



# **A digital wallet for cross border student micro-credentials**

How Finland and Lithuania are introducing digital micro-credentials that enable students to bring and prove their education achievements across borders.

## About the Project

The ECIU or the European Consortium of Innovative Universities is a network of 13 united since 1997 by a common profile of shared beliefs, interests, and mutual trust. One of the key initiatives, provided by ECIU and driven by business, and public stakeholders, is the challenge-based approach where businesses, city and regional governments provide the challenge for the ECIU University teams to solve using the challenge-based learning methodology. As a result, an expert team selects relevant learning micro-modules from ECIU member universities that help students gain knowledge or skills needed to solve the challenge.

Tampere University in Finland and Kaunas University of Technology in Lithuania both are taking leading positions towards building micro-accreditations standards. With such semantic models, universities across the EU could easily and in the uniform manner exchange academic information and it would be one more step towards EC Single Digital Market. Although, even having agreed a common data model there is still a need for a network or infrastructure that would allow the delivery of credentials that everyone can trust by default and be certain that they are authentic and legally binding. Moreover, such data transfer should address GDPR and EIDAS requirements, and students need to have mobility and interoperability.

That is how it was decided to participate in the EBSI Early adopters Multi-university pilot. EBSI not only provides a trusted network by using DLT technologies, but ensures GDPR and EIDAS compliance and has a governance framework agreed between all Member States that ensures trust and reliability.

## The Challenge

Universities do not have digital records for students especially for courses obtained across borders. This means that a large amount of manual work is needed.

Both universities ([Tampere University](#) in Finland & [Kaunas University of Technology](#) in Lithuania) are part of the university network [ECIU](#), however, student accreditation such as micro-credentials from courses (i.e. micro-modules or ECIU challenges) are not transferable between the two universities, making it very hard for students to take

necessary courses abroad. Additionally, the current course accreditation system is missing any records of skills and/or achievements acquired by the students.

As part of the [EBSI \(European Blockchain Services Infrastructure\)](#) early adopter program, the project team decided to use “Self-Sovereign Identity” or “SSI” to create transferable and verifiable micro credentials for students of both universities. This user-centric solution will allow students to hold records of their obtained courses, share these records and to have them verified by the university in which they’d like to enroll.

## The Solution

The project teams screened the market for solutions that would allow them to adopt SSI fast and without much complexity. Specifically, they looked for a solution that is

- open source under a permissive license (e.g. Apache 2),
- compliant with EBSI and the new EU identity standards (ESSIF),
- compliant with GDPR
- highly interoperable
- allows for data portability (of micro credentials)
- user-centric

Walt.id checked all the boxes and with that, the project team decided to use walt.id’s open source solutions and work closely with its team of experts.

## The Results

The project teams from Finland and Lithuania have decided to use walt.id’s open source solutions ([SSI Kit](#), [Wallet](#)) to introduce verifiable micro-credentials based on Self-Sovereign Identity. As a result students will be able to:

- Obtain courses abroad
- Have these records of courses in form of verifiable credentials
- Bring their records of achievements wherever they go and have them verified by various parties (e.g universities, potential employers etc.)

Today, the project teams have solved the process and identified many of the requirements for (a) setting up EBSI-related products (e.g. walt.id) and (b) integrating

them with their local systems and databases in order to automate the issuance, verification and processing of micro-credentials.

The plan is to extend the cross-border use case to ECIU University learning opportunities and to explore how to ensure portability of micro-credentials and interoperability of micro-credential solutions/technologies via EBSI.

*"In the light of the new digital era and evolving technologies, personal data privacy became one of the most important tasks. Citizens expect more control over their data and wish to know who is using their personal information and for what purpose. To address those needs and future cyber security challenges, the EU has created EBSI that is citizen-centric and where the user has control over its personal data. In our Early adopters, Multi university pilot we were seeking to develop a GDPR and eIDAS compliant data exchange solution for the students ensuring uniform data sharing without the need for direct connection between the university's IT systems.*

*As EBSI APIs ensures only generic and rather complex connection to the ecosystem we decided to use middleware allowing easy integration of EBSI to the used academic IT system. To eliminate possible security issues we have decided to use only an open source-based solution. After research of possible available solutions, we have*

**Jonas Žalinkevičius**

*Director@eDelivery LT*

*selected walt.id. On top of being open-source, they have ready to use components that could be easily deployed and allow to connect to EBSI. For more complex tasks walt.id has an experts team ready to provide assistance and support.*

"

*"Our main mission is to explore how to enable verifiable and student-owned micro-credentials via EBSI. Collaboration with KTU and walt.id has revealed new ways to ensure portability and authenticity of micro-credentials"*

## **Henri Pirkkalainen**

Associate Professor for  
Information and Knowledge  
Management, Tampere University

## **Ready to get started?**

[Contact us](#) or simply [book a meeting](#).

We are happy to help.

*... or get in touch with the [project](#) experts and team*



[Walt.id](#) develops Self-Sovereign Identity (SSI) solutions for businesses and governments across industries.

Developers and organisations rely on our open source products as an easy and fast way to use Self-Sovereign Identity - including Europe's new digital identity ecosystem based on the EU Blockchain and the EU SSI Framework (ESSIF).

To ensure client's success, our industry-leading experts provide holistic services including from conception over the implementation of pilots and production system to enterprise support and managed cloud services.

For more information visit [www.walt.id](http://www.walt.id) or get in touch via [mail](#).