

STORK project results: Pan-European eID interoperability demonstrated

Vicente Andreu Navarro¹, José Gumbau², Paúl Santapau³ and Andrés Marzal⁴

¹Senior Technology Innovation Specialist, andreuv@uji.es. ²Head of Office for Planning and Technology Forecast, gumbau@sg.uji.es. ³Technology Innovation Specialist, santapau@uji.es. ⁴Vicerector of Campus, Infrastructures and New Technologies, Universitat Jaume I, Spain, Andres.Marzal@uji.es.

Keywords

STORK, Pan-european projects, Mobility, Identity Federation, Cross-border services, Digital Identity, Authentication, Interoperability.

1. ABSTRACT

Secure idenTity acrOss boRders linKed (STORK) is a project co-funded by the European Commission as a part of its Competitiveness and Innovation Programme (CIP) in order to address, in a cross-border scenario, the identity management problem. This project, developed during the last three years, has brought together, in its two phases, 17 countries and 38 consortium partners mixing public and private sector organizations.

By running six real-life pilots the achievement of interoperability of national electronic identities among European member states involved has been proven. One of these pilots, the Students mobility one, has focused on the use of University services by foreign students moving from one European university to another.

This article will summarize the main outcomes of the project and will focus on its sustainability and further adoption by new stakeholders.

2. Background

University Jaume I is leading the student mobility pilot in STORK on behalf of “Conferencia de Rectores de Universidades Españolas” (CRUE). This pilot, which went live last June, allow students to use services in Universities from Austria, Estonia, Italy, Portugal and Spain using their own national credentials and despite of their physical location.

After almost one year running, this paper describes the main outcomes of STORK’s Students mobility pilot. Results and benefits obtained by all stakeholders are presented and special attention is paid to the sustainability of the common interoperability infrastructure after the end of the pilot, initially planned for the end of May 2011, but finally scheduled for the end of the year.

The sustainability of the project and its survival is backed by the addition of a new pilot to the initial five (Cross border Authentication for Electronic Services, SaferChat, eDelivery, Change of Address and Student Mobility). This new pilot, ECAS access, uses STORK’s infrastructure for authentication in several portals run by the European Commission.

3. STORK common results

The main remarkable result of the project, after several months in production, is that interoperability among countries participating in it has been achieved. The common interoperability framework put in place by the European Union Member States involved in STORK has allowed universities to successfully pilot the use of foreign electronic credentials in a range of locally provided services.

A common service was agreed among all participants in order to allow the registration of Erasmus students, but, besides this common application, services to be tested have been decided by each

academic institution depending on factors such as facility of implementation, impact in pre-existing services, resources available or links to other plans or lines of activity. In many cases, what has been done is to enhance single sign-on mechanisms in order to enable all University services to be accessed with foreign credentials. As an example of what has been achieved, the following cloud of services summarizes the services put by Universities involved at the disposal of foreign students with valid STORK credentials:

AT-TUG		POLITO	
TUGRAZonline		ReErasmus pre-enrollment (*)	
Erasmus Pre-Enrolment		Master of science courses application	
TU Graz TeachCenter		Phd programs application	
TU Graz LearnLand		1st and 2nd level Master application	
PLE			
WebNews			
Web-Portal			
u:book			
	EE-SAIS		
	Admission Information System		
	ES-UJI		
	Registration and personal data access		
	Registration as a community user		
	UJI-eServices (Online formalities)		
PT-IST			
IST			
Erasmus@IST			
Password recovery			
List of web services			

4. Technology outcomes

The main technology outcome of STORK has been the creation of a pan-European federation of electronic identities. The aim of Identity Federation is to delegate the authentication procedure on the involved party who has control over the validation of the authentication data. This party is commonly known as Identity Provider and could offer an Identity proof -that is a yes/no answer to the question "is the user authenticated?"- or, in addition, a reliable set of attributes could also be offered by the identity provider (e.g. postal address of a person, telephone number, date of birth,...). In the case of STORK, identity providers are national authorities which guarantee the authenticity and validity of identity proofs and attributes.

5. Student mobility benefits

The value of the pilot is translated into benefits for each one of the stakeholders involved in it. Mainly, the stakeholders involved in the student mobility pilot are two: University management services and students. Measurement of benefits is made through feedback forms: in the case of students these feedback forms are linked from the services offered within the pilot; in the case of internal stakeholders, feedback will be obtained in the final phases of the pilot. In some cases, even though they are not the focus of the pilot, also some benefits can be anticipated for external users of University services and for citizens in general. The use of different types of credentials for accessing University services allows academic institutions to enable new functionalities for alumni, prospective students or, even, general public.

The use of electronic identities issued in the country of origin generates, for the student moving to another University in a different country, several different benefits. Those benefits depend on the services made available by each academic institution, but they can be summarised as follows.

Benefits for students are:

- Reduction of the administrative burden for students: students can apply online for the Erasmus term/year at the Universities involved. By using their eIDs, the students' applications can be accepted almost immediately because it is no longer required to prove the identity of the student in person - with a physical ID. For example, in some cases such as PT-IST, before STORK identities students were already able to fill in their data online in order to speed-up the approval process, but they could not be given access to the general online services of the school because their identity was not verified. Only after physical verification, students could be given access to online services and finalize the enrolment process, namely they would have to discuss their plan of studies, choose the right courses, establish a schedule, have access to computer facilities, and get school identity cards from university administration. All these steps took about two to three weeks with classes already running. With STORK all of these steps can be performed before the student arrives at the university. In fact, on the first day of arrival the student can go directly to the first class and can almost instantly access every on-line service from his/her computer through the campus wifi network which is available through STORK, without requiring any presential procedure.
- Allow early completion of the registration formalities. By using their own electronic identity credential the student can perform several formalities while he or she is still at his country of residence.
- Provide faster, safer and easier access to services: in some cases, students can generate, thanks to the use of a STORK credential, user accounts that grant access to all online services for students. In other cases, services have been made directly accessible through the use of a STORK credential for authentication. Independently of the mechanism chosen by the service provider students can, for instance, register for lectures, labs, and exams before arriving at the University of destination.

University management services obtain also a verified benefit from the pilot. Access to electronic services using STORK authentication mechanisms allow the management staff to avoid some in person formalities, but also, some additional benefits derive from the use of identity attributes improving the quality of the data managed by the University.

Benefits for the University Administration

- Administrative processes become easier and more transparent.
- The use of eIDs increases the overall quality-of-service because applications can be processed faster and more efficiently.
- Electronic formalities can be performed without need of a previous in person registration and credentials delivery procedure.
- Some especially critical situations (students abroad who try to have their password changed by phone) can be safely solved with the use of nationally issued electronic credentials. Some Universities allow to do that change following authentication with STORK credentials.
- Improved data quality: thanks to the attributes linked to the identity of the user, the data quality is greatly improved. Some very common problems related with the handling of foreign names or dates are solved. So far, previously to the running of the pilot, some Erasmus application forms were received in paper (and had to be typed by local staff without knowledge of the language of the student) or names in online forms were not written in standardised ways. With the use of eIDs, the name, date of birth, and potentially further information is provided in a standardised way and cannot be changed by students. This helps avoid spelling mistakes or problems with special characters in names that are not used in local character set (e.g., ç, ñ, ú, ... vs. ä, ö, ü, ß).

Increasing the number of services offered by the Universities and extending them to other stakeholders different than students is the main way towards future benefits. Many services available for students can be also put to the disposal of other users but also, the use of nationally issued electronic identities, offer the possibility of developing new services.

6. Future challenges

A complete view of the scalability of the Student Mobility pilot, not limited only to current partners of the consortium but also to third parties, must take into account that there are at least three different levels of integration:

- Adding new services by Universities already integrated in STORK, which is a simple task and depends, from a technical point of view, exclusively on the service provider.
- Adding new Universities as service providers in member states that have developed and put in production their own infrastructure (national PEPS or V-IDP), which would involve technical developments by both, the new service provider and the national authority in charge of the PEPS.
- Adding new Universities as service providers in member states that have not developed STORK infrastructure. It is a complex task that would suppose a process similar to the current enlargement procedure.

7. CONCLUSIONS

The pilot has shown that generalization of eIDs by the European countries will eliminate formalities during the university engagement procedures, allowing students to apply for a specific service from anywhere just having his own national electronic credential.

The interconnection infrastructure has proven to be stable, easy to maintain and is providing a good user experience.

8. REFERENCES

STORK website (2011). The Stork project. Retrieved February 24, 2011, from: <https://www.eid-stork.eu/>.

CRUE website (2011). Conferencia de Rectores de Universidades Españolas. Retrieved February 24, 2011, from: <http://crue.org/>.

Wikipedia (2011). Identity management. Retrieved February 24, 2011, from: http://en.wikipedia.org/wiki/Identity_management.

SIR (2011). Servicio de Identidad de RedIRIS. Retrieved February 24, 2011, from: <http://www.rediris.es/sir/>.