legal persons.

The primary goal of the requirements analysis is therefore to identify the main common functions that these public services will require from an international eID infrastructure, such as the one to be provided by STORK 2.0. In addition to the common features, certain country-specific regulations or service-specific functions will also be analysed and evaluated in a comparative manner to detect differences relevant to the pilot to guarantee that STORK 2.0 services will be widely applicable.

Many STORK 2.0 pilot 5.3 partners will directly act as Service Providers (SPs) and will be mainly concerned with offering their services to foreign businesses, but STORK 2.0partners will also help identify and supply information about the other actors, such as Identity Providers and Attribute providers, both at home and abroad, which are needed for all the Pilot 3 services.

Moreover, in addition to the strictly functional aspects of the STORK 2.0 infrastructure for cross-border interoperability, the pilots will also be concerned with evaluating - and in some cases, implementing and validating - the non-functional and often immaterial aspects of the creation and maintenance of trust in an organization such as the "STORK 2.0Circle of Trust". Identification of all the appropriate actors for the services is a first step in this direction, but several other measures will also be required both of other STORK 2.0 work packages, in particular, WP3, WP4 and WP7, as well as of other EC initiatives contributing to the sustainability of the results of STORK and STORK 2.0:

- Extension of the original STORK system of Quality Authentication Assurance (QAA) to cover the attribute assertions provided by the additional actors and services that will be part of STORK 2.0
- Evaluation of the need to formalise service quality and accessibility in terms of a STORK Service Level Agreement (SLA)
- Analysis of the broader consideration of governance of the circle of trust the rules for entering and participating in the STORK 2.0circle of trust, the internal procedures and organisations which guarantee continued respect for these rules, the means by which STORK 2.0maintains adherence to international policy and standards.

As mentioned above, Pilot 3 services are real eGovernment applications currently available at national portals and open to foreign customers in a somehow limited or less user-friendly way than that of domestic users. The pilot activity must therefore include efforts to involve of a wide group of actors and services in order to attract a sufficient number of end-users to permit a full analysis of STORK 2.0 pilot results (including costs and benefits).

The STORK 2.0 system offers advantages that will be felt by all the actors involved.

- Reduction of administrative paper processes
- Quicker, more automated work processes requiring less physical presence of all actors
- More up-to-date, accurate information, less susceptible to fraud
- Reduction of the administrative burden (costs, time, inconvenience) of public services for cross border entrepreneurs
- More users for the public service portals
- Better return on investment for portal services

- Greater movement and growth for national economies with strong contribution to single market goals
- Synergy with other PAs and economy of scale for national and international eID management services and infrastructure.

2.2 Strategic EU/MS Policies Supported

The pilot "Public Services for Businesses" aims at using cross-border eID interoperability to reduce administrative burden on businesses and avoid frauds in public business registers and eGovernment service portals - these are priorities in the EU policies and regulations. These goals are clearly in line with the objectives of the Digital Agenda for Europe ([18]) and in fact appear among the specific Key Actions of the Digital Agenda.

In particular, the success of the Pilot will have a clear impact on the Businesses (equal treatment at national and European level in dealing with the Public Administrations, reduction of administrative burden and faster services), for the governments (common online procedure also for foreign operators, avoid frauds, improved quality and security of services for businesses) and for the better functioning of the European Single Market (facilitation of company mobility in the EU, enhancement of the public services for business in general). For example, the 11th Company Law Directive 0 defines the rules and the obligations, at EU level, for companies to open their branches abroad and for the different administrative obligations during the life of the branch towards the Business Register of the Member State where the branch is located.

The Pilot 3 will also contribute to the take up of the Services Directive (in particular, Article 8 which states that all formalities and procedures should be "easily completed, at a distance and by electronic means, through the relevant Point of Single Contact", [4]); in fact, at the EUGO event "PSC Testing days (7-8 June 2011)" ([20])the Cross Border eID infrastructure has been voted as the most needed enhancement to support the development and the functioning of the PSCs and the Services Directive itself.

Other EC regulations involved in pilot services concern the enrolment in specific sectorial registers as a prerequisite to participation in national markets. Examples of these are found in the areas of Health and Environment (see [5], [6], [7]). Even the Common Agricultural Policy ([21]) contains digital aspects to which the NL STORK 2.0pilot is contributing in the areas of land-use, animals and animal products registration.

Thus, all Pilot 3 services contribute to a range of National policies concerning eGovernment services, the consolidation of the use of eID and the promotion of foreign business development.

2.3 Success Criteria

This chapter provides both an explanation of the objectives and goals of the Cross Border Public Services for Business Pilot and a detailed explanation of the success criteria of the pilot resulting from application of the STORK 2.0Benefits Logic method. This method is a means of formalising the achievements of the pilot in concrete "SMART" results (Specific, Measurable, Attainable, Relevant and Time Bound) that can be measured and evaluated using quantitative and qualitative metrics, at later stages of piloting.

An important aspect of the Benefits Logic method is the connection of the Pilot's "Business" success criteria to a set of Common Technical Criteria. These criteria include concepts generally applicable for electronic services such as Functionality, Interoperability, Security, Maintainability, Scalability, Flexibility, Reliability, Portability and Usability.

The STORK 2.0Benefits Logic method also links both the Business and Technical success criteria to the generic evaluation dimensions Use (Service Usage), Value (Business Value-added) and Learn (Lessons learned). The Benefits Logic method is explained in the Stork pilots Common Addendum ([16]). The approach aims at providing an evaluation of the Pilot with substantiated objective evidence to answer the question: *Do the results of the pilot match the expected results*?

The ex-ante evaluation of the Public Services for Businesses Pilot conducted by WP6 has reported that WP5.3 objectives are fully in accordance with the DoW and that a consistent trail from objectives to the use cases and success criteria exists. The evaluation also notes that at the present stage, it is difficult to define the precise metrics to be applied: these will be developed in the coming months when it becomes possible to verify the feasibility of obtaining each one of them from the information that will be available from, for example, system logs, user feedback forms, stakeholder surveys or other means.

From Pilot Objective and Goals to Business Success Criteria

According to the project DoW, the main objectives of STORK 2.0 Public Services for Businesses Pilot are:

- 1. To implement, demonstrate and test eID interoperability for both persons and legal entities, including the capability to mandate responsibility between entities, with an aim at achieving truly equal conditions for domestic and foreign enterprises.
- 2. To validate and test in real-life eID-based services and infrastructures of the Member States and Associated Countries (available to both domestic and foreign legal entities, thanks to the pilot, and in some cases including regional or local levels²) that will make use of the open and secure cross-border interoperability infrastructure of STORK 2.0, enabling new circles of trust between different stakeholders of different countries (validating the whole architecture as well as some basic governance issues).
- 3. To substantiate and evaluate the facilities for user control and strong data protection that lie at the core of the STORK 2.0 privacy-by-design approach.

This leads to the following more specific goals and success criteria:

² For example the NL pilot services for farmers, see paragraph 3.4.1.4.

Pilot Objectives

To implement, demonstrate and test eID interoperability for both persons and legal entities, including the capability mandate to responsibility between entities, with an aim at achieving truly egual conditions for domestic and foreign enterprises.

To validate and test in real-life eID-based services infrastructures of the Member States and Associated Countries (including regional or local levels in some cases) that will make use of the open secure cross-border interoperability infrastructure of STORK 2.0, enabling new circles of trust between different stakeholders different countries (validating whole architecture including governance issues).

To substantiate and evaluate the facilities for user control and strong data protection that lie at the core of the STORK 2.0 privacy-by-design approach.

Pilot Goals

To extend the original STORK trust framework to include new entities (legal persons) and relations (roles and mandates) as well as defining other needed or useful attributes of these entities.

To validate, implement and test the extended STORK 2.0 trust framework by operating services requiring

- authentication by attribute & identity providers of both physical and legal persons
- verification of role attributes using mandates
- interoperability of different authentication levels

To assess ease of use and takeup of cross-border e-ID services.

To validate, implement and test the extended STORK 2.0 trust framework in different eGov configurations: SPs, Identity and Attribute providers, national and local Public Authorities, eGov portals and technical service providers.

To connect the Pilot portals and eGov services to the STORK 2.0 platform for cross-border authentication and test the interoperability of connections made with a variety of log-in methods and tokens.

Business Success Criteria

Demonstrate, with the different Pilot services, a wide variety of combinations and configurations of the extended STORK 2.0 functions, roles and QAA levels.

Meet the deadline indicated in the DoW for public "go live" of all pilot services and achieve a reasonable service level during the Running Phase.

Achieve as wide a variety of cross-border interoperability possibilities (MS A vs. MS B) as technically and legally possible.

Activate a significant number of foreign users of the Pilot services via STORK 2.0 authentication.

Draft a detailed Test Plan and successfully execute a number of different test cases, reaching established minimum levels for business criteria such as

- reduction of administrative paper processes;
- more up-to-date, accurate information;
- more users;
- better ROI;
- greater movement and growth;
- synergy with other PAs.

Figure 3: Pilot Objectives

2.3.1 Common Technical criteria

Services developed and run within the pilot must adhere to the common criteria required for this kind of solutions. Basically, from a technical perspective, the results to be met by the services built and run in pilot 5.1 should adhere to the following criteria:

- Functionality: The services must provide the functionality required. Attributes must be correctly retrieved through the STORK 2.0 infrastructure, the integrity of these attributes must be assured and they must be put at the disposal of the service provider that will treat them in order to provide the service to the final user. The whole development must fit the functional requirements discussed throughout the project's development.
- Interoperability: Although, in this case, it is also a functional requirement, interoperability among all systems involved must be guaranteed.
- Security: Availability, integrity and confidentiality of data exchanged through the common infrastructure must be guaranteed. It is extremely important for the success of the pilot the "feeling" of the user on this aspect.
- Maintainability: The services and the infrastructure required to run them must be maintainable without incurring in "non-reasonable" costs.
- Scalability: The addition of new Service Providers, Attribute Providers and users must be easily dealt with by the system designed.
- Flexibility: Services and STORK 2.0 infrastructure must be, desirably, designed in a
 way that allows future development and adaptation: implementation of new services,
 integration, etc.
- Reliability: The aim of the pilot is to run real-life services, the user of the services run within the pilot must perceive them as reliable.
- Portability: The solutions adopted should, as far as possible, be portable to different platforms and environments.
- Usability: STORK 2.0 services must offer an acceptable degree of usability and, preferably, they should comply with commonly accepted standards (e.g. W3C Best Practices).

These criteria will be further elaborated in the future deliverables D5.3.2 and D5.3.3 where more detail will be provided.

2.3.2 Measurement and Analysis of results

The success of the project, at the end of the piloting phase, will be evaluated through concrete, measurable and objective results. These results will be used to demonstrate that both the technical and business objectives of the pilot have been met.

As mentioned above, the analysis will be made in terms of specific (still to be defined) metrics which contribute to three general evaluation perspectives:

- Use: measurable results related to the use of the services piloted (number of users, uptime of the services, ...)
- Value: results linked to the technical or business value added as a consequence of using STORK 2.0 enabled services (service provider estimations, users satisfaction, ...)
- Learn: lessons learned from the technical and business perspective (including legal and policy issues).

The overall picture of the evaluation scheme is shown in the following figure; metrics are only indicative at this stage:

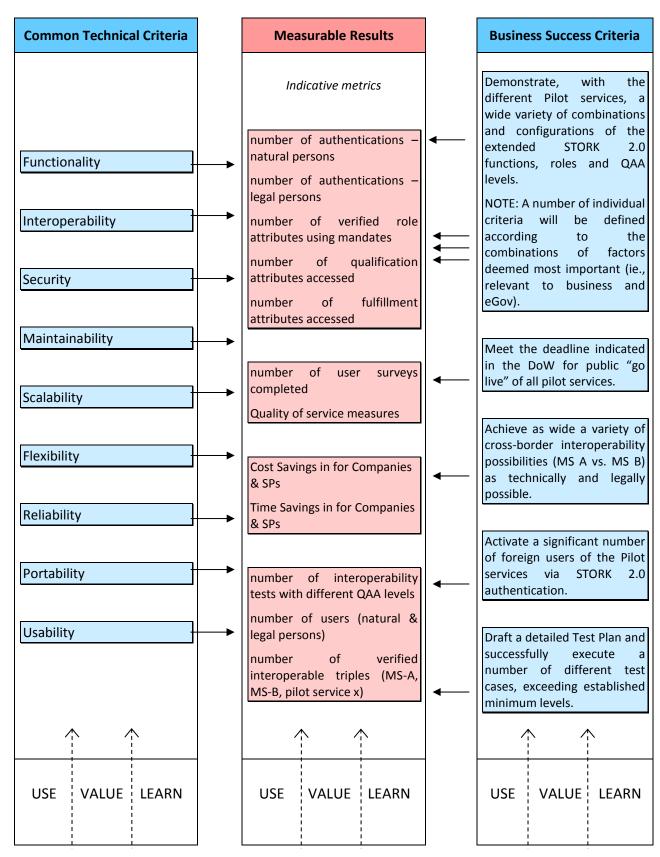


Figure 4: Evaluation metrics

3 Formalised Use Cases Descriptions (Requirements and Functional Analysis)

3.1 Actors Identification

For all the use cases, the main actors involved in the STORK 2.0 -enabled cross-border services for business are:

- A physical person acting on her/his own behalf to get access to a specific public
 administration portal or service. Typically an employee or a self-employed person, for
 example, for PSC services or services for a "Sole Trader" or "service provider" in the
 sense of Services Directive.
- A physical person acting on behalf of a company (legal entity) and possessing, directly or through legal mandate, a verifiable company role or authorisation – for example, full legal representative – used to access a public administration portal or service.
- A physical person acting on behalf of another physical person and possessing a legal mandate whose powers may authorize access to a specific public administration portal or service.
- An identity provider (IdP) that creates, maintains, and manages identity information for Entities and may provide User Authentication to Service Providers and other eID services.
- An attribute provider (AP) that can confirm the identity of a legal entity as well as the relationships between legal entities and natural persons, in particular the legal representation of one person by another (a legal or natural person acting on behalf of another legal or natural person) or the status of a natural person as employee of a legal entity. Important examples of AP will be the National Business Registers (responding to the company identity management requirements expressed in the 1st Company Law Directive ([1])) as well as other specific attribute providers such as mandate or role providers. All AP's may provide information for "attribute aggregation".
- A service provider (SP), the national public administration or Competent Authority that is the ultimate target of the STORK 2.0end-user. It is noted that such eGovernment portals often work in collaboration with other Public Administration portals and that services such as end-user registration and authorisation or Single Sign-On may be outsourced to or shared and/or federated with other portals.
- The STORK 2.0infrastructure consisting of its various components, service layers and actors (PEPS, V-IdP, ...)

The following table indicates the partners involved in the national services – it is noted that in all countries, the first partner listed will act as Service Provider. More information on the individual pilots and their portals is given in section 3.4, below.

Country	Partner Name	Partner full name	Role(s)
Use case 1 -	Enrolment to p	public registers	
Belgium	NSSO FEDICT	National Social Security Office SP Service Publique Federal Technologie De L'information Et De La Communication	
Estonia	RIK	Centre of Registers and Information Systems	SP, AP
Italy	IC	InfoCamere	SP, AP
Netherlands	NL-MEAI	Ministry of Economy, Innovation and Agriculture	SP
Use case 2 - Single Conta		Business Service Portals and Points of	
Austria	stria AT ARGE STORK.AT		SP
France CASSIDIAN ANTS		CASSIDIAN Secure Documents Office	SP AP
		Hellenic Ministry of Administrative Reform and eGovernance	SP
Iceland	IS-SKRA	Registers	SP
Lithuania LT_IS LT_MOI		State Enterprise Infrastructure Ministry of the Interior	SP, IDP, AP
Luxembourg	TUDOR	Centre de Recherche Public Henri Tudor	SP
Portugal	Portugal AMA PT-CMS Caixa Magica Software IRN Istituto de Registos e Norariado MULTICERT PT MULTICERT ITIJ ITIJ		AP e-security
Slovakia	SK-MOF	Ministry of Finance	SP
Slovenia	SI-MIPA	Ministry of the Interior and Public Administration	SP

Table 3: Summary of Pilot 3 Partners

The Actors that each Pilot 3 country will provide to implement the STORK 2.0 pilot are shown in Table 4 (P=Partner in STORK2.0; C=Committed agency; N=Not yet determined). More information on the actors provided by each MS in the pilot is given in section 4.2, below.

	Natural Persons			Legal Persons			
Service Provider / country	Identif. Provider	Authentic. Provider	Authoris. (Mandate) Provider	Identif. Provider	Authentic. Provider	Authoris. (Mandate) Provider	
AT / AT	С	С	Р	С	С	Р	
NSSO / BE	С	С	С	С	С	С	
RIK / EE	Р	Р	Р	Р	Р	Р	
ANTS / FR	С	С	Р	С	С	Р	
HMI / GR	С	С	Р	Р	Р	N	
IS-SKRA / IS	Р	Р	С	С	С	N	
IC / IT	С	С	Р	Р	Р	Р	
LT-MOI / LT	Р	Р	Р	Р	Р	Р	
TUDOR / LU	С	С	С	С	С	С	
NL-MEAI / NL	С	С	С	С	С	С	
AMA / PT	Р	Р	Р	Р	Р	Р	
SK-MOF / SK	С	С	С	С	С	С	
SI-MIPA / SI	С	С	С	Р	Р	С	

Table 4: Summary of available Actors

3.2 Structured Use Case Specification

3.2.1 Structured specification for Common Functional Use Case #1: Authentication and authorisation to access service on behalf of a legal entity

The legal representative of a company (or legal entity) wants to access the Pilot service of another country on behalf of her/his business. The main steps will be:

- 1. The legal representative accesses the eGovernment business service portal and requests a service which requires the authentication of his/her personal identity as well as the validation of his/her rights to represent a specific company (or legal entity). After ascertaining that the end-user comes from another MS (i.e., uses an eID from another MS) the SP redirects the transaction to the appropriate STORK 2.0interface (for simplicity, S-PEPS).
- 2. The S-PEPS receives the country of origin for personal ID authentication either from the end-user or from the SP, and passes the transaction to the corresponding C-PEPS. If the country has more than one IDP then the appropriate authority will be indicated by the end-user along with the information in the following steps.
- 3. The C-PEPS asks the end-user to provide the unique identifier of the represented business or legal entity. If more than one Business Register is present, or if there is more than one Attribute Provider (for mandates of company powers), then the end-user might also have to choose the appropriate authority from a list of

possibilities offered by the STORK 2.0infrastructure. Otherwise, the requests for attributes will be handled automatically by the C-PEPS, after the end-user has given consent to gather the information requested by the SP.

- 4. The STORK 2.0 infrastructure contacts the appropriate attribute providers (Business Register and official Mandate Providers) and requests the end-user's consent to furnish the gathered data to the SP.
- 5. Having obtained consent, the data will appear in the appropriate fields of the SP user validation (or registration) form, and the SP will determine whether or not to grant authorisation for further service access to the end-user.

NOTE: The main flow of events assumes that powers information are supplied to the SP in a machine processable format so that granting access to the service will be an automatic operation. Since this is not universally the case, for example information supplied by Business Registers regarding powers of representation is often in free text format, the SP might have to implement an alternate flow as indicated by the two-step variation mentioned in the introduction of Chapter 2 in which the SP validates the end-user's powers as an off-line, back-office procedure using email, or equivalent, to inform the end-user of the results of the validation.

Preconditions:

ID	Actor	Description
ACCESS-PRE-01	Legal Rep	Environment requirements
		A legal representative accesses a pilot service portal using a suitable web browser (on PC or tablet or similar device with internet connection and a moderately-modern java script-enabled web browser) with token reader, if needed.
ACCESS-PRE-02	Legal Rep	Authentication availability
		The legal representative and the second nominated person both have eIDs from STORK 2.0-enabled member states (ie., eID is supported by the STORK Interoperability Layer and identity attributes required for authentication through STORK can be provided).
ACCESS-PRE-03	AP	Business validation (unique ID and attributes)
		The represented business or legal entity is officially registered in a STORK 2.0-enabled member state with a unique identifier and the attributes required of the SP can be provided.
ACCESS-PRE-04	AP	Availability of Power attributes (for authentication on behalf of)
		The powers to represent the business or legal entity are registered with Business Registers or other Attribute Providers a STORK 2.0-enabled member state and can be provided to the SP to prove the qualifications of the legal representative.
ACCESS-PRE-05	Company (Legal entity)	Registration in the Business Register
		The company (or legal entity) to be represented is, in fact, registered with the appropriate national authority (in the end-user's home country, in the primary scenario; in another country as a variation of the primary scenario).

ID	Actor	Description
ACCESS-PRE-06	SP	SP is STORK-enabled
		The Service Provider is recognised and integrated with the national STORK 2.0 infrastructure (and circle of trust), in particular, it is allowed to use STORK 2.0to authenticate end-users and to retrieve attributes concerning legal entities and their representatives.

Table 5: Preconditions for Common Functional Use Case #1

Postconditions³:

ID	Actor	Description
ACCESS-POS-01	Legal Rep	Access to service on behalf of a legal entity
		The legal representative is authenticated, powers have been validated and access to the pilot service has been granted.
ACCESS-POS-02	SP	User Registration
		The Service Provider, according to the needs of the service, has registered the Legal Representative and/or the company as a "user" of the service.

Table 6: Postconditions for Common Functional Use Case #1

Main Flow of events:

ID	Actor	Description
ACCESS-MFE-01	Legal Rep	a legal representative accesses the business service portal
		A legal representative of a business or legal entity tries to access a Pilot 3 eGovernment service requiring a logon and presuming the intention to represent a company (or legal entity).
ACCESS-MFE-02	Legal Rep	legal representative indicates eID country
		Upon determining the fact that the s/he comes from a foreign country, the legal representative is requested (by the SP) to indicate the country where his/her eID can be authenticated.

³ Note that successful service fulfilment – for example, enrolment of a company in a government register or in the official national Business Register, or any other completion of the main service use cases and sub-use cases – is not a post condition of the STORK authentication on behalf of operation. That is, the successful completion of the STORK service is instrumental in the SP's decision to grant or deny the end-user authorisation to access the requested service, but does not imply the successful completion or fulfilment of that service. This comment is relevant for the definition and interpretation of service success criteria and the related evaluation metrics.

ID	Actor	Description
ACCESS-MFE-03	SP	SP requests end-user authentication and business attributes for authorisation
		The Service Provider requests the STORK infrastructure (S-PEPS) to activate the processes of end-user authentication, validation of company identification data and the gathering of powers information which will authorise the legal person to act on behalf of the company. The SP must indicate which information is required or not, as well as indicating the accepted STORK security levels (QAA) for the authentication and business attributes (see chapters 4 and 5 for additional details).
ACCESS-MFE-04	Legal Rep	Identification of represented business or legal entity
		The legal representative is requested (by the C-PEPS) to provide the unique identifier which will be used to validate the business or legal entity and retrieve attributes.
ACCESS-MFE-05	Legal Rep	Indication of APs
		If necessary, the legal representative is requested to indicate the appropriate IDP, Business Register and Attribute Provider(s) to be contacted by the STORK 2.0 infrastructure for personal authentication and for validation of business registration and attribute gathering.
ACCESS-MFE-06	Legal Rep	Consent to gather authentication and company attributes
		The Legal representative authorises STORK 2.0 to retrieve attributes from the indicated identity provider, Business Register and Attribute Provider(s). The legal representative may choose not to transfer some or all optional attributes.
ACCESS-MFE-07	Legal Rep,	Authentication of eID of Legal representative
	IDP	The legal representative performs the MS-specific authentication procedure of his/her home country.
ACCESS-MFE-08	Business	Attribute gathering
	Register, APs	The STORK 2.0infrastructure validates the company identifier with the Business Register and retrieves the necessary company attributes. Information on the powers of representation are retrieved from the BR and/or the indicated APs.
ACCESS-MFE-09	Legal Rep	Consent to deliver
		The Legal representative consents to the STORK 2.0request for permission to deliver the gathered data to the SP.
ACCESS-MFE-10	SP	Receipt of delivered data
		The service provider receives the final STORK 2.0 security assertion (SAML token) from the STORK 2.0infrastructure.
ACCESS-MFE-11	SP	Evaluation of end-user authorisation
		The SP procedure uses the information received from STORK 2.0to automatically grant or deny access to the portal according to the local service logic.

Table 7: Main Flow of events for Common Functional Use Case #1

Alternative Flows:

ID	Actor	Description
ACCESS -ALF-04-01	SP	Alternative to ACCESS-MFE-04.
		The eID country of the legal representative does not meet the SP requirement on QAA for personal credentials. Main flow of events is interrupted with failure message sent to SP. Postconditions don't apply.
ACCESS -ALF-06-02	SP	Alternative to ACCESS-MFE-06.
		The SP has requested mandatory attributes which are not available from the APs or which do not satisfy requested AP-QAA levels. Main flow of events is interrupted with failure message sent to SP. Postconditions don't apply.
ACCESS -ALF-06-03	Legal Rep	Alternative to ACCESS-MFE-06.
		The legal representative does not grant permission to retrieve a minimum set of attributes. Main flow of events is interrupted with failure message sent to Legal Representative. Postconditions don't apply.
ACCESS -ALF-07-04	Legal Rep	Alternative to ACCESS-MFE-07.
		The legal representative does not possess valid eID. Main flow of events is interrupted with failure message sent to Legal Representative. Postconditions don't apply.
ACCESS -ALF-09-05	Legal Rep	Alternative to ACCESS-MFE-09.
		The legal representative does not grant permission to deliver the retrieved attributes. Main flow of events is interrupted with failure message sent to SP. Postconditions don't apply.

Table 8: Alternative Flows of events for Common Functional Use Case #1

Variations on the main flow of events.

Two-step authorisation to access service.
 The pilot assumes that the information provided to the SP in the final step of the Main Flow, ACCESS-MFE-10, is NOT sufficient to automatically grant or deny the enduser authorisation to the SP service (e.g., necessary information is contained in free-text fields). The following steps will therefore be necessary to complete the procedure and would replace ACCESS-MFE-11:

ID	Actor	Description
ACCESS-VAR1-11-01	SP	Offline evaluation of end-user authorisation
		The SP will evaluate the information gathered through the STORK 2.0 procedure, eventually interpreting the contents of free-text fields in accordance with national regulations in order to determine the authorisation status of the end-user.
ACCESS-VAR1-11-02	SP	Notification of grant or denial of authorisation The SP will notify the end-user (by email or other channel) of the results of the evaluation of his/her authorisation to access the SP service on behalf of the indicated company.

Table 9: Variation 1 on Main Flow of events for Common Functional Use Case #1

2. More complicated models of powers.

To establish the end-user's right to represent the company it might be necessary to verify a chain of mandates passing through a series of legal entities and natural persons. Moreover, the power to represent might require a joint authorisation which would in turn limit the effective operation of the end-user. These cases will be further evaluated during piloting; STORK 2.0 will not implement specific solutions to support them in the near term and no further analysis is provided here.

3. Simplified indication of represented entity.

In order to simplify the end-user insertion of data some SPs may wish to provide the user with a list of companies to choose from, based on a query to the Business Register for the legal entities that are represented by the end-user. This query – the existence of which must be added as a new precondition for the present variation – would be involved immediately after the STORK-1 personal authentication has been performed. The following steps would replace ACCESS-MFE-04 in the Main Flow:

ID	Actor	Description
ACCESS-VAR3-04-01	Legal Rep,	Authentication of eID of Legal representative
	IDP	The legal representative performs the MS-specific authentication procedure of his/her home country.
ACCESS-VAR3-04-02	C-PEPS	Request list of represented legal entities
		The C-PEPS invokes the query to national Business Register and receives a list of companies represented by the person authenticated in the previous step.
ACCESS-VAR3-04-03 Legal R C-PEPS	Legal Rep,	Identification of represented company
	C-PEPS	The legal representative is requested (by the C-PEPS) to choose the desired legal entity from the list received from the BR, or alternatively (or in case the list is empty) to directly provide the unique identifier which will be used to validate the business or legal entity and retrieve attributes.

Table 10: Variation 3 on Main Flow of events for Common Functional Use Case #1

The procedure then continues with ACCESS-MFE-05 as in the Main Flow, except ACCESS-MFE-07 would be skipped, as the eID has already been authenticated.

4. Avoiding repeat authentications.

An end-user of a Pilot 3 service that has already been authenticated with either the simple STORK-1 procedure or with the more complete "Authentication on behalf of" should not have to repeat the authentication procedure of his/her personal eID, if possible, when using the same Pilot 3 service more than once (for example, when acting on behalf of different legal entities) or when using different services provided by the same SP. This may not always be possible, for example when role attributes are carried on the physical eID token and must be extracted as part of the basic authentication procedure, or when the use of STORK 2.0 pseudo-IDs prevents the reuse of the end-user's unique identifier.

Otherwise, without going into the details of the variation on the main flow, the SP would request an "Authentication on behalf of" service however with the value of the

end-user's unique already provided. The STORK 2.0 infrastructure would then activate only the necessary steps of the Main Flow (or of one of the variations).

5. Country of represented legal entity different from end-user's home country for eID authentication.

As Pilot 3 services begin to be used in real-life situations, more and more businessmen will be using their home eID tokens to identify themselves as representatives of companies from different MS. Thus, in addition to indicating the home country for eID authentication as in ACCESS-MFE-02, it will be increasingly necessary to indicate the country of registration of the represented business or legal entity. This may require the C-PEPS to contact a third country's PEPS, the "A-PEPS", to gather attribute information, but the pilot assumes that the end-user's unique identifier remains that of the home country. No connecting of multiple identities is required. We do not go into the further details of this variation on the Main flow.

3.2.2 Structured specification for workaround for Common Functional Use Case #2: Nomination of a natural person for powers or company role

A previously authenticated legal representative of a foreign business uses a feature of a pilot service that requires the submission of sensitive or reserved identity information regarding another natural person who is not physically present. Such features may include the assignment of company powers or the creation of mandates. The following procedure will guarantee that such information is handled with appropriate respect of privacy, security and data quality, and without excessively complicating neither the end-user experience, nor the SP online service

- 1. The legal representative fills out all the information required by the pilot service except for the personal identity information on the nominated person who is not present.
- 2. The SP service sends an email to the legal representative containing a link and instructions for the second person on how to connect to and complete the procedure.
- 3. The legal representative forwards this email to the second party, the nominated person.
- 4. The second person connects to the service, is authenticated with the standard STORK-1 personal eID authentication which furnishes the required identity information to the SP.
- 5. The second person may furnish the SP with additional information, such as confirmation of role or acceptance of powers.
- 6. Upon completion of the procedure, the first end-user, the original legal representative of the business or legal entity, will receive an email notifying him/her of the successful completion of the service and possibly requiring active final confirmation – as an additional security measure against both errors and fraud.

Preconditions:

ID	Actor	Description						
NOMINAT-PRE-01	Legal Rep	Environment requirements						
		A legal representative accesses a pilot service portal using a suitable web browser (on PC or tablet or similar device with internet connection and a moderately-modern java script-enabled web browser) with token reader, if needed.						
NOMINAT -PRE-02	Legal Rep	Authentication availability						
		The legal representative has eID from a STORK 2.0-enabled member state (ie., eID is supported by the STORK 2.0Interoperability Layer and identity attributes required for authentication through STORK 2.0 can be provided).						
NOMINAT -PRE-03	SP	SP is STORK-enabled						
		The Service Provider is recognised and integrated with the national 2.0 infrastructure (and circle of trust), in particular, it is allowed to use STORK 2.0to authenticate end-users and to retrieve attributes concerning legal entities and their representatives.						

Table 11: Preconditions for Common Functional Use Case #2

Postconditions:

ID	Actor	Description
NOMINAT -POS-01	Legal Rep	Access to service on behalf of a legal entity
		The legal representative is authenticated, powers have been validated and access to the pilot service has been granted.
NOMINAT -POS-02	SP	Insertion of ID information on nominated person
		The Service Provider, according to the needs of the service, has gathered personal identification information on two natural persons for use in a single administrative procedure without infringing individual rights or privacy.

Table 12: Postconditions for Common Functional Use Case #2

Main Flow of events:

ID	Actor	Description
NOMINAT-MFE-01	Legal Rep	a legal representative accesses a pilot service
		A legal representative of a company or other legal entity accesses a Pilot 3 eGovernment service as in the Common Functional Use case #1 (parag. 3.2.1) .
NOMINAT-MFE-02	SP	SP sends instructions on completion of service
		The Service Provider sends the legal representative instructions on how to complete the service.

ID	Actor	Description					
NOMINAT-MFE-03	Legal Rep	The legal representative forwards the instructions to the second party (the nominee)					
		The legal representative forwards the email to (or otherwise informs) the second person instructing him/her to connect to the service and submit the required information to the SP's pilot service.					
NOMINAT-MFE-04	Nominee	The nominee accesses and completes the SP service					
		The second person connects to the service via STORK-1 authentication; personal identity information is furnished through authorised STORK 2.0channels with the consent of the nominee.					
NOMINAT-MFE-05	SP	SP notifies of completion of service					
		The Service Provider notifies the legal representative of the successful completion of the service, and may (optionally) require the legal representative to check and confirm the data received (within the limits of data privacy).					

Table 13: Main Flow of events for Common Functional Use Case #2

Alternative Flows:

ID	Actor	Description
NOMINAT-ALF-04-01	SP	Alternative to NOMINAT-MFE-04.
		The QAA level for authentication of the nominated person does not meet the SP requirement on QAA. Main flow of events is interrupted with failure message sent to SP. Postconditions don't apply.
NOMINAT-ALF-04-02	Nominee,	Alternative to NOMINAT-MFE-04.
	SP	The nominee does not grant permission to deliver the retrieved attributes. Main flow of events is interrupted with failure message sent to SP. Postconditions don't apply.
NOMINAT-ALF-04-03	SP, IDP	Alternative to NOMINAT-MFE-04.
		The SP has requested mandatory attributes which are not available from the IDP or which do not satisfy requested QAA levels. Main flow of events is interrupted with failure message sent to SP. Postconditions don't apply.

Table 14: Alternative Flows of events for Common Functional Use Case #2

- 3.3 Activity Diagrams and process flows for Common Functional Use Cases
- 3.3.1 Activity Diagram and process flow for Common Functional Use Case #1: Authentication and authorisation to access service on behalf of a legal entity

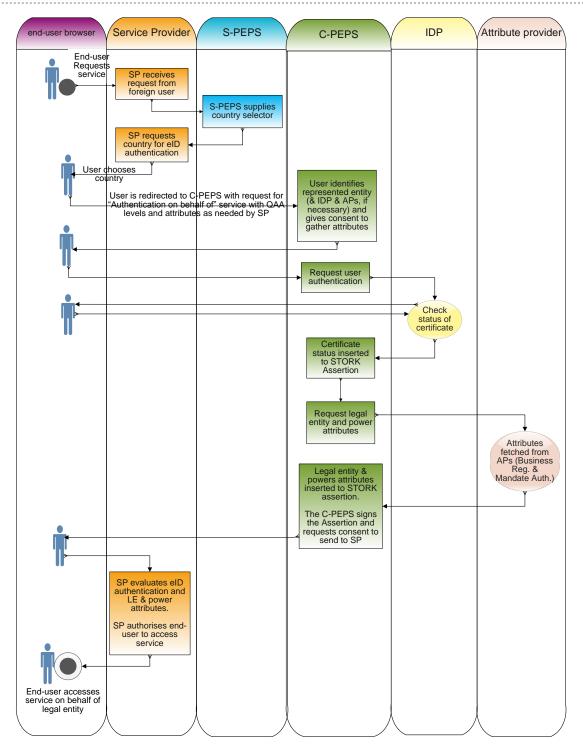


Figure 5: Sequence diagram for Common Functional Use Case #1: Authentication and authorisation to access service on behalf of a legal entity

- 1. The end-user requests a service from the SP which requires authorisation to act on behalf of a Legal entity
- 2. The SP ascertains that the end user is from a foreign country and receives the country selector from the national STORK 2.0 infrastructure (S-PEPS)

- 3. The end-user indicates his country of origin and the SP request for the STORK 2.0 "Authentication on behalf of" service is redirected from the user browser to the appropriate foreign STORK 2.0 infrastructure component (the C-PEPS).
- 4. In the case of multiple providers, the end-user indicates the appropriate IDP and business APs to the C_PEPS, provides the unique Legal entity identifier of the represented entity and consents to the gathering of the attributes required by the SP possibly refusing some non-mandatory attributes.
- 5. The C-PEPS contacts the IDP which engages the end-user for authentication of personal eID credentials, returning the results to the C-PEPS which continues with the validation and collection of the attributes of the Legal entity and of the end-users powers to represent the legal entity. More than one AP may be contacted in this process.
- 6. The C-PEPS prepares a signed security assertion (SAML token), receives the end-user's consent to send it to the SP and then sends it using the standard browser redirect method employed by all STORK 2.0 communications.
- 7. The SP evaluates the results of the authentication and attribute validation and grants access to the end-user acknowledging his/her rights to represent the indicated Legal entity (LE).

3.3.2 Activity Diagram and process flow for Common Functional Use Case #2: Nomination of a natural person for powers or company role

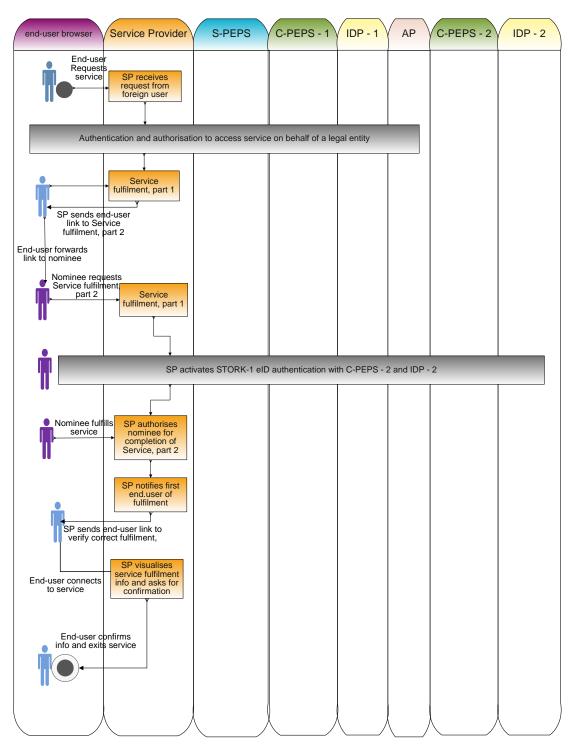


Figure 6: Sequence diagram for Common Functional Use Case #2: : Nomination of a natural person for powers or company role

- 1. An end-user requests a service from the SP and is granted access to act on behalf of a legal entity as described by the previous procedure, Common Functional Use Case #1.
- 2. The end-user wishes to nominate a second person who is not present for a power or company role and he completes the service up to the point that personal identity information for the second person is required.
- 3. The SP sends the end-user a link which is forwarded to the person to be nominated.
- 4. The nominee connects to the service, is authenticated with the basic STORK-1 validation of credentials and completes the fulfilment consenting to the transfer of eID credentials and supplying any additional information the SP may require. Please note that the Activity diagram in Figure 6 generalises the description of the CFUC#2 given in paragraph 3.2.2 in that the nominee is allowed to come from a country possibly different from the country of the first end-user. Such variations are further illustrated in section 6.4, below, to give an idea of the variety of cross-border situations that may arise and to which the STORK 2.0 infrastructure will respond.
- 5. The SP notifies the original end-user of the successful completion of the procedure and invites this user to check and confirm the data provided (respecting the data privacy of the nominated person) in order to avoid errors or abusive or fraudulent completion of the service.

3.4 User Interfaces (existing at each SP)

3.4.1 Use case #1. Enrolment to public registers

European Legislation has increased some of the administrative obligations for companies in order to protect consumers, workers and the environment and/or to protect the Member States interests when dealing with foreign enterprises. Such obligations have created the need for companies to enrol in special national registries in order to participate in cross-border markets. STORK 2.0 solutions can simplify the procedures involved in such registrations.

3.4.1.1 Belgium

The Belgian LIMOSA-project (www.limosa.be) was implemented following a decision of the Belgian government (see [10], [11], [12], [13]) to establish a system of monitoring of all forms of foreign activity as an employee, self-employed person or trainee, sent to work temporarily or partially on Belgian territory.

Ultimately, the LIMOSA project aims to set up an international and multilingual portal site (available in in Dutch, French, English and German) where employers and self-employed people who are going to work in another country, can enter all their declarations or file their applications through a single point of contact.

The majority of the problems in consulting and interpreting the LIMOSA system results from the fact that foreign enterprises are not correctly identified. As a result of minor differences between different declarations for the same employer (error in the name, different abbreviations, slight differences in the address, ...) foreign employers may have multiple listings in the database of the LIMOSA system. These multiple identifications create difficulties in consulting the data and extracting reports and statistics. The businesses involved in cross border employment are affected negatively by this lack of data quality. The STORK 2.0 platform with its possibilities to authenticate natural and legal persons and

validate mandates will be used to improve the quality of data regarding accurate business information.

Additionally, the expected gains in using LIMOSA include the following:

- •shorter processing times through the digital exchange of data between all relevant agencies concerning the work of foreigners in Belgium, as well as the simplification and improved coordination of procedures;
- •the availability of a complete electronically-based dossier on foreign workers;
- •the possibility of online consultation;
- •the availability of policy information.



Figure 7: The LIMOSA service (BE), part 1

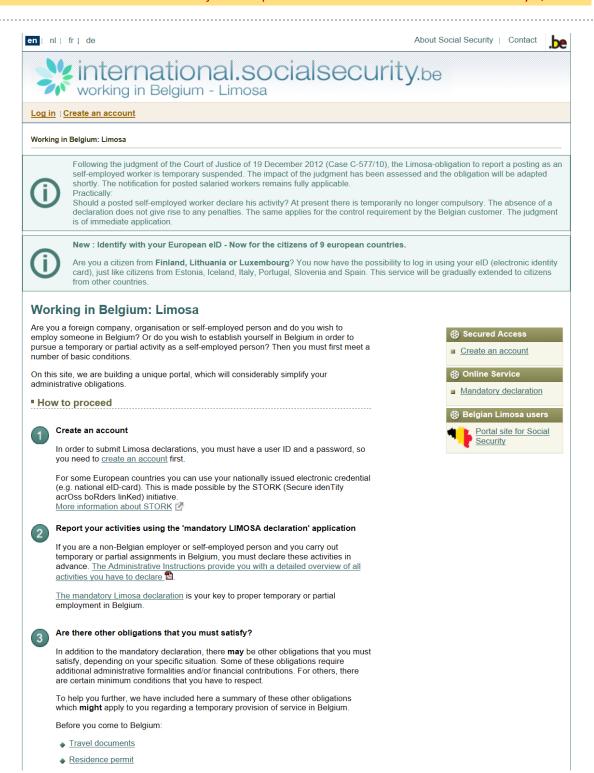


Figure 8: The LIMOSA service (BE), part 2

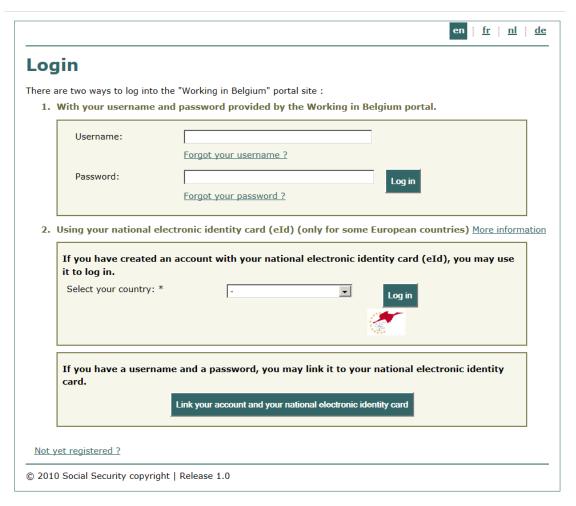


Figure 9: The LIMOSA service (BE), part 3

3.4.1.2 Estonia

In Estonia it is possible to establish a company within 18 minutes without leaving your home (ettevotjaportaal.rik.ee). To enter the system, you will have to authenticate yourself with the eID. In Estonia, every citizen has an ID card (eID) and easy access to the internet. Company Registration Portal, as it is called, provides the entrepreneur with the possibility to handle all communication with the Estonian business register through the portal without any paperwork.

Estonian legal entities can use the Company Registration Portal as well, when their legal representative authenticates to the system. A service that enables to validate the representation right of a person to a legal entity is a must in this case.

The Estonian Pilot 5.3 will involve the integration of STORK 2.0 services to the Company Registration Portal in order to validate foreign entrepreneurs (physical persons) and their right to legally represent a legal entity from another country.

The advantages which the Estonian Business register hopes to achieve through the STORK 2.0 project include:

- More users for Company Registration Portal which leads to greater investment in national economy.
- Less paperwork in the registration process
- A more automated work process leading to quicker administrative procedures
- Future side benefits such as the enabling of electronic B2B contracts

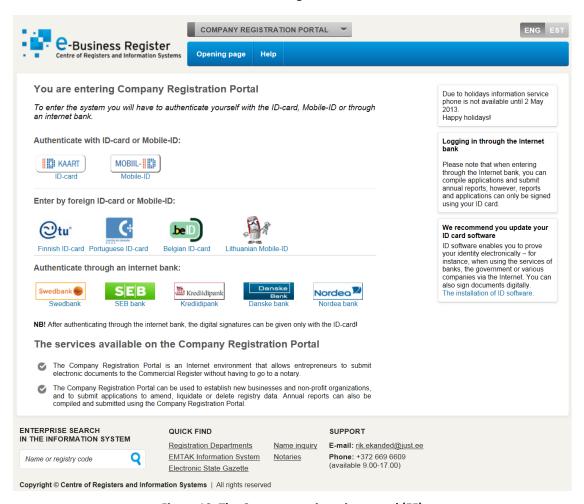


Figure 10: The Company registration portal (EE)

3.4.1.3 Italy

In Italy, all medical devices manufacturers, Italian or foreign, in order to operate in the Italian market are obliged, by Italian and European legislation (see [5], [6], [7]). to subscribe to a special directory managed by the Italian Ministry of Health. The portal **www.impresa.gov.it** provides domestic companies with a system of identification and authentication based on digital certificates, and directly accesses the Italian Business Register to check the powers of the legal representative of the company. The portal also provides specific functions to manage eMandates between legal persons and physical persons. These mandates are "local, ad hoc" mandates whose validity is limited to the Public Administration services offered at the impresa.gov portal. A similar system is in place at the Netherlands government portal described in the next section.

In a perfectly analogous manner all manufacturers of electrical equipment involving batteries and accumulators must be inscribed in the "registry of electrical and electronic wastes" and the "registry of batteries producers" managed by the Ministry for the Environment.

Each service requires foreign companies to fill out paper-based forms and provide paper documentation to comply. The STORK 2.0 pilot will implement and test online cross-border solutions for legal persons eID management and the management of "temporary mandate to other legal person" which is one of the current paper based solutions for foreign operators.

The potential advantages in the adoption of STORK2.0 solution are:

- The response time for an account request and its activation is dramatically reduced by about a month in the medical device manufacturers context
- EU companies will be in the position of operating directly and will not be forced to interact with the Central Administration upon traditional (paper based) instruments, with service quality improvements, equal conditions and lower costs.
- The quality and correctness of data will improve as well and will be uniformed



Figure 11: The impresa.gov portal - part of the "company-in-a-day" one-stop-shop (IT)



Figure 12: The Italian PSC, the "company-in-a-day" one-stop-shop (IT)

3.4.1.4 Netherlands

In the Netherlands, the Agencies of the Ministry of Economic Affairs, Agriculture and Innovation provide online services to about 80.000 farmers through the portal www.DR-loket.nl (operated by the National Service for the Implementations of Regulations). Online services are for example the application for subsidies, export permits and registration of cows and other animals. Cross border agricultural entrepreneurs have the same rights and obligations as entrepreneurs from the Netherlands. STORK 2.0 eID solutions will reduce administrative paperwork and provide services which are more up-to-date, accurate and less susceptible to fraud, thereby reducing the administrative burden of public services for cross border-entrepreneurs. By doing this a level playing field is created for farmers operating in the same region, independent of their country of origin.

By using the national eID solutions (like Belpic in Belgium) via the STORK 2.0 framework non-Dutch legal entities will be able to use hundreds of online services already available in the Netherlands. This will expand the market of these services – thereby helping to grow the Dutch economy – and result in

- a reduction of administrative paper processes,
- more up-to-date, accurate information,
- a system which is less susceptible to fraud,
- reduced administrative burden of public services for cross border entrepreneurs.

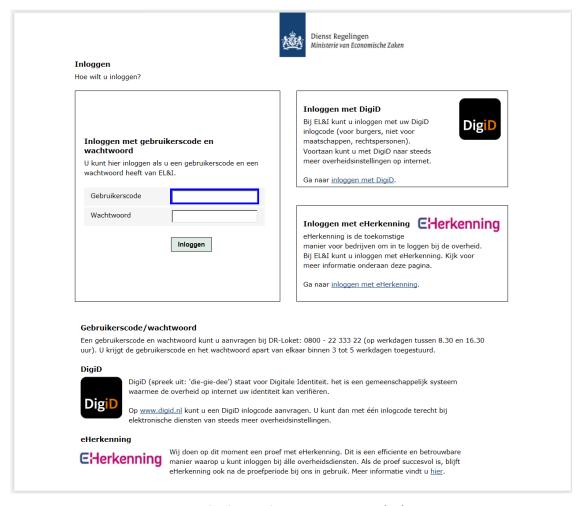


Figure 13: The portal for farmers' goods and services (NL), part 1

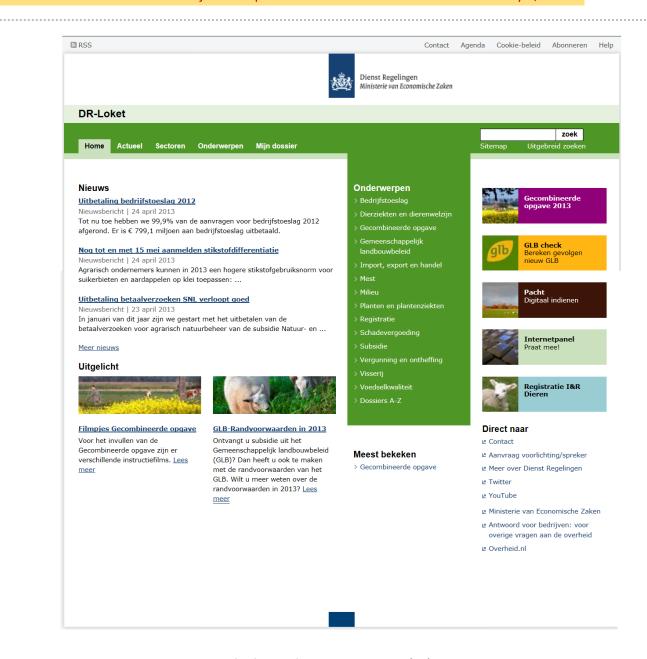


Figure 14: The portal for farmers' goods and services (NL), part 2

3.4.2 Use case **#2.** One-stop-shop Business Service Portals and Points of Single Contact

The proliferation of one-stop business portals, in particular the Points of Single Contact, PSC, created by the EC Services Directive, offers an important opportunity to foreign companies to develop their activity abroad. STORK 2.0 can help companies access the services offered at these portals with the same ease as domestic companies, reducing the overhead and "paperwork" required in establishing one's identity and receiving authorisation to use the services. Moreover, as eGovernment services become increasingly integrated at the national level, the value of the STORK 2.0 international eID interoperability is multiplied.

3.4.2.1 Austria

In Austria, the STORK 2.0 solutions will be tested with the one-stop-shop Business Service Portal (www.usp.gv.at) launched by the Austrian Public Administration on the 1st of January 2010.A representative of a non-Austrian company should be able to use his national eID to authenticate to the USP portal and use electronic services for his company. The USP portal offers a set of services to businesses.

The first application that has been identified being attractive for foreign users is "Notification of services" as a real-world use case to support STORK. The application covers notification under trade regulation that is required for cross-border provision of certain regulated services by entrepreneurs or companies. The notification needs to be done upon commencement of providing the service in Austria and needs to be renewed annually. Therefore, enabling this application via STORK 2.0 electronically is given priority, as it is assumed to reduce administrative burden and seems particularly attractive for SMEs in border regions. Similarly, electronic registration of businesses by single traders through USP is applicable to foreign users and seems interesting in border regions.

As a single electronic window to business services, the USP portal is continuously extended. The single-sign-on functions to other eGovernment services are aimed at in STORK 2.0. Such other services include tax online, or the electronic data interchange with the health and social security system — both being comprehensive portals themselves covering a wide range of electronic services. Further SSO-connected services are as diverse as elnvoicing to federal authorities, customs, environmental reporting obligations, or business promotion funds management. While several of those services are not applicable to foreign businesses, as they apply to domestic businesses having a seat in Austria, others are. The plan is to pilot the SSO functions to automatically open the range of connected eGovernment portals and services to foreign businesses. To support the SSO functions based on the provisions in the Austrian eGovernment Act, registration to the Supplementary Register for Other Persons is piloted. This provides seamless integration into the portals' identity management system.

Since Austria already uses electronic identities and electronic mandates, the envisaged STORK-solution will fit and integrate smoothly to the existing infrastructure providing simpler access for foreign businessmen and promoting the expansion of AT and EU economy.



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On 1 January 2010, the Austrian public administration launched a one-stop-shop Business Service Portal called 'Unternehmensserviceportal (USP)'.

USP.gv.at – a governmental web page that offers information on setting up and running a business in Austria. In the following we want to give an overview what kind of information can be found on USP.gv.at.

Currently, most information is only available in German. However, we are concerned to link to English web pages where available. We keep these links up-to-date and we are constantly adding pages in English. Where an English term is linked, the corresponding information will be in English as well. Accordingly, where a German term set in brackets is linked, this leads to a German web page.

You can find further information on our partner web page HELP for Foreign Citizens. This service describes the most important steps foreigners coming to Austria need to take in order to live and work here, from reporting one's place of residence to employment permits.

Stand: 01.01.2012

Abgenommen durch:

Federal Chancellery; Federal Ministry of Finance

Figure 15: PA one-stop Business Service Portal (AT), part 1

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Figure 16: PA one-stop Business Service Portal (AT), part 2

3.4.2.2 France

STORK 2.0 solutions will be tested to allow foreign companies/ businesses to use online services offered by the Business Register, particularly sending data and documents for registration of the company branch and for fulfilling the various administration obligations during the branch life. This will be done by implementing the PEPS solution developed in France within WP4 STORK 2.0.

The registration of new entities can be done electronically on the Guichet Entreprise website (www.guichet-entreprise.fr). It is only in French language at the moment. Services provided electronically are, among others: proposal for registration, change and deletion of companies, obtain a list of useful administrations in a given area. In some cases the guaranteed electronic signature is not necessary for the application.

The main objective of this service is to facilitate the establishment and management of new companies in France by electronic means.

This will achieve the advantage of faster and easier registry of new entities thereby reducing administrative burden for foreign businesses wishing to do business in France.

Moreover, successful adoption of STORK 2.0 solution can result in potential enhancement to other electronic public services for businesses in France.



Figure 17: Company registration at the PA Business Service Portal (FR)

3.4.2.3 Greece

In Greece, the STORK 2.0 solutions will be tested with the Hellenic Point of Single Contact (www.ermis.gov.gr), and the General Business Registry Services (www.geminet.gr).

The scope of participation of Greece in this use case is to prove that the procedure of validation of the supporting documents can be simplified by receiving attributes related to the mandate of the natural person to act on behalf of the legal person and initiate the required legal changes at national level in this regard.

Currently whenever a legal entity wants to apply for a license to offer services in Greece it must provide additional supporting documents usually proving that a company is already registered in another MS and that the applicant is either the legal representative of the legal entity or that he/she has the mandate from the management board of the legal entity to act on behalf of it for the specific purpose. The STORK2 Infrastructure can be tested in various services that fall under the Services Directive, since the requirements for acting on behalf of a legal entity are similar in Greece regardless of the type of licence that is requested. The Tourism sector is one of the most important sectors in Greece and that is why it will be a priority in the pilot, and the corresponding applications for licenses will be simplified through the use of STORK 2.0.

As a result legal entities that offer services as Travel agency, Travel busses, Tour operators can benefit from the Greek Business pilot through quicker and cheaper administrative procedures.

Using STORK 2.0 solution means to use an integrated authentication system with a high degree of trust. The synergy of many administrations using the same system is also an advantage.

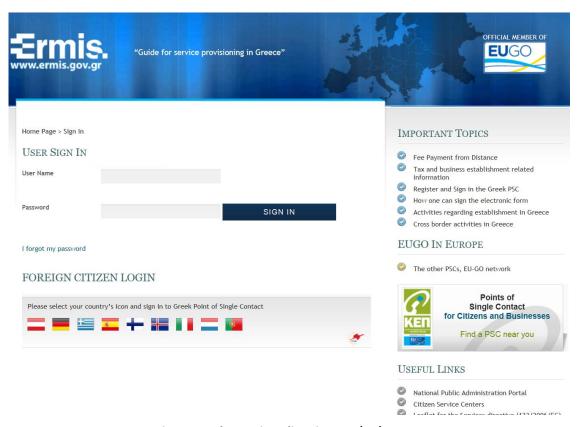


Figure 18: The services directive PSC (GR), part 1



Portal "Frmis"

About Frmis Context Index Target Group Index

Contact Index

News and Announcements of Ermis News and Announcements of

Public Bodies Terms Index

Frequently Asked Questions







RSS feeds

 List of Citizen Service Centers (KEP)

Municipalities

'ermis' websites

Public Sector Websites

Ministry of Transportation and Communications Engineers and Public Constructors Pension Fund (TSMEDE)

National Academic Recognition Information Center (Hellenic NARIC)

Complete catalog

☑ Contact

and suggestions for "Frmis"

24-hour public service

Visas for Foreigners travelling to Greece - 03-MAR-09

Information MINISTRY OF FOREIGN AFFAIRS

Greece follows the Schengen Agreement provisions and the subsequent acquis concerning short term

Government Category List

Public administration bodies

Navigate in the Hellenic government portal "ermis" and take advantage of the published news, the offered services, the frequently asked questions and the useful links under the categories you will choose

...based on the following user groups

Aliens of Greek descent | Civil servants | Consumers | Countryside residents | Disabled | Immigrants | Parents and children | Private employees | Registered - Electors | Students | Third age | Unemployed - Newly entered in the work market | Women | Young people

Industry | Product trading | Small and medium

Enterprises / Organisations

size companies | Tourism enterprises | Unions and associations | Welfare organisations

International affairs and European Union

Justice, State and Public Administration Elections | Justice and law | Public

People, Communities and Way of Living Citizenship, immigration and social incorporation | Human Rights | Personal details

Armed forces and recruiting service | Public order | Weapons and explosives

Controls and penalties | Entrepreneurship | Human Resources | Professional premises | .

Transportation Means, Trips and Tourism

Driving | Logistics | Means of transportation |

Job search | Labour issues | Practice of an

administration | State and democratic

| Residence | ...

Public Order and Defence

Services for companies

Traffic management | ...

Chambers | Companies | Cooperations | Cultural institutions | Freelancers | Handcraft |

Complete services list

(for enterprises - employers)

EA | EN | FR | DE

ξεκινάω

Electronic Services

Υποβολή e - φακέλου

The following services, available to registered users, are processed on-line through the ermis portal.

Issuing of certification of insurance awareness

Starting a Business

Getting insured

Military Service

Studying

Having a baby

Current announcements

10-MAY-10 - Public discussion on law

...based on the following thematic categories

City planning and Land registry
City planning and city plan | Constructions and buildings | Land registry and fields

Civilization and Free time
Culture | Entertainment | Sports | Volunteer

work | ... Education and Research

Education (general) | First and Second Degree Education | Higher Education | Technical and professional education | ...

Environment and Natural Resources Action | Delimitations | Protection of the

environment | Utilization of natural resources Finance and Economy

wances and benefits in cash | Financial

★ Popular Services

activity sectors | Loans, debts and currency exchange | Taxation and taxes | ...

Health and Social Care

Alimentation | Consumer protection | Health and sanitation | Social welfare | \dots

Information and Communication

Communication | Data protection | Informatics and communication technologies | Telecommunications | ..

Issuing of certification of insurance awareness (for enterprises - employers)

Issuing a score corresponding certificate (Hellenic NARIC)

4. Permit to issue live animals from a third

3. Issuing of certificate on non insurance at IKA

Popular Categories

Work, Insurance and Pension

occupation | Social Insurance | ...

- 1. Establishment and operation of a company
- 2. Establishment and operation of a company
- 3. Foreigners in Greece
- 4. IKA (Social Security Organisation) Insurance
- 5. Military Service

Figure 19: The services directive PSC (GR), part 2

3.4.2.4 Iceland

In Iceland, the STORK 2.0 solutions will be tested with the one–stop-shop Business Service Portal (psc.island.is).

This pilot is aimed at facilitating citizens to access all information and forms in one place as well as processing forms related to the Service Directive. This will be done by implementing the PEPS solution from STORK to the PSC portal. Both nationals and foreign will therefore have identical (i.e., equivalent) authentication method. An authenticated end-user can then access the official Iceland eDelivery system to send application forms to the appropriate Competent Authorities.

Synergy with other administrations will produce a higher level of trust in the business portal.

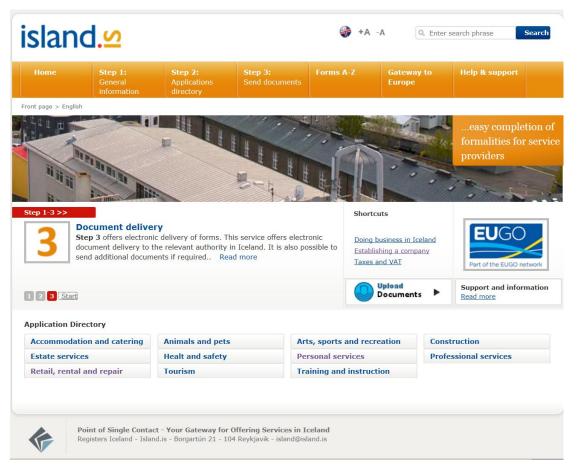


Figure 20: The services directive PSC (IS) and eDocument Delivery service

3.4.2.5 Lithuania

In Lithuania, the STORK 2.0 solutions will be tested with the Point of Single Contact for Services and Products (PSCSP), the so-called Business Gateway (www.verslovartai.lt). STORK 2.0 authentication will provide foreign customers access to all PSC services (see list of services and sectors in screenshot, below)

The main role of this pilot is to facilitate foreign service providers' and service recipients' access to the information they need to be able to carry on service operations and also to submit documents to the Lithuanian authorities when applying for permits and licenses required to pursue certain activities in Lithuania. This will be achieved by implementing the PEPS solution to the Point of Single Contact portal in Lithuania. This will allow to authenticate foreign and local citizens.

By using STORK 2.0 the time needed to access service and complete the needed procedures may potentially decreased. STORK 2.0 will also promote the growth of national eID cards spreading the benefits to all public administrations and citizens.



Figure 21: The services directive PSC, Business Gateway (LT), part 1

Services Sectors list

- Advertisement
- Agricultural and Fisheries
- Educational
- Energy
- Construction
- Production
- Professional and technical activities
- Travel and Tourism
- Transport
- Sales
- Support Activities
- All permits

Useful information

- Employment relations
- Health, safety and hygiene
- Responsible business activity
- Remedies
- Market surveillance
- Usage of computer software in business

Products categories

- Animal Products
- Vegetable Products
- Animal or Vegetable Fats and Oils
- Foodstuffs, Spirits, Tobacco

.....

- Mineral Products
- Chemical industry
- Plastics and Rubber
- Leather, Fur and Travel goods
- Wood
- Paper and Paperboard
- Textiles
- Headgear and Wigs
- Stone or similar materials, Ceramics and Glass
- Precious stones and metals, Imitation jewellery, Coins
- Base metals
- Machinery and Mechanical appliances
- Vehicles
- Instruments, Apparatus and Musical instruments
- Miscellaneous manufactured articles
- Works of Art and Antiques

Plan business

- Taxes
- Legal form
- Business Plan Calculator
- Setting up and closure of a business
- Financial and other information
- Public registers

Questionnaires

- General requirements for business
- Your Business Licences
- About questionnaires

Table 15: List of services offered at the portal, Business Gateway, Lithuania

3.4.2.6 Luxembourg

In Luxembourg, the STORK 2.0 solutions will be tested with the One-stop-shop Business Service Portals known as "Le Guichet" (www.guichet.lu). In particular, the company registration service will be made available to STORK 2.0 pilot users.

Luxembourg's PSC "Guichet.lu" has developed an "On line service assistant" in order to assist data collection, electronic signature and provide a personal safe to record applications as well as file's follow-up. The transmission of the application to the Ministry in charge is made from the PSC's safe.

The main advantage that the pilot service hopes to achieve is that foreign businessmen could be able to start a company without physical presence; a European eID Interoperability Platform would allow businesses and citizens to submit applications to a business permit across borders with no necessity of local authentication certificate, simplifying the current procedures and greatly reducing time and costs.

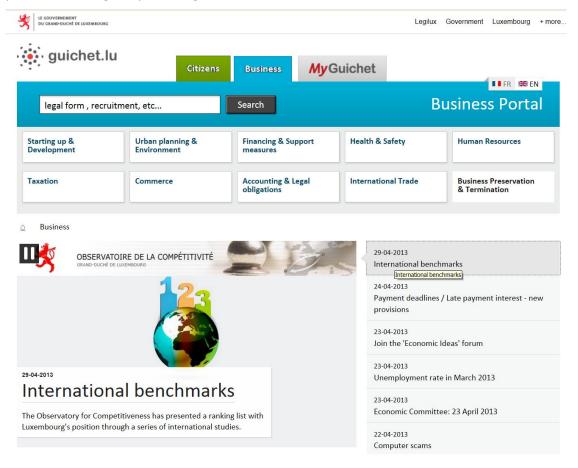


Figure 22: One-stop-shop Business Service Portals, "Le Guichet" (LU), part 1

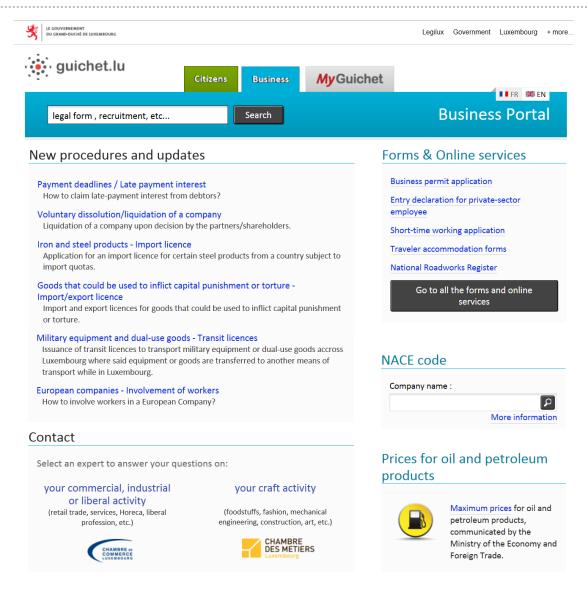


Figure 23: One-stop-shop Business Service Portals, "Le Guichet" (LU), part 2

3.4.2.7 Portugal

In Portugal, the STORK 2.0 solutions will be tested with Portuguese PSC, Portal da Empresa (www.portaldaempresa.pt). This service will create an electronic service that facilitates the access of Portuguese and foreign citizens who hold a Citizen Card (foreign equivalent) and perform duties of administrators/managers of Portuguese companies. The pilot will offer a company role management service will integrate services of the Commercial Companies Register with the Professional Attributes Certification and Management System and information systems of the Ministry of Justice.



Figure 24: The companies Register at the PSC (PT)

3.4.2.8 Slovakia

The STORK 2.0 solutions will be tested both for natural and legal persons to allow foreign businesses to use online services offered by national Point of Single Contact created in accordance with the EC Services Directive ([4]). The services of the Point of Single Contact (PSC) are accessible through the central portal of public administration (ÚPVS) that provides central and unified access to information sources and government services (www.portal.gov.sk).

The "Notification of cross-border services provision" has been selected as the use case to support STORK. Notification of cross-border services provision in the territory of the Slovak Republic is for those services providers that are established in EU or EEA member states and wish to provide their services in the territory of the Slovak Republic on a temporary and occasional basis. This notification of cross-border services provision is free and electronic signature is not required for signing the form as well as the obligatory attachments. Notification is automatically sent to territorially appropriate district office acting as point of single contact which acknowledges the receipt of the notification (and submitted attachments according to Art. 5 par. 2 of the Act No. 293/2007 Coll. on recognition of professional qualifications as amended) to service provider by issuing the receipt which is sent to eDesktop of the service provider.

The main benefits that the Pilot service aims to achieve are reduced administrative burden and simplification of access to services provided by PSC for foreign businesses wishing to do business in Slovakia.

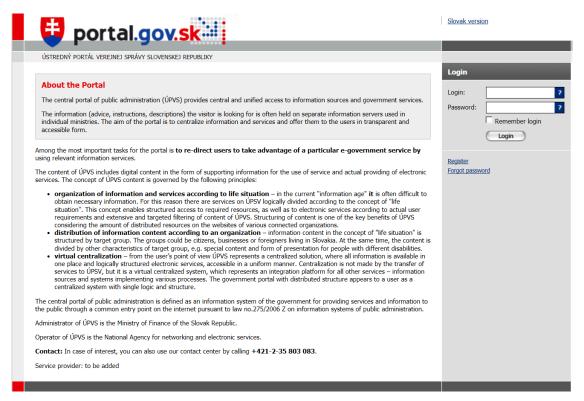


Figure 25: Notification of cross-border services at the PSC (SK), part 1

Petrof the BLGO network Jednotné kontaktné miesta - služby živnostenského registra								
Home Informáci	e/Information							
verzia 1.0.0								
O CEZHRANIO	ČNOM POSKYTOVANÍ S	ZNÁMENIE LUŽIEB NA ÚZEMÍ SLOVENS						
NOTIFICATION OF CR	OSS-BORDER PROVISION OF	SERVICES IN THE TERRITORY	OF THE SLOVAK REPUBLIC					
neskorā ich predpisov / within the meaning of	zmyele zákona č. 136/2010 Z. z. o službách na vnútornom trhu a o zmene a dopinení niektorý ch zákonov a zákona č. 293/2007 Z. z. o uznávaní odborný ch kvalifikáci í v znení eskorších prečpisov / vrithin the meaning of Act No. 136/2010 Coll. on services in the Internal market and amending and supplementing certain acts and Act No. 293/2007 Coll. on ecognition of professional qualifications as amended.							
Žiadateľ / Applicant								
Titul / Tide:			0					
Priezvisko / Surname:*	Hrasko		0					
Meno / Name:	Ján		0					
Ulica, číslo / Street, Number.	Lotyšská 5182\30		0					
Obec / City:	Bratislava - Podunajské E	Biskupioe	0					
PSČ / Postcode:	82106		0					
Štát / State:*	Slovensko		0					
Telefón / Telephone:	+4212325897		0					
E-mail: / E-mail:	hrasko.jan@gmail.com		0					
CEZHRANIČNÝ POSKYTOVATEĽ SLUŽIEB / CROSS-BORDER SERVICE PROVIDER Obchodné meno / Business name:								
Adresa sídla/adresa miesta pod / Address of seat/address of pl				0				
IČO / Identification number:								
				0				
POSKYTOVANÁ SLUŽBA /	SERVICE PROVIDED							
Predmet poskytovanej služby / The object of service provided: Vybrať / Select								
				0				
				0				
Miesto výkonu poskytovanej sl	užby (obec) / The place wher	re service will be provided (city):		0				
Miesto výkonu poskytovanej sl	užby (obec) / The place wher	re service will be provided (city):		0				
	užby (obec) / The place when	re service will be provided (city): [*] Odobrať miesto výkonu služby	/ Remove place of servi	0				

Figure 26: Notification of cross-border services at the PSC (SK), part 2

3.4.2.9 Slovenia

The scope of this pilot (5.3) in Slovenia involves the integration of a system/service (STORK 2.0) to the Slovenian Business Portal (www.eugo.gov.si) aiming to facilitate citizens to access all information and forms in one place as well as all the e-procedures related to the Service Directive. This will be done by connecting the PEPS solution from STORK to the Slovenian Business Point (serving as PSC portal). The pilot will enable foreign legal persons to establish branch offices in Slovenia through the PSC.

STORK 2.0 can be seen as a key enabler for cross border services, and can realize the political and strategic goals to boost the single market opportunities. It will facilitate the sustainability of STORK (1) results that proved its benefits through different pilots.

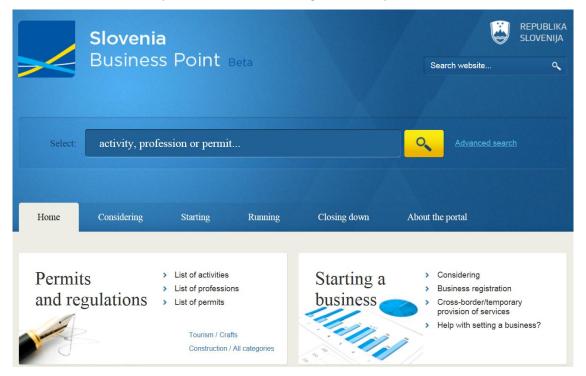


Figure 27: Business registration at the PSC (SI), part 1

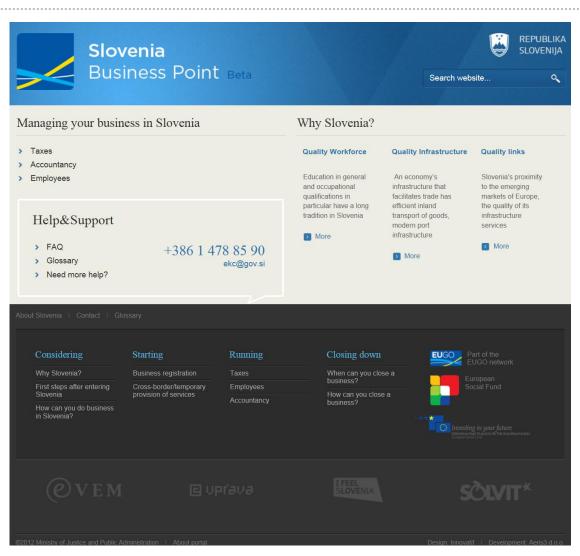


Figure 28: Business registration at the PSC (SI), part 2

4 Attributes

All Pilot 3 services will involve the authentication of an end-user who is legal representative of a company (or other legal entity). To establish the authorisation of the end-user to act on behalf of a company all relevant attributes granting her/him powers of representation must be examined. These attributes are found in different official databases, usually the official business register, but more and more often in specific databases for company mandates or roles. Additionally, some eGovernment portals offer their own mandate management service with scope of the mandates limited to the family of services offered at the portal. Such cases will be relevant to STORK 2.0 as part of the eID management of the SP service, since these mandates will be available to foreign users, but since the mandates are not currently valid across borders they will not be provided as part of the STORK 2.0 "Authentication on behalf of" procedure.

The handling of powers attributes can be seen from different points of view. For the Business Register powers are usually viewed as company attributes consisting of a list of Legal Representatives and their characteristics (ID, type of power, limit of power, period of validity of power, etc.). This amount and type of information is more than is required by the STORK assertions. Of particular interest to the Pilot services is the assertion that one particular legal representative has full powers to act and sign for a legal entity.

Thus, the company attribute hasLegalRepresentative whose input is a company identifier with together а personal identifier might return 3-valued variable ("Yes"/"No"/"Undetermined") together with a data structure containing the powers of the representative (as defined, below, in paragraph 4.1.3). The Interpretation of the 3-valued variable are as follows: "Yes" means that the person is a legal representative with full powers; No means that the person does not figure as a (statutory) legal representative; Undetermined means that the person is a legal representative, but his/her powers may be limited and the specific powers information must be consulted for a final interpretation. Such an attribute would be required by almost all pilot services. A richer behaviour of this attribute might allow (if APs and national law permit) furnishing just one of the two input identifiers and receiving as output a list of corresponding company or personal identifiers with associated powers data. That is, the attribute may be used as queries on the Business Register to find on the one hand all the legal representatives of a single legal entity, or on the other hand, all the legal entities represented by a specific person. It was already seen in the 3rd variation of the Common Functional Use Case #1, how one of these queries could be used to simplify the enduser experience.

These same relations could also be seen from the end-user, or agent's, point of view. In this case the identity information of a natural person might contain the attribute **isLegalRepresentativeOf** (possibly derived from the **hasLegalRepresentative** attribute just described) and consisting of a unique company identifier (or a list of such IDs) and a description of the relative powers that correspond to the personal identifier of the person in question.

A Mandate management service may see these relations from a more neutral point of view as special cases of the general relation between any pair of legal persons acting as Represented Party and Representing Agent. Such differences of perspective can be handled in many different ways by the logical and physical data models.

Some further considerations on powers and mandates are given in section 4.3.

The personal identity attribute **isEmployee** is of specific interest to the Belgian Limosa portal and the PSCs of Iceland and Luxembourg as well as being of potential interest to other PSC services and also the services of Banking Pilot. This attribute, too, can be implemented as a 3-valued ("Yes"/"No"/"Undetermined") response with multiple behaviours depending on the input furnished and in respect of the STORK principle to furnish only the minimum information necessary to satisfy the service requirements at hand.

In countries where no attribute provider is found to supply employee/employer information, this information will have to be handled directly by the SP services themselves with information received from the interested end-users.

At the present time, all other Service Provider attributes have been evaluated as being too service-specific and not sufficiently "identity-related" to qualify for being managed by the STORK 2.0 interoperability platform. Part of the Pilot evaluation will consider whether additional attributes should be provided by APs to enrich the benefits of STORK.

4.1 IdP & AP attributes required by SPs - per MS

4.1.1 Personal identity attributes

Attributes	Description						
eldentifier ⁴	A structured attribute consisting of a unique identifier (number or code), the countries of origin and destination of the present authentication request and a general "type" of the identifier – eg., citizen code, tax code, social security code, passport number, etc.						
name	A structured attribute consisting of givenName and surname						
alternativeName ⁵	An alternative name normally used by the person; a personal pen name, nickname, religious name or stage name.						
nationalityCode	ISO 3166-1 alpha-2						
dateOfBirth	YYYYMMDD / YYYYMM / YYYY						
address	A structured attribute consisting of Street_and_number, Post_box, Postal_code, City, Country						
gender	F (Female) / M (Male)						
eMail	RFC 822						
isEmployee	Y/N/Undetermined, coupled with the employer's business register ID when needed.						
personaleIDQAALevel ⁶ A structured attribute consisting of the QAA level [1, 2, currently used authentication procedure, the IDP involved date and time the authentication took place (a formal is not necessary)							

Table 16: Personal identity attributes required by Pilot 3.

	UC1 – Enrol. to registers					Use Case #2 - One-stop Portals and PSC							SC
Attribute	BE	EE	ΙΤ	NL	SK	AT	FR	GR	IS	LT	LU	PT	SI
eldentifier	М	М	М	М	М	М	М	М	М	М	М	М	М

⁴ This attribute intends to extend the current Stork1 attribute eldentifier whose structure is given by NC/NC/xxxxxxxxxx.... Where NC=NationalityCode, the first one the country of origin of the eldentifier, the second one the destination country. Although the suggested extension involves a more structured set of xml data a "quick-and-dirty" implementation could always re-use the present string data fields "padding" them with an additional coded header to record the "type" of identifier.

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⁵ It is suggested renaming the Stork-1 attribute "pseudonym" to avoid confusion with the Stork "ID pseudonym".

⁶ This attribute extends the attribute citizenQAALevel of Stork-1 which was simply an integer in the range from 1 to 4. The suggested name is also intended to indicate that the attribute depends on the eID authentication process rather than on the individual object ("citizen") of the authentication process.

	UC1 – Enrol. to registers					Use Case #2 - One-stop Portals and PSC							
Attribute	BE	EE	ΙΤ	NL	SK	АТ	FR	GR	IS	LT	LU	PT	SI
name	М	М	М	М	М	М	М	М	М	М	М	0	М
alternativeeName	0	0	0	0	0	0	0	0	0	0	0	0	0
nationalityCode	М	М	0	0	М	0	0	0	М	0	М	0	0
dateOfBirth	М	М	М	0	0	0	М	М	М	0	М	0	О
address	М	М	М	М	М	0	М	0	М	0	0	0	0
gender	М	0	0	0	0	0	0	О	М	0	О	0	Ο
eMail	М	М	0	0	М	0	0	М	М	0	0	0	0
isEmployee	М	0	0	0	0	0	0	0	М	0	М	0	Ο
personaleIDQAAL evel	М	М	М	M	М	М	М	М	M	M	М	M	М

Table 17: Personal identity attributes needed by the individual Pilot 3 Member States.

The following diagram indicates the personal identity attributes already supported by the current STORK data model. It is pointed out that the eldentifier field and citizenQAALevel should be modified according to the indications of Table 17, above. The isEmployee attribute should also be added.

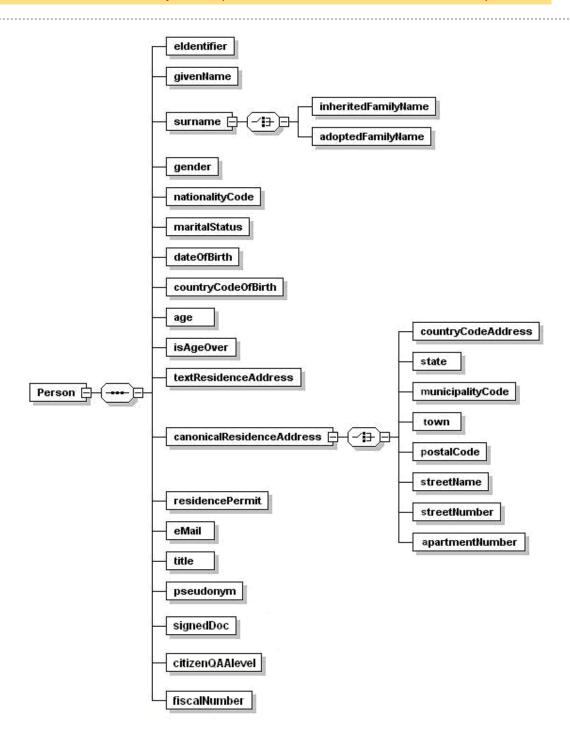


Figure 29: The STORK data model for personal identity attributes

4.1.2 Legal entity attributes

Attributes	Description					
legalEntityIdentifier	A structured attribute consisting of a unique identifier (number or code), the country of origin and the name or type of the registering authority (Chamber of Commerce, Min Justice, Trade Register,)					

Attributes	Description
legalEntityName	the official registered denomination of the entity
alternativeName	Commercial name or short name for the legal entity
registeredAddress	A structured attribute consisting of Street_and_number, Post_box, Postal_code, City, Country
legalForm	The legal "type" of the company (i.e., Limited Company, Partnership, Sole Trader, etc.)
legalStatus	The legal status of the company (i.e., active, winding up, bankrupt, etc.)
hasLegalRepresentative	Y/N/Undetermined, coupled with a data structure representing the powers of the identified representative in the identified legal entity (as defined, below, in parag. 4.1.3).
legalEntityContacts	A structured attribute consisting of some combination of Office Name, Personal ID information, telephone, fax, email, certified email, homepage
legalEntityQAALevel	A structured attribute consisting of the QAA level [1, 2, 3, 4] of the company identification attributes, the AP involved and the date and time the attributes were validated

Table 18: Legal entity attributes required by Pilot 3.

	UC	C1 – En	rol. to	regist	ers	Use Case #2 - One-stop Portals and PSC								
Attribute	BE	EE	ΙΤ	NL	SK	АТ	FR	GR	IS	LT	LU	PT	SI	
legalEntityIdentifier	М	М	М	М	М	М	М	М	М	М	М	М	М	
legalEntityName	М	М	М	М	М	М	М	М	М	М	М	М	М	
alternativeName	0	0	0	0	0	0	0	0	0	0	0	0	0	
registeredAddress	М	М	М	М	М	М	М	М	М	М	М	М	М	
legalForm	0	M	0	M	0	М	0	М	М	0	М	0	0	
legalStatus	0	М	0	0	0	0	0	М	0	0	0	0	0	
hasLegalReprese ntative	0	М	М	0	0	0	0	М	0	0	M	0	0	
legalEntityContacts	0	М	М	0	0	0	0	0	М	0	0	0	0	
legalEntityQAALevel	М	М	М	М	М	М	М	М	М	М	М	М	M	

Table 19: Legal Entity attributes needed by the individual Pilot 3 Member States.

The following diagram indicates the preliminary data model for Legal Entity attributes foreseen by the current STORK 2.0 infrastructure (as described in the draft D4.2). It is pointed out the following significant differences with respect to Table 5, above:

- eLPIdentifier field should be modified to include the information indicated as part of companyID
- the legal representative attributes should be added
- contacts information should be added
- the QAA level of the attribute assertion should be included as requested above.

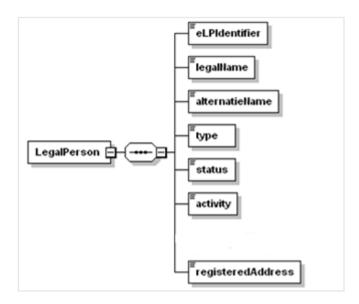


Figure 30: The STORK 2.0 initial data model for legal entity attributes

NOTE: The eID data concerning Legal persons required by the Pilot services is generally public data available in public registers, nevertheless, it is still opportune to request the consent of the legal representative before transmitting company attributes to Service Providers.

Moreover, STORK ID pseudonyms may still be necessary for data regarding the natural persons who represent the company or who hold specific mandates to act on its behalf. However, some eGovernment services have expressed doubts about whether such pseudonyms would be recognised for identification.

4.1.3 Mandates or powers attributes

Attributes	Description							
representativeID	A structured attribute consisting of the identifying attributes of the natural person or legal entity acting as <i>agent</i> on behalf of another legal person.							
mandatorID	A structured attribute consisting of the identifying attributes of the legal person being represented by the <i>agent</i> .							
textDescriptionOfPowers	A free-text field allowing a description of the powers							
formalDescriptionOfPowers	A structured machine processable field describing the categories and/or limitations of the powers – fullPowers [Y/N/Unkown],							

Attributes	Description
	periodOfValidity, economicLimits
powersQAALevel	A structured attribute consisting of the QAA level [1, 2, 3, 4] of the powers attributes, the AP involved and the date and time the attributes were validated

Table 20: Attributes regarding the powers of legal representation required by Pilot 3.

	UC	C1 – En	rol. to	regist	ers	Use Case #2 - One-stop Portals and PSC									
Attribute	BE	EE	ΙΤ	NL	SK	АТ	FR	GR	IS	LT	LU	PT	SI		
representativeID	0	М	М	М	М	М	М	М	М	М	М	М	М		
mandatorID	0	М	М	М	М	М	М	М	М	М	М	М	М		
textDescriptionOf Powers	0	М	М	М	М	М	М	М	М	М	М	М	М		
formalDescriptio nOfPowers	0	М	0	0	М	0	0	Ο	M	0	0	0	М		
powersQAALevel	0	M	M	М	М	М	М	М	М	М	М	М	М		

Table 21: Mandates attributes needed by the individual Pilot 3 Member States.

The following diagram indicates the preliminary data model for Mandates attributes foreseen by the current STORK 2.0 infrastructure (as described in the draft D4.2). The only significant difference with respect to Table 21, above, is the need to include the QAA level associated with the provision of the attributes .

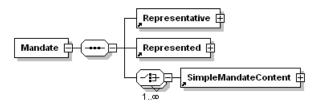


Figure 31: The STORK 2.0 initial data model for mandated power attributes.

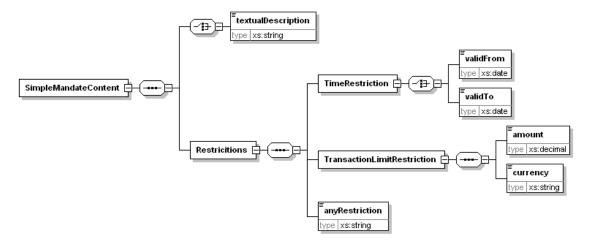


Figure 32: The STORK 2.0 initial data model for mandated power attributes, detail.

4.2 IdP & AP attributes supplied by APs - per MS

The "supply-side" of the question of attributes provision for Pilot 3 are summarised below.

NOTE: Although the present section only considers Member States actively participating in Pilot 3, end-users of Pilot 3 services may come from any other STORK 2.0 country provided that the national infrastructure can support the required services of eID authentication and validation of legal entity and powers attributes, that is, that suitable IDPs and APs are integrated in the national STORK 2.0 infrastructure. In particular, those MS participating in Pilot 2, Banking Pilot, should meet these requirements and therefore be potential pools of additional Pilot 3 end-users

4.2.1 Personal identity attributes

The following actors will provide the STORK 2.0 infrastructure with eID authentication services and personal ID attributes:

Country	ID Provider	IDP token and/or system					
Austria	SourcePIN Register Authority	Bürgerkarte: Smartcard based citizen card (Health insurance card, professions service card, etc.) www.buergerkarte.at					
	A-SIT Secure Information Technology Centre - Austria	Handy-Signatur : mobile eID-based citizen card, www.buergerkarte.at					
Belgium	FEDICT - Service Publique Federal Technologie De L'information Et De La Communication	BELPIC National ID card, eid.belgium.be					
	Department of Federal Immigration	Foreign Residence Card					
Estonia	AS Sertifitseerimiskeskus	ID-kaart, National ID card, www.sk.ee					
France	ChamberSign France	Digital certificates from ChamberSign France (Chamber of Commerce CA), www.chambersign.fr					
Greece	Hellenic Ministry of Administrative Reform and E- Governance	Digital Signature-Authentication Card (Hellenic Public Administration Root CA), National Government Portal, www.ermis.gov.gr, pki.ermis.gov.gr/repository.html					

Country	ID Provider	IDP token and/or system
Iceland	Internal Revenue Directorete (Ríkisskattstjóri)	www.eid.is, www.skilriki.is, www.islandsrot.is, www.audkenni.is
Italy	CNSD – Ministry of Interior	National ID card , www.servizidemografici.interno.it
	AGID - Agenzia per l'Italia Digitale	National Services Card, www.digitpa.gov.it/carta- nazionale-dei-serviz
Lithuania	NSC - Ministry of Interior	National ID card, www.nsc.vrm.lt/default_en.htm
Luxembourg	LuxTrust	Smartcard eID, www.luxtrust.lu
	Social security administration	For isEmployee attribute
Netherlands	DigID	Citizen authentication: Usr/pwd + sms token, www.digid.nl
	MEAI - Ministry of Economy, Innovation and agriculture	Legal entity authentication: Usr/pwd + sms token or PKI certificate, www.eherkenning.nl
Portugal	AMA	Portuguese Citizen Card, www.cartaodecidadao.pt
Slovakia	Ministry of Interior	National eID
Slovenia	SIGOV-CA (Slovenian GOVernmental Certification Authority)	Qualified Certificate SIGOV-CA , www.sigov-ca.si
	Pošta Slovenije	Qualified Certificate POŠTArCA, postarca.posta.si
	Halcom-CA	Qualified Certificate HALCOM-CA, www.halcom-ca.si
	NLB - Nova Ljubljanska banka	Qualified Certificate AC NLB, www.nlb.si/acnlb

Table 22: Summary of ID Providers

NOTE: The following table indicates the personal eID attributes that can be provided online and, at least in some cases where explicitly required by the use-case, in machine-processable format. Information on some attributes (alternativeName, address, gender, eMail, isEmployee) is still being verified and will be finalised during the pre-running planning phase.

Attribute	AT	BE	EE	FR	GR	IS	ΙΤ	LT	LU	NL	PT	SK	SI
eldentifier	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
name	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х
nationalityCode	Χ	Χ	Χ	Χ	Х	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
dateOfBirth	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х
eIDQAALevel	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ

Table 23: Summary of provided personal eID attributes

4.2.2 Legal entity attributes

The following table provides a summary of legal entity attribute providers. The Business Attribute Provider for some countries (i.e Netherlands and Portugal) will be reflected in deliverable D5.2.2 - Go-Live Planning as it has not been possible to confirm it for the current document.

Country	Business Attribute Provider	notes
Austria	SourcePIN Register Authority	The SourcePIN Register Authority operates the Online-Mandate System that interfaces to the authoritative registers (Company Register, Register of Associations, Supplementary Register)
Belgium	CBE – Cross Roads Bank for Companies	
Estonia	RIK - Centre of Registers and Information Systems	National business register, www.rik.ee/en/e-business-register
France	InfoGreffe	the Business Register of the French Ministry of Justice, www.infogreffe.fr
Greece	Commercial business registry	www.businessregistry.gr
Iceland	SKRAIS - Register of Enterprises, Registers Iceland	
Italy	IC - InfoCamere	National business register, registroimprese.it
Lithuania	IS_LT - Registers of Lithuania	
Luxembourg	Ministry of Small and Medium-Sized Businesses	
Netherlands		To be determined during the pre-running planning phase
Portugal		To be determined during the pre-running planning phase
Slovakia	Ministry of Justice – Business register	in English at orsr.sk
Slovenia	AJPES - Agency of the Republic of Slovenia for Public Legal Records and Related Services	Slovenian Business Register, www.ajpes.si

Table 24: Summary of legal entity attribute providers

NOTE: The following table indicates the legal entity attributes that can be provided online and, at least in some cases where explicitly required by the use-case, in machine-processable format. Information on some attributes (alternativeName, address, gender, eMail, isEmployee, legalEntityContacts, legalEntityQAALevel) is still being verified and will be finalised during the pre-running planning phase.

Attribute	АТ	BE	EE	FR	GR	IS	ΙΤ	LT	LU	NL	PT	SK	SI
companyID	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
companyName	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
companyAddress	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ

Attribute	АТ	BE	EE	FR	GR	IS	ΙΤ	LT	LU	NL	PT	SK	SI
legalForm	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
legalStatus	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
hasLegalRepresentative	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ

Table 25: Summary of provided legal entity attributes

4.2.3 Mandates or powers attributes

The following table provides a summary of mandates attribute providers. The Mandate Attribute Provider for some countries will be reflected in deliverable D5.2.2 - Go-Live Planning as it has not been possible to confirm it for the current document.

Country	Mandate Attribute Provider	notes
Austria	SourcePIN Register Authority	The SourcePIN Register Authority operates the Online-Mandate System that interfaces to the authoritative registers (Company Register, Register of Associations, Supplementary Register)
Belgium		Source not yet determined
Estonia	RIK - Centre of Registers and Information Systems	National business register, www.rik.ee/en/e-business-register
France	InfoGreffe	the Business Register of the French Ministry of Justice, www.infogreffe.fr
Greece		Source not yet determined
Iceland		Source not yet determined
Italy	InfoCamere	Business register
Lithuania	IS_LT - Registers of Lithuania	
Luxembourg		Source not yet determined
Netherlands		Source not yet determined
Portugal		Source not yet determined
Slovakia	Ministry of Justice – Business register	in English at orsr.sk
Slovenia		Source not yet determined

Table 26: Summary of mandates attribute providers

NOTE: The following table indicates the mandate attributes that can be provided online and, at least in some cases where explicitly required by the use-case, in machine-processable format. Information on some powersQAALevel will be finalised during the pre-running planning phase.

Attribute	ΑТ	BE	CZ	EE	FR	GR	IS	ΙΤ	LT	LU	NL	PT	SK	SI	ES	SE	Sw	TR	UK
representativeID	X		Χ	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х

Attribute	АТ	BE	CZ	EE	FR	GR	IS	ΙΤ	LT	LU	NL	PT	SK	SI	ES	SE	Sw	TR	UK
mandatorID	Х		Х	Х	Х	Χ	Χ	Χ	Χ	Χ	Х	Χ	Χ	Χ	Χ	Χ	Х	Х	Χ
textDescriptionOfPowers	X		Х	Х	Х	Χ	Χ	Χ	Χ	Χ	Х	Χ	Χ	Χ	Χ	Χ	Х	Х	Χ
formalDescriptionOfPowers	X		Х	Χ	Х	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х	Х	Χ

Table 27: Summary of provided mandate attributes

4.3 Specific attributes for accepting mandates; powers for representing Legal Persons

As already mentioned in Chapters 2 and 3, the powers of representation of company officers is often expressed in free text in the official Business Register, being directly transcribed from the company's founding documents. No standard European classification of these powers is in force, and, in fact, even at the national level coded values are used to a very limited extent. Therefore, if the pilot sticks to the principle of requiring (or at least preferring) machine processable data fields in the STORK security and identity assertions (SAML assertions) then the most the pilot could hope to implement in the short term is the attribute which returns one of three values: "no powers", "some powers" or "full powers".

In the interest of developing a more useful service, a Special Interest Group has been formed within STORK 2.0 to study the state of the mandate services in the partner countries and to try to establish a richer yet implementable taxonomy of powers. Additional problems of interoperability and extending the usefulness of current mandate management systems will also be part of the agenda of this workgroup.

5 Trust mappings (QAA levels & mappings) per portal

5.1 Required QAA per service provider & service

NOTE: Since the formal definitions of QAA for generic assertions from Attribute Providers must still be defined and technically specified, the main purpose of this section is to report the QAA of credentials required by the different SPs and available from the MSs. In absence of a formal definition, the required or desired QAA values indicated by Pilot 3 partners for the attributes concerning the identity of legal entities and mandates are based on "rough analogy" with the four levels of STORK eID-QAA.

The information of "Required by SP for..." of the following table for some countries will be reflected in deliverable D5.2.2 - Go-Live Planning as it has not been possible to confirm for the current deliverable the missing QAA levels. On the other hand, the columns corresponding to the Attribute Providers of Legal Entity attributes and Powers of Representation (i.e., Business registers and Mandate Providers) are intentionally left empty and will be established during the piloting planning phase after further discussion with WP3 with regard to the QAA criteria for attribute assertions.

QAA Levels	Required	by SP for		Provided b	ру							
Country	Personal eID	Legal Entity ID	Mandates	elD Provider	Business Register	Mandate Provider						
Use case 1 - Enrolment to public registers												
Belgium	1	1	1	4	-	-						
Estonia	4	4	4	4	-	-						
Italy	4	3	3	4	-	-						
Netherlands	2	2	2	1, 2, 3, 4	-	-						
Slovakia	2	2	2	4	-	-						
Use case 2 - O	ne-stop-sh	op Business Se	ervice Portals	and Points	of Single Con	tact						
Austria	4	4	4	4	-	-						
France				3	-	-						
Greece	4	4	4	1, 2, 3, 4	-	-						
Iceland	4	4	4	4	-	-						
Lithuania	3			4	-	-						
Luxembourg	4			4	-	-						
Portugal	4			4	-	-						
Slovenia	3			3, 4	-	-						

Table 28: Summary of required and provided QAA levels by MS and by attribute category

6 Pilot specific architecture(s)

6.1 STORK 2.0 Platform Services to be used in Pilot

Besides the basic services of eID authentication and validation for natural persons, legal entities and the powers of representation between them (including the STORK ID pseudonym feature), the following sections briefly describe special platform functions needed by the Pilot 3 services.

6.1.1 Signature function

With the advent of an increasing number of EC Directives promoting eGovernment services, in particular, the Services Directive ([4]), provisioning of cross-border electronic processes shifted – at least in the public sector – from a service offering to an obligation. A typical eGovernment application may require signing of documents and electronic declarations of the applicant, including attesting to a wilful act during authentication. Other specific service functions requiring a digital signature are

- Enrolment to a register that needs a formal declaration of authorisation such as "With the present request for being enrolled in ..., the applicant declares to hold powers to act on behalf of ..."
- Public registers or services with other "in writing" requirements such as a signed application together with presenting an ID in conventional processes.
- Proof of receipt for registered electronic letters

In fact, more than half of the Pilot 3 SPs have indicated that a digital signature function would be a useful feature of STORK 2.0: AT, EE, FR, GR, IS, IT, NL, SK.

This has led to some consolidation and effort on electronic signature cross-border interoperability, such as the Trust List Decision ([8]) and the Signature Formats Decision ([9]). The latter (the Formats Decision) gives a sustainable route that STORK can rely on when maintaining and further developing the SignRequest. The core objective of the WP4 signature subgroup is to further develop the existing SignRequest / SignResponse in order to advance signature-creation so that service providers' (SPs) business processes are supported.

STORK is well positioned to support a European infrastructure on signatures created during authenticated sessions, since STORK already provides the quality authentication usually starting business processes that need electronic signatures, and already technically supports a big portion of the signature-creation devices used in Europe (i.e. eID tokens that usually also can create signatures).

6.1.2 Attribute Aggregation Service

Although not explicitly required for the initial phase of Pilot 3 services, the operation of gathering attributes from several APs in different countries is a complex operation (i.e., "user unfriendly") which could benefit from the simplifications proposed by the Attribute Aggregation service. At the present time the phenomenon of authentication with multicountry verification of mandates and attribute aggregation is statistically not very significant, but, in part thanks to STORK 2.0, this situation will change in time and must be monitored.

6.2 Components to develop at pilot/use case level

No STORK 2.0 software components specific to Pilot 3 have been identified. Each Pilot service is evaluating the impact of integrating STORK 2.0 services into their service environment and assessing the costs and benefits of the individual services. Besides the specific technical issues of handling foreign clients, their data and the STORK-enabled service processes, STORK 2.0 partners must also evaluate the overall service experience from the end-user perspective and as seen from the back-office.

6.3 Connection of SP's to STORK 2.0 Platform

The following diagram illustrates how some general logical architectural components of a "legacy" eGovernment portal - i.e., a set of eGovernment web applications with pre-existing ID management systems for local (national) users and local (national) databases containing attributes not managed through the STORK 2.0 platform - can be organised to, in the role of a Service Provider, with the STORK 2.0 infrastructure:

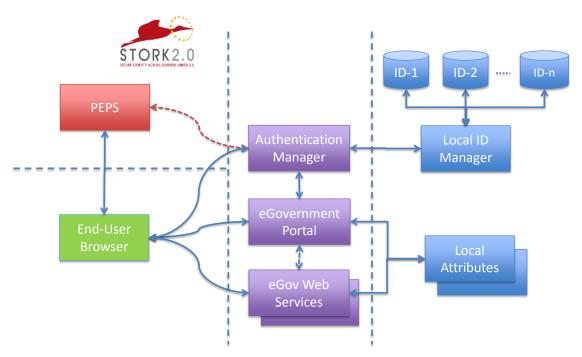


Figure 33: Example of integration of a STORK 2.0 Service Provider

The central column shows the components used at the SP level to provide e-Government services for foreign Legal Entities; the Authentication Manager relies on the PEPS for access to foreign e-ID, mandate and power attributes; the right hand column doesn't take part in STORK 2.0 interactions and is serves local (national) end-users.

6.4 General Pilot Architecture Diagrams

The general STORK 2.0 architecture required by Pilot 3 contains no features not already foreseen by WP2, WP3 and WP4, or not already present in other STORK 2.0 Pilots. As indicated, the basic eID operations which must be handled by STORK can be identified as follows:

- Authentication of personal eID credentials of service end-users
- Validation of legal entity identifiers and business attributes with authorities such as Business Registers
- Validation of a natural or legal person's rights (authorisation) to act on behalf of another legal entity or natural person. This would involve receiving additional information from an authority like a Business Register or a more specialised type of Attribute Provider, a Mandate Provider.

All of the above operations fit in the general STORK 2.0 scheme and are implementable with the process flows designed in WP4, and by the actors foreseen by WP2.

A typical, simple configuration of STORK components, end-users, Service Providers, IDP and other attribute providers is given in the following figure (similar to Figure 1):

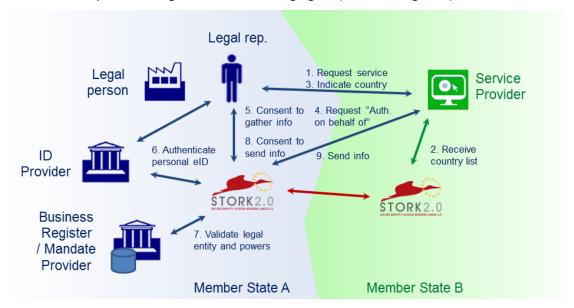


Figure 34: Simple example of STORK 2.0 architecture and service flow

In this figure a person from MS A (i.e., whose eID is issued by an IDP in MS A), and representing a business registered in MS A, would like to use the (eGovernment) service of a provider in MS B. The SP contacts the local STORK infrastructure (S-PEPS) and then activates the STORK 2.0 component in MS A (C-PEPS) which will handle each of the three operations listed above — authentication of personal credentials, validation of legal entity attributes and validation of authorisation to represent. The C-PEPS will then send the results back to the Service Provider in a single, secure assertion. This flow corresponds to Common Functional use case #1.

For legal or even economic reasons, the legal representative in the previous figure may use a feature of the SP service to delegate powers to represent the original business (limited to the services of the eGovernment portal publishing the SP service) to a different mandated person in MS B. The procedure would be as described in Common Functional use case #2, following the same STORK-1 rules for physical person e-ID authentication. It would lead to the following situation — a variation of Figure 2 - in which a natural person from MS B will request access to a pilot service offered in MS B on behalf of a legal entity in MS A.

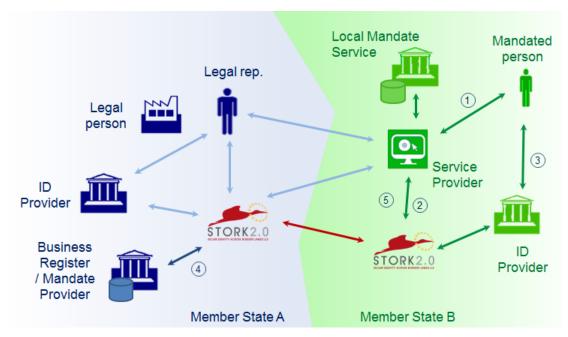


Figure 35: Example of STORK 2.0 architecture and service flow with SP-local mandated person

The numbers in the figure above indicate the main steps (user consent and similar standard steps have been skipped) that would be followed when the mandated person requests access to the SP service on behalf of the foreign business he represents: starting with the request of service (1), the STORK infrastructure (2) activates the personal authentication (3) with the appropriate IDP, then collects the attributes of the legal entity (4) and returns the information to the SP (5) who would verify the powers of representation with the local mandate service.

A further development or variation of the above situation may arise when a business in MS A wishes to register a branch office in MS B (using one of the STORK Pilot 3 services), and nominates as legal representative for the newly registered entity a person who comes from a (nearby) third country, MS C.

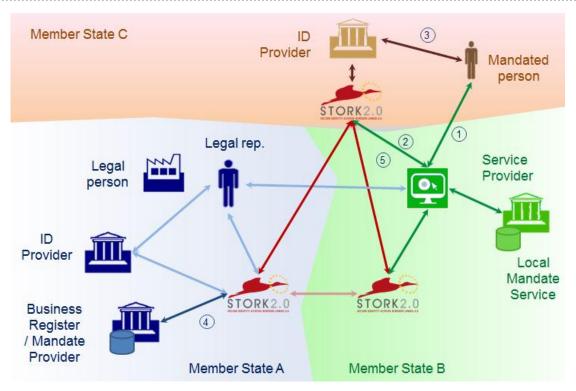


Figure 36: Example of STORK 2.0 architecture and service flow with cross-border mandated person

A further development or variation of the above situation may arise when a business in MS A wishes to register a branch office in MS B (using one of the STORK 2.0 Pilot 3 services), and nominates as legal representative for the newly registered entity a person who comes from a (nearby) third country, MS C.

In theory, other configurations or combinations of multi-country, cross-border situations may arise, but until they present themselves as statistically significant no special STORK 2.0 implementations will be considered or seem needed to handle them.

7 User engagement strategy

7.1 Overview

The "user engagement strategy" aims at ensuring sufficient users to validate the Pilot.

This section summarises the overall engagement and marketing strategy of Pilot 3. It is based on the current understanding of the pilot service users, their needs and their expected benefits. The strategy and the initiatives to implement it will be further developed and refined in the following pre-planning phase of the project and during actual piloting as engagement progresses and as feedback from users is gathered.

Although it is dealt with at the Pilot level, the user engagement strategy is the responsibility of each WP5.3 partner who will be called upon to formulate MS-specific marketing plans, in synergy with the STORK2.0 dissemination strategy, coordinated by WP8.

To enable a real user engagement, it is extremely important to have a sufficient number and distribution of Attribute Providers within the Pilot to cover the information needs of the SPs and to ensure a satisfactory set of support services for potential users; "holes" at this level of the STORK infrastructure would seriously diminish the overall quality of the Pilot, in terms of Users participation, creating difficulties to extract productive conclusions from the pilot's evaluation. The Pilot services have been chosen and confirmed with such needs in mind; partners and their collaborators have been selected with the capacity to carry out the required user and stakeholder engagement plans to ensure offering services with features such as attraction, usability, accessibility which will be the subject of effective marketing campaigns to create awareness and generate real usage.

7.2 Marketing and dissemination

The first phase of "marketing" of STORK 2.0 results will mainly involve the engagement of end-users for the pilot phase of service provision. Since all Business Pilot services involve existing online systems the market of current end-users is in most cases at least partially known. Actions to inform and involve businesses in pilot services will start from these pools of businesses and end-users, especially making use of the 'marketing reach' of the portals involved in the pilot' and of the network of Public Administrations contributing to these portals.

Future phases of marketing will involve

- increasing the user-base: collaborative marketing with other government agencies whose mission is to attract foreign investment & business, in particular with the so-called Competent Authorities associated with PSCs and whose services are often integrated into the PSC environments.
- increasing the market: promoting the take-up of the proved techniques and solutions of STORK 2.0 to additional Public services for Business beyond those experimented in the project pilot. As mentioned, the PSC is a natural aggregator of services from many public agencies, therefore the STORK 2.0 experience will be immediately shared with many government administrations and the STORK 2.0 results and solutions will be readily available for take-up by these administrations.
- improving the technical results: additional features may be integrated with the initial technical solutions of STORK 2.0 such as requests which were left undeveloped in the first wave of piloting. Such features could consist in richer sets of attributes (for example for the

description of mandated powers) and also increased semantic interoperability of attributes and services (in particular, in collaboration with other LSPs)

- growing the STORK 2.0 "Circle of Trust": as stakeholders are made aware of the benefits of participating in STORK 2.0 the network of actors of all types – SPs, IDPs, APs – will grow. Public and private collaborations will also be encouraged as the service model is better understood.

7.3 Pilot users involvement

Users involved in Pilot 3 are primarily the Legal Entities which are subjects or customers of the eGovernment services that make up the two broad Use Cases defined in the project Description of Work: "Enrolment to public registers" and "One-stop-shop Business Service Portals and Points of Single Contact". They are usually SMEs but they come from a wide range of economic activity sectors including services, manufacturing, commerce and even agriculture.

Looking at the current national service portals and the customers they attract it is seen that it is often the case that such companies delegate their online administrative duties to a business services professional, for example an accountant or a notary. This observation might be useful in defining strategies for attracting and satisfying future STORK 2.0 end-users.

7.3.1 Known Users

A Known User is a foreign Legal Entity already enrolled with a Pilot 3 specific Service Provider; known users should be addresses directly by Pilot 3 Service Providers, inviting them to access the services by means or the eID Stork2.0 authentication, rather than using the traditional system.

Particular care must be taken upon known user selection at SP level, in order to both:

- define a controlled set participants, sufficient to guarantee a successful pilot testing phase:
- contribute to achieving the critical mass needed to guarantee success of the project.

Pilot 3 partners have already begun furnishing statistics on the cross-border usage of their current services (online usage and by more traditional means) and although the statistics are too partial and heterogeneous to draw any broad conclusions the individual numbers indicate that each pilot service has a ready market of from hundreds to thousands of current customers in just the top four or five STORK 2.0 countries in its user pool. This should permit each country to ally itself with a manageably small number of STORK 2.0 partners to implement targeted initiatives.

7.3.2 Potential Users

A Potential User is a foreign Legal Entity potentially interested in a Pilot 3 SP-specific Service.

A key success factor for the Pilot is that of converting Potential Users into real (Known) Users; this can be achieved by means of developing a (first phase) marketing strategy (see Ch.7.2 above). Actions and instruments which will be evaluated and deployed to achieve this include: press releases, targeted e-mailing, the use of house organs and general Public

Administration and Trade Association newsletters, the launching of a STORK 2.0 pilot microwebsite, participation at eGovernment and other sectorial events

7.4 Wider take up by future users

The objective of the project is that of accelerating the deployment of eID for public services and to maximise the take-up of its scalable solutions throughout the EU. This will be achieved by extending the Public Services for Business offer, beyond what is provided by the Pilot, as a future phase (see Ch 7.2 above).

7.5 User Contribution to evaluation

Focus groups will be identified for testing of services by real Users before the formal Go Live date. This will allow a better fine-tuning of the successive marketing initiatives and communication message.

Further on, at the end of the piloting phase, the success of the project will be evaluated in a more formal and thorough way as part of the activities of WP6 through careful measurement of concrete and objective results aimed at determining to what degree the technical and business objectives of the pilot have been met.

The WP6 analysis will be made in terms of specific metrics which contribute to three general evaluation perspectives:

- Use: measurable results related to the use of the services piloted (number of users, uptime of the services, ...)
- Value: results linked to the technical or business value added as a consequence of using STORK 2.0 enabled services (service provider estimations, users satisfaction, ...)
- Learn: lessons learned from the technical and business perspective (including legal and policy issues).

7.6 Pilot Feedback

During the piloting phase controlled, structured feedback will be supplied through periodic recourse to Focus groups that will be required to support the pilot providing feedback in terms of specific criteria, from the eID perspective such as, but not limited to: system functionality, security perceived, reliability, usability.

A feedback form will be available on the STORK 2.0 website and accessible either by means of Stork authentication or on anonymous basis.

The outcome will provide valuable input for the consortium, in terms of evaluation of success and for future improvement.

8 Relationship with Other WP's in Y1

Over the past 12 months Pilot 3 (WP5.3) partners have actively collaborated with all other STORK 2.0 work packages, exchanging information, participating in tasks, events and discussions. These activities and relationships are described in the following sections.

8.1 WP2 Existing infrastructures and resources

Pilot 3 Member States furnished input to the WP2 surveys and deliverables on national eldentity infrastructures and on the current state of providers and consumers (sources and sinks) of eID attributes. In particular, WP5.3 is very interested in the availability of attributes regarding legal entities and the delegation of powers to represent them. The results of the WP2 surveys have been very useful, in this direction, in the formulation of reasonable requirements for the Pilot services.

8.2 WP3 Legal and Trust Analysis

The results of WP3 on data privacy and on the classification of mandates and the powers they encompass have informed the analysis of Public Services for Businesses Pilot requirements and the creation of feasible operating scenarios for taking advantage of the STORK 2.0 cross-border eID interoperability platform and services. Compliance to international legislation in each of the above-mentioned areas is of fundamental importance to the success of the pilot services.

Moreover, the extension of the STORK QAA security levels to cover legal entity attributes and assertions (i.e., extending the current QAA coverage beyond personal eID credentials) will be an important contribution to the governance mechanisms of the STORK 2.0 circle of trust.

WP5.3 partners have given input to the studies of WP2 and have provided feedback to the draft versions of the deliverables in all of the above areas.

8.3 WP4 Common Specifications and Building Blocks

At the heart of the Pilot 3 Common Functional Use Cases lie the fundamental service process flows and data models that WP4 is designing and will provide. There has been a continuous exchange between WP4 and Wp5.3 regarding the support needed or requested by the pilot services and the technical and organisational possibilities that could be reasonably provided by the future STORK 2.0 platform. Sharing of draft deliverables and internal technical documentation, as well as joint participation in meetings and phone conferences and frequent contact between WP Leaders has guaranteed a healthy tension between requirements and services offered, which is converging towards alignment.

8.4 WP6 Pilots evaluation

The Public Services for Businesses Pilot has participated in the WP6 ex-ante evaluation with interviews and discussions with members of five different Pilot partners. The draft evaluation report is generally positive signalling "objectives in accordance with the DoW" and "a consistent trail from objectives to the use cases and success criteria". Other constructive criticism has been provided to guide the next phases of planning and work.

8.5 WP7 eID as a Service Offering

The requirements analysis for the Public Services for Businesses Pilot has brought to light certain needs in the area of organisation, regulation and governance of the STORK circle of trust that are relevant to the future planning towards the sustainable deployment of STORK 2.0 cross-border interoperable eID services.

8.6 WP8 Marketing, Communication & Dissemination

Partners of WP5.3 have contributed to the dissemination activities of WP8 by participating in national and international events dealing with the use of eID management to achieve interoperable eGovernment services. Presentations have been made to a wide variety of PA stakeholders that have expressed strong interest in the project results. Specific contributions are listed in the Dissemination and Marketing Activities Report, D8.5.1.

9 Conclusions

This document has reported the business and technical objectives of the STORK 2.0 Pilot 3, Public Services for Business. It defined the scope of the pilot and analysed the service use cases in order to produce technical specifications which are the basis for the design and implementation of the STORK 2.0 cross-border platform and for the integration of this platform with the individual eGovernment systems and portals which house the pilot services.

Since the final services of the 13 piloting MSs comprise a variety of different Public Administration applications the analysis has tried to separate the service-specific functionalities and features from the purely eID management requirements that are needed to achieve cross-border interoperability of identity authentication and of role verification for authorisation to access and fulfil the services.

In this way two functional use cases were identified that were common to all, or almost all, the pilot services. The first case, a requirement of all pilots, largely coincides with the main process flow foreseen in WP4, the authentication of a natural person and the verification of his/her authorisation to act on behalf of another natural or legal person, or more simply, "Authentication on behalf of". On the other hand, the service identified by the second use case, was evaluated by WP3 and WP4 as not immediately implementable by the STORK 2.0 infrastructure for reasons dealing with both data privacy and security and also for market constraints. Therefore an alternate service was proposed by WP3 and WP4, in some sense a Service Provider-side workaround, which uses current STORK 2.0 services to satisfy the functional requirements of the use case. This solution can be easily implemented by those SPs who need it and still offers a good degree of "STORK 2.0 added-value" to SPs and end-users.

The document also has started two other important activities which will be continued in the next phases of work and planning: the first is in the deriving from objectives and functional goals a complete and coherent set of success criteria and indicators which will be further mapped or transformed into concrete metrics to be implemented and applied to the running pilot services in order to assess their real impact and usefulness; the second is the identification of the main actions that will ensure an adequate service take-up, including the engagement of end-users and the spread of the STORK 2.0 solutions to other nearby service areas.

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11 Appendix - The basic operations of STORK eID Management

The STORK 2.0 infrastructure WILL SUPPORT cross-border interoperability of the standard eID processes of identification, authentication and authorisation of natural and legal persons. Additionally, according to service priorities and opportunities to be further evaluated in the course of the piloting phase of the project, the STORK infrastructure MAY PROVIDE additional information dealing with specific aspects of service qualification and fulfilment. The following definitions of these terms are adapted from the previous STORK Project Glossary:

eID management function	Tasks for the STORK 2.0 infrastructure						
Identification	Gather and/or present the attributes which will uniquely determine a natural or legal person						
Authentication	Authentication of physical persons . When the physical person is the end-user of the online system then authentication will make use of the standard mechanisms used by the national eID provider – token, card, password, etc. In case the physical person is not present (as in CFUC #3 & #4), authentication consists in validating the Identity attributes that have been supplied, that is, requesting confirmation from the national eId Provider that the attributes correspond to a correctly registered physical person.						
	Authentication of legal persons. This will consist in the validation of the Identity attributes with the recognized Id Providers for legal persons – e.g., request Business Registers to confirm the existence of a company.						
Authorisation	Verify that natural and legal persons possess the legal right to access the requested services. This may involve verifying • possession of legal rights, and/or mandates, to represent other (natural or legal) persons						
	 possession of other attributes strictly regarding the end-user's right to access the requested service. 						
Qualification (or general Attribute Aggregation)	Assist the Service Provider (SP) by gathering attributes of natural and legal persons regarding the possession of the requirements for fulfilling the requested service. This will typically involve accessing recognized Attribute Providers (Public agencies, Competent Authorities, etc.) for certifying the status, achievements, experiences or other characteristics of the (natural and legal) persons involved.						
Fulfilment	Assist the Service Provider (SP) by gathering attributes of natural and legal persons regarding the fulfilment of the requested service . This may involve accessing whatever Attribute Provider has been identified for the service and that has joined the STORK 2.0 Circle of Trust.						
	NB: Service fulfilment is almost always out of scope of the STORK 2.0 infrastructure; the definition is included for completeness of this classification of this list of operations.						

Table 29: The basic operations of eID management

Clearly, for all of the above tasks, the STORK 2.0 infrastructure must enable the appropriate communications – SAML assertions regarding all the necessary information – among all the interested parties (Service Providers, Identity and Attribute providers and other platform

nodes). The above five categories of Service Objectives – Identification, Authentication (of Identity attributes with or without the physical presence of the "owner" of the attributes), Authorization, Qualification, Fulfilment – may prove useful for the categorization and structuring of the SAML attributes.

The services that each pilot 3 country REQUIRES of the STORK 2.0 infrastructure in order to implement their STORK 2.0 pilot are shown in Table 30 (M=Mandatory; O=Optional). As mentioned before, qualification and fulfilment are optional services. :

	Natural	Persons		Legal Pe	ersons	
Partner (SP) / country	Identif.	Authentic.	Authoris. (mandates) ⁷	Identif.	Authentic.	Authoris. (mandates) ⁸
AT / AT	М	М	М	М	М	0
NSSO / BE	М	М	М	М	М	0
RIK / EE	М	М	М	М	М	0
ANTS / FR	М	М	М	М	М	0
HMI / GR	М	М	М	M	М	0
IS-SKRA / IS	М	М	М	M	М	0
IC / IT	М	М	М	M	М	0
LT-MOI / LT	М	М	0	0	0	0
TUDOR / LU	М	М	М	M	М	0
NL-MEAI / NL	М	М	М	М	М	М
AMA / PT	М	М	М	M	М	0
SK-MOF / SK	М	М	М	M	М	0
SI-MJPA / SI	М	М	М	М	М	0

Table 30: Summary of required services

⁷ Including the Mandate of a Natural Person to act on behalf of another Natural or Legal Person.

⁸ Including the Mandate of a Legal Person to act on behalf of another Natural or Legal Person.