

EPSILON ERASMUS+ PROJECT

2021-1-DE01-KA220-HED-000029711

PR2: Knowledge Platform and Business Intelligence Toolkit



**Co-funded by
the European Union**

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**By SEIT Lab,
University of Cyprus**



PR2: KNOWLEDGE PLATFORM AND BUSINESS INTELLIGENCE TOOLKIT



Started: 01-07-2022



Ended: 31-12-2023



Lead by: UCY

The UCY team lead the technical design and development of the platform and the business analytics toolkit.



Main Aim: “*To develop a digital environment to support the objectives of the project and the work of Data science volunteers.*” This was the main focus and the main objective we had in mind to guide us through designing and developing the tools.

PR2: KNOWLEDGE PLATFORM AND BUSINESS INTELLIGENCE TOOLKIT

Production and Testing of:

- an *interactive, open access, sustainable*, online **European Knowledge Platform** providing comprehensive information and content for the target groups.
- a **Business Intelligence (BI) Toolkit** (e.g., interactive workflows, dashboards) for storing, synthesizing, and presenting data.

IMPACT & TRANSFERABILITY

Expected Impact:

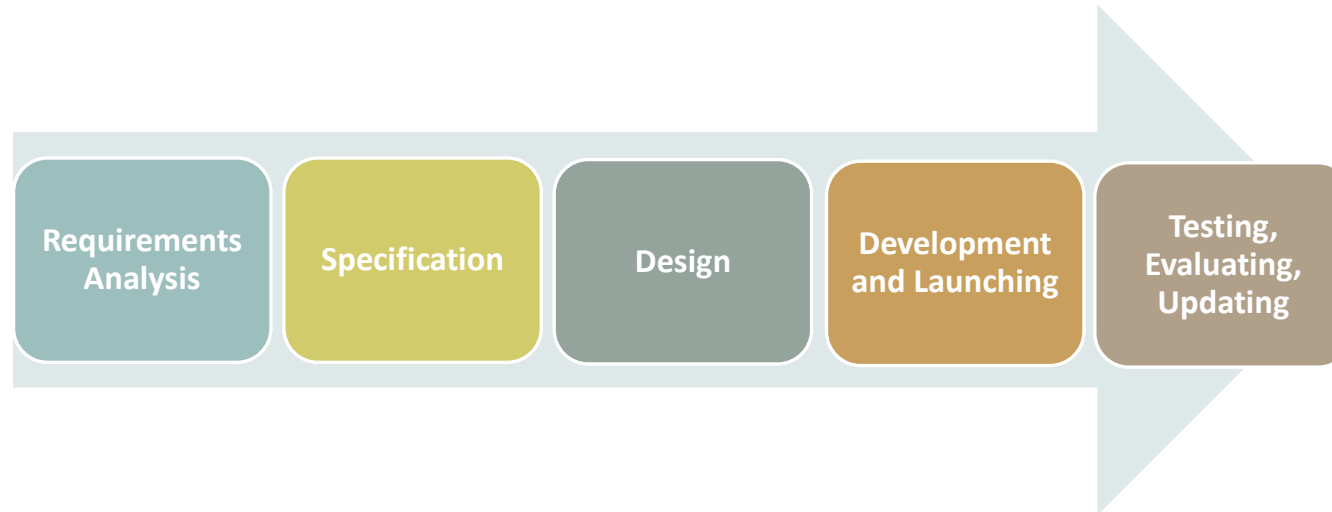
- This output is very important for the future impact of the EPSILON project, as it integrates all the other results of the project, it meets the needs of the stakeholders, supporting them in applying Data for Good in an accessible manner, and offering a sustainable European Knowledge Platform with useful information and content.
- The EPSILON platform will be maintained and stay online, with a free and open access for all stakeholders.

Transferability Potential:

- The EPSILON platform and tools will be able to be used by any volunteer data scientist, in any context and at any time.
- The Knowledge Platform gathers material that will be able to be accessed and used at any place and any time.
- The BI toolkit is able to accommodate any interested stakeholders.

PLAN OF WORK: TECHNICAL METHODOLOGY

A software engineering process and common Software Engineering methodologies and procedures were followed by the engineering team.



PLAN OF WORK: TECHNICAL METHODOLOGY

UCY followed the “Waterfall software engineering process”:

- The activities of the development are broken down into sequential steps
- Each phase depends on the results of the previous one
- Each phase can be revised after receiving feedback from consortium partners or testing and evaluating with users
- Each phase should be finalised before proceeding to the next one.
- The methodology is visualized in the figure in the next slide.

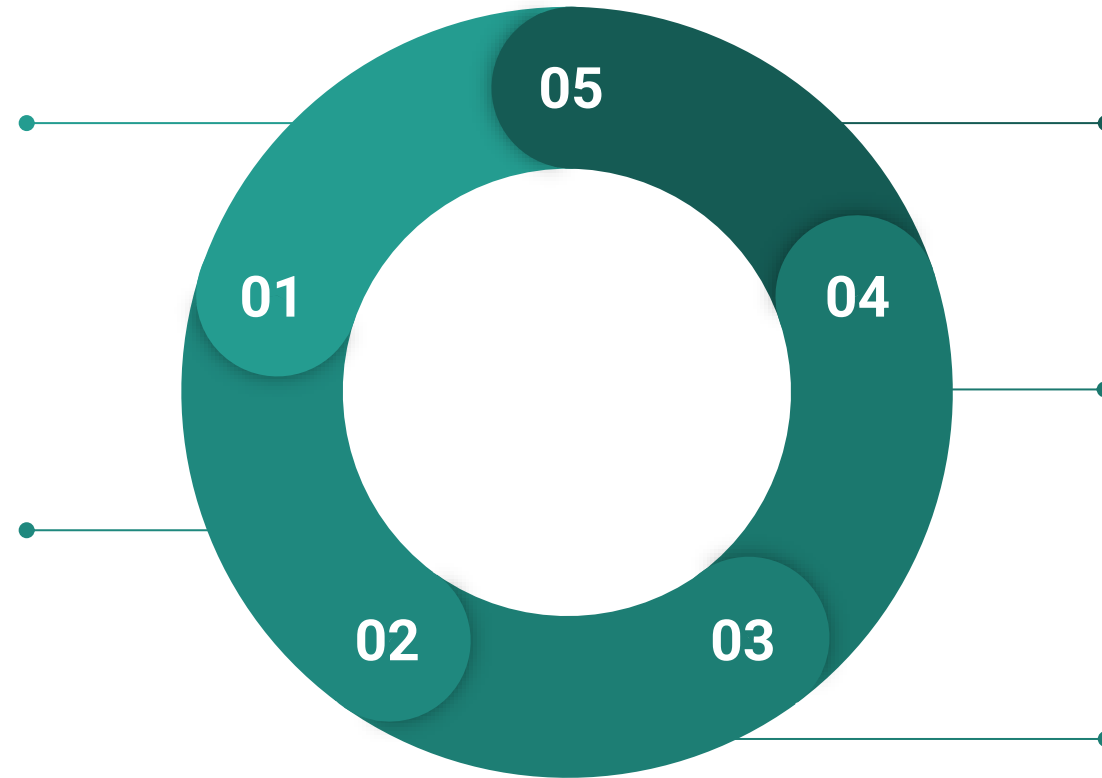
PLAN OF WORK*: TECHNICAL METHODOLOGY

1. Gathering User Requirements & Needs

The user requirements stage will be completed during the first PR (PR1) and will be transferred towards this output. In case it is deemed as needed, further questionnaires will be created and distributed to relevant stakeholders with the active participation of the rest of the partners.

2. Specification

The results from the user requirements analysis will be mainly considered for creating the specification of the platform and the tools, describing the required functionalities. Then the specifications will be enhanced with privacy requirements, such as requirements from the EU GDPR regarding the privacy of personal data. Furthermore, non-functional specifications such as performance specification and any other kind of specification judged as needed at that point will be added.



5. Testing, Evaluating, Updating

As a first step, the platform and tools will be tested by the consortium members and then by external stakeholders. Software engineering validation methodologies will be followed. All the feedback collected will be analyzed and results will be used in the creation of the final versions.

4. Development and launching

This task includes the actual development of the platform and Business Intelligence tools, using software engineering tools. The initial content for the Knowledge Platform will be integrated before launching it.

3. Design

A technical design will be produced including user interface details, system and database architecture details and functionality details. The architecture of the system will be specified. UML or/and other similar and related diagrams will be created to showcase the full design of the system if needed.

**This is the original plan of work as drafted before beginning the work, thus it is written in the future tense.*

PLAN OF WORK: GATHERING USER REQUIREMENTS

Details on the work done (1):

- (Gathering User Requirements Step) For the platform we initially and mainly took into consideration the results from the first Project Result (PR1). The user requirements were collected during the first PR and were transferred towards this output, indicating the needs and suggestions from the target groups.
- (Gathering User Requirements Step) We also conducted three additional informal interviews with 1 person from Portugal and two persons from Cyprus, to get their feedback and opinion.
- (Gathering User Requirements Step) Requirement gathering questionnaires were not deemed as needed as we had already spoken with many people with precise expertise on the matter and had collected their clear views and needs.
- (Specification Step) UCY team did a quick study of related work and research for similar tools and discovered a gap in the area and room for innovation.
- (Specification Step) The UCY team analyzed all the interview responses, and with the help of the partners transformed them into software functionality. UCY presented the envisioned functionality to the partners during many brainstorming sessions, until a final set of specifications was decided.

PLAN OF WORK: GATHERING USER REQUIREMENTS

Details on the work done (2):

- (Specification Step) UCY enhanced the specification with privacy requirements and non-functional specification. The final result is presented in the “Platform’s Specification Document”, included in the “PR2” document.
- (Specification step) The team made sure that the functionality implemented will be innovative and useful for the main target groups
- (Design step) UCY followed a User-Centred design approach, focusing on the users and their needs in each phase of the process.
- (Design step) The first version of the user interface (UI) was produced as a web-app prototype directly in the web space. The partners had the opportunity to interact directly and give us their comments for improvements and changes.
- (Design step) The database schema was decided. The architecture of the system was specified. UML or/and other similar and related diagrams were not deemed as needed.

PLAN OF WORK: GATHERING USER REQUIREMENTS

Details on the work done (3):

- **(Development Step)** The development was done using web technologies: HTML, CSS, PHP, JavaScript, and MySQL. The technical infrastructure includes a MariaDB database and hosting space in an Apache server.
- **(Development Step)** The development was done in many iterations, with partners providing feedback and UCY proceeding with improvements and changes.
- **(Launching Step)** The first contents of the platform were added and then the platform was launched. The final version of the platform is presented in the “PR2” document.
- **(Testing Step)** The partners did a last round of testing and feedback was given to UCY for last changes. Then stakeholders had the opportunity to test and evaluate the platform. UCY conducted individual interviews and focus groups using software engineering validation methodologies and tools. Feedback was collected and analyzed, and the results were used in the creation of the final version of the tools. The whole testing methodology and results are described in the “PR2” document.

THANK YOU!

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