Training SMEs for the Digital Decade[1]

D2.2. Second-year report on short-term training programmes results

Deliverable Due date	31.12.2024
Work Package	Work Package 2: Short-term training programmes
Reporting period	01.01.2024- 31.12.2024
Dissemination level	Public
Contributing Partners:	BME – Budapest University of Technology and Economics Hyper Island TAG – Talent Garden INRIA
Quality Assurance	EITD –EIT Digital KIFÜ – the Governmental Agency for IT Development" in Hungary

[1] This project has received funding from the European Union's Digital Europe Programme under grant agreement No 101100768

Table of Contents

Table of illustrations

Executive Summary

The Work Package 2 (WP2) of the SME4DD project focuses on building and deploying short-term training programs in the three key capacity areas: AI, Blockchain, and Cybersecurity. Each training provider (BME, Hyper Island, Inria and Talent Garden), an expert institution in their specific fields, focuses on one of these three topics and delivers the training programs mainly in one of the four SME4DD focus countries (Hungary, Italy, France and Sweden).

During 2024 (second year of the project), SME4DD partners

- delivered 22 courses,
- trained 263 people,
- 78 of them were women (30%),
- trained 169 SMEs

Additionally in 2024, the project delivered 11 workshops with an overall participation of 577 people (41% of women) from 336 European SMEs.

This report takes stock of the current SME4DD training landscape, assesses and analyses the initial results available to understand how SME4DD short-term training is meeting the needs of SMEs to acquire advanced digital skills and skills related to AI, Blockchain, and cybersecurity, how trained professionals are able to understand and use digital solutions in their projects and how the consortium is meeting the quality of KPI courses.

The report also provides an overview of the barriers that partners meet in 2024 and the contingency plan they developed to overcome the difficulties.

Finally, while the deliverable looks back over the past twelve months, the consortium is moving forward to 2025 and remains committed to ensuring a high quality of the training delivered. The focus will be put on courses, workshops, and the deployment of the Executive Programme 'STRATEGIC DIGITAL TECHNOLOGIES FOR SMEs', explicitly crafted to empower SME professionals with the essential skills and knowledge required to navigate and leverage digital innovations effectively.

1 Introduction

Delivering during 12-month period a comprehensive training programs that covered **22 courses on Artificial Intelligence (8 courses), Cybersecurity (4 courses), and Blockchain (10 courses)** presented an exciting challenge and opportunity to equip European SMEs with the skills and knowledge needed to excel in some of the most rapidly evolving fields in technology. The partners programs have been designed to take participants – technical and non-technical on a structured curriculum, starting with foundational principles and advancing to complex, cutting-edge applications. Throughout the year, the SME4DD partners made every effort to ensure that learners will engage with a carefully curated module that span key topics in each domain, providing a balanced and integrated approach to understanding the benefit of using AI, Cybersecurity, and Blockchain in their professional projects. This approach ensures that participants gain not only technical expertise but also strategic insights into how these technologies are reshaping their business.

The 22 courses on three key capacity areas have been delivered in line with a quality process developed by partners in 2023 (T4.3) and, progressively, enriched by the participants feedback, feedback from the project's evaluators (mid-term project review in July 2024) and the knowledge acquired in previous courses while also allowing participants the flexibility to focus on areas that align with their career goals. To ensure the program remains relevant and responsive to SMEs demands, the curriculum has been continuously updated to reflect the latest developments in AI, Cybersecurity, and Blockchain technologies. Regular assessments, peer collaboration (for example between Inria and Hyper Island on the AI vertical), and opportunities for feedback helped the consortium measure progress and ensure that participants are meeting learning objectives at each stage.

These 22 SME4DD courses have been complemented by **11 workshops that featured a combination of lectures, hands-on labs, case studies, and real-world projects to provide a dynamic learning experience.** With the support of expert speaker, workshops participants were empowered to understand the interest to develop both the theoretical and practical skills required to tackle real-world challenges, to drive innovation and to safeguard the digital landscape.

However, attracting participants to digital courses was also challenging due to a variety of factors. First, there is a **saturated market**, with numerous online courses available, particularly **on AI and cybersecurity topics**, making it difficult for SME4DD courses to stand out. The consortium faced the scepticism of the SMEs around the quality of digital courses available on the market, especially if the courses are not from well-known institutions or trainers. What helped the SME4DD consortium to overcome this difficulty was the reputation and legitimacy of the SME4DD partners providing the training – BME, Hyper Island, Inria, and Talent Garden – that are all solid, well-references institutions, with extensive experience in training on digital technologies.

Another barrier was the **lack of engagement and interactivity in some online learning formats**, which can cause learners to feel disconnected or unmotivated. To meet this challenge, Hyper Island designed the course *AI for business* in two formats: online and face-to-face. BME used the same approach for its course *Blockchain for Small Businesses.*

Time constraints also play a significant role, as training requires concentration and "disconnection from the company's business" that many SME managers and executives, in particular, struggle with, especially when competing with other important professional commitments. To meet this challenge, Inria deployed a very

short (2 hours) course on Machine Learning designed specifically for executives. Finally, **financial issues** increasingly present in the European economy[2], significantly deterred participation and created difficulty accessing the course - even proposed for prices well below market prices -, in all countries of SME4DD geography. Overcoming these hurdles required from partners offering compelling content, building trust, creating an engaging learning experience, and providing flexible support to cater to diverse learner needs. Also, the consortium delivered 12 from 22 courses (55%) for free.

The final stage of 2024 training activity was the development of the common Executive Programme 'STRATEGIC DIGITAL TECHNOLOGIES FOR SMEs' aiming at emphasising AI, cybersecurity and blockchain topics and the integration of these technologies into business strategies and projects. The pilot of the Executive Programme will be launched in January 2025.

The figures presented in the report cover the period from 1 January to 31 December 2024[3] excepting the KPI tables which present figures covering the entire project implementation period (24 months).

[2] https://www.eib.org/attachments/lucalli/20240358_economics_working_paper_2024_08_en.pdf

[3] the last course was delivered by the project on December 16 and some data are not yet available

2 SME4DD Training programme deployment

2.1 SME4DD courses overview in 2024

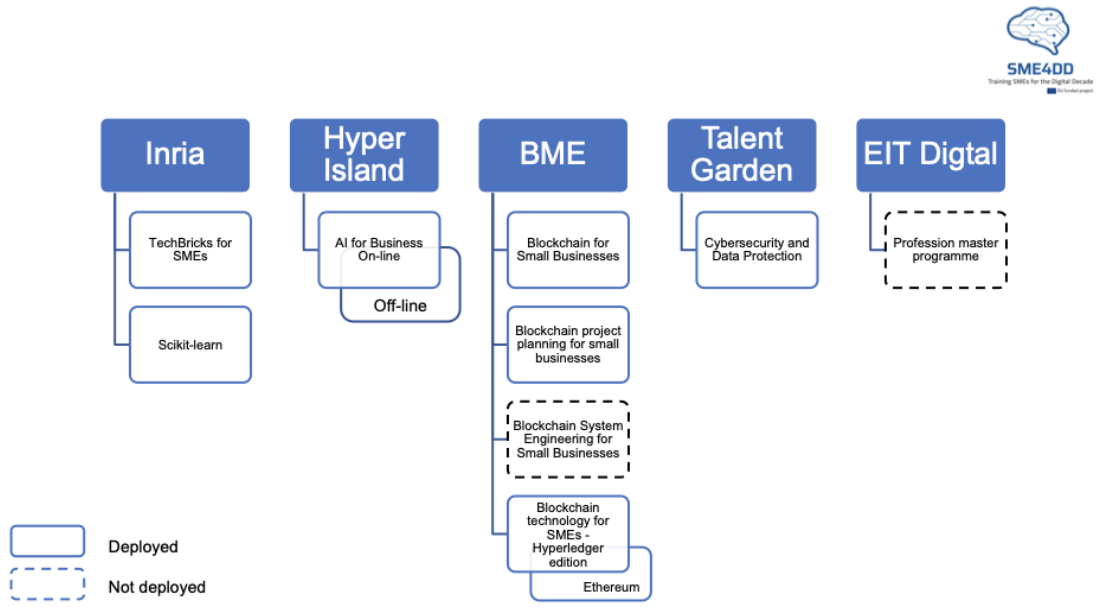


Figure 1: SME4DD courses overview

By the end of the second executive year, the consortium developed **nine courses in comparison with seven envisaged** in the grant agreement **and delivered 24[4] of the 25 sessions programmed for the duration of the project**, with respectively 129% and 96% of the project target.

List of nine courses offered by SME consortium in 2024 (SME4DD training catalogue):

1. AI for business (Hyper Island)
2. DeepTech course "Scikit-learn, machine learning tool box" (Inria)
3. Executive education course "Machine learning, TechBricks for the SMEs" (Inria)
4. Blockchain for Small Businesses (BME)
5. Building Blockchain Projects in SMEs (BME)
6. Blockchain Technology for SMEs – Hyperledger Edition (BME)
7. Blockchain Technology for SMEs – Ethereum Edition (BME)
8. Blockchain Systems Engineering for SMEs (BME)

[4] Including two courses delivered in December 2023

9. Cybersecurity and Data Protection (Talent Garden)

One of the key tasks of the consortium in 2024 was developing a **specialised training Master program that integrates Artificial Intelligence (AI), Cybersecurity, and Blockchain technological bricks (T2.4)**. The challenge was to design a Master program in respect to a holistic approach that balances foundational knowledge with advanced application. The first step in the process was to assess the target audience's current understanding of these domains and tailor the curriculum accordingly. With the inputs provided by the training activities of SME4DD, the partners have opted for a program that will introduce basic concepts of AI, while simultaneously providing an overview of blockchain fundamentals like cryptography, distributed ledgers, and consensus mechanisms. Cybersecurity concepts, including risk management, encryption, and threat mitigation, should be covered at a foundational level to ensure participants understand the security implications of both AI and blockchain technologies. Hands-on exercises, such as building simple AI models or creating a blockchain transaction, will make the learning process interactive and engaging.

The detailed process and result of this work is presented in the section 6.

The table below provides an overview of the training activities results achieved by M24. The indicators presented in this table (and in the tables below relevant to the KPIs of SME4DD's partners) are based on cumulative figures for 2023-2024, to give an objective view of the KPIs achieved compared with those programmed.

Table 1: Overview of the training activities results by M24

	Project deliverable	M24	Percentage reached	Future actions
Developed courses	7	9	129 %	Target reached
Delivered courses	25	24	96%	On track
Seminars/ workshop	35	16	46%	Increased partner responsibility
Profession master programme developed	1	1	100%	Target reached Starts on Jan 21, 2025
Number trained including workshop	1200	1108	92%	On track on high level, focusing on high-impact activities
Part of women trained	30%	34,5%	-	On track
Number SMEs including workshops	350	> 500	140%	Target reached
Quality	> 8,0	Most courses- but not a clear trajectory		Need to be addressed
Evaluation above 4/5	95%	Most courses	71%	Need to be addressed

Course Completion Percentage	> 95%	Most courses, but not all		Need to be addressed

2.2 Artificial Intelligence courses by Hyper Island and Inria

The SME4DD training catalogue in Artificial Intelligence comprises in 2024 three courses:

- AI for business (Hyper Island)
- DeepTech course “Scikit-learn, machine learning toolbox” (Inria)
- Executive education course “Machine learning, TechBricks for the SMEs” (Inria)

International landing pages (including the descriptions of the curricula) and registration pages for the courses are maintained by EIT Digital at https://www.eitdigital.eu/eu-collaborations/sme4dd/.

Hyper Island and Inria maintain localised, Swedish/English and French landing and registration pages under its respective websites.

2.2.1 Curriculum overview

2.2.1.1 AI for business by Hyper Island

The AI for Business is an immersive course that explores how artificial intelligence is reshaping the business landscape, providing significant innovation and transformative potential.

- Duration: 4 weeks online with one weekly session of 2,5 hours
- Time estimation put into the course: 5-7 hours per week

Overview

- Learn how to make AI work for you: discover how AI is impacting, disrupting, and transforming traditional business models. From automating routine tasks to unlocking predictive insights, AI has the potential to revolutionise how organisations operate. Learn how to harness this power to stay competitive and relevant.
- As a leader, understanding AI is essential in today’s fast-paced world. Our course empowers you to make sense of this new technology, fostering an environment where AI is a valued ally. Embrace AI’s potential to enhance decision-making, streamline operations, and drive innovation.
- Learn how to unlock opportunities in your business area.
- Course designed for entrepreneurs, startup founders, experienced managers, and decision makers at SMEs that want to:
    - Get insights into the implications and disruption and new technologies on businesses, individuals and society.
    - See changes in consumer behaviour and the impact of digital on client journeys.
    - Identify and unlock opportunities related to new tech in your business area

- Be able to prototype how new tech like artificial intelligence can help us reach our business goals.
- Explore how to update our current business model into a digital one.
- Understand how you create a culture that encourages constant innovation.
- Be able to freely discuss the impact of new tech in areas like decentralised business models and how they affect the organisations and society.
- Have the confidence to confidently explore and unlock opportunities for implementation and application of what you learn.

Learning outcomes:

- Building a solid foundation: gain a robust understanding of AI underneath the hood, non-coding tools and what to come. Equip yourself with the knowledge and skills to solve complex problems and foster innovation within your business.
- Shaping your point of view: delve into the world of AI's impact on society, business, and individuals. Develop a perspective that empowers you to navigate the evolving landscape with confidence and foresight.
- Maximising Business Efficiency: discover how AI can supercharge your organisation's efficiency and your own workflow. Learn to identify opportunities for AI integration and drive operational excellence.
- Navigating ethical debates: in the era of AI, ethics and societal discussions are paramount. Equip yourself with the ability to engage in meaningful conversations about the ethical implications of AI, ensuring responsible and empathetic leadership.
- Generative AI integration: unlock the potential of generative AI tools and explore how they can be seamlessly integrated into your organisation and workflow, unleashing creative possibilities.
- Building super intelligence: combine the power of Artificial Intelligence with Emotional Intelligence to adapt your leadership to the unique challenges and responsibilities of this era. Cultivate a leadership style that is fit for purpose, empathetic, and future-proof.

2.2.1.2 DeepTech course Scikit-learn, machine learning toolbox by Inria

The DeepTech - in the following DT - course has been designed to meet the needs of engineering staff of the SMEs in machine learning, and in particular in upskilling on scikit-learn library commonly used in the world. The course allows participants to learn how to use the scikit-learn library correctly, while providing an intuitive understanding of machine learning to avoid methodological pitfalls. The training is above all practical and focuses on examples of applications with code executed by the participants supervised by a course trainer from Inria who is an expert in the field.

Objectives: the teaching objectives have remained stable since the launch of the pilot courses (see D2.1):

- Understand the benefits of using artificial intelligence for an SME with use cases.
- Define the basic principles and notions of machine learning and the different types of model families.
- Manipulate scikit-learn with different datasets.
- Understand the processing chain scikit-learn.

Duration: 6 hours

Target audience: IT engineers and developers

2.2.1.3 Executive Education course "Machine learning, TechBricks for SMEs" by Inria

The Executive Education - in the following EE - course provides a comprehensive understanding of the benefits of using Machine Learning (ML) for an SME through three use cases (AI scenarios applied to human resources, fraud management and predictive maintenance), defines the basic principles and concepts of machine learning, compares the technology building blocks available to SMEs, and introduces one of them: scikit-learn, one of the leading ML technologies.

Objective: to enlighten the target group on the various technological building blocks available to SMEs in Machine Learning, and to help the trainees to understand the benefits of using ML for an SME.

Target audience: executive and managers from IT or non-IT companies

Duration: 2 hours (focus on course timeline):

- What is the benefit of using AI for an SME? (15 minutes)
  - Personalisation: improving the customer experience
  - Optimisation: automation of business processes
  - Security: fraud detection
- What is machine learning? (25 minutes)
- The Tech bricks of machine learning Focus on scikit-learn tech brick (20 minutes)
- What about generative AI? (20 minutes) - *content added after mi-review of the project (see below)*
- Risks (20 minutes)
- How to take action? (20 minutes)
  - Ecosystem and tools depending on your resources and objectives (data, HR, etc.)
  - Benefit from supercomputers (ecosystem, price, eligibility) - *content added on the basis of the feedbacks from participants after 1st intake (see below)*

2.2.2 Curriculum adaptations based on early and ongoing feedback

From technical focus to hand-on focus

Since the launch for the course *AI for Business*, Hyper Island has iterated the curriculum to be even more hands-on so that the participants/learners get the opportunity to get a deeper understanding of the potential that the technology has. Previously the course took a too technical direction, and the participants felt disconnected from the content.

More use-cases asked by participants

As part of the roll-out of DeepTech beginner course *Scikit-learn, machine learning toolbox*, Inria has made several changes into the content based on the feedback provided by the participants. In particular, the pedagogical team reworked the technical content to simplify it and reworked the use cases section to meet the needs of SMEs in a more operational way. Real-world use cases such as **data management with scikit-learn, market segmentation or problem solving** were considered more suitable for illustration of the practical application of the scikit-learn toolbox. Use cases-based learning is crucial at this stage, enabling

learners to experiment with real-world scenarios and develop problem-solving skills that could be directly applicable to their professional projects.

Technical Topics of great interest

The executive education course *Machine learning: TechBricks for SMEs* delivered by Inria has evolved considerably since its first edition in May 2024. Two new sections have been designed and integrated into its content.

- At the project Interim Review Meeting in Milan (July 2024), the consortium discussed with the evaluator about an important increase in interest for the AI area, due to the emergence of generative AI. As one of the most advanced natural language processing models, Generative AI (e.g. ChatGPT) offers users a hands-on understanding of AI's potential in communication, problem-solving, and content generation. The rapid emergence of Generative AI led to a demand from SMEs for guidance, **in particular at the management level** regarding how Generative AI will impact their business model and how to meet a need for upskilling of technical staff on the capacities and limitations of the new AI models. Following this Interim Review Meeting Inria reworked the content of the executive education course *Machine learning: TechBricks for SMEs* including it in a Generative AI brick that allow learners to explore real-world applications of machine learning, enhances their grasp of language models, and prepares them for the ethical and technical challenges associated with AI-driven tools. Moreover, familiarity with Generative AI technology equips executives with the practical understanding on who to work with cutting-edge AI technologies, making them more competitive in the evolving market.

- Based on feedback from the technical managers who took part in the first intake of the course for executives (May, 21) regarding computing power needs, Inria decided that incorporating a section on High-Performance Computing (HPC) into machine learning course for managers will bring a specific value for equipping them with the knowledge to understand and leverage the computational power needed to scale AI projects effectively. Inria puts a particular research focus on HPC and the institute is involved in numerous EuroHPC initiatives. The new HPC "brick" presents the way HPC enables faster processing of vast datasets and complex algorithms, which are essential for training advanced AI models. By exposing managers to HPC concepts, they can better grasp the infrastructure requirements, resource allocation, and cost implications of running AI initiatives at scale. Moreover, the content has been aligned with EuroCC access initiative (EuroHPC instrument) that also helps to understand how an SMEs can get access to European computing infrastructure. This is very important for SMEs in making informed decisions about cloud computing, hardware investments, and optimising workflows. As machine learning continues to drive AI innovation across industries, managers who are familiar with HPC will be better positioned to lead AI projects, ensuring their teams can efficiently execute cutting-edge AI solutions.

The updated content was delivered on the September 25, 2024 (2d EE intake) and received encouraging feedback from the participants both on Generative IA and on HPC "bricks".

With respect to the Generative AI issue, Hyper Island designed a new workshop "Generative AI". Two on-site sessions were successfully deployed in November 2024 with 52 participants in total (see section 5).

2.2.3 AI courses Deployment timeline

Table 2: AI courses deployment

Date	Course	Language	Class hours	No. partici-pants trained	Women trained	#SME	Rating	Eval. above 4/5	Completion Rate
Feb 24	AI for Business	English	2,5x4[5]	13	8	10	6,6	37%	92%
April 11	AI for Business	English	2,5x4	11	4	9	9,4	100%	100%
April 12	DT –scikit-learn, ML tool box for SMEs	French	6	6	2	4	8,4	100%	100%
May 21	EE-ML TechBricks for SMEs	French	2	14	6	14	9,0	50%	74%
May 24	AI for Business	English	2,5x4	15	7	7	8,4	67%	100%
July 04	DT –scikit-learn, ML tool box for SMEs	French	6	8	1	5	9,0	100%	100%
Sept 25	EE-ML TechBricks for SMEs	French	2	24	2	18	8,6	100%	80%
Oct 24	Ai for Business	English	2,5x4	45	23	17	6,53	38%	100%
Total	8			136	53	84			

2.2.4 KPIs

Overview KPI Status - Hyper Island

Reminder: The indicators presented in this table (and in the tables below relevant to the KPIs of other partners) are based on cumulative figures for 2023-2024, to give an objective view of the KPIs achieved compared with those programmed.

[5] The duration of the course is 4 weeks

Table 3: Hyper Island KPI status

	Project deliverable	M24	On Target (yes/no)
Developed courses	1	1	Yes
Delivered courses	4	4	Yes
Seminars/ workshop	7	5	Near to target
Number trained in courses and in workshops	170	544[6]	Yes
Trained women (30%)	30%	ca 50%	Yes
Number SMEs trained	20	306	Yes
AI for Business - evaluation	8,0	7,7	Near to target
AI for Business - evaluation above 4/5	95%	68%	Need to be addressed
AI for Business - course completion	80%	98%	Yes

Overview KPI Status - Inria

Table 4: Inria KPI status

	Project deliverable	M24	On Target (yes/no)
Developed courses	2	2	Yes
Delivered courses	10	5 (3DT+2EE)	Yes: 5 courses are planned for 2025 (2DT +3EE)
Seminars/ workshop	0	2	>100%
Number trained in courses	100	54	Yes: + 66 SME trained in workshops + 5 courses are planned for 2025
Number trained in workshop	0[7]	66	Yes
Trained women	30%	25%	No

[6] 84 trained via the courses and 462 trained via workshops
[7] Inria has no KPI for workshops

Number SMEs trained	30	41	Yes
DT-Scikit-learn, toolbox - evaluation	8,0	8,7	Yes
DT-Scikit-learn, toolbox - eval. 4/5	95%	100%	Yes
DT-Scikit-learn, toolbox - course completion	80%	100%	Yes
EE-Maching Learning Techbricks for SMEs – evaluation	8,0	8,8	Yes
EE-Maching Learning Techbricks for SMEs – eval. 4/5	95%	100%	Yes
EE-Maching Learning Techbricks for SMEs - course completion	80%	77%	Nearly

Analysis of KPIs linked to AI vertical:

Hyper Island and Inria are on track on most of the KPIs. The two providers are in the process of scheduling courses and workshops for 2025.

Developed Courses: this metric – fully completed - reflects the ability of partners to create high-quality, relevant learning content that meets the needs of SME4DD target audiences: engineers and executives. The development of Inria's courses "in tandem" (Executive Education – DeepTech) has been driven by an expectation of being able to convert participants from Executive Education course to DeepTech course, which in reality did not happen, at least not after the first two intakes Executive Education.

Additionally, to meet the SMEs' demand for specific skills in proficiency in machine learning Inria proposes an advanced course on scikit-learn and a specific course scikit-learn for cybersecurity, we have a conversion rate of 30% (people who take the beginners' course enrol in the advanced course) but this advanced courses are not part of the SME4DD programme.

Delivered Courses: Hyper Island has fully achieved the project KPI. Inria is on track on this KPI in 2024.

AI Seminars and Workshops: Hyper Island delivered 5 workshops from 7 planned (71%). According to the GA, Inria has no KPI on this seminars/workshops metric, however Inria contributed to the collective effort and delivered 2 workshops in 2024 that provided an opportunity for deeper dives into AI/machine learning topics.

Number Trained (via courses and via workshops): this KPI tracks the total number of participants coming from the SMES exclusively who have completed a course or participated in workshop. It provides an important metric for understanding the overall impact of our courses and this number is crucial for gauging the scale of a courses/workshops reach. Hyper Island and Inria are on track on this KPI in 2024.

Trained Women: what stands out the most here is the ratio of female participants in Hyper Island courses both from Sweden and other European countries. Hyper Island is way over the target at 30 %. There is no specific strategy on Hyper Island's side to reach this target, the organisation has always attracted female and male participants alike. It happens organically considering the strong community and also the historical

aspect of Scandinavian education. In Sweden it is the norm to attract female participants to technical education.

In Inria experience, executive education courses and workshops without technical prerequisites attract more women that DeepTech courses.

Trained Number SME: Hyper Island fully achieved the project KPI in 2024. Inria will improve its strategy for promoting courses to women (see D3.2)

Courses Evaluation

Evaluating the effectiveness of the SME4DD AI courses is essential for determining its success in meeting learners' needs. This KPI measures how well the course content, delivery methods, and tools like Scikit-learn are received by participants. The evaluation process involves collecting feedback from learners, assessing their ability to apply what they've learned, and measuring the improvements in their skills and knowledge. Inria's courses (EE and DT) have a high evaluation rate (100% above 4/5). However, Inria pedagogical team has difficulty getting feedback from the executives (feedback rate at 17%) comparing to getting feedback from the engineers (feedback rate at 67%). A corrective action has been put in place with introduction of QR code that is display 5 minutes before the end of the course.

Hyper Island's last AI for business course registered a low evaluation rate below than 50%. The reason seems to be linked to the group size (too large group) because a correlation has been observed between the size of a group and the level of course evaluation. In other words, the larger the group of learners, the lower the course evaluations tend to be. This could in fact be linked to a number of factors like less individual attention, variability in learning levels (in a large group, learners can have very different levels of ability, which can make it difficult to teach consistent content) and cognitive saturation.

Hyper Island team is now analysing these factors in order to put a corrective action in place (e.g. to limit the number of places).

Course Completion

Hyper Island and Inria are on track on this KPI in 2024. It could simply be noted that completion rates correlate with access model: there is a charge for the AI for Business course of HyperIsland and deeptech course of Inria (completion 97% and 100% respectively) while the executive education course of Inria is delivered for free, a free access increases the no show rate (completion 77%).

2.2.5 Following the quality process

The providers of AI training stand here at the quality process developed under T4.3 – Quality assurance, including:

- SME4DD on-boarding questionnaire (survey before the course). The template has been provided in D2.1
- SME4DD Post-session questionnaire (« hot » questionnaire). The template has been provided in D2.1
- SME4DD 6-month after questionnaire (« cold » questionnaire). The template is provided in Appendix 8.1.
- Retrospectives with staff and external collaborators who have been involved in the course to maintain an iterative process to improve processes and course deliveries

Additionally, Hyper Island and Inria have two specific evaluation tools:

- Quiz section (deployed during the course) -> specific for Inria
- "Short temperature" checks after live sessions -> specific to Hyper Island

To get the first feedback on the session delivered and check the overall satisfaction rate, Hyper Island utilizes tools such as Mentimeter.

As for Inria quiz section, it is specific to Inria DeepTech course and the tool has been designed in order to assess understanding of the content delivered in real time. Inria has developed a series of 9 Multiple Choice Questions (MCQs) which form an integral part of the curriculum. Technically, these quizzes have been created using the Drag'n survey tool. The results - the number of points acquired are displayed in real time. The quizzes take place every 30 minutes and the answers are used to check whether the content has been integrated, and if not, to quickly pick up on the point or points that have not been understood. This allows the trainer to move on quickly and the learners to enter an active, rather than passive, learning mode.

SME4DD post-session questionnaires: to increase the rate of responses on the questionnaires Inria designed a QR code to be display in the last 5 minutes of the course. Immediately after the course, the pedagogical team send a message of thanks with a link to the post-session questionnaire to all participants and ensure a follow-up with two relaunches.

The 6 months post-course survey evaluates how well participants are able to use the concepts and techniques learned in the course to solve real-world problems, tracking the implementation of skills in the workplace six months after the course. Additionally, 6 months post-course questionnaire is supposed to help Hyper Island and Inria to see how learners have advanced in their careers.

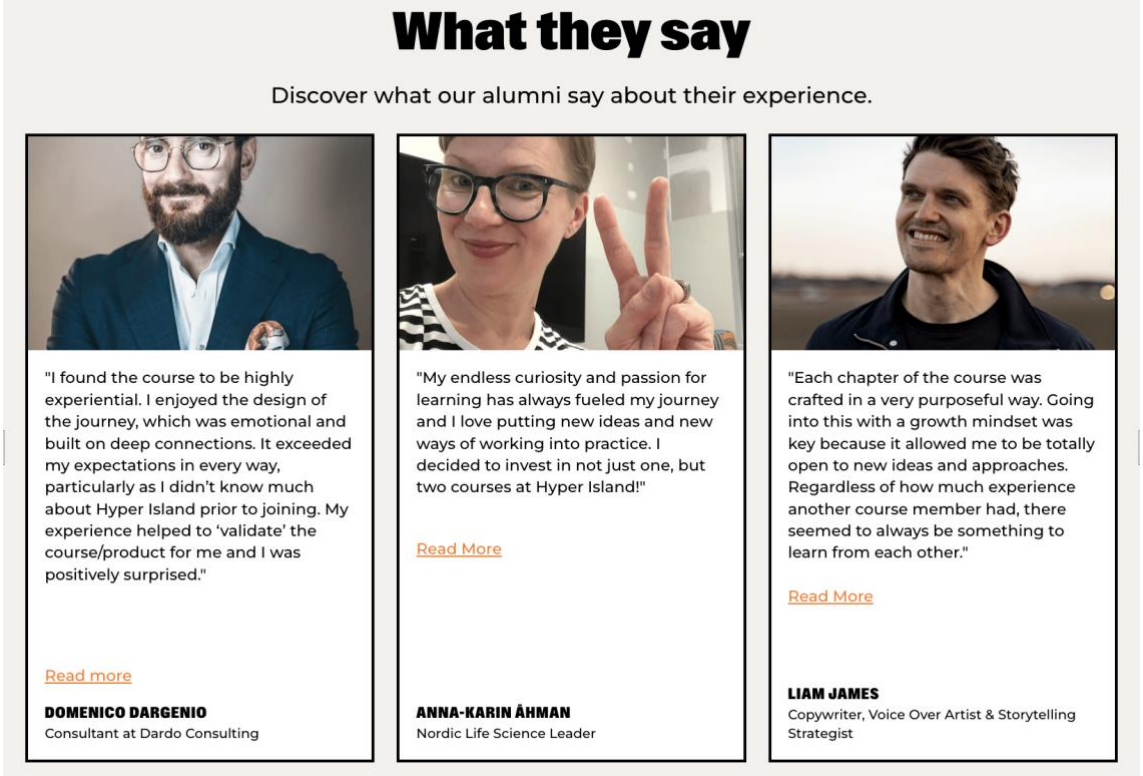
The effectiveness of the process however was challenging: the consortium faced a difficulty in getting feedback from learners after a course, and in particularly regarding the SME4DD 6-month after questionnaire (see section 4). The problem is linked to the fact that learners are frequently asked to fill out surveys and they develop survey fatigue and ignore or decline to respond. The solution could be Acknowledge and Act on Feedback: Hyper Island and Inria will make sure learners know their feedback leads to real improvement of the courses content.

Synthesis of evaluation results obtained so far

The evaluations of the AI courses revealed an overall satisfaction rate of 83%. Participants expressed positive feedback on the content quality, delivery, and practical relevance of the sessions. However, some areas for improvement were highlighted, including the pacing of certain sections (DeepTech course) and the need for more use cases (feedback integrated, see section 2.2.2). The majority of attendees found the SME4DD courses on AI vertical valuable and beneficial to their professional development. The results indicate a solid foundation, with room for refinement in future iterations to further elevate participant engagement and outcomes.

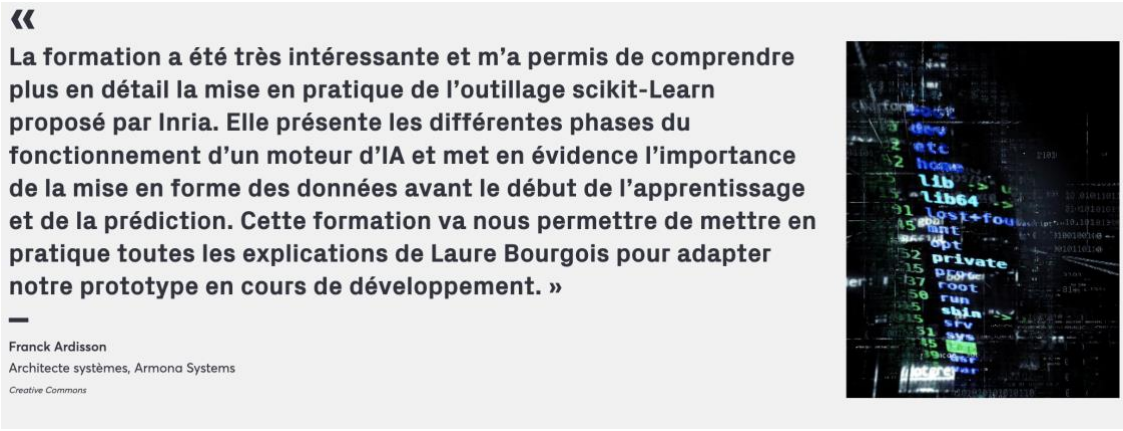
Testimonials

Below is a screen shot for Hyper Island's and Inria's websites with testimonials from course participants:



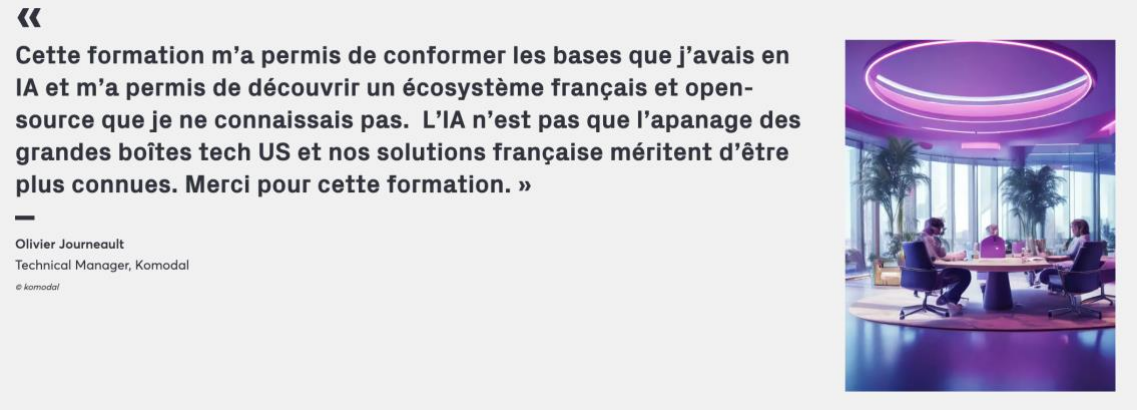
[Inria DT course on scikit-learn, 2d intake, April 2024, translated from French]

The training was very interesting and enabled me to understand in more detail the practical application of the Scikit-Learn tool proposed by Inria. It presented the different phases in the operation of an AI engine and highlighted the importance of shaping the data before the start of learning and prediction. This training course will enable us to put all all the instructor's explanations into practice in order to adapt our prototype currently under development.



[Inria EE course on Machine Learning, 2d intake, September 2024, translated from French]

This course enabled me to test the basics of artificial intelligence. It also introduced me to a French and open-source software ecosystem with which I was unfamiliar. AI isn't just the preserve of the big US tech companies, and our French solutions deserve to be better known. Thank you for this training.



2.3 Blockchain courses by BME

2.3.1 Curriculum overview

As planned and reported on at the end of 2023 in D2.1 (and underpinned by D1.1), BME has been implementing a range of blockchain courses throughout 2024.

- Blockchain for Small Businesses – in the following referred as SB - introduces the applicability of blockchain for small businesses in a practical and understandable way.
- Building Blockchain Projects in SMEs – in the following referred as PM -focuses on moving from an idea to a solution using blockchain-based technologies in an SME setting.
- Blockchain Technology for SMEs – Hyperledger Edition - in the following referred as HLF - is a comprehensive technical course on the Hyperledger Fabric blockchain platform and its smart contract development, specifically designed for the employees of SMEs.
- Blockchain Technology for SMEs – Ethereum Edition - in the following referred as ETH - is a hands-on technical program which covers everything necessary to get started with building decentralised applications (dApps) on blockchains using Ethereum technology (including the Ethereum mainnet itself).

- Blockchain Systems Engineering for SMEs – hereafter referred as SE - provides a practical overview of the key systems engineering tasks in the planning and implementation of blockchain-based applications - and the contemporary approaches to solving them.

International landing pages (including the descriptions of the curricula) and registration pages for the courses are maintained by EIT Digital at https://www.eitdigital.eu/eu-collaborations/sme4dd/. KIFÜ maintains localised, Hungarian landing pages and registration pages for the short courses under https://kifu.gov.hu/sme4dd-kepzesek-rendezvenyek/[8].

2.3.2 Curriculum adaptations based on early and ongoing feedback

Throughout 2024, BME strived to follow the common Plan-Do-Check-Act (PDCA) quality assurance approach of the project, introducing and testing the adaptations which were necessary (or hypothesised to be necessary) in a timely manner.

The pilot course deployed at the end of 2023 (SB, Hungarian cohort) provided some limited early feedback and indications on adaptation requirements.

a) The approach towards non-technical offerings seemed (and seems) to be broadly correct and has significant value add in the "converse with the experts" aspect of the courses. (During the courses, prompt questions are encouraged and when meaningful, they are shaped into brief group exchanges; "Bring Your Own Problem" sessions are also included.) This is an important distinguishing factor from the increasingly widely available non-synchronous options in the topic.
b) At the same time, it became clear that further improving the SME focus is necessary.

This was a recurring point of feedback from the H1 Hungarian-speaking deployments of the SB and PM course, although, in BME's evaluation, decreasingly so due to the effort to continuously improve and refine the selection of SME-relevant use cases and the selection of blockchain failure stories (which are generally very well received).

Curriculum-wise, the SB course has been abridged and repositioned from 2 x 8 hours to 2 x 4 hours, to better fit the time constraints of stakeholder demographics and to reduce overlap with the other courses. For the PM course, the curriculum has been abridged from 3 x 6 hours to 3 x 4 hours to better fit the work commitments of the participants.

From the technical course track, in H1 (first half of the year), the HLF course was piloted in Hungarian, as it was deemed to have the bigger potential impact (more specialised technological knowledge than Ethereum). The limited feedback received, coupled with the fact it is a technical one on a nontrivial topic, did not support deriving decisions on major adaptation at that point.

2.3.2.1 From a Hungarian focus to a pan-European one

The marketing for the consecutive deployments of the SB course and the PM course in Hungarian in H1 showed decreasing initial interest, while the course ratings and completion rates remained consistently

[8] Note that, in accordance with the 234/2024. (VIII.8.) decree of the Hungarian Government (https://njt.hu/jogszabaly/2024-234-20-22.0), KIFÜ is being dissolved with the end of the calendar year 2024, without a successor. At the time of writing, it is yet unclear how the transitioning of the role of KIFÜ in SME4DD to a different governmental agency will impact the process and technical support created for the purposes of the project.

good. BME hypothesised that this was due to an interplay of multiple factors, of which a – at least - temporary "depletion" of the prospective (Hungarian) participants in the practical outreach of our collective marketing efforts was probably the most significant factor.

Originally, BME planned a staggered rollout model: in the first part of 2024 delivering (and in the case of PM and HLF, also piloting) Hungarian-speaking courses, and in H2 (second half of the year) also English-speaking courses to a pan-European audience. The above phenomenon underscored the necessity of this strategy, BME committed to it as of the mid-term review and implemented it in the past months.

This way, in H2, SB was deployed in English and in Hungarian, and HLF and ETH in English. PM and SE were omitted, to stay focused – notice that at least in the online and English delivery model, despite existing competencies and educational materials, both HLF and ETH were quasi-pilots.

SB in English provided limited direct feedback to work with (only 3 participants filled out the offboarding form, which is a part of our quality process). BME's working hypotheses for the planned international SB and PM deployments in 2025 are the following.

- International cohorts are much more diverse in background as well as language capabilities than what can be assumed for the Hungarian speaking courses (where BME being the preeminent technical university in the country is also an influencing factor in retaining participants). Going forward, the discussion will be simplified, made more linear and practical, and the focus will be shifted to worked business cases even more.
- The dynamic ("Socratic") dialogues employed by the experts of BME during teaching, which are a significant added value, do not translate well to ad-hoc online classrooms with participants of varying language capabilities and backgrounds – even such mundane factors, as the participants' technical setup (camera and microphone and the ability to use them) matter. For the international courses, the interactive parts have to be adapted to online methods, preferably with elements of gamification and constant feedback.
- Breaking up SB in two parts seems to have been counterproductive for the English and online delivery; it must be empirically validated whether delivery in one day improves the outcome.

The latter point has been indirectly validated by the Hungarian-speaking, hybrid December edition of SB (with an approximately even split between in-class and online participants), in that the established didactic approach remains to be effective – in an at least partially physical classroom setting.

2.3.2.2 Feedback and adaptations for the technical courses

Prior to conducting HLF and ETH, BME reached out to the respective open-source communities – not just to "market" the courses, but also to gather feedback on the developed curricula. Specifically:

- Feedback was gathered at the Ethereum Budapest meetup in person and on the associated Telegram channel. The feedback was positive; a specific point that was also acted on (suggested by multiple community members) is the inclusion of an introduction to practical Zero-Knowledge Proof techniques in Solidity smart contracts.
- Similarly, BME reached out to the Linux Foundation Decentralized Trust (formerly Hyperledger Foundation) and made queries on the Hyperledger Fabric and Besu mailing lists and Discord servers. Here not much specific feedback was received, but BME did get some positive responses.
- Feedback received for the November editions of ETH and HLF suggest that:

- The amount and depth of the material may need some revisiting, as it was generally considered "challenging" (however, at the same time, feedback points to the deeper/more unique course content as truly valuable)
- The one lecture – one lab format needs rethinking, as some participants found it hard to do the independent coding exercises as well as to follow live coding tutoring.

Adaptations will be considered and acted on for the 2025 editions of the technical courses.

2.3.2.3 The evolving European aspects of the subject matter

During 2024, both the (blockchain-backed) Verifiable Identity and the associated EU Digital Identity Wallet aspects of our subject matter saw important and fast-paced development. Additionally, the finalisation of the 2024 revision of the 2014 eIDAS Regulation is also shaping the discourse around blockchains and DLTs. In the SB and PM courses, BME is reacting to this development on an ongoing basis, now dedicating a lecture module to blockchain-secured Self-Sovereign Identity (SSI) and the way Europe is approaching the introduction of digital identities and Verifiable Credentials.

Due to the increasing importance of the topic, BME organised a one-hour online webinar-**workshop on Verifiable Credentials on the 16th of Decembe**r. At this point in the project and considering the existing commitments to deliver blockchain courses, it does not seem to be practical to introduce dedicated courses around these topics in 2025; but as the increasing need and interest are obvious, a dedicated SME4DD workshop series is planned for 2025.

2.3.3 Deployment timeline

Table below summarises the deployment timeline for BME and its blockchain courses in 2024. The timeline reflects the beginning of delivering English-speaking online courses with the commencement of H2 and largely fulfils the respective beginning-of-year commitments.

One major deviation is pushing up delivering the first instance of SE to 2025. The reasons are twofold and flow from the fact that, especially in the SME context, blockchain/DLT systems engineering is a very specialised topic. Despite this fact, from a professional point of view, BME still deems it necessary to complete its original vision of serving all relevant key roles at SMEs with blockchain courses.

- On the one hand, BME aimed to create a "catchment" cohort for the SE course with successfully delivering the technical courses in English.
- On the other hand, the significant course development efforts required to deliver the technical courses (both 24 contact hours) in English and online at a high quality meant that they could not be started significantly earlier during the year.

Table 5: Blockchain courses deployment

Date/ Format	Course	Language	Format	Contact hours	No. Participants Trained	Women Trained	#SMEs	Course Rating AVG	Eval. above 4/5	Completion Rate
February 22/23	SB	Hungarian	online	2 x 4	11	3	10	9,67	100%	71%

February 22/23	SB	Hungarian	in-person	2 x 4	11	0	10	9,0	100%	92%
April 25/26	SB	Hungarian	hybrid	2 x 4	4	0	4	10,0	100%	50%
September 16/17	SB	English	online	2 x 4	4	1	4	9,0	67%	33%
December 9.	SB	Hungarian	hybrid	8	21	4	18	9,35	88%	84%
March 18/20/22	PM	Hungarian	hybrid	3 x 6	9	2	6	9,0	100%	90%
June 11/12/13	PM	Hungarian	online	3 x 4	3	1	2	9,7	100%	100%
April 15	HLF	Hungarian	hybrid	6 x 4	6	0	3	8,0*	80%*	67%
November 11-29	HLF	English	online	6 x 4	7	0	2	8,38	75%	77%
November 12-28	ETH	English	online	6 x 4	8	3	3	9,38	100%	80%
Total	10				84	14	62			

Course instance associated KPIs are reported on in Section 2.3.4. The stars in the table denote that the respective metrics were computed from all evaluations (including mid-course ones). It is to be noted that the data have been adjusted compared to the Milan meeting when BME reported 80 persons trained by M22.

The Hungarian editions of PM and HLF were delivered at a nominal cost (in accordance with the GA) to incentivise course attendance and completion, while all English-speaking courses were delivered for free. The English-speaking, online versions of HLF and ETH were open to all interested parties globally to gather as much feedback as possible, but BME accounted as KPIs only a) European residents working at European SMEs, b) European citizens who are SME employees/freelancers/job seekers. Of these, those who successfully finished the course, received a certificate of completion from BME. As a rule, completion rates were computed against participants who were prospective KPIs and at least began the course.

In 2025, BME is committed to deliver two editions of each of its five courses.

2.3.4 KPIs

Table below summarises the KPIs on a by-course basis and contrasts it with the project goals with respect to the blockchain topic. Acknowledging the concern of the reviewers during the mid-term review on the shifting interest in technological topics in general, and blockchain in particular, BME's efforts have been largely successful, and BME feels it is on a good track to achieve the overall goals of the project.

Table 6: BME KPI status

KPI	Project deliverable	M24	On target
Developed courses	5	4	Yes
Delivered courses	10	11	Yes

Number trained	150	99	Yes
Trained women (30%)	30%	18%	No
Number of SMEs		76	
Blockchain for Small Businesses - evaluation	8.0	9.48	Yes
Blockchain for Small Businesses – eval.4/5	95%	91%	Nearly
Blockchain for Small Businesses - course completion	80%	71%	Nearly
Building Blockchain Projects in SMEs – evaluation	8.0	9.2	Yes
Building Blockchain Projects in SMEs – eval. 4/5	95%	100%	Yes
Building Blockchain Projects in SMEs - course completion	80%	93%	Yes
Blockchain Technology for SMEs – Hyperledger Edition - evaluation	8.0	8.2	Yes
Blockchain Technology for SMEs – Hyperledger Edition – eval.4/5	95%	73%	No
Blockchain Technology for SMEs – Hyperledger Edition - course completion	80%	72%	Nearly
Blockchain Technology for SMEs – Ethereum Edition - evaluation	8.0	9.38	Yes
Blockchain Technology for SMEs – Ethereum Edition – eval.4/5	95%	100%	Yes
Blockchain Technology for SMEs – Ethereum Edition - course completion	80%	80%	Yes

However, the KPIs and their evolutions point to certain areas, where BME needs to seek effective means for improvement.

- Conversion of applications into actual participation should be improved.
- Course completion rates should be improved.
- The participation rate of women should be improved.

The project pedagogical team will touch on these points in the risk assessment and mitigation section more extensively. Quality-wise, there are no major issues; that said, this is an area where further developments must be monitored closely.

The broad-picture takeaway of the KPIs is that in 2024, the kinds of blockchain courses offered in SME4DD (non-crypto and SME focused) were a "harder sell" then expected – in that sense, the suggestion of the mid-term review that BME should pivot to blockchain awareness raising from knowledge and capability building was well-grounded.

On the other hand, BME believes that this status quo will change, as numerous application areas (in addition to digital identities, also EU data spaces and regulation-compliant tokenisation) are seeing novel, or renewed interest. BME believes that adapting to these developments in content and marketing – but not core course structure – can elevate interest to the level where the courses begin to carry a true potential for later sustainability.

2.3.5 Following the quality process

BME has been closely following the quality process with onboarding forms, course evaluations, project internal follow-ups and 6-month follow-up questionnaires. This has led to several adaptations, as discussed earlier. However, the effectiveness of the process has been hindered by the fact that participants are reluctant to fill out "hot" evaluation forms and extremely unlikely to fill out the 6-month follow-up

questionnaires. (To note is that this is independent of the paid or free nature of the course.) For the 6 long term follow-ups sent out, BME received 10 answers with the only significant takeaway that digitisation is either just as important as half a year before, or even more important at SMEs.

One control introduced with the technical courses in Q4 is that BME provides certificates to those eligible only after they provided their feedback.

For the technical courses (which encompass 24 contact hours each), the instantiation of the quality process provides a detailed picture; see, e.g., the "topic usefulness" question for the November HLF and ETH editions below.

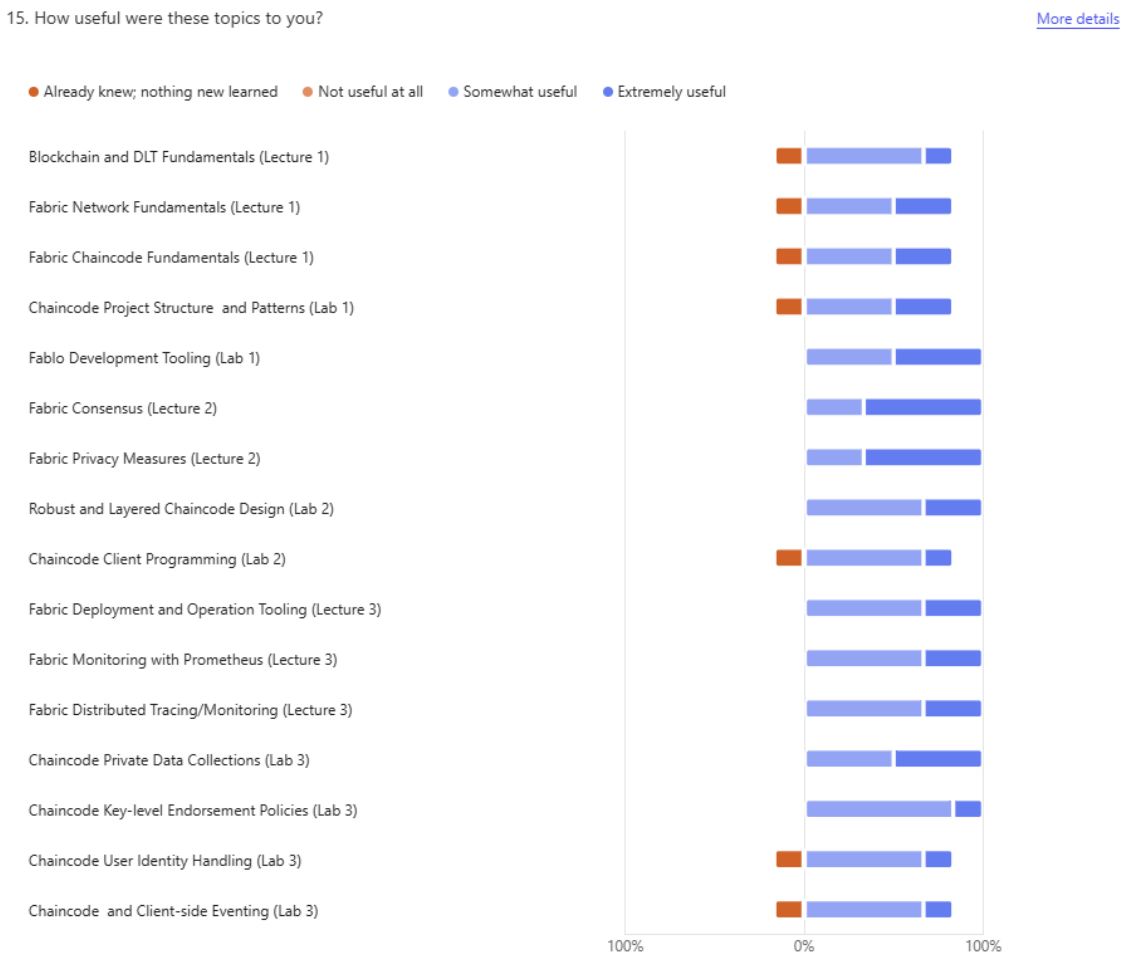


Figure 2: Quality process illustration for HLF course

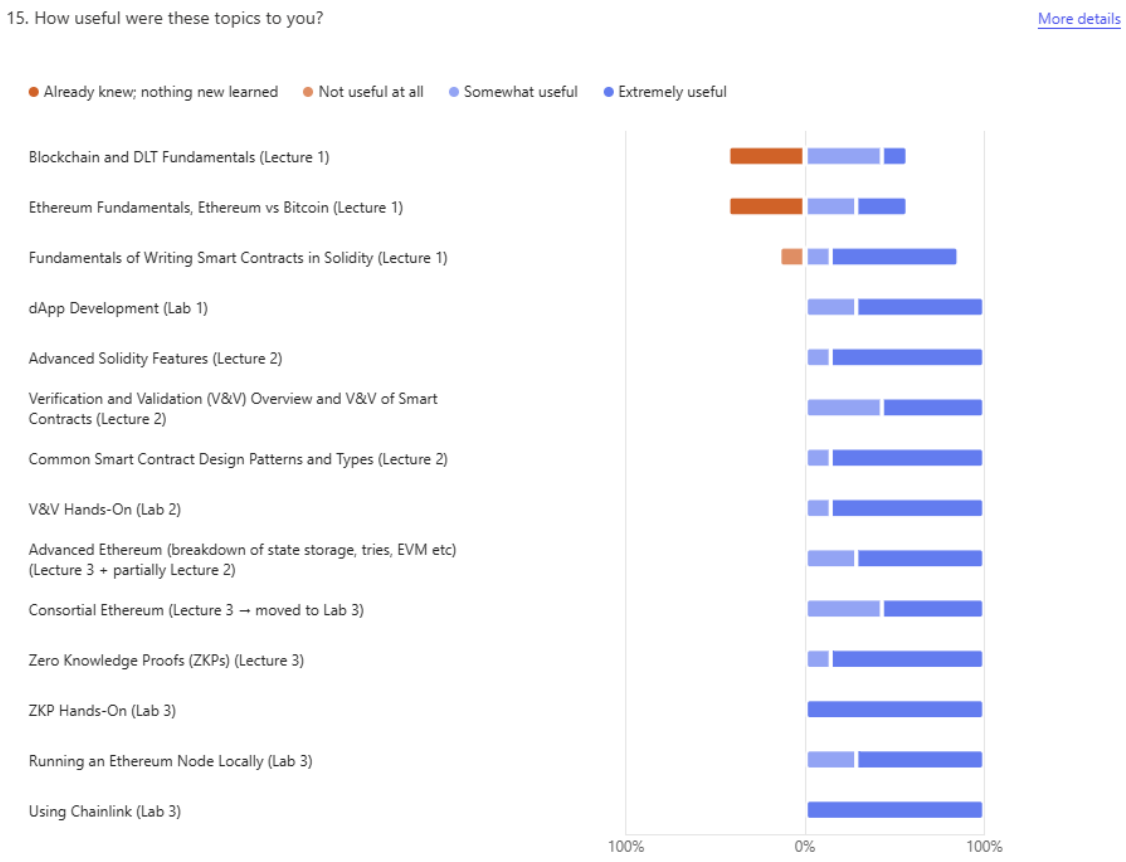


Figure 3: Quality process illustration for ETH course

BME is also collecting testimonials for use in marketing in 2025; some notable examples below and in the Appendix 8.4:

[November ETH] *"Even without the need to understand everything, this course gives an amazing overview of the most important pillars connected with web3, blockchain and Ethereum in particular. Sometime it is tough to go deep and follow the lessons if you do not have the prerequisite, but if you really want to have an edge and a real knowledge of this topic, the course give you all the instrument you will need in the future to be prepare for deal with blockchains and the web3 world of tomorrow."*

[November HLF] *"The Hyperledger Fabric Course was great. As a participant, I was blown away by the depth of knowledge shared and the clarity with which complex concepts were explained. This course not only presents blockchain technology but also provided practical skills for real-world projects. The instructors were knowledgeable, approachable, and passionate, making every session insightful and engaging. Whether you're a beginner or an experienced developer this course is worth taking part to master dlt.*

[December SB – translated from Hungarian] *"Thank you very much for the opportunity. I got a comprehensive overview of the basics, so now I can move forward and think further about how we*

[December SB – translated from Hungarian] *"I did have 'AHA' moments. The presenter was excellent, spoke clearly and understandably, and the organisation of topics was also appropriate."*

could / whether it would be worth using the technology in our field"

2.4 Cybersecurity courses by TAG

2.4.1 Curriculum overview

A training program "Cybersecurity & Data Protection" designed by TAG combines essential cybersecurity skills with a strong foundation in governance and risk management. The curriculum prepares students for key roles in information security and risk management through the following core areas:

1. Cybersecurity Governance
    a. Developing policies and frameworks for information security.
    b. Understanding organisational structures and responsibilities.
2. Legal and Regulatory Aspects
    a. GDPR compliance and privacy regulations.
    b. International laws and standards for cybersecurity.
3. Cyber Risk Management
    a. Identifying, assessing, and mitigating cyber risks.
    b. Risk assessment methodologies and tools.
4. Business Continuity and Disaster Recovery
    a. Planning and implementing business continuity strategies.
    b. Recovery protocols for operational resilience.
5. Practical Applications
    a. Hands-on labs and case studies in cybersecurity and governance.
    b. Workshops with industry experts and real-world scenarios.

In terms of course duration, the synchronous format totalled approximately 55 hours, while the asynchronous format has a total duration of about 40 hours.

Key Features:

- A unique blend of cybersecurity and governance competencies.
- Expert faculty and guest speakers from leading industry companies.
- Comprehensive preparation to address information security challenges and manage risks.
- Focus on regulatory, legal, and compliance aspects, including GDPR.
- Skills to manage risks, plan operational continuity, and handle information threats.

This curriculum ensures students are well-equipped to meet the demands of the rapidly evolving cybersecurity landscape.

2.4.2 Curriculum adaptations based on early and ongoing feedback

TAG understands the importance of staying current in this rapidly evolving field. Therefore, TAG is committed to updating the course content regularly to reflect any new regulations, frameworks, or best

practices as they emerge. This ensures that participants in TAG courses receive the most relevant and up-to-date information, maintaining the integrity and continuity of the program. By fostering a learning environment that adapts to changes in the cybersecurity landscape, TAG aimed to equip our students with the knowledge and skills they need to excel in their careers.

2.4.2.1 From Italian focus to pan-European one

To transition the project from a domestic focus to a European focus, TAG implemented several strategic measures that enhanced their program's relevance and appeal across a broader audience.

Firstly, TAG revised the course content to incorporate European cybersecurity regulations, standards, and best practices. This included a thorough examination of the General Data Protection Regulation (GDPR) and other pertinent EU directives, ensuring that TAG's participants are well-versed in the legal frameworks governing cybersecurity in Europe.

TAG also engaged with a diverse array of guest speakers and industry experts from various European countries. This initiative not only enriched the curriculum with different perspectives but also facilitated networking opportunities for participants, fostering a sense of community and collaboration across borders.

Additionally, TAG established partnerships with organisations and institutions throughout Europe. These collaborations enabled the pedagogical team to gain insights into regional challenges and practices in cybersecurity, allowing to tailor the program to address the specific needs of different countries and sectors.

To further enhance the European focus, TAG scheduled a workshop in English in 2025 and aims to reach a wider audience thought the support of EIT Digital. Finally, TAG incorporated comparative analyses of cybersecurity practices in different European contexts into its curriculum. This provided participants with a broader understanding of how various countries approach cybersecurity, equipping them with the knowledge necessary to navigate the diverse landscape of cybersecurity challenges across Europe.

These concerted efforts have successfully positioned the project as a valuable resource for individuals and organisations throughout Europe, addressing a range of cybersecurity issues while fostering a collaborative learning environment.

2.4.3 Deployment timeline

In the first quarter, from December 2023 to March 2024, TAG launched the **Cybersecurity and Data Protection course**. There were 112 applications and 12 participants. Out of these, 3 were women, and 7 SMEs were represented, reflecting the efforts toward inclusivity and SME participation. The course received a rating of 7.1, and 43% of evaluations rated it above 4/5 with 83% completion rate.

The second quarter, from April to June 2024, saw improved outcomes for the same course. TAG received 100 applications and trained 14 participants, with 3 women and 10 SMEs represented. The course rating significantly increased to 8.8, and 100% of evaluations were above 4/5, demonstrating strong positive feedback. The completion rate also improved, reaching 100%, showing high engagement and satisfaction with the course.

For the third quarter, from June to October 2024, TAG registered 120 applications. There were 8 participants, 2 of whom were women, and 3 SMEs were represented. This session received a rating of 8.5, and again, 83% of evaluations rated it highly. The completion rate was strong at 87%, indicating sustained engagement and a high satisfaction level among participants.

Looking ahead to the upcoming course editions and workshops for 2024 and 2025, TAG scheduled **three additional intakes for the Master in Cybersecurity & Data Protection, started in November 2024.**

Each intake is asynchronous, allowing participants to study at their own pace and making the course more accessible to those with varying schedules. Through the purchase of a consultancy service from an external provider, TAG developed the online platform in which participants can access video lessons and book Q&A sessions. This format is a strategic shift to broaden the reach, making it easier for participants from diverse backgrounds to engage fully with the material. With this flexible structure, TAG expects to see stronger participation and progress toward the KPI targets.

The first new intake was launched in November 2024[6], it will be followed by two more throughout 2025. Each will offer a deep dive into a robust curriculum, covering critical areas of cybersecurity and data protection. Additionally, these intakes will feature Q&A sessions, giving students a unique opportunity to learn directly from industry professionals. These interactive sessions not only enhance the learning experience but also provide invaluable networking opportunities and practical insights into the field.

To keep up with the rapid pace of change in cybersecurity, TAG committed to updating course content as new regulations and best practices emerge. This ensures that participants are always learning the most current and relevant information, reinforcing the program's value and credibility in an evolving landscape.

Table below summarise the deployment timeline for TAG and its cybersecurity courses in 2024. All courses have been delivered on-line, in Italian.

Table 7: Cybersecurity courses deployement

Date/ Format	Course	Contact hours	No. Participants Trained	Women Trained	#SME	Course Rating AVG	Eval. above 4/5	Completion Rate
December 2023 to March 2024	Cybersecurity & Data Protection	55	12	3	7	7,1	43%	83%
April to June	Cybersecurity &Data Protection	55	14	3	10	8,8	100%	100%
June to October	Cybersecurity & Data Protection	55	8	2	3	8.5	83%	87%
November to March 2025[7]	Cybersecurity &Data Protection	40	9	3	3	NA	NA	NA
Total	4		43	11	23			

2.4.4 KPIs

Table 8: Talent Garden KPI status

	Project deliverable	By M24	On target (Yes/No)
Developed courses	1	1	Yes
Delivered courses	6	4	Yes
Seminars/ workshop	6	3	Yes

Number trained in courses	120	43	No
Number trained in workshops	180	100	Yes
Trained women (30%)	30%	18%	No
Number SMEs (courses)	30	23	Yes
Cybersecurity and data protection - evaluation	8,0	8.1	Yes
Cybersecurity and data protection - eval. 4/5	95%	74%	No
Cybersecurity and data protection - course completion	80%	91%	Yes

For the developed courses, TAG had a goal to create one course, and TAG is right on track—the synchronous course was developed and deployed from M12. In M23 the course was adapted to asynchronous format.

Moving on to delivered courses, out of the six TAG aimed to complete, three have already been rolled out and one is being delivered. TAG is well within the timeline here, so things are looking solid.

Seminars and workshops are progressing nicely too. TAG set a target for six in total, with three successfully held. This means TAG is halfway there, keeping us aligned with our goal.

Now, for the number of individuals trained in courses, TAG is a bit behind. The target is 120, but so far, there are 43 participants. TAG will need to ramp up efforts to bring more people onboard and meet that goal.

On the workshop front, however, TAG did better. The pedagogical team aimed to train 180 individuals and have already reached 100, so TAG is on track to hit this number by the end of the project.

One of TAG objectives is to have 30% of participants be women, but currently, TAG is at 18% and will focus on initiatives to increase female participation to meet that diversity target.

For the SMEs represented in courses, TAG registered 23 of the 30 SMEs already participating.

When it comes to course evaluations in cybersecurity and data protection, the goal was an average score of 8.0, and participants have given us a slightly higher rating of 8.1, so feedback is positive. Finally, course completion rates are also looking great: TAG was aiming for an 80% completion rate, and TAG actually reached 91%.

2.4.5 Following the quality process

Like all project partners TAG has been closely following the quality process designed under the T4.3 - Quality Assurance by deploying SM4DD onboarding forms, course evaluations, and project internal follow-ups.

According to feedback collected, some adjustments were implemented to make the synchronous course more effective and relevant for the target group:

- regarding the **content**, the practical component was removed in consideration of the participants' predominantly managerial backgrounds. To foster well-rounded professionals in Governance, Risk, Compliance (GCR), the focus was shifted to other topics such as supplier security, analytics,

and international treaties. Although not directly implemented, the practical component was still discussed during the course,

- regarding the **format**, sessions in presence were removed due to low participation.

Following the quality process, TAG prioritized robust curriculum development and conducted reviews after every intake to ensure that the course content remains current and relevant, aligning with industry standards and regulatory requirements. This action was made through the incorporation of feedback not only from participants but also from industry experts

In addition, TAG placed a strong emphasis on enhancing the participants' experience, creating networking opportunities and connecting participants with industry professionals to enrich the educational experience and encourage positive referrals.

After the 3rd intake, further adaptations were implemented to boost accessibility and retention. In the 4th intake the course moved to an asynchronous model to enable participants to study on their own schedules with the objective to increase enrolment and completion rates.

Regarding outreach efforts, TAG deployed focused campaigns aimed at attracting a diverse audience, which includes **recent graduates and professionals seeking career transitions.** On this point collaborations with institutions and tech organizations aimed to promote the program effectively, increasing visibility and enrolment.

Through the approach adopted and actions implemented, participants' feedback was positive registering an average score of 8.1.

Regarding the impact of the training, TAG administered the 6-month follow-up questionnaires for the 1st and 2nd intake, but the process was hampered by participants' reluctance to complete the survey. A key priority for 2025 will be to gather more data to effectively evaluate the results.

3 Risks assessment and mitigation

3.1 Foreseen Risks and Mitigation Strategies

One of the key foreseen risks in the delivery of short-term training programs in AI, Blockchain, and Cybersecurity is the **potential lack of participant enrollment**. The fast-evolving nature of these fields can make it challenging to attract enough participants, especially when the programs are relatively new or niche. To address this risk, a strategic improvement in marketing efforts is essential. This includes refining the messaging to better communicate the value of the courses and expanding outreach to relevant audiences. Collaboration with ecosystems organisations and feedback from SMEs can help boost visibility and credibility, attracting a broader pool of potential participants. Additionally, revising the terms of delivery—such as adjusting course structures, delivery methods, or scheduling—can help accommodate the preferences and needs of the target audience, improving participation rates.

Hyper Island, the most experienced training provider of the consortium, considers that here **is always a risk of low attendance at the start of any course launched**. Before they have collected testimonials to attract new participants, and before they have managed to create a "buzz" in the community around the course, attendance is generally lower, especially in comparison to courses that have been running for a long time.

As Hyper Island's onsite course was the one that attracted the least number of participants, it was decided to discontinue the course in the spring 2024. However, there is a plan to merge the AI for Business course with the Strategy Course to attract more participants, primarily leaders in senior positions. If that iteration of the course does not succeed, Hyper Island is already looking into offering a slightly less advanced onsite course to attract more participants.

Inria faced the problem in a different way. The recruitment difficulty is not related to the Executive course, but attracting participants to the DeepTech sessions proved more challenging than expected. The pricing was adapted to the SME4DD framework: the session is offered at a special "SME" rate of 500 euros/person (instead of 930 euros). At first glance, this concerns the difficulty faced by Inria - a research institute - in implementing an effective marketing strategy to attract SMEs.

Corrective actions: 1) opening the course to the entrepreneurs from 19 French Public Incubators on free-of-charge basis (with approval of the Direction of Technology Transfer and Partnerships of Inria) 2) setting up of a coaching program by the project coordinator (EIT Digital) to help Inria run a more effective recruitment campaign via sales funnel. Weekly meetings with the account manager (recruited on the project) for follow-up and reporting on the sales funnel.

From BME side, ongoing uncertainty about the technology, stemming from the reputational challenges of the crypto field. This risk is constantly diminishing and the intended mitigation – emphatically focusing on the non-crypto aspects – proved to be sufficient. Recruitment efficiency for registrations potentially leading to KPIs has been very uneven. The planned mitigation is to lengthen the timeframes of the course marketing activities as well as to synergise recruitment with the workshop series planned for 2025. Additionally, the own outreach of the agency taking over the role of KIFÜ will hopefully significantly extend the potential participant pool.

3.2 Unforeseen Risks and Strategic Responses

In addition to the foreseen risks, there are also potential unforeseen challenges that could impact the success of these training programs. One such risk is the **insufficient sales and recruitment capacity by partners,** which may hinder the ability to effectively promote and fill the courses. To mitigate this, strengthening the sales and recruitment strategies is necessary. This includes building a more robust sales pipeline, ensuring constant engagement with potential participants, and implementing personalised follow-up efforts. By tailoring recruitment strategies to specific needs and ensuring consistent communication, it becomes possible to attract more participants and sustain their interest over time.

Another unforeseen risk arises from the **high level of competition from other education providers**, including those offering discounted or even free courses. This has the potential to erode the market share for paid programs. To counter this, it is crucial to focus on differentiating the course offerings by clarifying their unique value propositions. This could involve emphasising specialised expertise, the quality of the curriculum, or the practical applicability of the training. Additionally, improving the market positioning of these programs—such as highlighting success stories, testimonials, and the tangible career benefits for participants—will help to attract individuals looking for high-quality, value-driven learning experiences. By strengthening these aspects, the programs can stand out in a crowded and competitive market.

Too technical level to the course content: unforeseen risk identified from the Hyper Island side. It turned out that the initial collaborators/guest speakers/experts applied a too technical level to the course content. To remedy that Hyper Island has now exchanged those collaborators with more suitable ones for the content of the course.

Trainer certification: unforeseen risk incurred from the Inria side. Inria Academy had to reschedule the DeepTech course on scikit-learn programmed on December 04, 2024 because Inria course trainer must follow a certification process on scikit-learn established by :probabl. Inria trainer has successfully obtained a certificate demonstrating proficiency in key concepts and techniques such as data preprocessing, model selection, evaluation, and optimisation. This certification reflects the trainer's deep understanding of machine learning workflows and their ability to effectively apply Scikit-learn to real-world problems. It further validates the expertise in guiding SMEs trainees through complex machine learning tasks, ensuring that trainees receive high-quality, up-to-date instruction.

The no-show rate relevant to the free of charge courses (specific for BME) the extent of the challenge of converting registrations into participation and retaining online participants to the end of the courses. BME is not below what can be broadly considered the industry standard for free online courses in this respect; however, to reach project KPIs, mitigations are needed. The planned mitigations are the introduction of nominal participation fees as well as a wider application of the certificate of completion mechanism.

4 First Impact

The SME4DD partners has started an analysis of the first results based on the six months after the courses questionnaires. This activity is closely linked to the Indicator 3[9], and covers two parameters:

- Impact of SME4DD training activities on improvement of trainees' technical competences
- Impact of SME4DD training activities on trainees' professional carrier

Evaluating the impact of training activities on the improvement of trainees' technical competencies and carrier has proven challenging for SME4DD partners due to the low level of returns (12%) obtained so far. While the training programs are designed and deployed, the data required to measure indicator 3 has not yet been compiled: the consortium just starts to deploy 6-months after questionnaires. The work is in progress but the partners do not have at this stage enough information to assess the direct correlation between the SME4DD courses and impact on improvement of technical abilities and of participants' professional career. The consortium has been closely following the quality process with 6-month follow-up questionnaires. However, the effectiveness of the process has been hindered by the fact **that participants are reluctant to fill out "hot" evaluation forms and extremely unlikely to fill out the 6-month follow-up questionnaires.**

Table 9: six-months questionnaires outreach

	No. "cold" questionnaires sent	No. responses obtained [10]	From women	From job seakers	% reached	Corrective action
Hyper Island	39	7	anonymous	0	18%	Reminder sent
Inria	22	2	0	0	9%	Phoning in process
BME	56	10	0	0	18 %	Reminder sent
Talent Garden	26	1	0	0	3,8%	Phoning in process

This is a question of people's motivation to provide feedback, data gaps and timing. The partners need to perform a thorough analysis of the training's effectiveness at the macro level. A structured data collection process was discussed during the consortium meeting in France in November 2024. The partners are moving forward to obtain data needed to provide a clearer picture of the training's economic impact in the next report.

[9] Number of participants enrolled in training activities that found employment or report an improved employment situation 6 months after leaving the intervention

[10] The figures provided only concern SMEs

The sample of 20 responses out of an expected 143 is too small for an initial analysis, it does indicate a very preliminary following trend: the SME4DD course has impacted participants in their current job/projects but has not led to any career shifts. An example of the 6moths after course questionnaire from DeepTech course on scikit-learn (Inria) is provided in Appendix 8.2.

5 SME4DD Workshops 2024 round up

Table below summarises the key figures on a by-workshop basis with respect to the project activities in 2024. Acknowledging the concern of the reviewers during the mid-term review on increasing the number of workshops the partners have been expanded the focus to cover a wider range of relevant topics and TAG experimented an external collaboration (with one of the major banking groups to deliver seminars and workshops all around Italy). The consortium delivered 11 workshops and trained 577 people from 336 SMEs, however the partners noted a drop in the attractiveness of the workshops towards the end of the year, the over-solicitation of SMEs seems to be the first possibility. The consortium will position workshops as a business priority in 2025 (see section 7) and will program 19 workshops to meet the project target of 35 workshops.

Table 10: SME4DD workshops 2024

Date	Partner	Name	No. people trained	No. women trained	No.SMEs trained
Jan 31st	HI	AI for Business webinar	309	178	234
Feb 1st	HI	AI for Business onsite workshop	45	11	-
Feb 8th	Inria	Machine learning: Techbricks for SMEs onsite workshop	62	18	57
May 17th	TG	Cybersecurity Risk Management	82	11	
March 21	Inria	Machine learning: Techbricks for SMEs	4	1	4
June 25th	BME with KIFU	Innovation & Blockchain	14	3	10
Oct 18th	TG	Il Futuro della Finanza? Passa dalla Cybersecurity	5	1	

[11] This seminar has been managed by an external organisation. Hyper Island did not have access to the data regarding the number of women and SME, only the total number of participants was communicated.

Oct 31st	BME	Hyperledger Fabric or Ethereum? - Choosing the right tool to learn for your future projects (webinar)	1	0	1
Nov 5	HI	Generative AI onsite workshop	26	10	14
Nov 6	HI	Generative AI onsite workshop	26	3	15
December 16th	BME	Towards Practical Digital Trust for SME Operations with Verifiable Credentials - a webinar of the SME4DD project	3	0	1
Total	11		577	236	336

6 Harmonisation and future exploitation of the training programmes

The objective of Task T2.4, Harmonisation of the Course Portfolio, is ensure the sustainability and scalability of SME4DD training programmes. It focuses on harmonising the curriculum and formats of the short-term courses developed during the project into a unified, modular training path. The aim is to create a professional master programme that could be implemented beyond the project lifespan, offering SMEs a cohesive learning experience in Blockchain, Artificial Intelligence (AI), and Cybersecurity.

While the programme focuses on these three areas, it goes further to address broader SME challenges, such as leadership, change management, and ethical considerations. Participants will learn to optimise operations, strengthen organisational resilience, and navigate the complexities of digital transformation.

The task is structured into three key steps:

1. Harmonisation of the course portfolio (M3-M12): Bringing together content from the three verticals into a single progressive and modular learning path tailored for SMEs.

2. Design and pilot deployment of a professional master programme (M13-M36): Consolidating the curriculum based on course feedback, implementing the pilot, and ensuring relevance through real-world applications.

3. Definition of a certification scheme (M30-M36): Developing an end-of-master certification framework aligned with European Competence Framework standards to validate participant skills.

The harmonisation process enables the SME4DD consortium to combine key insights, align course formats, and establish a modular, adaptable learning path to support SME training needs.

6.1 Master programme curriculum

In today's rapidly changing digital environment, SMEs must embrace and integrate advanced technologies to stay competitive and foster growth. SMEs need to adopt advanced technologies to drive competitiveness and growth. Digital transformation is essential, unlocking greater operational efficiency, improved customer engagement, and expanded market opportunities. The **Executive Programme in Strategic Digital Technologies** was designed specifically to empower SME professionals with the essential skills and knowledge required to navigate and leverage digital innovations effectively. Key focus areas include Blockchain, Artificial Intelligence (AI), and Cybersecurity, ensuring participants are well-prepared to

implement these innovations within their businesses, enhancing their efficiency, security, and strategic decision-making.

Target Audience

It targets a diverse SME audience, making it accessible to both non-technical and technical professionals as follows:

- SME leaders and managers with limited technical background.
- Technical SME professionals seeking business application insights.
- Entrepreneurs aiming to leverage digital technologies for growth.
- Job seekers.

The Format

The Executive Programme follows a balanced curriculum that integrates theory, hands-on activities, and practical case studies. The programme consists of 10 half-days delivered synchronously online over 3.5 months, with each session lasting 4 hours on two consecutive days, from 1:00 PM to 5:00 PM. This format ensures a flexible schedule for SME participants, allowing them to integrate learning with their professional responsibilities.

The Curriculum

Sessions are designed to balance foundational concepts with practical strategies that SMEs can implement immediately. The key learning objectives:

1. Understanding digital transformation and its strategic importance for SMEs.
2. Integration of Blockchain, AI, and Cybersecurity into business operations.
3. Data management and its impact on business decisions.
4. Ethical and legal considerations in adopting digital technologies.
5. Practical application through real-world scenarios and projects.
6. Leadership skills for driving digital transformation and managing organizational change.

The lineup of sessions is as follows:

SESSION 1 - Introduction to Digital Technologies and Business Management (21 January 2025)
Participants will gain an understanding of the fundamental concepts of digital transformation. The session highlights the strategic importance of Blockchain, AI, and Cybersecurity for SMEs and the role of data in business decision-making. (Delivered by BME, HI, TAG)

Learning objectives:

- Understand the fundamental concepts of digital transformation.
- Recognize the strategic importance of Blockchain, AI, and Cybersecurity in SMEs.
- Understand how data impacts business decisions.

SESSION 2 - Integrating Digital Technologies into Business Strategy (22 January 2025)
This session focuses on strategies to incorporate Blockchain, AI, and Cybersecurity into SME operations. Participants will explore effective management of digital transformation projects and collaboration across digital solutions. (Delivered by TAG)

Learning Objectives:

- Develop strategies to integrate Blockchain, AI, and Cybersecurity into business operations.
- Manage digital transformation initiatives effectively.
- Collaborate on projects that combine multiple digital technologies for business solutions.

SESSIONS 3-4 - Artificial Intelligence for Business (18-19 February 2025)
Participants will explore AI principles, its impact on business and society, and practical tools to improve SME efficiency. Advanced applications and challenges, including ethical and regulatory considerations, will also be addressed. (Delivered by HI)

Learning Objectives:

- Understand the core principles and concepts of AI. Analyse the impact of AI on business and society.
- Manage challenges in AI adoption, including skills gaps and regulatory issues. Apply AI tools to enhance business operations and efficiency.
- Address ethical considerations and lead responsibly in AI adoption.

SESSION 5-6 - Blockchain for Business (11-12 March 2025)
The session introduces the principles of Blockchain technology, its relevance to SMEs, and hands-on development of Blockchain prototypes. Legal considerations and integration challenges will be discussed. (Delivered by BME)

Learning Objectives

- Understand the principles of Blockchain technology.
- Identify and evaluate Blockchain applications relevant to SMEs.
- Develop and manage Blockchain projects from concept to implementation.
- Navigate legal and regulatory issues associated with Blockchain.
- Apply interdisciplinary approaches in Blockchain training for practical implementation.

SESSION 7-8 - Cybersecurity Essentials for Business (25-26 March 2025)
Participants will learn to identify and mitigate cyber threats, implement cybersecurity frameworks, and develop strategic roadmaps to safeguard business operations. (Delivered by TAG)

Learning Objectives:

- Understand the basic principles of cybersecurity. Identify and mitigate various cyber threats.
- Implement and manage cybersecurity governance frameworks.
- Develop and manage enterprise cybersecurity strategies and architectures.
- Recognize the importance of cybersecurity in maintaining business continuity.

SESSION 9 - Legal and Ethical Aspects of Digital Technologies (8 April 2025)
This session covers compliance with legal standards and ethical technology adoption. Participants will address dilemmas in digital transformation and align operations with international regulations. (Delivered by TAG)

Learning Objectives:

- Understand the legal landscape surrounding digital technologies.
- Identify and address ethical dilemmas in technology adoption.

- Ensure compliance with relevant EU/international regulations.
- Implement ethical guidelines and best practices in digital technology use.
- Address regulatory barriers and the importance of data standardization.

SESSION 10 - Digital Leadership and Change Management (9 April 2025)
The final session focuses on leadership skills for managing organisational change. Participants will explore strategies to foster digital-first cultures and navigate disruptions effectively. (Delivered by HI)

Learning Objectives

- Develop leadership skills tailored to digital transformation.
- Manage organisational change in the context of digital projects.
- Foster a culture that supports digital-first initiatives.
- Navigate and lead through digital disruptions effectively.

Course Work and Assessment

Participants are expected to complete pre-module preparation, which includes compulsory pre-session readings. During modules, they will engage in practical tasks and case studies to reinforce applied learning. Attendance at all sessions is mandatory. The assessment consists of:

- Individual Test: A comprehensive online test covering module content, with a minimum pass grade of 75%.

- Optional Case Presentation: Participants can complete a business project individually or in groups. The project involves presenting a digital case strategy for an SME that incorporates Blockchain, AI, and/or Cybersecurity. Presentations will be conducted in a 30-minute online session at the course's end and evaluated by instructors and course partners. The business project will be introduced on Day 1, with ongoing guidance and support provided by teaching faculty throughout the programme.

6.2 Delivery of Pilot

The pilot edition of the Executive Programme in Strategic Digital Technologies is scheduled to kick off in January 2025. Preparations began in Q4 2024, after the programme was built in M20, with a strong focus on multichannel outreach to promote the programme and recruit participants. Substantial interest and a growing leads pipeline have been established, including engagement from EU SME professionals, professionals outside the EU, and even beyond Europe. These efforts include targeted campaigns, SME network engagement, and collaboration with project partners to ensure visibility and outreach to key audiences.

Table 11: Pilot session of the Executive Programme

SESSION	SESSION NAME	DATE
1	Tuesday, 21 January 2025	Introduction to Digital Technologies and Business Management

2	Wednesday, 22 January 2025	Integrating Digital Technologies into Business Strategy
3	Tuesday, 18 February 2025	Artificial Intelligence for Business
4	Wednesday, 19 February 2025	Artificial Intelligence for Business (Continued)
5	Tuesday, 11 March 2025	Blockchain for Business
6	Wednesday, 12 March 2025	Blockchain for Business (Continued)
7	Tuesday, 25 March 2025	Cybersecurity Essentials for Business
8	Wednesday, 26 March 2025	Cybersecurity Essentials for Business (Continued)
9	Tuesday, 8 April 2025	Legal and Ethical Aspects of Digital Technologies
10	Wednesday, 9 April 2025	Digital Leadership and Change Management

As with any new programme entering a competitive educational market, nurturing relationships, recruitment, and conversion require focused and deliberate efforts. A small administrative teaching fee of 490€ has been introduced to reinforce the programme's perceived value and ensure participant commitment, while maintaining accessibility for SMEs with limited training budgets.

7 Conclusion and next steps

7.1 Lessons learnt from 2024

The SME4DD project is making strong progress toward its targets, with several key indicators showing a very positive trajectory. Notably, 96% of the planned courses on AI, Blockchain, and Cybersecurity have been delivered (24 out of 25), the number of participants trained is also on track, with 92% of the target achieved (1,108 of 1,200) and the share of women trained currently stands at 34,5%, representing more than 30% of the total participants fixed by project target. Finally, the number of SMEs trained – 505 in 2024 - has also far exceeded the initial target of 350, therefore this key indicator is also on track.

On the other hand, certain targets, particularly the seminars and workshops and targets linked to the quality process need to be addressed. Eleven seminars and workshops focused on specific business cases in AI, Blockchain, and Cybersecurity, have been organised during 2024 but the overall volume appears below expected performance levels with 46% performed compared to the project target (16 out of 35).

Also, further efforts should be paid to ensure the collection of post-training evaluations, the appraisal given satisfactory trainee feedback but not in sufficient number to meet the project's KPIs and analyse the impact of the SME4DD courses on improvement of technical abilities of participants and on their professional career. Furthermore, enhancing course completion rates will be a priority, through adjustments in pricing, prerequisites, formats, and content to better align with participants' expectations.

Finally, the KPI relative the share of women trained remains a focus area, as SME4DD continues to implement strategies to increase female participation in training activities.

To address these gaps, there will be a concerted effort:

- to secure course quality
- to increase the number of seminars and workshops
- to increase the representation of women

This focus on quality and inclusivity will be essential for meeting the project's overall goals and ensuring lasting impact.

7.2 Priorities for 2025

The project activities in 2025 will represent important steps toward enhancing its educational offerings and ensuring its long-term success.

As stated above, the SME4DD consortium has successfully met the established key performance indicators in terms of quantity (see Table 1: Overview of the training activities results by M24), demonstrating a strong commitment to delivering the required outputs. However, while the "volume" of work has been achieved,

significant effort is still needed to ensure that the quality standards (developed under T4.3 - Quality Assurance) are consistently met.

Focus 1: Quality

The SME4DD team is actively focusing on improving processes developed and described in T4.3, improving performance, and addressing any gaps in quality assurance. This ongoing effort highlights the consortium's dedication to not just meeting targets but exceeding expectations in delivering high-quality results by the end of the project.

The focus on quality in the upcoming deliverables will be paramount, with rigorous evaluation processes in place to ensure that the SME4DD short-term courses and the Executive master programme meet the highest pedagogical standards and SME relevance.

With this focus on quality the consortium will continue to roll out the courses according to the attached schedule (see Appendix 8.3).

Focus 2: Women participation

Increasing women's participation in our training programmes requires implementing targeted efforts that address their specific needs and interests. This includes promoting the courses through platforms and networks that are particularly effective at reaching women and offering mentorship and support systems to encourage retention and active participation. These initiatives should also consider creating more inclusive and welcoming environments in the programs and fostering networks for women in these fields via liaising with national and local initiatives. By tailoring outreach strategies and providing dedicated support (for more details see D3.2-Second Year Report on Marketing, Communication, and Dissemination Activities), the partners can improve female engagement and help close the gender gap in these vital tech industries.

Focus 3: Workshops

In parallel, the structure and delivery of the workshops will be enhanced to meet the dynamic needs of participants. The topics covered in these workshops have been broadened to ensure they align with the latest industry trends and address the evolving demands of the job market. To increase participant engagement and ensure deeper learning, the consortium will increase collaboration with other projects and initiatives.

Final report on SME4DD short-term training activities

At month 36 (M36), the consortium will submit a comprehensive third-year report on the results of the short-term training programmes (D2.3), which will provide valuable insights into their impact and effectiveness. This report will serve as a key evaluation of the training initiatives, showcasing the outcomes achieved and identifying areas for project sustainability "the project is finished and now what?". In parallel, D2.4 will focus on deploying the professional master's programme in AI, Blockchain, and Cybersecurity, marking a significant achievement in the project's educational objectives. The executive programme will stand as an outcome, a content stemming out from the curriculum of the individual courses offering a transversal training path and possibly a learning path that can be continued after the project end.

8 Appendix

8.1 Template 6-month after course questionnaire

You participated in our course xx about six months ago. This course is part of an EU-founded program to increase European digital skills. We are conducting a survey to understand the impact of this program on participants' roles and employment status. Your feedback is crucial in this process. We would like you to answer three quick questions.

Q1 - Are you employed by an SME

- Yes
- No

Q1b – If No,
Are you

- Employed by Large cooperation (>250 employed)
- Employed by Public organization
- Employed by NGO
- A job seeker
- Graduate
- Non-of the above

Q2 - Has your job or **employment situation changed since you took the course**

- Yes
- No

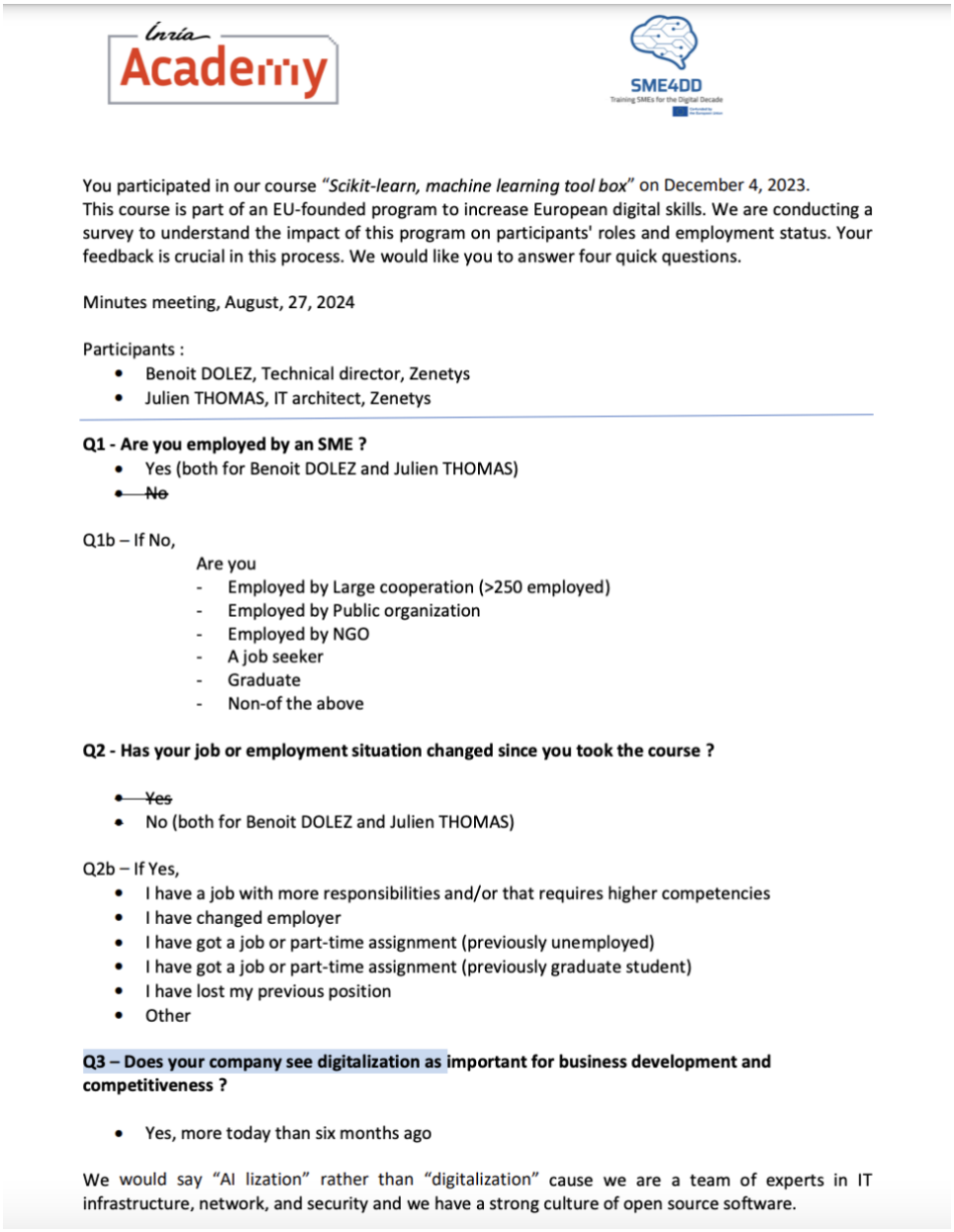
Q2b – If Yes,

- I have a job with more responsibilities and/or that requires higher competencies
- I have changed employer
- I have got a job or part-time assignment (previously unemployed)
- I have got a job or part-time assignment (previously graduate student)
- I have lost my previous position
- Other

Q3 – Does your company see digitalization as important for business development and competitiveness

- Yes, more today than six months ago
- Yes, similar to six months ago
- Yes, but less than six months ago
- No, not really
- I don’t know/ not relevant

8.2 Example of 6-month questionnaire from DeepTech course (Inria)



You participated in our course "*Scikit-learn, machine learning tool box*" on December 4, 2023.
This course is part of an EU-founded program to increase European digital skills. We are conducting a survey to understand the impact of this program on participants' roles and employment status. Your feedback is crucial in this process. We would like you to answer four quick questions.

Minutes meeting, August, 27, 2024

Participants :

- Benoit DOLEZ, Technical director, Zenetys
- Julien THOMAS, IT architect, Zenetys

Q1 - Are you employed by an SME ?

- Yes (both for Benoit DOLEZ and Julien THOMAS)
- ~~No~~

Q1b – If No,

Are you

- Employed by Large cooperation (>250 employed)
- Employed by Public organization
- Employed by NGO
- A job seeker
- Graduate
- Non-of the above

Q2 - Has your job or employment situation changed since you took the course ?

- ~~Yes~~
- No (both for Benoit DOLEZ and Julien THOMAS)

Q2b – If Yes,

- I have a job with more responsibilities and/or that requires higher competencies
- I have changed employer
- I have got a job or part-time assignment (previously unemployed)
- I have got a job or part-time assignment (previously graduate student)
- I have lost my previous position
- Other

Q3 – Does your company see digitalization as important for business development and competitiveness ?

- Yes, more today than six months ago

We would say "AI lization" rather than "digitalization" cause we are a team of experts in IT infrastructure, network, and security and we have a strong culture of open source software.

We help small and medium sized businesses to design architectures and to ensure the maintenance of their IS[1] infrastructures, so it is important to us to acquire in continuously the right competences to perform the development of tools and solutions for networks and applications optimization.

In line with the development of activities of Zenetys on DevOps IA/LLM vertical and Networks &Security vertical, and in particular with the creation of our open source ZLAB the training on scikit-learn and scikit-learn applied for cybersecurity was a good knowledge input to be able to perform our data analysis on how to improve the IT infrastructure and networks security. The training also helped us to highlight the need to get more competences on LLM[2] technologies. We are also interested to put the competences on machine learning in application with Zenetys dataset linked to our activities.

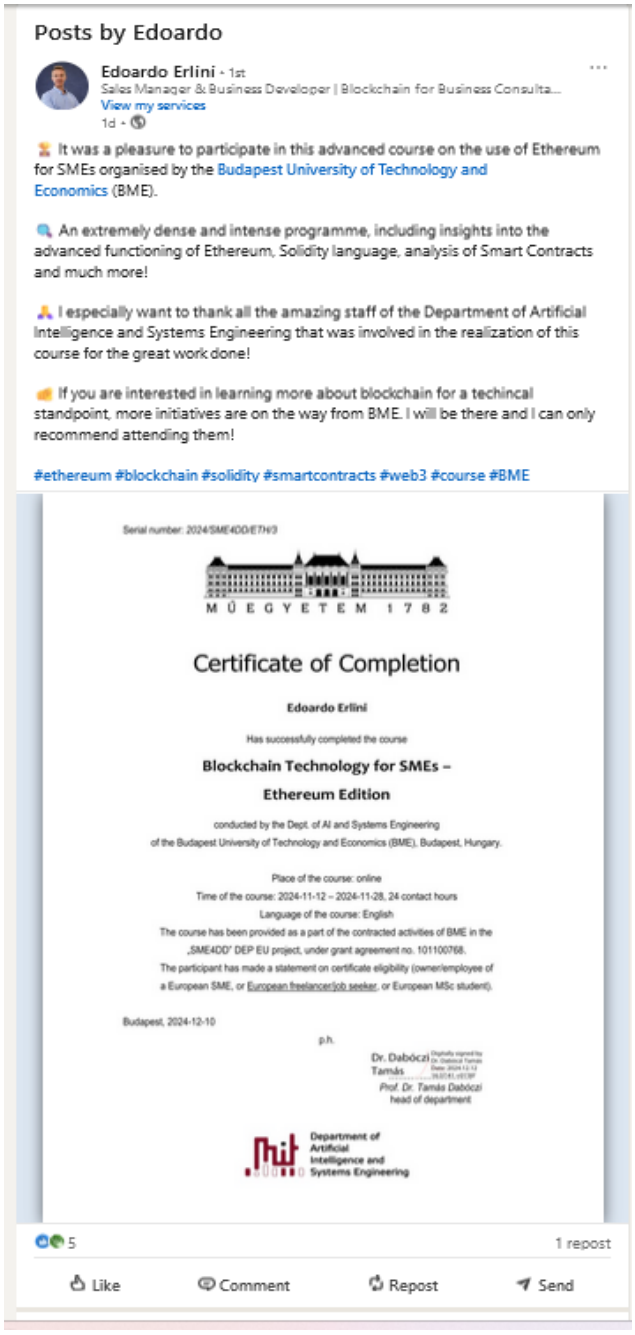
- ~~Yes, similar to six months ago~~
- ~~Yes, but less than six months ago~~
- ~~No, not really~~
- ~~I don't know/ not relevant~~

8.3 SME4DD courses planning for 2025

	Date	Course	Language	Format
Hyper Island	intake 1 - date TBC	AI for Business Online	English	Online
Hyper Island	intake 2 - date TBC	AI for Business Online	English	Online
Hyper Island	intake 3 - date TBC	AI for Business Online	English	Online
Hyper Island	intake 4 - date TBC	AI for Business Online	English	Online
Talent Garden	intake 4 - November 2024[12]	Cybersecurity & Data Protection	Italian	Online /asynchronous
Talent Garden	intake 5 - date TBC	Cybersecurity & Data Protection	Italian	Online /asynchronous
Talent Garden	intake 6 - date TBC	Cybersecurity & Data Protection	Italian	Online /asynchronous
Inria	intake 4 DT - Feb 26th 2025	DeepTech course, "Scikit-learn, the machine learning toolbox for SME"	French	On-line
Inria	intake 3 EE - March 6th 2025	Executive Education course, "Machine learning, Tech bricks for SMEs"	French	On-line
Inria	intake 5 DT - April 08th 2025	DeepTech course, "Scikit-learn, the machine learning toolbox for SME"	French	On-line
Inria	intake 4 EE - June 5th 2025	Executive Education course, "Machine learning, Tech bricks for SMEs"	French	On-line
Inria	intake 5 EE - Sept. 25th 2025	Executive Education course, "Machine learning, Tech bricks for SMEs"	French	On-line
BME	two editions of each of its five courses- date TBC	SB, PM, HLF, ETH and SE	Hungarian English	On-line

[12] The course has stated in November 2024 and will finish in March 2025

8.4 Testimonial for ETH course (BME)



Posts by Edoardo

Edoardo Erlini · 1st
Sales Manager & Business Developer | Blockchain for Business Consulta...
View my services
1d ·

It was a pleasure to participate in this advanced course on the use of Ethereum for SMEs organised by the Budapest University of Technology and Economics (BME).

An extremely dense and intense programme, including insights into the advanced functioning of Ethereum, Solidity language, analysis of Smart Contracts and much more!

I especially want to thank all the amazing staff of the Department of Artificial Intelligence and Systems Engineering that was involved in the realization of this course for the great work done!

If you are interested in learning more about blockchain for a techincal standpoint, more initiatives are on the way from BME. I will be there and I can only recommend attending them!

#ethereum #blockchain #solidity #smartcontracts #web3 #course #BME

Serial number: 2024/SME4DD/E7H/3

MŰEGYETEM 1782

Certificate of Completion

Edoardo Erlini

Has successfully completed the course

Blockchain Technology for SMEs –

Ethereum Edition

conducted by the Dept. of AI and Systems Engineering
of the Budapest University of Technology and Economics (BME), Budapest, Hungary.

Place of the course: online
Time of the course: 2024-11-12 – 2024-11-28, 24 contact hours
Language of the course: English
The course has been provided as a part of the contracted activities of BME in the „SME4DD" DEP EU project, under grant agreement no. 101100768.
The participant has made a statement on certificate eligibility (owner/employee of a European SME, or European freelancer/job seeker, or European MSc student).

Budapest, 2024-12-10

p.h.

Dr. Dabóczi Tamás
Prof. Dr. Tamás Dabóczi
head of department

Department of Artificial Intelligence and Systems Engineering

5 1 repost

Like Comment Repost Send