Project Overview

The European Campus Card Association (ECCA) is actively progressing with a “Consultation Process on the Development of a Proposal for a Trusted Student Identification Framework” (Student eID Framework) that will use internet technologies to support the provision of secure identification and authentication of students on a cross-border basis in Europe. Since established in 2002, the main policies and strategies of ECCA are dedicated to promoting research for the development and implementation of student electronic identification (eID) credentials in Higher Education Institutions (HEI) that supports student mobility and the provision of trusted identification and secure access to services across European countries.

Achieving cross-border student mobility will enable students to complete transactions online using internet technologies. This requires secure identification and authentication. The absence of trusted interoperable and an easy-to-use forms of eID and authentication can pose obstacles to students completing these transactions securely and efficiently between the relevant HEI.

The main goal of this project is to obtain a consensus between European HEIs, Service Providers and the relevant stakeholders on the necessary structure, technology and requirements that will facilitate the implementation of a common student eID throughout Europe.

Project Objectives:

(i) Engage in a process of dialogue with the relevant stakeholders to seek out their views and opinions on the needs and requirements of a trusted Student eID credential (eIDAS compliant) that supports cross-border services;

(ii) Establish recommendations on innovation in internet technologies for the development of a proposal for a trusted student eID framework that will support the provision of secure identification and authentication on a cross-border basis in Europe;

(iii) Disseminate and promote the recommendations to the relevant stakeholders on the future requirements of eID technologies in-line with EU policy.

Deliverable 1 – Researching the State-of-the-art

The traditional student identification (ID) in HEIs across Europe generally consists of bespoke, standalone solutions that do not conform to any common standard. These solutions operate in isolation and therefore are incapable of facilitating mobility, interoperability or student authentication between HEIs. The current process of student identification is generally based on the student’s unique ID number; however, the format and process used to issue the student ID number varies from country to country, and in many cases, this format varies within a country. Furthermore, in some countries, there is no formal process in place to issue student ID numbers. In recent years, through innovation in technology and the use of mobile devices, the requirements for secure electronic identification is now becoming an important mechanism in the evolution of student life on campus. However, the customary core function of the student ID usually remains restricted to facilitating local access to services for students, academics and visitors. This has resulted in a multiplicity of student identities in HEIs, which are required for the diverse range of academic and non-academic services both on and off campus. To overcome this problem, it is essential that there is effective collaboration with past and on-going initiatives to develop and integrate an infrastructure that supports the concept of a European Student eID for HEIs.

The European Commission, under the Connecting Europe Facility (CEF) in the field of trans-European Telecommunication network has prioritised its support for initiatives on cross-border student mobility. This support is focused on solutions that facilitate cross-border online access to academic and nonacademic e-services for students, together with the trusted electronic transfer of student information between students and the relevant HEI.

One of the primary aims of this project is to assist in the process of generating knowledge and awareness of the benefits derived from a student eID credential, compliant to eIDAS, which supports the statutory activities of ECCA and EU policy. In particular, Regulation (EU) N°910/2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation) is to provide a predictable regulatory environment to enable secure and seamless electronic interactions between businesses, citizens and public authorities.
Many of these projects focused on the use of digital technology for connecting HEIs and facilitating secure exchange and verification of student data, interoperable with eIDAS. Compliance with EU policies and regulations in relation to eID and trust services is demonstrated in many of these projects.

The outcome of this analysis has resulted in the review, and collation of the most recent and relevant student eID projects. Over the past 10 years these projects have resulted in successful outcomes individually, but many are done in isolation from each other with inadequate collaboration between projects. There is a need to achieve better cooperation between the various project stakeholders to enable the exchange of information and the sharing of best practices in the process of establishing a student eID. It is important for the stakeholders to be aware and understand the evolution of the eID landscape in order to support the needs and requirements of students and HEIs. This cannot be analysed or achieved in isolation.

In July 2019 the CEF Telecom call was announced (CEF-TC-2019-4: EU Student eCard Core Service Platform) and the objective is to design, develop, and roll-out a solid technical infrastructure to support European higher education institutions in offering to students a secure cross-border electronic identification and authentication as well as cross-border electronic exchange of data required by online student services. It states that the future solution should integrate the eIDAS eID framework with various existing projects and infrastructure. The goal of this future solution is to enable European students in a cross-border mobility context to use the different academic online services as well as nonacademic services.
Deliverable 2 – Market Research Survey

As part of this consultation process, an on-line survey was commissioned, to obtain the views and opinions of all relevant stakeholders regarding their requirements and the benefits of a European Student eID that will overcome the obstacles to the cross-border mutual recognition of students. This survey was representative of all stakeholders, which included HEIs, service providers, students and others, from Europe, USA, Canada, and Asia. The total number of fully completed survey responses was 190 (completion rate 88%). From the 190 respondents, HEIs accounted for 42.63%, students 33.16%, service providers 16.32% and others 7.89% (namely IT professionals, Government departments).

Over 98% of the HEIs and students’ sectors confirmed that currently the physical ID card is the most common form of student identification on campus. However, over 70% of all the stakeholders combined confirmed that in relation a European Student eID their preferred choice would be a hybrid system consisting of a physical ID card and mobile / digital device. This is not surprising considering the advancement in mobile and digital technology in recent times.

When all stakeholders were asked about the services that the European Student eID should be used for, again as expected, on-campus academic and non-academic services were prevalent but there was a significant demand for off-campus service use. In addition, over 60% of all the stakeholders stated it should be used for cross-border services and this was highest among the students’ sector. This is a significant result as the student will be the end user of the system.

The main aim of a European Student eID is to provide students with a single secure identifier that can be used at HEIs across Europe and provide access to services on a cross-border basis. This is part of the digital single market policy. However, awareness among the stakeholders varied. The highest level of awareness was with the Service Providers/Others grouping at 82.61% and HEIs at 72.84%. The awareness of the Students sector was only 15.88%.

However, in terms of its importance, over 95% of all stakeholders rated the European Student eID as being ‘somewhat important’ to ‘very important’. While the results clearly demonstrate its level of importance to all stakeholders, the level of awareness by the student group, who will be the end user of the system, is low and is a concerning issue. This is something that needs to be addressed in the future.
There are many benefits to a single European Student eID. There was a consensus among all the stakeholders that the most important benefit was enabling the identification of students in a trusted manner. The secure exchange and verification of student data and records seamlessly and reliably was also ranked a high benefit for both the HEIs and Service Providers/Other groups in particular. Moreover, the students group stated that having immediate access to services and facilities on and off-campus and being able to register for courses in advance was an important benefit for them.

Technology is advancing at a rapid pace and is now part of our everyday lives. A digital wallet, also known as an "e-Wallet", is becoming more prevalent. As part of the survey, it was important to determine the significance of incorporating an e-Wallet with the European Student eID. 51.98% of all the stakeholders felt it was either ‘important’ or ‘very important’. It ranked the highest among students at 58.73%. There was also a significant number at 18.29% that felt it was ‘not important’.

The implementation of a European Student eID will present many challenges and obstacles. Achieving internal agreement in the HEI was rated as a difficulty level of ‘high’ by 88.83% of the stakeholders with HEIs rating it the highest at 93.83%. This would be expected as they would understand the internal issues that need to be addressed within the HEI.

Achieving individual Member state agreement was rated as a difficulty level of ‘high’ by 89.13% of the stakeholders, with HEIs rating it the highest at 96.3%.

Regarding HEIs losing ownership of their own eID, this was rated a ‘high’ difficulty by 72.67% of the stakeholders. However, of all the difficulties presented in the ‘high’ range, this issue is ranked the lowest, even among the HEIs.

The complexity of implementing a single eID was given a difficulty level of ‘high’ by 83.29% of the respondents with the HEI grouping rating it the highest at 88.89%. This would be anticipated as HEIs would be more familiar with the complexities of developing, integrating and implementing systems on campus.

Trust, security, validation and authentication issues were given a difficulty level of ‘high’ by 85.02% of the stakeholders and the ratings were similar among the HEIs, Students and Services Providers/Others.

Interoperability of different systems was given a difficulty level of ‘high’ by 88.89% of the respondents with HEIs and Service Providers/Others group very similar at 93%, with students rating it 79%.

Amalgamation of multiple identities into a single identity was given a difficulty level of ‘high’ by 82.5% of the stakeholders with Service Providers/Others rating it the highest at 91.3%.

Of all the obstacles and challenges presented, they all scored a difficulty level above 82%, with the exception of HEIs losing ownership of their own eID scoring 72.6%.

As confirmed by 67.9% of HEIs their ID card services are currently hosted locally or mainly locally. This is something that might change with the advancement of digital technology. Europe’s digital transformation is accelerating due to the rapid advance of these new and developing technologies. The European Student eID will require the use of various digital technology. Digital transformation is the use of new, fast and frequently changing digital technology to solve problems. In terms of digital technologies, Cloud Computing was the most popular answer choice by all stakeholders at 61.52%, scoring highest with Service Providers/Others at 76.09%. Blockchain was the next most popular at 34.24%. A considerable percentage of the stakeholders ‘did not know’ what technologies should be considered at 27.8%. In terms of other responses provided, these included digital certificates, digital signatures, trust services (eIDAS), federated authentication, SSO, cyber security, PKI, smart card.

As part of this project we reviewed the ‘state of the art’ in Deliverable 1, and outlined the various projects and initiatives being undertaken in relation to the European Student eID. Overall 80.47% were not aware of the projects, the highest being the Students group at 96.86%. This is an issue that needs to be addressed; a more effective method of information dissemination is required.
The deployment of a European Student eID will require a connection to the student profile. The unique identifier is the most popular at 88.54%, followed by Open Access information (name, photo, email etc.) at 64.68%, HEI related information (e.g. student role and status, current course, sports facilities access, etc.) at 43.49%. It is important to note from the results that HEIs only require information that is public in the card. Also, the use of the ID to store non-public information could lead to data protection problems if not treated appropriately. This will be important information to consider in the development of the European Student eID and data protection issues will be a key factor in this regard.

The European Student eID will be an important enabler in supporting student mobility and the provision of trusted identification and secure access to services across European countries. The transfer of student data and records electronically will require the provision of trusted identification and authentication. Both the HEIs and Service Providers/Other groups were asked to select the most suitable mechanism for this. The preferred option was the mobile/digital device at 61.76%, followed by a physical eID card 56.18%. The username and password were rated at 23.98%, One Time Password at 22.27% and ‘don’t know’ at 13.94%. Other options at 10.22% included trusted certificates, national ID card, biometrics, digital signatures, cloud services authentication, ISO standard 18013-5 compliance. The mechanism adopted will be important as there is a consensus among all the stakeholders that the most important benefit was enabling the identification of students in a trusted manner, but trust, security, validation and authentication issues also scored high in terms of difficulty level.

Standards will be an important requirement for the European Student eID. 97.5% of HEIs rated it as being ‘important’ or ‘very important’. Standards in the ecosystem will assist in protecting HEIs being dependent on a specific service provider or solution. This will be an important consideration that should be addressed in the development of the European Student eID system.

In addition, what needs to be considered is the infrastructure for the secure provisioning and validation of data and who should be responsible for this. For the survey we asked the HEIs who should be involved in this process with 46.91% stating the HEIs should be responsible for the validation, and the Government / National Entity will act as the broker to the data, providing trust to the European Student eID and 22.22% stated the HEIs should be responsible for all data storage, issuance and validation. It is important to note from the results that a significant percentage of HEIs don’t necessarily want everything under their control. Their preference is to have one entry point that will provide the interoperability.

This data collection process brought together the needs and requirements of the relevant stakeholders. It provided a good insight from each of their perspectives. It has established a process of dialogue and knowledge sharing which will be beneficial for the establishment of a European Student eID.
Deliverable 3 – Workshops

An essential element in this consultation process of the project was to engage in knowledge sharing with the stakeholders and other groups through a series of regional workshops which were held in Sweden, Portugal, and online. The aim of the workshops was to obtain feedback from the stakeholders in that region on the future needs and requirements of a trusted eID credential. The workshops were attended by Higher Education Institutions (HEIs), Service Providers, Students, State Entities and Research Centre’s. The 107 participants that attended the three workshops, comprised of groups who collectively possessed an extensive and diverse range of knowledge and expertise with regards to the requirements of a trusted eID credential. The availability of this expertise facilitated an engagement process, that involved open dialogue and knowledge sharing with all stakeholders at each of the three workshops. It provided much fruitful discussions on the future needs and requirements of a European Student eID.

Conclusions & Recommendations

From the various dialogues it was established that the majority of stakeholders considered a European Student eID of significant importance, even though their level of awareness of it was considerably low. They do see many benefits too but also the level of difficulty with the challenges outlined were rated highly. This is something that will require careful consideration and planning with the development of a European Student eID. It is important that the system will have the capability to be used on an off campus for both academic and non-academic services and these services need to be defined taking into consideration the technical, operational and political challenges that need to be addressed.

There are a diverse range of reports, projects and studies, all of which are relevant to the delivery of a European eID credential that supports student mobility and the provision of trusted identification and secure access to services across borders. However, from our dialogue with the stakeholders many of these projects are done in isolation from each other with inadequate collaboration between projects. It was also established a very high percentage of the stakeholders were not aware of these projects. There is a need to achieve better cooperation between the various project stakeholders to enable the exchange of information and the sharing of best practices in the process of establishing a European Student eID.

On campus at present the physical ID card is the most common but the preferred choice for a European eID is a hybrid system which consists of both a physical ID card and mobile / digital device. The advancement in technology will be a key consideration but the token type should not be dependent on any particular type of technology.

What is important is the need for a trusted interoperable eID system in trying to achieve cross-border student mobility and the transfer of data securely on a global platform. But this will present challenges both politically and technically that each member state will need to address. From our dialogue it was recommended that standards are hugely important and where possible existing standards and infrastructure should be used.

The process of validation and hosting of the system will also need to be considered. From our discussions and dialogue HEIs don’t necessarily want everything under their control. Their preference is to have one entry point that will provide the interoperability. Service Providers will also be crucial as some HEIs expressed the importance of having a common ecosystem.

From our communications it was identified that trust is an important factor and the use of a suitable trust framework with 2/3 factor authentication may be required. There was much debate around the use of eIDAS with some concerns expressed e.g. it is difficult to use for a normal user with many steps involved, it is an online system and services can be offline, and in terms of usage it can only be used from a PC and not a mobile. There were other technical solutions discussed including strong recommendations on the use of eduGAIN. But concerns were expressed in relation to no agreements between member states on how will trust be validated and national systems of authentication.

There was a lot of discussion in relation to a self-sovereign identity, the need for a separate student ID and could a national ID be used with additional attributes authenticated by the HEI. It was outlined that having a unique student identifier for all worldwide is the biggest challenge and also to make the UID unique. But it was expressed that the development of innovative technology (e.g. blockchain) does provide many benefits and opportunities for identity management and accessing the student profile. It was outlined though that you will still require a physical card for identification as HEIs are not connected to online services or digital technology for everything. You still need identification and authentication.

In terms of a European Student eID it will be important to get the balance right between trust, convenience, privacy and security. It will also be important to take account of diversity, different cultures and integration requirements of European countries. An initial pilot project involving three or four countries was strongly recommended. Small steps are required at the early stage of the process in order to achieve the high level of trust required between the stakeholders to implement a European Student eID.

This research provides the ideal foundation to proceed with the next phase, which is to establish the future state-of-the-art and achieve the ultimate goal of enabling secure identification and authentication of students across borders with their European student eID.

The final report on this project is available to download on https://ecca.eu/index.php/projects/vietsch-foundation/publications