

# Smart Diaspora 2023

10 - 13 Aprilie 2023,  
Timișoara

[www.diaspora-stiintifica.ro](http://www.diaspora-stiintifica.ro)

Eveniment aflat sub înaltul patronaj  
al Președintelui României



# European Priorities for **Blockchain in Education**

## **EBSI4RO** Connecting Romania through Blockchain

Carmen Holotescu, Professor PhD  
Team member EBSI4RO UPT



# Content



1. EU Initiatives and Policies related to Blockchain. Blockchain in Education
2. EBSI4RO – aims and outcomes

# Blockchain Technology

## Bitcoin P2P e-cash paper

Satoshi Nakamoto [satoshi at vistomail.com](mailto:satoshi@vistomail.com)

Fri Oct 31 14:10:00 EDT 2008

- Previous message: [Fw: SHA-3 lounge](#)
- Messages sorted by: [\[ date \]](#) [\[ thread \]](#) [\[ subject \]](#) [\[ author \]](#)

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I've been working on a new electronic cash system that's fully peer-to-peer, with no trusted third party.

The paper is available at:

<http://www.bitcoin.org/bitcoin.pdf>

The main properties:

- Double-spending is prevented with a peer-to-peer network.
- No mint or other trusted parties.
- Participants can be anonymous.
- New coins are made from Hashcash style proof-of-work.
- The proof-of-work for new coin generation also powers the network to prevent double-spending.

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<http://metzdowd.com/pipermail/cryptography/2008-October/014810.html>

The blockchain term, originally *block chain*, was first coined in 2009, by (the still unknown) *Satoshi Nakamoto*, in the original source code for the virtual currency Bitcoin: "Nodes collect new transactions into a block, hash them into a hash tree"; "when they solve the proof-of-work, they broadcast the block to everyone and the block is added to the block chain." (Nakamoto, 2009).

<https://github.com/trottier/original-bitcoin>

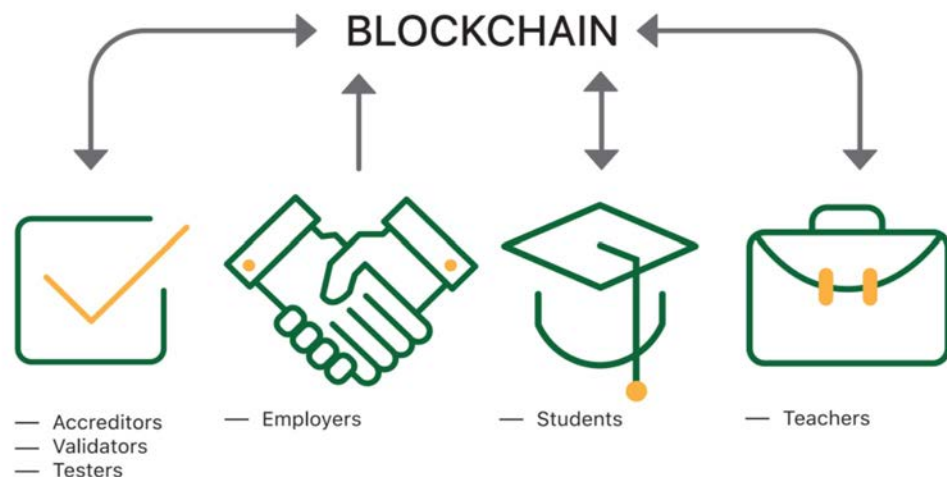
Blockchain technology enables the creation of a decentralized environment, where cryptographically validated transactions and data are not under the control of any third-party organization. Any transaction ever completed is recorded in an immutable ledger in a verifiable, secure, transparent, and permanent way, with a timestamp and other details.

In March 2018, Merriam Webster Dictionary added the definitions for Blockchain, Cryptocurrency and Initial Coin Offering (ICO).  
[twitter.com/MerriamWebster/status/970667988964831232](https://twitter.com/MerriamWebster/status/970667988964831232)

# Blockchain in Education and Research

- Digital certification using an open infrastructure for credentials
- Intellectual property management (scientific papers, research)
- Public funding tracking
- Students' payments, grants management, students' services (e.g. academic records, transcripts), credit transfer, learning portfolios
- Pedagogical enhancement: anonymous marks/student performance comparison leading to personalised learning, reputation, proof of learning
- Decentralized Universities/Science
- Tokenization of Learning

<https://slideshare.net/inamor/open-education-blockchain-and-flexible-learning-pathways>



## Pioneering universities:

- University of Nicosia - <https://unic.ac.cy/blockchain> (2013)
- Open University UK - <http://blockchain.open.ac.uk> (2016)
- MIT USA - <http://certificates.media.mit.edu> (2016)

# EU Initiatives and Policies related to **Blockchain** (1)

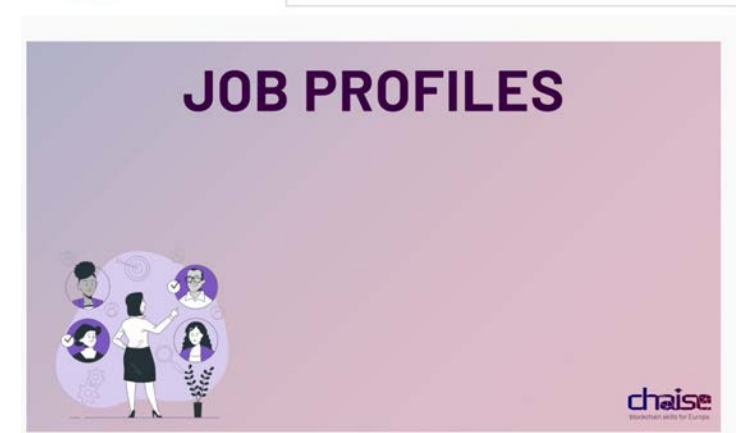
- **Blockchain Technologies are considered strategic for EU:** “Blockchain and Distributed Ledger Technologies (DLT) have the potential to bring great improvements to the European industry and citizens. These technologies are transforming the way we use the internet and digital services globally.” - <https://digital-strategy.ec.europa.eu/en/policies/blockchain-strategy>
- **EU Blockchain Observatory and Forum** was launched on 1 March 2018, as a knowledge hub on blockchain – <http://www.eublockchainforum.eu>
  - 2018-2020 - 60 experts: Irina Albita (FilmChain) and Vlad Zamfir (Ethereum)
  - From 2021 – 90 experts: Anca Bogdana Rusu, Dr.Ingrid Vasiliu-Feltes and Irina Albita
  - Online Forum - <http://eublockchain.mobilize.io>
- **European Blockchain Partnership (EBP)** was signed on 10 April 2018 (Romania on 29 May 2018) - <https://ec.europa.eu/digital-single-market/en/news/european-countries-join-blockchain-partnership>
- **European Parliament resolution on distributed ledger technologies and blockchains: building trust with disintermediation, 3 October 2018:**
  - <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P8-TA-2018-0373&language=EN&ring=B8-2018-0397>
  - <https://medium.com/@operagroup/eu-parliament-passes-blockchain-resolution-737d0ce99e38>

# EU Initiatives and Policies related to Blockchain (2)

- **European Blockchain Services Infrastructure (EBSI)** - a project of EBP (9 April 2019); 4 use cases selected in 2019, 3 new cases in 2020; putting the citizens in control of their data; EBSI Experience Centre - <https://ec.europa.eu/ebsi>  
Notarization of documents, Validation of diplomas, European Self Sovereign Identity, Trusted Data Sharing  
SME financing, European Social Security Identification Number, Asylum process management
- **International Association for Trusted Blockchain Applications (INATBA)** - industry, startups and SMEs, policy makers, regulators, civil society and standard setting bodies, 3 April 2019 – <http://inatba.org>, <https://inatba.org/reports/blockchain-education-report> (2021)
- **CHAISE** – Erasmus+ Sector Skills Alliance (2020-2024), with mission is to develop a strategic approach on blockchain skills development for Europe as well as to deliver future-proof training solutions; ANC is a partner <https://chaise-blockchainskills.eu>, <https://chaise-blockchainskills.eu/join-the-chaise-alliance>
- **European Blockchain Regulatory Sandbox** – a pan-European framework for regulatory dialogues to increase legal certainty for innovative blockchain technology solutions - <http://blockchain-sandbox.eu/>

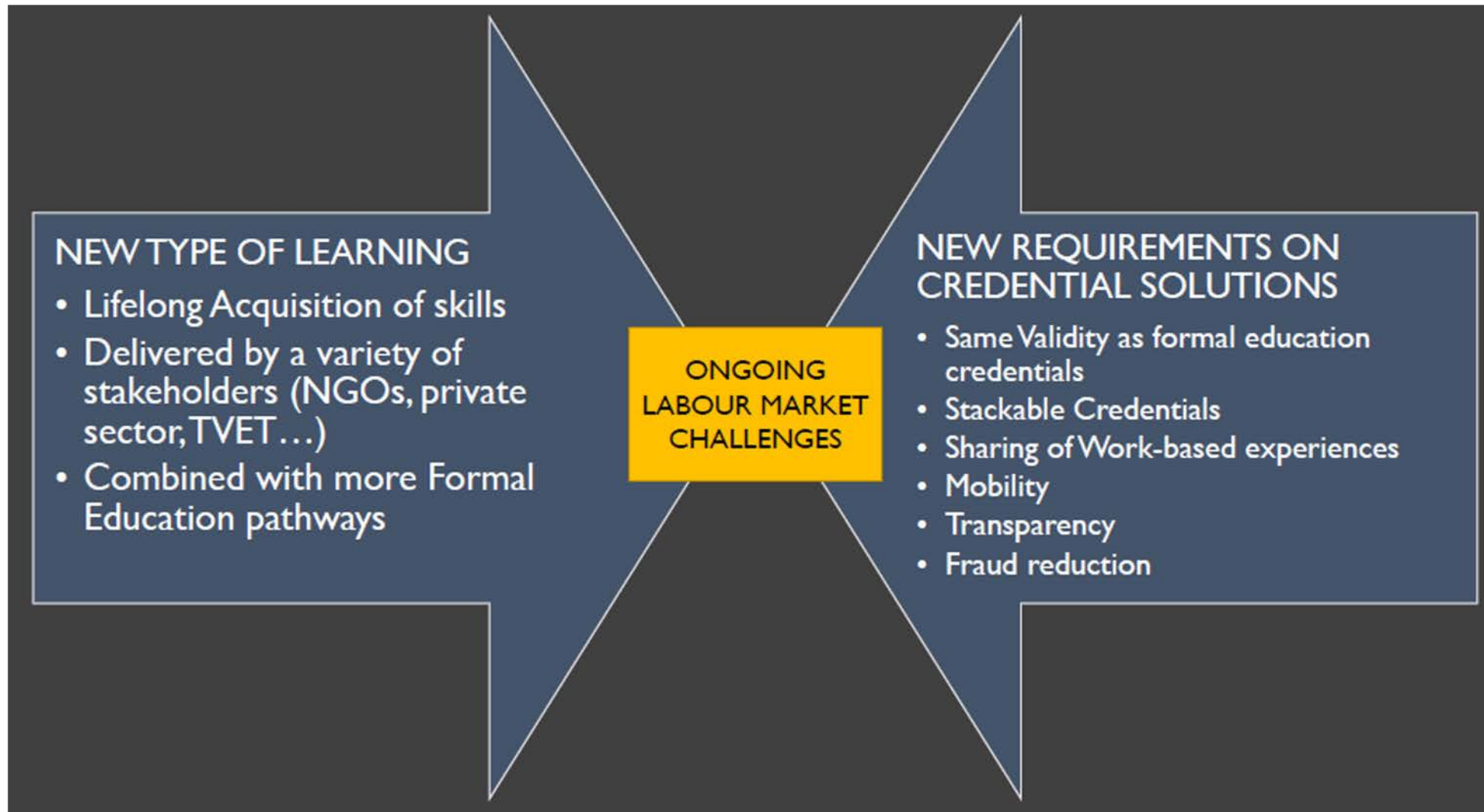


Blockchain Skills for Europe - An introduction to the CHAISE project



Job profiles in the blockchain industry - The Blockchain Manager

# Opening up Education



From Alex Grech - Blockchain, Self-Sovereign Identity and Credentials, March, 2021 – <https://www.slideshare.net/alexgrech/blockchain-selfsovereign-identity-and-credentials>



# European Digital Credentials for Learning



English EN

Home > What are digital credentials

europass

Europass tools

Learn In Europe

Work In Europe

About Europass

Stakeholders

Login to Europass

## What are Digital Credentials

Europass Digital Credentials describe a learning achievement. They can describe activities, assessments, and professional entitlements as well as qualifications.

The [European Commission](#) is developing the Europass Digital Credentials Infrastructure (EDCI) to support efficiency and security in how credentials such as qualifications and other learning achievements can be recognised across Europe.

Work is ongoing on the development of the Europass Digital Credentials Infrastructure (EDCI). The EDCI will support authentication services for any digital documents or representations of information on skills and qualifications as outlined in [Article 4 \(6\) of the Europass Decision](#).

A credential is a documented statement containing claims about a person issued by an educational organisation following a learning experience.

Europass Digital Credentials describe a learning achievement. They can describe:

- activities (e.g. classes attended),
- assessments (e.g. projects),
- achievements (e.g. skills developed),
- professional entitlements (e.g. registration as a medical doctor) and
- qualifications.

*European Digital Credentials for Learning* respond to the need of the citizens to easily share their diplomas, transcripts of records, and other certificates of learning achievements in formal, informal, and non-formal settings, in a secure and digital way, when applying for a job or for further studies and training in any Member State

Oct 25, 2021 - <https://europa.eu/europass/en/what-are-digital-credentials>

# Micro-credentials

## A European approach to micro-credentials

Micro-credentials offer more flexible and modular learning opportunities. Having a European approach will help widen learning opportunities and strengthen the role of higher education and vocational education and training institutions in lifelong learning.

Certifying the learning outcomes of short-term learning experiences, the micro-credentials could offer a flexible and targeted way to help people acquire new knowledge, upskill and reskill the competences needed for their personal and professional development.

### What are micro-credentials?

A micro-credential is a proof of the learning outcomes that a learner has acquired following a short, transparently-assessed learning experience. They are awarded upon the completion of short stand-alone courses (or modules) done on-site or online (or in a blended format).

### Flexible learning

Micro-credentials open education up to more people because of their flexible, short-term nature. They are open to all types of learners. They can be particularly helpful for people who

- are looking to build on their current knowledge rather than get a full degree
- want to bridge a gap between degrees or their initial formal education and emerging labour market skills
- want to upskill or reskill

Dec 14, 2020 - A European approach to micro-credentials

June 2022 - Council of the European Union: Recommendation on a European approach to micro-credentials for lifelong learning and employability

[https://ec.europa.eu/education/education-in-the-eu/european-education-area/a-european-approach-to-micro-credentials\\_en](https://ec.europa.eu/education/education-in-the-eu/european-education-area/a-european-approach-to-micro-credentials_en)

About education in the EU

European Education Area

About the European Education Area

Education for Climate Coalition

Micro-credentials

Mutual recognition of diplomas

Quality in early childhood education and care

Language learning

# Verifiable Credentials and EBSI

- Therefore there is a need to redesign the way educational credentials are issued, stored, displayed, and verified, bringing new opportunities for flexible participation in traditional education and in lifelong learning for upskilling and reskilling
- A Verifiable Credential (VC) is a tamper-evident and privacy-respecting credential, with specific Metadata and Proofs, requested by the Holder and issued by a competent authority, called Trusted Issuer, and where the authorship can be cryptographically verified (W3C, DCC, 2020)
- Blockchain technology, with its characteristics of security, transparency, and integrity - a solution for a trusted, robust, scalable and flexible decentralized credentialing ecosystem
- Through its Diploma use case, the European Blockchain Services Infrastructure (EBSI) represents a cross-border decentralized credentialing ecosystem for issuing Verifiable Credentials.

## What is EBSI ?

EBSI is user centric, decentralised and reusable in multiple contexts and use cases. It is based on open standards to stimulate interoperability and the creation of cross-border public services



# Trusted diplomas have great potential.

Students' mobility in Europe is a broad market. EBSI and EuroPass are its enablers.



**17 million**  
students (Bachelor, Master and PhD).



**2,465**  
higher education institutions



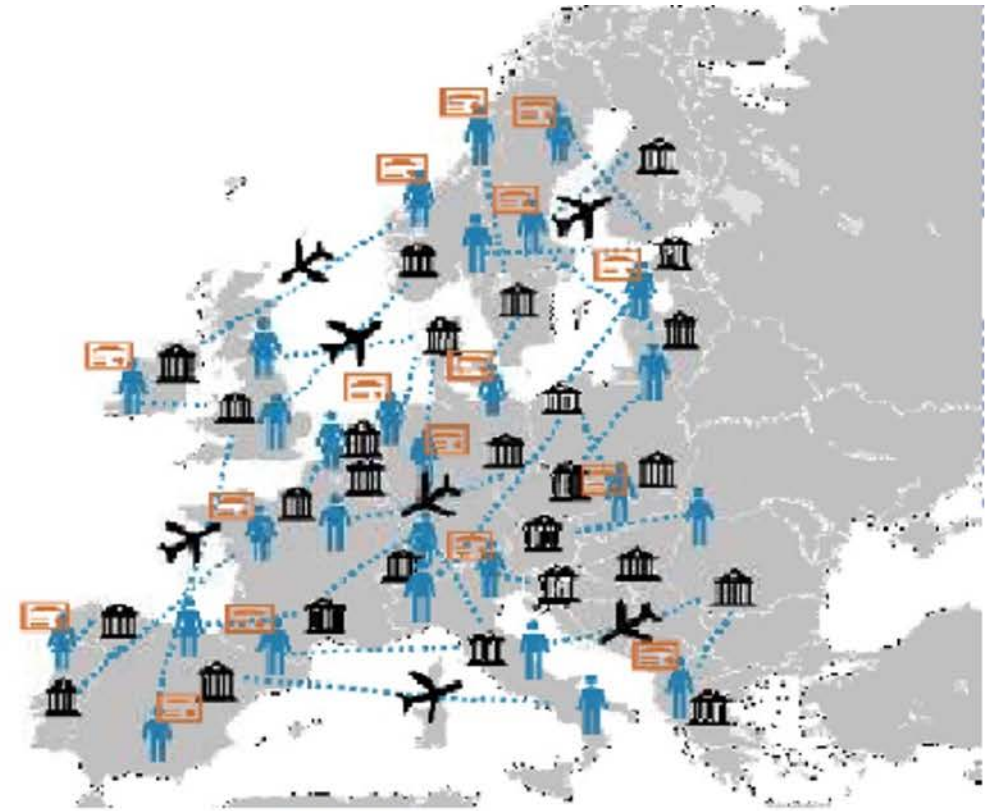
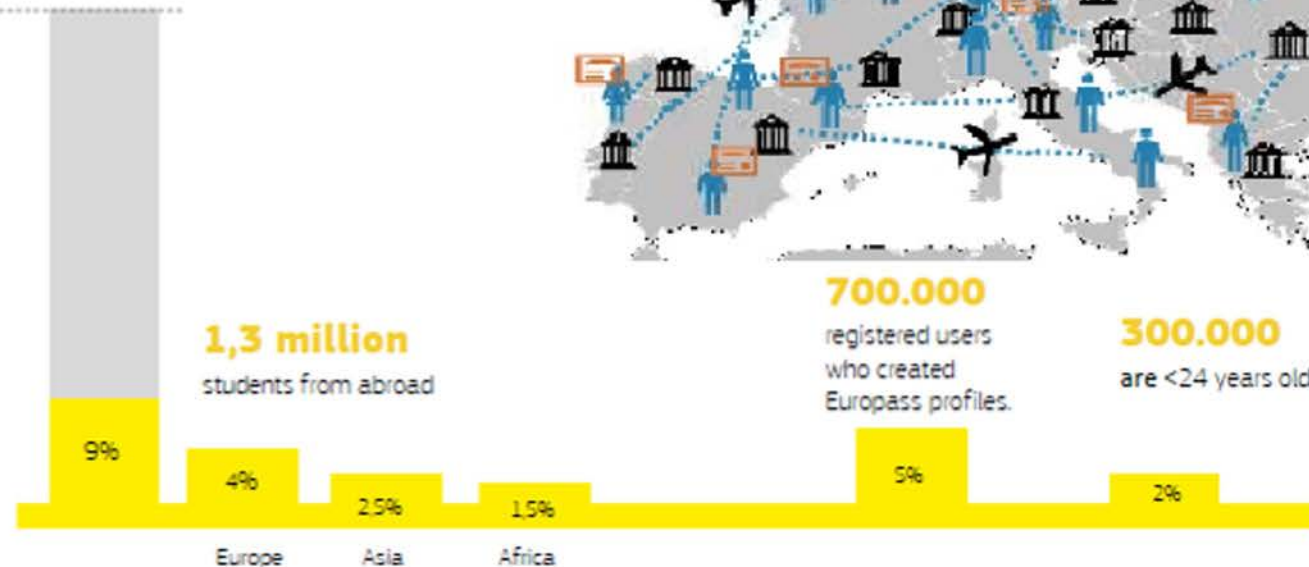
**27**  
European countries



**1.35 million**  
teachers



**4.0 million**  
students graduated (diplomas)



From Early Adopters EBSI Programme Webinar - March 2021 -

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/EBSI+Early+Adopters+programme+kick-off+webinar>

# EBSI4RO Connecting Romania through Blockchain

Central scope: to create an extendable and sustainable ecosystem to facilitate and accelerate the awareness, knowledge and adoption of the Blockchain technologies and European Blockchain Services Infrastructure (EBSI) by the Romanian citizens, businesses, institutions and administration; proposals for Blockchain policies in education.

## Partners:

### 1. Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI)

- Dr.Cosmin Cioranu
- Elena Stefania Nicolaescu

### 2. Politehnica University of Timisoara (UPT)

- Prof.dr.ing.Radu Vasii
- Dr.Diana Andone
- Prof.dr.ing.Carmen Holotescu
- Drd.Victor Holotescu
- S.I.dr.Andrei Ternauciuc
- Conf.dr. Gabriela Grosseck



April 2021 – March 2023

<https://ebsi4ro.ro>

<https://www.facebook.com/ebsi4ro>

<https://twitter.com/ebsi4ro>



# Objectives and Outcomes of the project



01

**Setup and operation of an EBSI node**

Node operational from July 2021

02

**Credentialing System for issuing Verifiable Credentials on EBSI for university diplomas and micro-credentials**

Integrated with the National Student Enrolment Registry (Registrul Matricol Unic RMU) operated by UEFISCDI, and with Virtual Campus UPT & Unicampus

03

**5 miniMOOCs on Unicampus.ro**

04

**Communication and Blockchain community strengthening in Romania, with the aim to raise awareness of Blockchain / EBSI**



## Latest News

### România este una din primele 12 țări din UE care emit diplome pe European Blockchain Services Infrastructure (EBSI)

BY: CARMEN HOLOTESCU / ON: AUGUST 11, 2021

Membrii echipei EBSI4RO: Connecting Romania through Blockchain suntem mândri de realizările din primele 14 luni de implementare, care includ și demonstrarea cu succes a emiterii de diplome universitare pe European Blockchain Services Infrastructure (EBSI), în cadrul evenimentului EBSI Demo Day, din 31 mai. Alături de colegi din Grecia și Franța am colaborat îndeaproape în cadrul EBSI Early Adopters Programme, lansat în 15 iulie 2021, sub coordonarea profesioniștilor echipei EBSI și

### EU Funded Projects

BY: ADMIN@EBSI4RO / ON: JULY 18, 2021

### Educational projects

BY: ADMIN@EBSI4RO / ON: JULY 18, 2021

### Blockchain academic courses and programs

BY: ADMIN@EBSI4RO / ON: JULY 18, 2021

### Blockchain projects from Romania

BY: CARMEN HOLOTESCU / ON: JULY 18, 2021

### EBSI4RO în raportul DESI pentru România

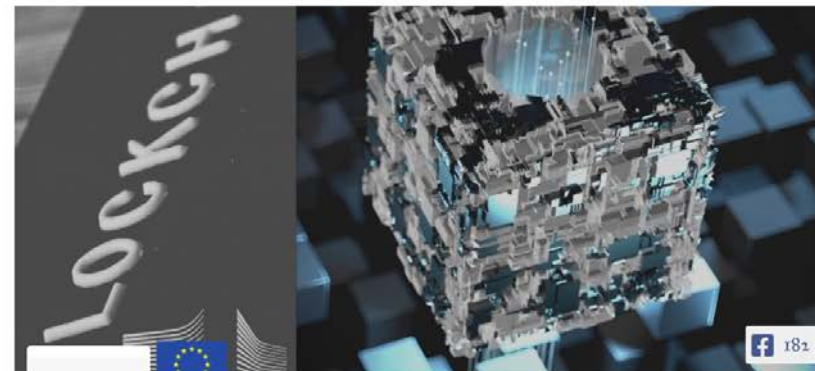
BY: CARMEN HOLOTESCU / ON: APRIL 11, 2021

Ca o recunoaștere a contribuției la procesul de digitalizare, proiectul "EBSI4RO: Connecting Romania through Blockchain" este menționat în raportul de țară Digital Economy and Society Index – DESI pentru 2021.

[VIEW ALL](#)

## About the project

## Facebook @EBSI4RO



Ebsi4ro

EBSI4RO: Connecting Romania through Blockchain



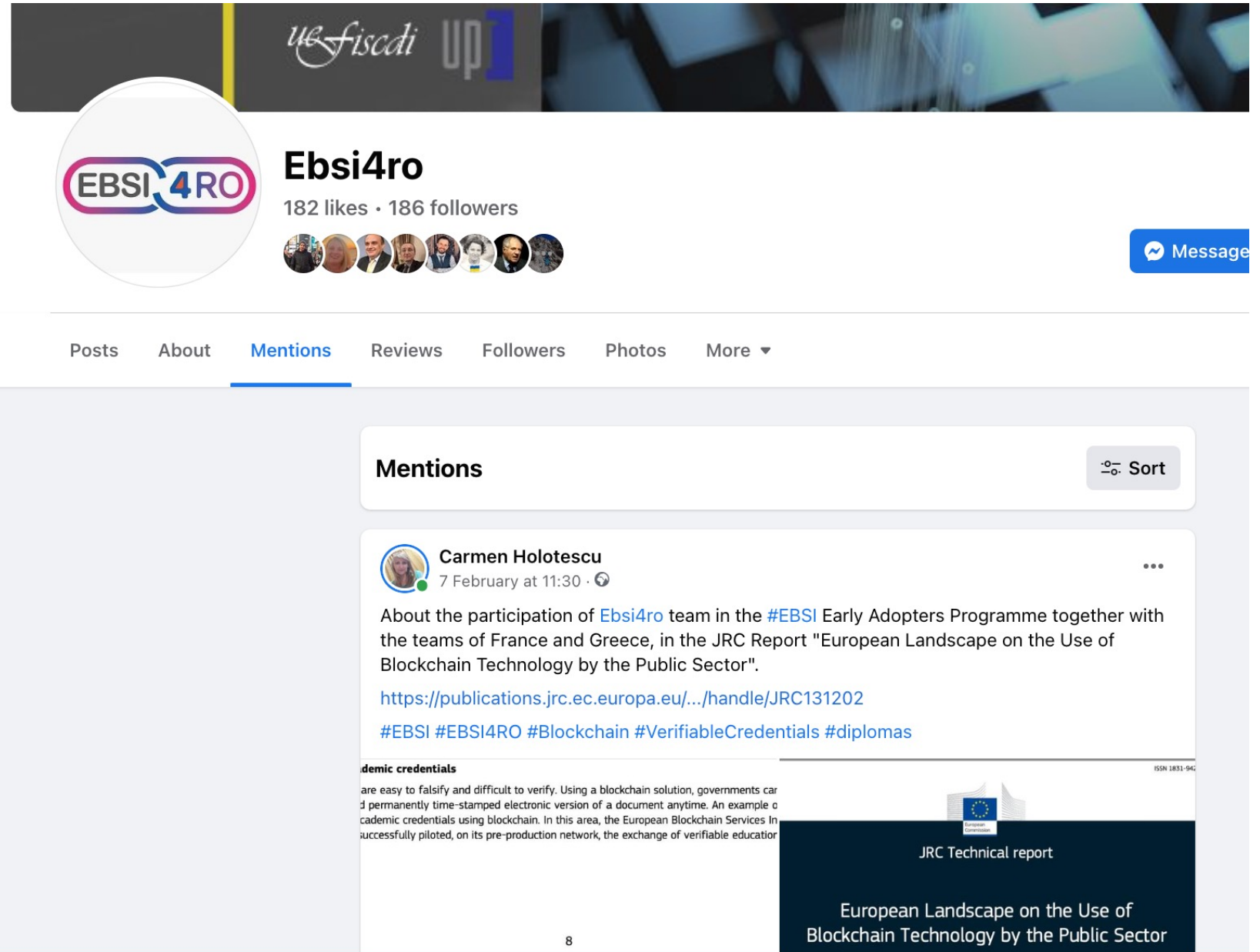
Ebsi4ro plans to go live.  
1 days ago

Open Education Week Workshop 2023

[View on Facebook](#) · [Share](#)

English

@EBSI4RO FB



The image shows a screenshot of the Facebook profile for 'Ebsi4ro'. The profile picture is a circular logo with 'EBSI4RO' in a stylized font. The cover photo features the logos of 'ue-fiscedi' and 'up' on a dark background. The profile name is 'Ebsi4ro' with 182 likes and 186 followers. Below the name is a row of profile pictures of several people. A 'Message' button is visible on the right. The navigation tabs include 'Posts', 'About', 'Mentions', 'Reviews', 'Followers', 'Photos', and 'More'. The 'Mentions' tab is selected, showing a post from Carmen Holotescu dated 7 February at 11:30. The post text mentions the Ebsi4ro team's participation in the #EBSI Early Adopters Programme and references a JRC Report. Below the text is a link to the report and several hashtags. A preview of the report is shown at the bottom, including the title 'JRC Technical report' and the subtitle 'European Landscape on the Use of Blockchain Technology by the Public Sector'.

ue-fiscedi up

**Ebsi4ro**  
182 likes · 186 followers

Message

Posts About **Mentions** Reviews Followers Photos More ▾

**Mentions** Sort

**Carmen Holotescu**  
7 February at 11:30 · 🌐

About the participation of **Ebsi4ro** team in the **#EBSI** Early Adopters Programme together with the teams of France and Greece, in the JRC Report "European Landscape on the Use of Blockchain Technology by the Public Sector".

<https://publications.jrc.ec.europa.eu/.../handle/JRC131202>

**#EBSI #EBSI4RO #Blockchain #VerifiableCredentials #diplomas**

**ademic credentials**  
are easy to falsify and difficult to verify. Using a blockchain solution, governments can permanently time-stamped electronic version of a document anytime. An example of academic credentials using blockchain. In this area, the European Blockchain Services Infrastructure has successfully piloted, on its pre-production network, the exchange of verifiable educational

JRC Technical report  
European Landscape on the Use of Blockchain Technology by the Public Sector

8

<https://www.facebook.com/ebsi4ro>



# 01 Set-up an **EBSI** node - UEFISCDI







## EBSI's State of play – the node network

EBSI's pan-European network of nodes

45 nodes in 23 countries



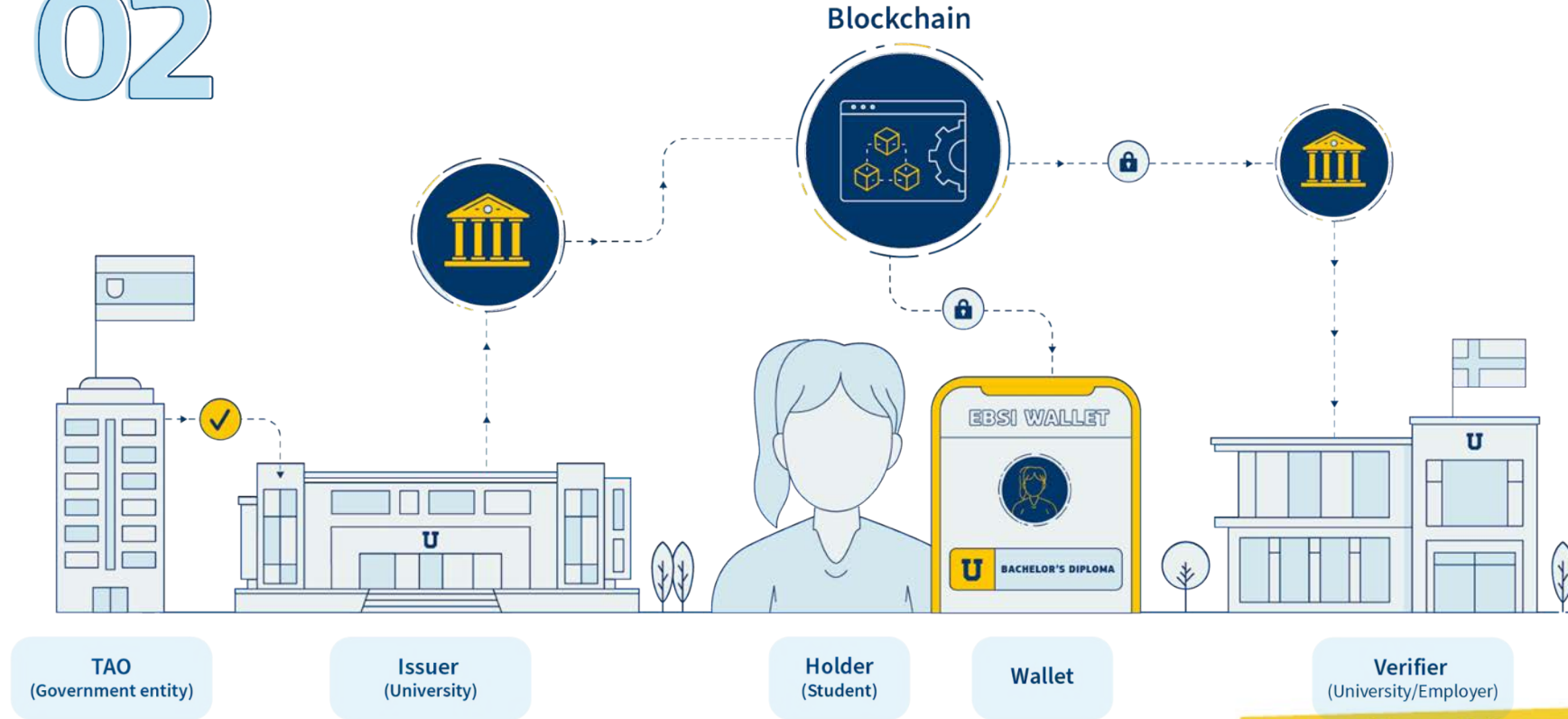
Nodes per country:

- |   |   |
|---|---|
|  Austria (1)   |  Lithuania (1)   |
|  Belgium (2)   |  Luxembourg (2)  |
|  Bulgaria (2)  |  Netherlands (4) |
|  Croatia (1)   |  Norway (1)      |
|  Cyprus (1)    |  Poland (1)      |
|  Czechia (2)   |  Romania (3)     |
|  Estonia (1)   |  Slovakia (2)    |
|  Finland (1)   |  Slovenia (1)    |
|  France (2)  |  Spain (2)     |
|  Germany (3) |  Sweden (1)    |
|  Greece (2)  |   |
|  Hungary (3) |   |
|  Italy (2)   |   |

➤ 3 EBSI nodes in Romania: ICI (Dec 2020), UEFISCDI (June 2021), STS (Dec 2021); a new node will be installed by UPT

# Verifiable Credentials on EBSI

02



## Standards

- ✓ W3C VCs & DIDs
- ✓ OpenID Connect

- ✓ High level of certainty that the issuer is trusted alongside the time of issuance
- ✓ High level of certainty that the holder is the one that the Verifiable Credential was issued to
- ✓ The holder keeps data control and ownership

**TAO** Trusted Accreditation  
Organisation  
The  
ministry

Reduce friction in interactions, increase trust (transparency) and security in shared data.



**Build a new trust paradigm**

**Issuer**

The university  
A

Position your university as a pioneer brand, reduce friction in interactions, increase trust (transparency) and security in shared data. At scale, decrease administrative costs.



**Lead the change**

**Holder**

The student

Take control of their own data in a secure way and easily move with their own credentials across Europe.



**Enjoy mobility across borders**

**Verifier**

The company / university B

Reduce mistakes and protect against fraud, effortlessly interact with government agencies as well as reduce friction and reduce verification costs.



**Reduce costs**

# EBSI Early Adopters: Multi-University Pilot

2 European universities alliances, +20 universities from +15 countries

EBSI4RO participates in the EA Programme – July 2021 – May 2022



# The actors and their roles

Credentialing System integrated with the Single National Student Enrolment Registry (Registrul Matricol Unic or RMU)

## Romania

mobile

## Other Member States



### Trusted Accreditation Organisation (TAO)

Ministry of Education  
through UEFISCDI

will certify the students' diplomas existing in the National Students Enrollment (RMU) platform



### Issuer

Politehnica University of Timisoara, Romania

is issuing the diploma in the RMU platform right after graduation



### Holder

Alumni

The graduated student is the holder of the diploma



### Verifier

University of Athens, Greece  
University of Lille, France

will be able to verify the authenticity of the diploma on EBSI

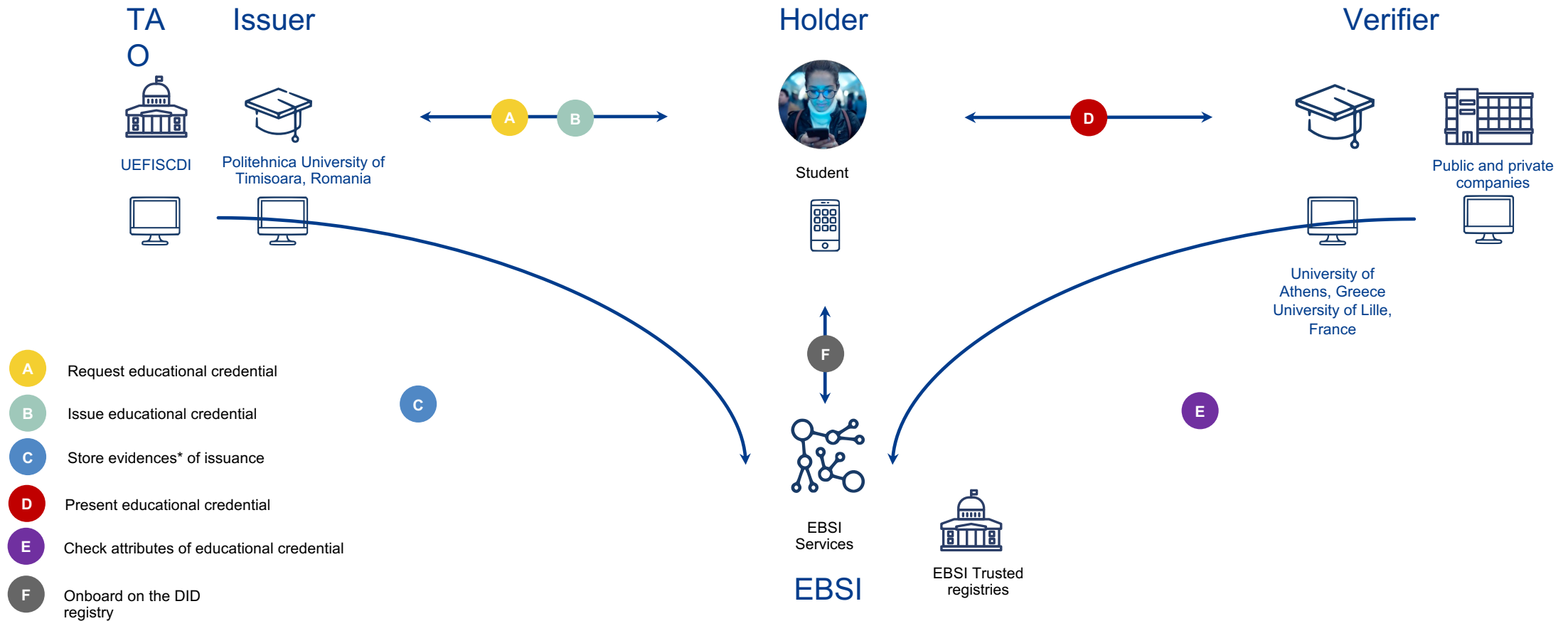


Private company of public institution

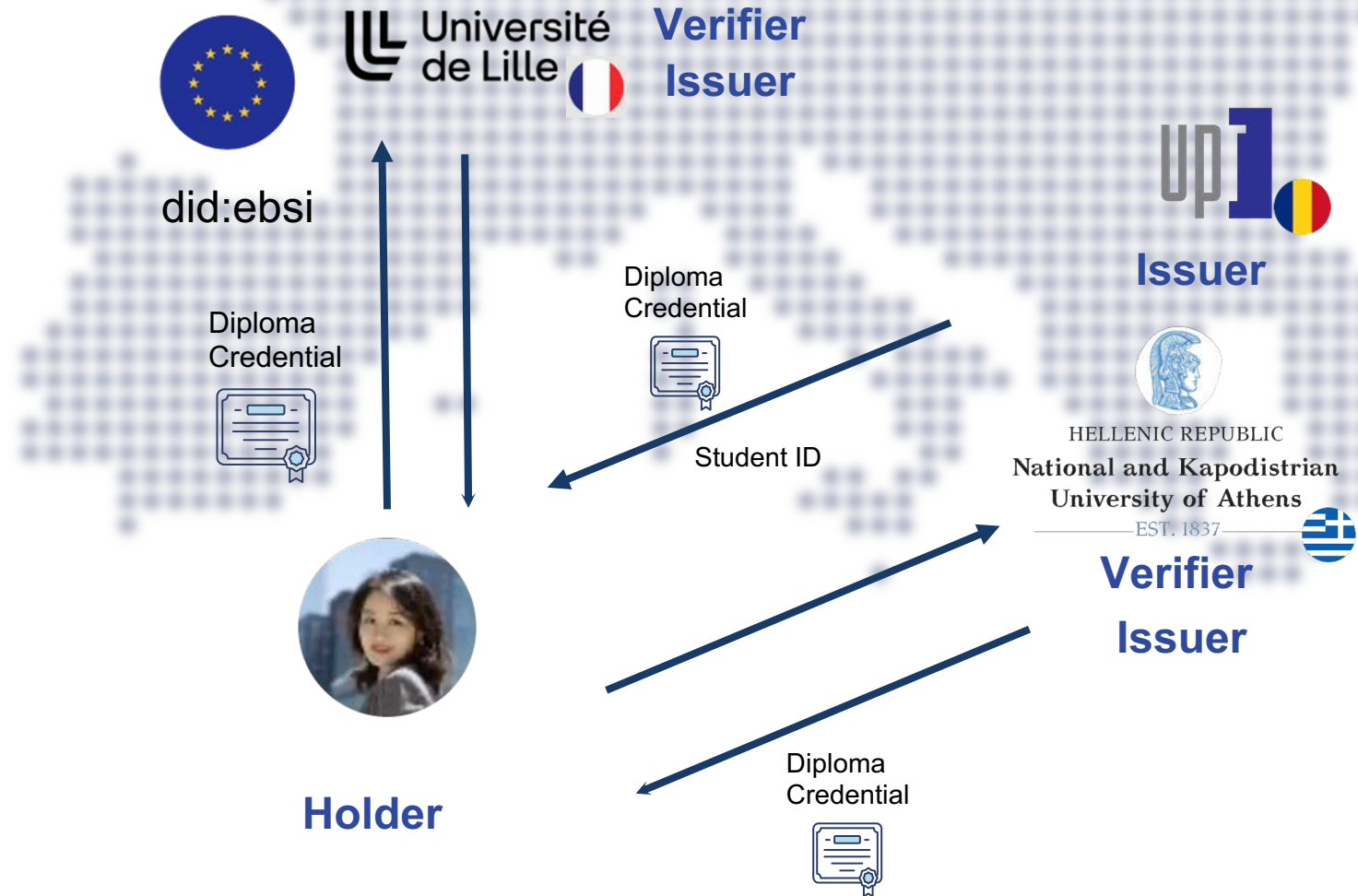
will be able to verify the authenticity of the diploma on EBSI

# Scenario in practice

## Diploma use case



# The implemented cross-border scenario



# EBSI Early Adopters – EBSI4RO participation

- ✓ Defined the actors of the pilot program
- ✓ Onboard actors on EBSI and receive Verifiable Accreditation as TAO and TI
- ✓ Issue Verifiable Attestation (Diploma)
- ✓ Generate Verifiable Presentation
- ✓ Present and Verify Verifiable Presentation
- ✓ Contribute to Walt.id open-source solution for EBSI compliant wallet – Victor Holotescu  
<https://github.com/walt-id/waltid-ssikit/pull/69>



EBSI's success stories

# Bachelor/Master Degree



## A student applies for a PhD with a bachelor/master degree from a foreign country

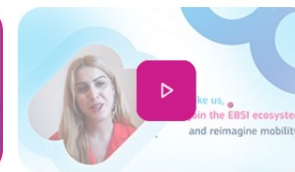


<https://ec.europa.eu/digital-building-blocks/wikis/display/EBSI/Bachelor+-+Master+Degree+Adopters+Programme>

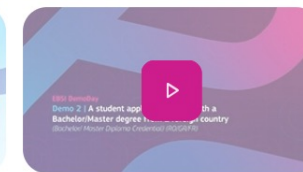
<https://ec.europa.eu/digital-building-blocks/wikis/display/EBSI/Verifiable+Credentials+Success+Stories>



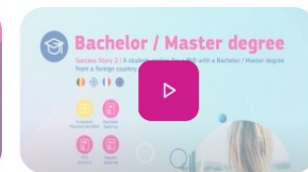
Short Demo Story 2



Interview of Actors



Full Demo



Scenario

## Tehnologia Blockchain. European Blockchain Services Infrastructure

[Acasă](#) / [Cursurile mele](#) / [Cursuri EBSI4RO](#) / [ebsi4ro\\_bc\\_tech](#)

Bun venit! Modul de lucru

**Due:** Friday, 13 October 2023, 3:43 PM

Coffee House



Tehnologia Blockchain.  
Aplicații în diferite domenii  
și în educație



Priorități și programe EU  
legate de Blockchain.  
Proiecte Blockchain în ...



Specificații tehnice și  
use-cases EBSI



Diploma use-case



Dezvoltarea și testarea  
aplicațiilor EBSI

Micro-credentials will be issued on EBSi for the participants in the MOOC on Unicampus 5 miniMOOCs integrating OEP/OER/MOOCs, respecting the CHAISE/INATBA recommendations

<https://ebsi4ro.ro>  
<https://unicampus.ro>

Activitate colaborativă 1.2: Să contribuim la Wikipedia în limba română cu termeni legați de Blockchain

Activitate 2.1: Evaluarea proiectelor de Blockchain din țară și din Europa

Activitate colaborativă 3.1: Traducerea Glosarului EBSI

Activitate 4.1 - Rezolvarea unui puzzle despre facilitățile EBSI

Activitate 5.1: Să analizăm utilitatea emiterii credențialelor verificabile pe EBSI

Piloted with UPT Master students and Bachelor students at UPT and Ioan Slavici University of Timisoara  
Over 250 participants  
New participants are welcome


<https://ebsi4ro.ro>  
<https://unicampus.ro>

## Romanian Blockchain Ecosystem

<https://ebsi4ro.ro/romanian-blockchain-ecosystem/>

Based on an active implication, extensive research, and monitoring of the Romanian Blockchain scene since 2017, this work is a continually updated report of the **first attempt to map the Romanian Blockchain Ecosystem** published in 2018, followed by the **report** published on Medium

The new report is published under the auspices of the project “**EBSI4RO: Connecting Romania through Blockchain**”, the most important Blockchain educational initiative of the moment in Romania, the first two authors being part of the implementation team.

Without claiming exhaustiveness, the report offers a fresh perspective of the vibrant, diverse and mature initiatives in the field. Romania has a growing number of experienced companies, innovative startups and projects ( over 120 are presented below), active accelerators, many communities and events (section 1), and also numerous educational programs, initiatives and policy proposals (section 2).

During the last two years there were registered numerous innovative government projects, including the developing of a Blockchain strategy and initiatives for specific national legislation for crypto-assets and Blockchain, also some pioneering projects in Europe, such as the Blockchain voting reporting tool for the national parliamentary elections in 2020, and a national system and policies for verifiable diplomas and micro-credentials on the **European Blockchain Services Infrastructure (EBSI)** (sections 1.11, 1.12, 2.6).

 Part of the findings of this work are presented in the new **EU Blockchain Ecosystem latest developments**, a report of the **EU Blockchain Observatory**, published on September 9, 2022, for which **Carmen Holotescu** was the **Romanian expert**.

### 1. General Initiatives

#### 1.1. Regulations

#### 1.2. Companies and Start-ups

#### 1.3. NFT initiatives

#### 1.4. Mining

#### 1.5. Media and News

#### 1.6. Conferences and Events

#### 1.7. Hackathons

#### 1.8. Payments

#### 1.9. Communities

#### 1.10. Training

#### 1.11. EU Funded Projects

#### 1.12. National projects and policies

#### 1.13. Activities at European Level

#### 1.14. Influencers

### 2. Educational initiatives and projects

#### 2.1. Academic Courses and Programs

#### 2.2. Research

#### 2.3. Educational Conferences and Workshops

#### 2.4. Educational Blockchain projects

#### 2.5. Other educational initiatives

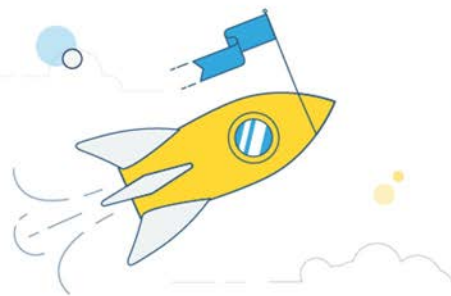
#### 2.6. Educational Policy Proposals

# Participation in EBSI Early Adopters Wave 3

UEFISCDI, UPT, “Ioan Slavici” University of Timisoara, Lideea Ltd, OncoGen, “Vasile Goldis” University of Arad, UVT & UNITA – from December 2022

## EBSI Early Adopters Programme

An incubator programme to help imagine, build and launch blockchain pilot project(s) to improve the life of European citizens.



# Proposals for Digital Education Strategy in Romania - SmartEDU

The first proposals of educational policies related to diplomas/micro-credentials on EBSI made by the EBSI4RO team – December 2020

Măsură	Argumentare	
Implementarea unui <b>sistem descentralizat pe Blockchain</b> , utilizând <i>Infrastructura Europeană de Servicii pe Blockchain</i> (EBSI - European Blockchain Services Infrastructure). Opțional: instalarea unui nod EBSI gestionat de MEC.	<p>Pentru învățământul pre-universitar:</p> <p>Se vor stoca pe Blockchain certificate digitale echivalente unor documente ca: situațiile școlare anuale, (parte a) portofoliile, certificatele/diplomele de finalizare a ciclurilor de învățământ.</p> <p>Beneficii: sporirea integrității certificatelor prin digitalizare, îmbunătățirea confidențialității informațiilor personale, transparență mărită în ceea ce privește procesul de învățământ, recunoașterea studiilor și competențelor la continuarea studiilor, la transferul la altă unitate de învățământ, în țară sau străinătate și la angajare.</p> <p>Măsura vine și în sprijinul sutelor de mii de elevi români, care învață în străinătate pentru anumite perioade de timp și au dificultăți în recunoașterea studiilor în alte țări sau la revenirea în țară.</p>	<p>Se vor stoca pe Blokchain certificate digitale echivalente unor documente ca: diplomele universitare, postuniversitare, de doctorat și microcredențiale (certificând participarea la module/cursuri în alte instituții/țări).</p> <p>Beneficii: sporirea integrității certificatelor prin digitalizare, îmbunătățirea confidențialității informațiilor personale, transparență mărită în ceea ce privește procesul de învățământ, acuratețe mai precisă în portofoliul de aptitudini și competențe, portabilitate și mobilitate crescute pentru documente la continuarea studiilor sau la angajare, incurajarea personalizării parcursului educațional.</p> <p>Pentru sistemul educațional: Registru pe Blockchain cu fondurile investite în educație, pentru monitorizare, transparență, auditabilitate, performanță a proceselor de gestionare financiară, urmărirea rezultatelor.</p>

<https://www.smart.edu.ro/>

# Other Disseminations and Conclusions (1)

- Task Force: Lluís Alfons Ariño Martín, Daniel Du Seuil, Perrine de Coëtlogon, Soulla Louca, Monica Chiffa - ADR, ICI, CRED – MEN, ANC, STS, CertSign, walt.id, Bloxberg, ARIES, Sorin Cristescu, Iulian Niță, Iosif Peterfi, Alex Grech, ISE, Romanian Blockchain Association
- Events, conferences and workshops
- Interviews, reports and articles
- Springer book “Open Education and Blockchain” – call of chapters
- The first NFT in Romanian Academy - <https://nft.spotlight-timisoara.eu/>



# Other Disseminations and **Conclusions (2)**

- UEFISCDI and UPT consolidated their experiences as valuable partners for Blockchain, EBSI, Web3
- The partners will participate in 3 new projects related to EBSI in the next 2 years

01

Increase/enhance existing EBSI capabilities

Revocation, Suspension, Mandates, Consent, ZKP

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**EBSI -VECTOR**

UEFISCDI  
UPT  
ICI  
certSign

02

Educational credentials, professional qualifications and Social Security

Combining the best of identity and signature provided by the eID, with the potential and flexibility of verifiable credentials and the increased privacy provided by the EBSI ledger

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**DC4EU**

UEFISCDI  
UPT  
ICI  
certSign

03

Enhance EBSI nodes requirements

EBSI to become a Trust Anchor (ISO27001, etc.)

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**EBSI-NE**

UEFISCDI  
UPT