

# CertiDigital



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# Glossary

|                   |  |                  |  |
|-------------------|--|------------------|--|
| <b>Blockchain</b> | Blockchain technology allows people and organisations who may not know or trust each other to collectively agree on and permanently recorded information without a third-party authority. By creating trust in data in ways that were not possible before, blockchain has the potential to revolutionise how we share information and carry out transactions online. | <b>EDC</b>       | European Digital Credentials for Learning.                             |
| <b>Credential</b> | A documented statement, awarded from one party to another, describing the latter's qualities.  | <b>EQF / NQF</b> | European Qualifications Framework / National Qualifications Framework. |
| <b>EBSI</b>       | European Blockchain Services Infrastructure.   | <b>ESCO</b>      | European Skills, Competences, Qualifications and Occupations.          |
|                   |  | <b>LMS</b>       | Learning Management System.  |
|                   |  | <b>MOOC</b>      | Massive Open Online Course.  |



# Background

**The digital transformation and the green transitions are changing society in profound and far-reaching ways, including our ways of living, working and interacting with each other<sup>1</sup>.**

**Frequent transitions between jobs and between employment and further training.**

The COVID-19 pandemic has accelerated these transitions by making people more aware of their benefits. It has also confirmed powerful trends in the labour market, including robotisation and digitisation, which will have increasingly large impacts on the economy.

The education and training sectors are also permanently impacted by the forced and accelerated technological and methodical adaptations that were required to endure, and recover from, the COVID-19 pandemic. Independent megatrends, such as digitisation, greening of the economy and an ageing population, greatly contribute to changing citizen preferences when it comes to seeking personal development and employment. All the above-mentioned circumstances and conditions lead to frequent transitions between jobs and between work and further learning. Thus, it is more crucial than ever for people to be able to proactively plan their careers, find new learning and employment opportunities, and demonstrate and communicate their skills and qualifications when applying for jobs.

<sup>1</sup> Communication on a "European Skills Agenda for sustainable competitiveness, social fairness and resilience" <https://ec.europa.eu/social/main.jsp?catId=1223>

Nowadays, people search for jobs and courses mainly online. Employers increasingly manage their recruitment processes with platforms like job boards. Social media platforms and crowdsourcing marketplaces have become the cornerstone for the functioning of the labour market. Similarly, education and training providers manage their processes, from student admission, through course enrolment management and delivery, to learning assessment and feedback provision, via sophisticated and secure Student Information Systems and Learning Management Systems (LMS), using a variety of digital technologies.

In the higher education context, it is paramount to leverage on the benefits of technology and digitalisation in supporting the three types of **outcomes** students typically obtain by the end of a learning phase:

### **Knowledge, skills and competences**

Awareness of domain specific facts and procedures, as well as learned ability to perform an action well, to achieve determined results.

### **Certification**

Legal basis that enables the certificate holder to prove the learning outcomes they acquired.

### **Attitudes and extracurricular university experience**

Intangible gains such as critical thinking, collaboration and teamwork, and the network of contacts established during, and cultivated after, studies.



## **In recent years we have witnessed in the field of higher education the conception and consolidation of many digitisation initiatives.**

Moreover, in recent years we have witnessed in the field of higher education the conception and consolidation of many digitisation initiatives that focus mainly on:

Educational **content** supporting the acquisition of knowledge, skills and competences,

**Pedagogy** and new ways of facilitating teaching and learning delivery online, face-to-face and in hybrid environments,

**MOOC** (Massive Open Online Courses) **platforms** and repositories of open educational resources (OER) that have become popular with continuous learners wishing to complement their formal education with meaningful niche learning resources or to gain transversal skills and competences.

Well-known and prestigious global and European initiatives, such as **Open Badges**<sup>2</sup> (formally originated by the Mozilla and now owned by IMS Global), the MIT lead **Digital Credentials Consortium**<sup>3</sup>, the **European approach to micro-credentials**<sup>3</sup> and the **European Digital Credentials for Learning (EDC)**<sup>4</sup> demonstrate that the most innovative and influential policy makers and practitioners have great interest in the digitisation of **certification**. However, the uptake of available solutions has not kept up with the pace of learning content and delivery digitalisation, even though it is an area of great importance in the context of higher education. The reasons for this are complex, nevertheless the need to align technologies and regulations to ensure that a person's credentials are transparent and portable is widely agreed. With an ever more mobile, and continuously upskilling, labour force there is also an increasing demand for more reliable ways to verify credentials, and the provision of mechanisms to reduce the impact of credential fraud.

**With an increasingly flexible job offer and in a continuous training process.**

## Education providers could also benefit greatly from the use of standardised, verifiable, and temper-evident digital credentials



To mention just a few strong benefits, instant and automatic authentication and verification checks could make it easier to screen out unauthorised credential issuers and diploma mills and make admission processes faster and more efficient. Verifiable digitally signed credentials can also aid and speed up cross-institutional micro-credential recognition, that in turn, can facilitate the creation and promotion of more flexible learning pathways. Additionally, a more open and flexible higher education area can also better serve adult learners, who might be returning into higher education only briefly to reskill/upskill.

<sup>2</sup> <https://openbadges.org/>

<sup>3</sup> <https://digitalcredentials.mit.edu/>

<sup>4</sup> <https://education.ec.europa.eu/levels/higher-education/european-approach-to-micro-credentials>

<sup>5</sup> <https://europa.eu/europass/en/european-digital-credentials-learning>

# European Context

Digital technologies offer a vast array of opportunities to enhance learning and teaching and can play a crucial role in meeting European targets such as bringing down barriers to inclusive and high-quality education and training systems. Over the past years, several initiatives orbiting around digitisation of certifications have been initiated, aimed to provide tools or services targeting the enhancement of a digital labour market and the education and training sector. The most relevant ones are described below.

Since the launch of the first comprehensive framework for digital education, the **Digital Education Action Plan (2018)**<sup>6</sup>, the European Union has been investigating how to better address challenges and opportunities related to the digital transformation. Action 3 of this Plan explicitly called for the provision of a framework for issuing digitally certified qualifications and validating digitally acquired skills that are trusted, multilingual and are fully aligned with EQF<sup>7</sup> and ESCO<sup>8</sup>. A response to this call for action was the development of the new Europass platform (Action 11 of the European Skills Agenda<sup>9</sup>), that is supporting people to manage their learning pathways and career development online. Mandated by point 6 of Article 4 in the Europass decision<sup>10</sup> Europass also committed to supporting authentication services for any digital documents or representations of information on skills and qualifications. These conditions led to the new Europass platform becoming the first implementer of a set of tools and services – the European Digital Credentials for Learning (EDC) – that facilitates the documentation, issuing, storage and sharing of multilingual, authentic and temper-evident verifiable digital credentials at scale. Furthermore, the European Skills Agenda also highlights the importance of Europass as a vehicle for delivering on various other actions, e.g., individual learning accounts (Action 9) and micro-credentials (Action 10).

**The Europass platform is the first implementation of the European Digital Credentials for Learning (EDC), granting the more than 3 million Europass account holders a portfolio of digital credentials integrated into their digital portfolio.**



6 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A22%3AFIN>

7 <https://europa.eu/europass/en/european-qualifications-framework-ef>

8 ESCO es la clasificación europea de capacidades, competencias, cualificaciones y ocupaciones <https://ec.europa.eu/esco/portal/>

9 <https://ec.europa.eu/social/BlobServlet?docId=22832&langId=en>

10 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018D0646&rid=9>

The **European Data Strategy**<sup>11</sup>, that stresses out the importance of high quality and transparent data on skills, qualifications and on learning opportunities, also highlights the significance of creating a **Common European skills data space** (Point 9) that can be seen as the culmination of Commission efforts to put in place a range of open standards, reference frameworks and semantic assets to increase data quality and interoperability by developing European Digital Credentials for Learning. Furthermore, in the European Data Strategy, the Commission pledges to support Member States in the development of digital credential transformation plans and in the preparation of reusable data sets of qualifications and learning opportunities (2020-2022); and establish a governance model for the on-going management of the **European Learning Model** in close cooperation with Member States and key stakeholders (by 2022).

**The European Commission is committed to support Member States in the development of the digital credential transformation plans.**

The plans of the European Commission under President Von der Leyen are aiming to accelerate and foster the achievement of an education and training system fit for the digital age. In particular, the latest adopted **Digital Education Action Plan (2021-2027)** prioritises the development, and better use, of a digital education ecosystem and the acquisition of digital skills and competences.

## Today, European education and training providers are responding to the digital transition following different approaches.

The unprecedented shift to remote schooling following the COVID-19 crisis has highlighted differences among Member States in degrees of readiness towards the use of digital technologies. During the last couple of years, various studies have been conducted to assess inter- and intra-country differences within the European Union on digital practices for education and training. Findings show that the latest rapid advances have led to divergent developments not only among the two key actors, which are education providers on the supply side and learners on the demand side, but also among other stakeholders such as learners' families. The



<sup>11</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593073685620&uri=CELEX%3A52020DC0066>

<sup>12</sup> [https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan\\_en](https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en)

<sup>13</sup> Carretero Gomez, S., Napierala, J., Bessios, A., Mägi, E., Pugaczewicz, A., Ranieri, M., Triquet, K., Lombaerts, K., Robledo Bottcher, N., Montanari, M. and Gonzalez Vazquez, I., What did we learn from schooling practices during the COVID-19 lockdown, EUR 30559 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-28418-5, doi:10.2760/135208, JRC123654.

<sup>14</sup> Examples include:

Di Pietro, G., Biagi, F., Dinis Mota Da Costa, P., Karpinski, Z. and Mazza, J., The likely impact of COVID-19 on education: Reflections based on the existing literature and recent international datasets, EUR 30275 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-19937-3 (online), doi:10.2760/126686 (online), JRC121071.  
Vuorikari, R., Velicu, A., Chaudron, S., Cachia, R. and Di Gioia, R., How families handled emergency remote schooling during the Covid-19 lockdown in spring 2020, EUR 30425 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-24519-3, doi:10.2760/31977, JRC122303.



COVID-19 crisis has pushed the adoption of digital technologies in the education sector to a ground-breaking point. This has been stressed by announcements following the above-mentioned **European Skills Agenda**, which presents a vision focussing on the improvement of digital skills at all levels of education and training.

The new Europass platform, that was the first activity to be implemented from the European Skills Agenda, was launched in July 2020 . Since then, more than 3 and a half million people registered an account, and the platform receives more than 2 million visits per month on average. The new Europass, as indicated above, also developed the technical framework for European Digital Credentials for Learning and has become the first implementer of the EDC infrastructure, granting to all 3+ million Europass account holders a digital credential wallet that is embedded into their Europass Library. This infrastructure serves not only citizens, but also learning providers and employers in different ways.



## Citizens

Can build an [online portfolio](#) to track their learning while being in full control of their data.

Can easily utilise their credentials to get a job or apply for further training all across Europe.

[Can present](#) and have their credentials verified at any point in their career, even if the institution who issued them closes, or if the data used to create them is lost



## Learning Providers

Can build EU standard compliant credentials that are settings-independent (i.e., can describe both formal and non-formal learning) and size neutral (i.e., can document course, term or degree level).

Can reduce their costs of [issuing credentials](#) after an initial investment into transforming from paper to digital.

Can better understand credentials from other Member States as EDC contents can be navigated in 29 languages.



## Employers

Can dramatically reduce the time and cost of verifying credentials and processing job applications.

Can better understand the credentials of candidates, especially from other Member States as EDC content is navigable in 29 languages.

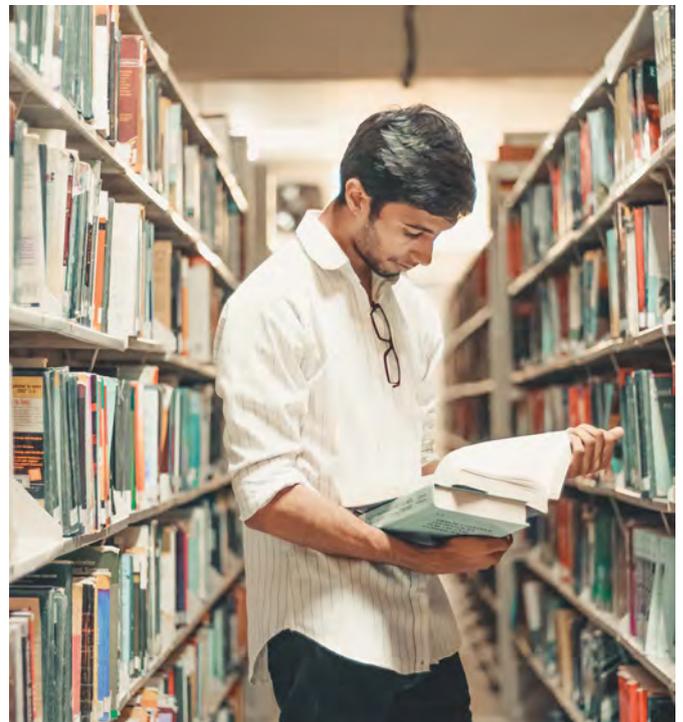
Can immediately see on the instant, automatic authentication and verification check list if a credential has expired or was tampered with

## **The European Partnership's vision is to use blockchain technology to create cross-border services.**

Another important initiative stems from the **European Blockchain Partnership** is composed of 29 countries (all EU Member States, Norway, and Lichtenstein). They have agreed to work together to realise the potential of decentralised ledgers and blockchains for the benefit of citizens, society, and the economy. The Partnership is developing a **European Blockchain Services Infrastructure (EBSI)**. The Partnership's vision is to use blockchain to create cross-border services for the public administrations and their ecosystems to verify information and make services trustworthy. EBSI has been deploying a network of distributed blockchain nodes in Europe since 2020 to support applications that are specific to a few use cases. EBSI is Europe's first blockchain infrastructure.

## **These cross-border services can support citizens to manage their own identity, educational digital credentials and register these documents in a secure place.**

EBSI is organised around a set of use cases, in which member states collaborate to implement services around a specific domain using blockchain technologies. The Self-Sovereign Identity use cases is foundational in that it describes a new system of identity and credentials based around decentralised identifiers and verifiable credentials. These concepts are then implemented in each other use case. The Diploma use case aims to use these technologies to give control to citizens when managing their learning credentials. It reduces verification costs for issuers of diplomas and increases the trustworthiness of the credentials.



The initiatives described above fully align with the ambition of different strands of the recovery and resilience plans stemming from Europe's **Next-GenerationEU** especially in the Education pillar, aimed at improving the resilience of their education systems with a strong focus on digital education.

# National Context



**In a context of global pandemic caused by COVID-19, the European Council agreed on July 21st, 2020, on a far-reaching package of measures.**

These measures stem from a totally innovative approach and aim to boost the convergence, resilience, and transformation of the European Union.

The measures, stemming from the implementation of the **Next-GenerationEU**, entail 140 billion euros for Spain in the form of transfers and loans for the period 2021-2026, part of which will be earmarked for Spain's Recovery, Transformation and Resilience Plan. This plan, managed by the Ministry of Universities, defines various reforms and investments to be executed, integrating in its component number 21 the "Modernization and digitalization of the education system, including early education from 0 to 3 years", which also includes the university system. In this way, the Ministry of Universities contributes to the requalification of the Spanish University System and, on the other hand, to its modernization and digitalization.

**The Ministry of Universities contributes to the requalification of the Spanish University System and to its modernization and digitalization.**

## National Context:

# UniDigital

Within the framework of component number 21, the Ministry of Universities participates in the investment C21.15 “Improvement of universities’ infrastructures, equipment, technologies, teaching and digital evaluation”. This is a multi-year investment which entails an amount of 76.850.000 euros for the period 2021-2021, and which aims for the modernization of the Spanish Universities System, promoting **projects and initiatives in the field of digitalization**, as established in the Royal Decree 641/2021, of July 27th, which regulates the direct granting of subsidies to Spanish public universities for the modernization and digitalization of the Spanish University System within the framework of the Recovery, Transformation and Resilience Plan.

## Modernization of the Spanish University System through the promotion of projects and initiatives in the field of digitization.

**This plan for the modernization of the Spanish University System has been named UniDigital, and the actions carried out under it must be framed within one of the four lines of action stipulated by the Ministry of Universities:**



### Line 1 Improvement of Digital Equipment

Interventions involving the modernization, adaptation and improvement of equipment and infrastructure will be carried out.

### Line 2 Digital Education

Projects may be financed to undertake investments for the improvement of digital learning **Improvement of digital equipment** environments, the design of support processes in digital teaching, supervision services and evaluation of teaching-learning processes.

### Line 3 Contents and Training Programs.

Projects for the development of materials, contents, resources, and repositories may be financed for various purposes: to improve the digital offer for the student community, to cover strategic domains in order to organize innovative training programs, to train teachers in digital skills and to meet the needs of professional requalification.

### Line 4 Digital Service Platforms.

Projects that are committed to the development of digital solutions aimed at improving and adapting other university management services, not necessarily focused on teaching, may be financed.

It should also be noted that the actions carried out with the funds budgeted within UniDigital can be carried out individually, by the beneficiary university itself, or through **collaborative projects** between several universities.

National Context:

## CertiDigital<sup>16</sup>

Within the framework established by the fourth line of action of the UniDigital plan, universities have the possibility of allocating part of their budget to the **creation and development of digital certification procedures**, aligned with the European standards and initiatives described above, such as Europass, European Digital Credentials for Learning (EDC) or European Blockchain Service Infrastructure (EBSI). In this context, and as

**Universities have the possibility of allocating part of their budget to the creation and development of digital certification procedures**



**CertiDigital** 

an initiative of the UniDigital Plan of the Ministry of Universities, the CertiDigital project was created with the aim of deploying a Digital Certification Service for the Spanish University System framed in the European Higher Education Area (EHEA).

CertiDigital is an initiative that brings together 6 coordinating universities, led by the University Carlos III de Madrid (UC3M), and 17 other partner universities.

# 02 Certi Digital



## Goals

**The ultimate goal of the project is the deployment of a digital certification service for the Spanish University System within the framework of the European Higher Education Area, as an initiative of the UniDigital Plan of the Ministry of Universities.**

**It will deliver a technical infrastructure which will put at the disposal of any university the necessary means to issue.**

The digital certification service will deliver a technical infrastructure which will put at the disposal of any university the necessary means to issue, by means of the European Learning Model, digital certificates stemming from a number of business cases of their choice. The issuing will be fundamentally aligned with the two initiatives mentioned earlier: (1) EDC (*European Digital Credentials for Learning*) as part of a centralised scenario; and (2) EBSI (*European Blockchain Services Infrastructure*), which is based on Blockchain and therefore outlines a decentralised scenario.

The project will aim at fulfilling the following specific objectives:



Develop an **open and scalable architecture** deployed at RedIRIS aligned with European standards that can be re-used by any university of the Spanish University Service (SUE), irrespective of their human and material resources, creating economies of scale.



Publish the source code as **open source**, making it freely available for possible modification and redistribution, which potentially allows other to build upon the and benefit from the CertiDigital work.



**Reduce administrative burden** and **costs** stemming from the management and issuing of digitally signed certificates



**Improve the functioning and trust of the labour market and the education and training sector**, by helping employers and learning providers in the verification process of digitally signed certificates, thus favouring learning and job transitions.

Against this background, CertiDigital will indirectly contribute to realise the following UN Sustainable Development Goals<sup>17</sup>: quality education (goal 4) and build resilient infrastructure, promote sustainable industrialization and foster innovation (goal 9).



# Challenges

**Achieving these specific objectives of the project will require overcoming significant challenges:**

The digital certification service should serve all the universities of the SUE, regardless of their size and human/financial resources. Designing an inclusive system that allows any university to connect is therefore paramount.

Different universities, often with different goals and needs, must find ways to cooperate efficiently. *poner de relieve la necesidad de una sólida capacidad de gestión.*

Ambitious scope and schedule, emphasizing the need for a strong project management capability to successfully coordinate the works and deliver the envisaged outcomes.

Universities must balance the ambition and feasibility of their commitments (e.g., use cases) and prioritise concrete actions.

High organizational complexity project, with many stakeholders and users (e.g. students, administrative and IT staff, professors and R&D staff...) involved where no-one can be left behind, thus requiring profound support, change and organizational management.

<sup>17</sup> <https://sdgs.un.org/goals>

# Organization



**The Project is organised around 6 leading universities led by Universidad Carlos III de Madrid, and 17 partner universities that will be implementing different business cases in their condition of early adopters.**

## Leading Universities



## Early Adopters



The coordination group will combine their efforts towards a joint procurement process aiming to publish different procedures published on behalf of all participating authorities, in which UC3M will act as the lead contracting authority. Such joint procurement will be for the provision of services to develop and maintain the different elements of the digital certification service and provide support and assistance to the different stakeholders that will engage with the initiative.

## **The coordination group will combine their efforts towards a joint procurement process**



## **More specifically, the scope of these procedure may include:**

Analysis and design of information systems, their development, their implementation and maintenance.

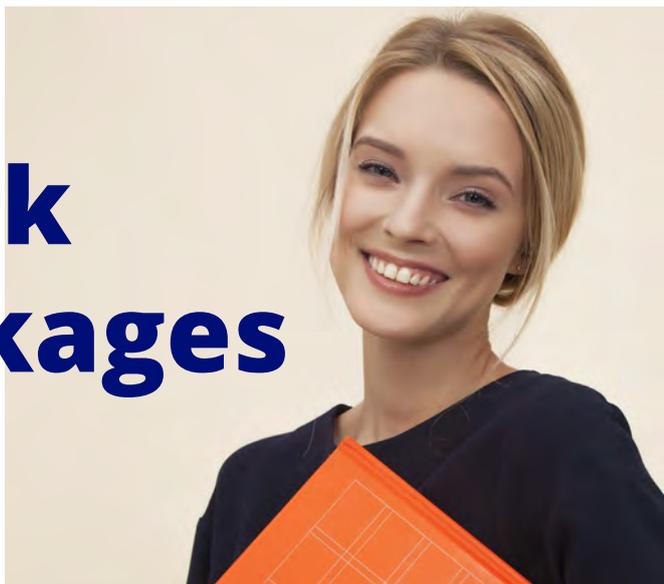
Stakeholder support, training and documentation, information systems production and administration.

Development and implementation of systems of governance involving key stakeholders.

Conception, design, production and dissemination of communications and marketing materials.

Implementation of quality control systems to ensure the high quality of deliverables and service.

# Work Packages



The work to be performed as part of the Project is divided into several Work Packages (WPs) encompassing one or several Main Tasks (MTs), clustered into different strands of work:

## Governance / Organisational

### WP1 - Legal Aspects

#### Description

the aim is to analyse the different legal aspects involved directly and / or indirectly in the generation and use of digital credentials.

- MT1.1** Analysis of the Spanish legal framework and the European legal framework.
- MT1.2** Integration of digital credentials in the Spanish legal framework (in collaboration with ANECA)
- MT1.3** Alignment with the European legal framework and the national proposals of other EU countries.
- MT1.4** Quality assurance mechanisms (lists of trust certificate issuers, actions that are certified...)

### WP2 - Academic Aspects

#### Description

The aim is to analyse the different scenarios of digital certifications in the academic environment, as well as to identify and manage changes in the work processes and information flows affected by the project.

- MT2.1** Definition change management of scenarios for the issuing of digital certifications from the point of view of an educational institution.
- MT2.2** Definition change management of scenarios of scenarios involving multiple institutions simultaneously (European Universities, inter-university degrees...).
- MT2.3** Definition of the elements of the teaching practice and academic management that constitute the digital certification in each scenario (minimum information required).
- MT2.4** Study and implementation of the "Stackability" of digital credentials.

### WP3 - Coordination and Management

#### Description

Se trata de definir, planificar e implementar una gestión del proyecto basada en metodologías ágiles que permita una comunicación interna fluida y transparencia en la toma de decisiones clave del proyecto.

- MT3.1** Definition of Governance through academic and technical committees respectively.
- MT3.2** Relationship with educational institutions interested in the project.
- MT3.3** Definition and planning of the necessary actions for the project implementation based on an agile project management methodology (communication channels, milestones, intermediate deliverables)
- MT3.4** Project monitoring and compliance reporting.

# Technical Development

## WP4 - Technical Aspects: Data Model

### Description

the aim consists of defining the data model, designing the mock-ups, and implementing the automation of the model.

- MT4.1** Create a mapping platform of competence frameworks.
- EDC**
- MT4.1** Analyse and understand the data model
- MT4.2** Generate XML examples based on the data model (supported by use cases).
- MT4.3** Develop parsers that allow to automate XML generation.
- ESBI**
- MT4.4** Understanding the data model
- MT4.5** Automatic generation of certificates with EDC level of detail.

## WP5 - Technical Aspects: Certificates Issuing (issuer)

### Description

Aimed at designing and implementing the issuing of certificates in EDC and EBSI technologies.

- EDC**
- MT5.1** Perform automated certificate issuing tests.
- MT5.2** Management/development of all certificates issued/received by an institution.
- ESBI**
- MT5.3** Understanding the management technology and assessing opportunities for improvement.
- MT5.4** Development of activity analysis module, issuer's logs.
- MT5.5** Development of activity analysis module, issuer's logs.
- MT5.6** Communication/coordination with RedIRIS as hosting provider.

## WP6 - Technical Aspects: Consumption of Certificates (cv / wallet)

### Description

Defining, implementing, and evaluating those technical aspects related to the consumption of university digital credentials by end users (PAS/PDI/students).

- EDC**
- MT6.1** Promote the use of the Europass CV/profile and the inclusion of digital credentials in it.
- ESBI**
- MT6.2** Design a graphical visualization of Europass compliant credentials.
- MT6.3** Get to know, experience, and become familiar with the technology and detect possible problems, issues, and support.
- MT6.4** Study the use of SSI within a university: how it affects traditional SSO, coexistence, problems, paradigm shift.
- MT6.5** Get to know the data exchange within applications.
- MT6.6** Design, analyse and assess the storage of data exchanged by the wallet and applications for record and analysis purposes.

## WP7 - Technical Aspects: APIs and Interconnection with Existing Platforms.

### Description

It consists of knowing the existing software platforms in the different universities and defining and implementing ways of interconnection with the credential issuing platform.

- MT7.1** Define Good practices in the use of APIs: development examples.
- MT7.2** Development of real cases of integration with the university backend: analyse possible alternatives, problems, scope, paradigm, shifts...
- MT7.3** Analyse and develop connections with academic management platforms.
- MT7.4** Analyse and develop connections with educational LMS platforms (LTI)

# Implementation, Training, and Support

## WP8 - Pilot Projects for various Use Cases

### Description

The goal is to identify and accompany the implementation of pilot projects for the production and consumption of digital credentials in the participating universities.

- MT8.1** Identify, implement, and evaluate the use case of digital certification of official degrees (prior to their legal validation)
- MT8.2** Identify, implement, and evaluate the use of digital certification of continued training / own degrees.
- MT8.3** Identify, implement, and evaluate the use case for digital certification of transversal training (languages, social skills, etc.)
- MT8.4** Identify, implement, and evaluate the use case of digital certification of the European University Training (UC3M, URV and UGR).
- MT8.5** Identify, implement, and evaluate the digital certification use case of Teacher Training (DigCompEdu, Pedagogy-Methodology, Experiences, Innovation).
- MT8.6** Identify, Implement, and evaluate the use case of digital certification of PAS/PDI Training from the human resources management.
- MT8.7** Identify, implement, and evaluate the use case of stackable certificates.
- MT8.8** Identify, implement, and evaluate the use case for digital certification of Inter-university Degrees.
- MT8.9** Identify, implement, and evaluate interoperability with EBSI.

## WP9 - Training and Support

### Description

The aim is to plan and execute the necessary training and support actions for the technological appropriation of credentials among the various agents that make up the university community.

- MT9.1** Elaborate technical documentation (staff) and user manuals in the different roles (student, PAS/PDI, etc.)
- MT9.2** Design, implement, and evaluate a training plan addressed to the university community involved in the project.
- MT9.3** Design, implement, and evaluate a plan to provide technical, administrative, and academic support to all the actors involved in the pilot projects.
- MT9.4** Design, implement, and evaluate a change management plan that facilitates the appropriation of the technologies developed.

## WP10 - Impact Evaluation and Knowledge Dissemination

### Description

The goal is to design, plan, and carry out the necessary actions to evaluate the project, to spread its lessons learnt, results, and challenges, as well as lay the foundations for its future sustainability.

- MT10.1** Design of indicators and implementation of impact evaluation of digital credentials in the Spanish University System for the implemented use cases.
- MT10.2** Design and implementation of dissemination activities of the project in the national and international context (workshops, conferences).
- MT10.3** Promotion of the recognition of the digital credentials by employers (collaboration with the Ministry of Universities and industry stakeholders).
- MT10.4** Design and initial implementation of a sustainability plan for the project (alliances, agreements, synergies, commitment)

**The scope above will not necessarily be outsourced completely and should only be considered as a reference, and it might change when translated into one or several procurement processes.**

# Schedule

## CERTI Digital 2022-2023

### CertiDigital Project Governance and Organization

- Academic and Technical coordination through Committees (weekly/monthly)
- Dynamization and follow up with 23 universities (4 milestones / year)
- Preparation and signature of the agreement with 23 universities
- Drafting and publishing of the EDC Tender documentation
- Drafting and publishing of the EBSI Tender documentation
- CertiDigital UniDigital project closure and memorandum

### Identification and Planning of the Use Cases in SUE

- Definition and action plan for EDC Use Cases
- Definition and action plan for ESBI Use Cases

### Phase 0. Development and Integration of the new EDC System

- Agile project Management CT-Contractor
- Educational and administrative processes implementation consultancy
- EDC software development with partial deliveries
- Integration with existing ERP systems
- Production of user and technical documentation

### Phase 1. Roll-out and Usage of the new EDC System

- EDC installation and deployment in RedIris
- Training and consultancy on issuance and intake of credentials
- Change management for EDC SUE Use Cases
- Software updates, maintenance and support

### Phase 0. Development and Integration of the new EBSI System

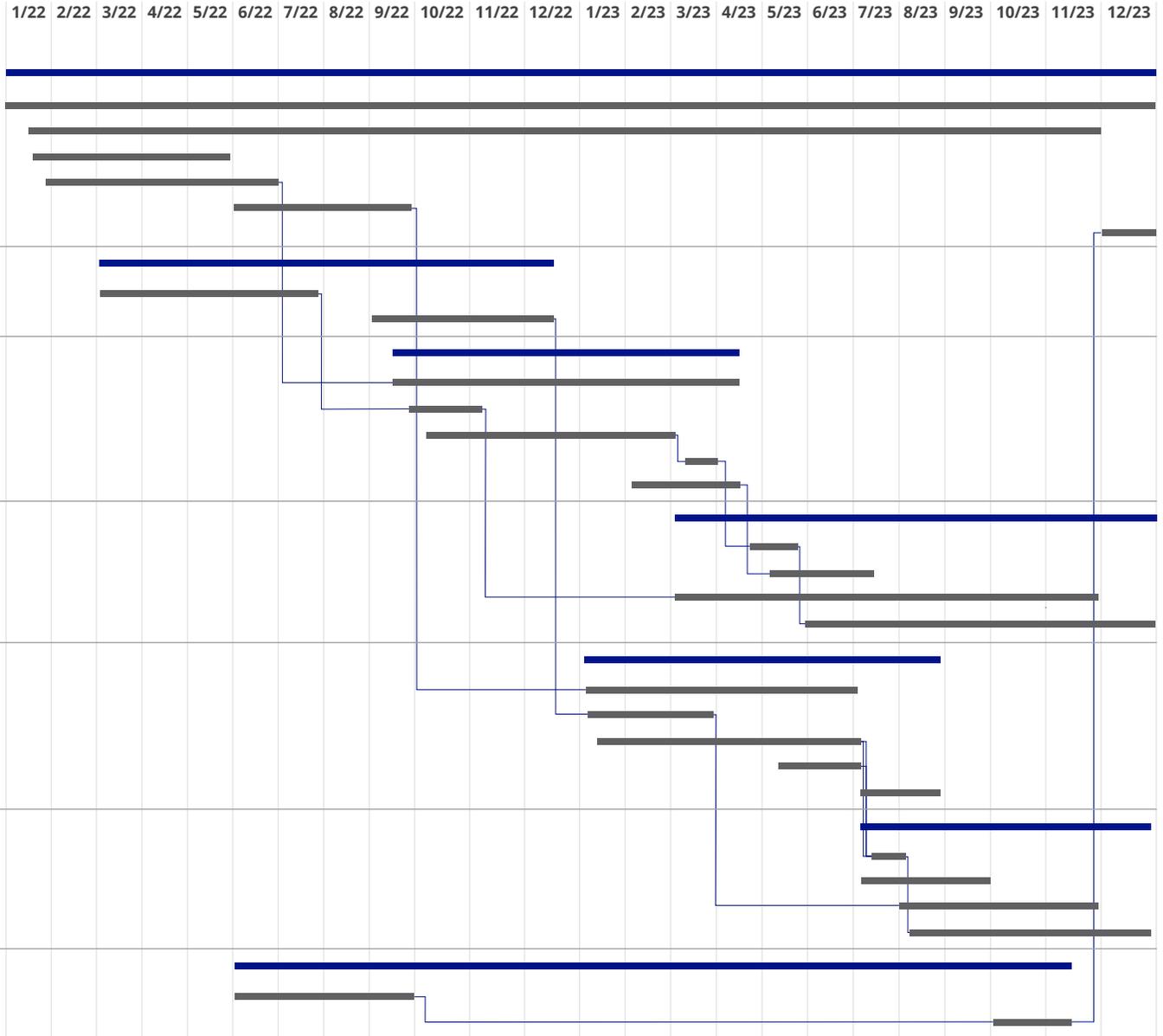
- Agile project Management CT-Contractor
- Educational and administrative processes implementation consultancy
- EDC software development with partial deliveries
- Production of user and technical documentation
- Customised EBSI developments by Universities

### Phase 1. Roll-out and Usage of the new EBSI System

- EBSI installation and deployment in RedIris
- Training and consultancy on issuance and intake of credentials
- Change management for EBSI SUE Use Cases
- Software updates, maintenance and support

### Impact Assessment and Sustainability of EDC/EBSI in SUE

- Definition of the goals and indicators for evaluation
- Gathering, information analysis and production of report



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