EDIH-MADRID REGION

EUROPEAN DIGITAL INNOVATION HUB – MADRID REGION

D 3.1 REPORT SERVICES PROVIDED DURING THE FIRST YEAR. WP3

Task 1.2	Technical coordination and results integration
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Executive Summary

This document describes the procedures to evaluate and report the quality of the services provided under **Work Package 3 (WP3)** by **EDIH MADRID REGION** within the project during the first year of the project, helping project managers and stakeholders assess performance and make informed decisions for future project implementation.

Introduction

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The EDIH MADRID REGION project aims to establish a European Digital Innovation Hub (EDIH) in the Madrid region, targeting the digitization of both the public sector and small to medium-sized enterprises (SMEs).

The primary objectives of the project include:
- Accelerating the digital transformation of SMEs and public sector organizations in the Madrid region.
- Providing comprehensive support services, including digital maturity assessments, skill and training services, and support for accessing financing for digital transformation.
- Facilitating the integration and adaptation of advanced digital technologies to im
- prove operational efficiencies and business models.

The project encompasses several key sectors, specifically:
- SMEs in the service sector
- Industrial SMEs focusing on Industry 4.0
- Regional and municipal public administrations
- Mobility and transport sectors

The project commenced on December 1, 2022, and is set to run for 36 months. This timeline includes various phases of implementation, monitoring, and evaluation to ensure the project meets its objectives and delivers tangible benefits to its stakeholders; in this deliverable, **first year** (M1-M12) of the project, helping project managers and stakeholders assess performance and make informed decisions for future project implementation.

The Test Before Invest methodology plays a key role in driving digital transformation. It allows businesses and public sector entities to experiment with and assess cutting-edge digital solutions within a controlled setting before making substantial financial commitments.

The EDIH MADRID REGION project places a significant emphasis on the digital transformation of industrial SMEs, particularly through the adoption of Industry 4.0 technologies. This focus aims to modernize industrial operations, enhance productivity, and improve competitiveness by leveraging advanced digital tools and methodologies.

Work Package 3 (WP3) provides digitalization support services to industrial SMEs in the Madrid region. The objective is to enhance the digital capabilities of these SMEs, thereby improving their competitiveness and operational efficiency through the adoption of advanced technologies associated with Industry 4.0.

Objectives for Industrial SMEs

- **Adoption of Advanced Manufacturing Technologies**: Facilitate the integration of technologies such as the Internet of Things (IoT), robotics, artificial intelligence (AI), and big data analytics into manufacturing processes to enable smart factories and automated production lines.
- **Improvement of Operational Efficiency**: Implement digital solutions that streamline operations, reduce waste, and optimize resource usage, thereby enhancing overall operational efficiency and reducing costs.
- **Enhancement of Product Quality and Customization**: Use advanced technologies to improve product quality, enable mass customization, and respond more rapidly to market demands and customer preferences.
- **Development of Digital Skills**: Provide targeted training and upskilling programs for the workforce to ensure they are proficient in using new digital tools and technologies.
- **Support for Innovation and R&D**: Encourage and facilitate research and development activities within SMEs to foster innovation and the development of new products and services.

Partners Involved in WP3

1. **Universidad Carlos III de Madrid (UC3M)**: UC3M is the lead beneficiary of WP3. It provides access to various high-tech facilities, including industrial robotics laboratories, general robotics laboratories, and 3D printing infrastructure
2. **Asociación de Empresarios del Comercio e Industria del Metal de Madrid (AECIM)**: AECIM offers access to the FabLab from IVECO in Madrid and brings extensive experience in supporting industrial SMEs in the region
3. **Asociacion de Empresarios del Henares (AEDHE)**: AEDHE contributes its expertise in providing business support services to industrial SMEs, focusing on digital maturity assessment and technology integration
4. **Fundación para el Conocimiento Madrimasd (MADRIMASD)**: MADRIMASD coordinates the methodological support and quality control of digital transformation services provided under WP3
5. **Hewlett-Packard Servicios España (HPE)**: HPE offers high-performance computing capabilities, facilitating the testing and experimentation with digital technologies for industrial SMEs.
6. **Connected mobility Hub (CMH):** CMH focuses on connected mobility, providing expertise and support for digital transformation initiatives within the mobility and transportation sectors.

This report evaluates the effectiveness and efficiency of the services delivered in WP 3.

Effectiveness refers to the extent to which the services delivered achieve the intended outcomes and goals. For the EDIH MADRID REGION project, effectiveness can be measured through several key indicators: Digital transformation success, skill development, innovation and growth (impact on competitiveness (enable the SMEs to better compete in the market)

Efficiency relates to the resources used to deliver the services and the speed and cost-effectiveness of the delivery process. Key factors include resources utilization (human, technological resources to deliver high quality services); timelines (delivery of the services with the planned timelines); services delivery processes (by reducing bureaucracy and improving speed); scalability (ability to scale services to accommodate more services without increasing costs or time)

By focusing on these aspects, the EDIH MADRID REGION project aims to ensure that the services provided are both effective in achieving their intended goals and efficient in their delivery, maximizing the benefits for all stakeholders involved.

Description and information of services provided WP3

The services offered by the EDIH during its first year in the context of WP3 have been provided to SMEs in the industrial sector of the Madrid Region. These services can be structured by type, as described in the following sections.

<u>Test before Invest</u>

Test before Invest (TBI) services can be defined as expert guidance and technological experimentation aimed to facilitate successful and cost-effective digital transformation for, in this WP, manufacturing companies. These services were provided mostly in a series of facilities available for this purpose: Industrial robotics laboratory (UC3M), General robotics laboratory (UC3M), 3D printing infrastructure (UC3M), Fablab from IVECO in Madrid (AECIM) and the the high-performance computing capabilities provided by HPE.

In total, **125 TBI services** were provided in WP3, of which **106 were Digital Maturity Assessment** (DMAs). The **other 19** correspond to Integration, adaptation and customization of digital technologies, Testing and experimentation with digital technologies, and Knowledge and technology transfer. Of all these, the most numerous have been Knowledge and technology transfer, generally materialized in the form of technical reports assessing some sort of problem/purchase option.

The technology is used to provide these services has been done by artificial intelligence, robotics, software architectures, big data and laser-based manufacturing and materials processing.

Of **the106 DMA's highlight 22 in manufacturing, 17 in telecommunications**, and the rest in other sectors like: transport and mobility, education, consumer products, etc.

Partner	Number of DMAs carried out
AECIM	22
AEDHE	25
MADRIMASD	34
IDC	5
EIT	6
CMH	14
Total	106

These services are described below sorted by the partner who has provided them:

Type TBI Sevices	Nº of services
Integration and Adaptation	6
Knowlegde Transfer	6
Test and Experiment	7
Total	19

AECIM

- 3 services have been provided to AUXITEL

  - Advises on the steps to follow for the integration and adaptation of the purchased machinery,
  - Test and experimentation report on the steps to follow when introducing the machinery into its facilities
  - In March 2023, AUXITEL consulted AECIM about the possibilities of existing aid to innovate in its production processes by purchasing new machinery, with a budget of approximately 150,000 euros. After analyzing several lines of aid, we decided that the most suitable one was that of the CDTI LICA. AECIM then describes the advantages in terms of automation and digitalization in order to prepare the application for aid, and which are reflected in the preparation of the Knowledge Transfer Report.

- 3 services have provided to APRIM

  - AECIM put APRIM in contact with Leyton, to prepare a knowledge transfer report, which was used to draft the technical report that was included in the grant application.
    The Test and Experimentation Report includes the steps that APRIM needs to carry out before the 3 acquired machines arrive at its facilities.
  - In May 2023, AECIM advised APRIM-Alta Precisión Industrial Mecánica S.L on various grants available to acquire different types of machinery. After an analysis of the characteristics of the grants, and the adequacy of the investments to them, as well as the technical and economic viability, it was decided to apply for the Ministry of Industry grant "Connected Industry 4.0"

- 3 services has provided to Jesús Castro S.L

  - In March 2023, AECIM indicated to Jesús Castro S.L the steps to follow to receive the lathe at its facilities and organize itself in the best possible way, preparing a Test and Experimentation Report.
  - AECIM carries out a transfer of knowledge, providing the necessary description to prepare the technical report of the subsidy, which must contain the advantages of digitalization of both machines, and which are reflected in the attached report.
  - Jesús Castro S.L is awaiting the arrival at its facilities of a DN Solutions PUMA DNT 2100 lathe that integrates design software (SKETCH TURN) and operations control software (MT-LINKi). Prior to receiving it, AECIM advises them on the steps to follow for the integration and adaptation of said machinery, ensuring optimal and safe production,

preparing a Technology Integration and Adaptation Report.

- 3 services has provided to Segura Hermanos

  o AECIM carries out a transfer of knowledge, providing the necessary description to prepare the technical report of the grant, which must contain the advantages of digitalisation of the two machines to be acquired: Citizen L32-X fixed/movable head lathe.
  o AECIM indicated to the company the steps to follow to receive the CNC turning center and the lathe with fixed/movable head in its facilities and to organize itself in the best possible way, preparing a knowledge transfer report for this purpose.
  o The client prior receiving the machines, AECIM advises them on the steps to follow for the integration and adaptation of said machinery, ensuring optimal and safe production, for which it prepares a Technology Integration and Adaptation report.

- 3 services have provided to Steel Bombe Valley

  o Test and experiment report for the steps to follow to start up the laser cutting machine.
  o Shortly before the arrival of the BODOR brand laser cutting machine purchased from Rastro Máquinas to the Steel Bombe Valley facilities, AECIM advised them on the steps to follow for the integration and adaptation of said machinery, ensuring optimal and safe production.
  o AECIM transfers knowledge to Steel Bombe Valley by providing the necessary description to prepare the technical report for the grant it will apply for to purchase a laser cutting machine, explaining the advantages of digitalisation and innovation in its production process.

- Compañía Auxiliar de Aeronáutica, S.L (CADA Madrid)

  o Currently, Industrias GES uses Power Business Intelligence at a basic level, to collect, analyse and visualize different types of data. With this, you are able to make decisions in a more informed and efficient manner, which in turn drives operational efficiency, improves customer satisfaction and increases your profitability. However, after using Power B.I for some time, the need has been detected to go one step further and explore the possibilities that an advanced Power BI would offer. That is why AECIM prepared a Knowledge Transfer Report, to detect possible suppliers that offered this knowledge. 1 video call was made with 3 suppliers and finally one was chosen, with whom AECIM has recommended specialized training.

- Servosis S.L Transfer technology and knowledge. Report on technological solutions for 3D printer

MADRIMASD

- 1 service in the assessment in the innovation management capacities of the SME to the Orto Alresa company.

UC3M
- Rydeapp S.L., Analysis of technical documentation and assessment of the feasibility of their project

for an automatic event broadcasting system and the infrastructure to be used, resulting in an expert recommendation of a specific camera model and platform.

Technical documentation analysis and feasibility assessment of your project for an automatic event broadcasting system and the infrastructure to be used. After a preliminary meeting on 10/23 and a technical meeting on 11/20, an expert recommendation was made for the selection of the most suitable camera model and streaming platform for their needs.

Analysis of the services delivered

Previous 19 services were delivered to SMEs, being 5 SMEs repeating the service.
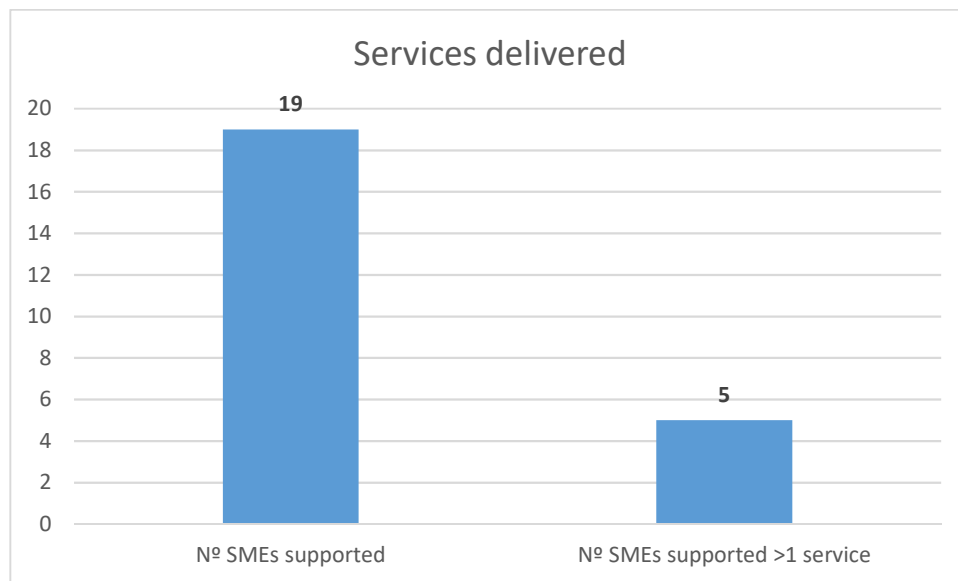
These SMEs have the following representation according to their SME type:
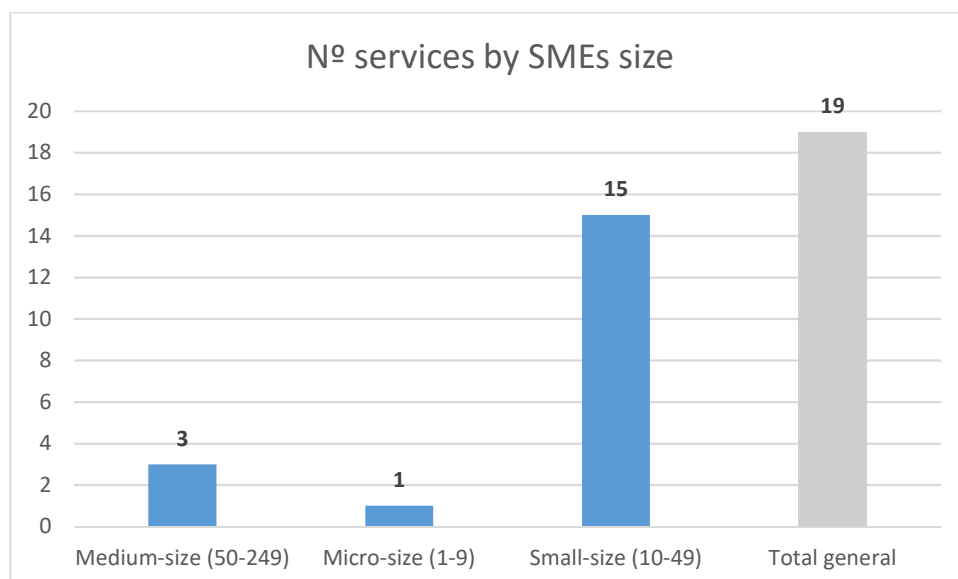
Best practices and Continuous Improvement

The implementation of services within the EDIH Madrid Region project has revealed several best practices that have significantly contributed to delivering high-quality outcomes for industrial SMEs. A clear emphasis on collaboration between partners and stakeholders has proven to be a cornerstone for success. By leveraging the combined expertise and resources of participating organizations, the project has ensured that services are both relevant and impactful, addressing the specific needs of SMEs in the industrial sector.

Key strengths identified include the effectiveness of digital maturity assessments as a diagnostic tool, which provided a solid foundation for recommending tailored solutions to SMEs. Moreover, the structured methodology for "Test Before Invest" services enabled businesses to experiment with advanced technologies in a controlled environment, minimizing risks while fostering innovation. The focus on capacity building through targeted training sessions has also been pivotal in empowering SME employees to adopt new technologies confidently.

In terms of continuous improvement, the project has benefited from regular feedback loops with stakeholders, allowing for adjustments to service delivery and the identification of areas for enhancement. Challenges encountered during service provision, such as addressing diverse technological needs and overcoming resource constraints, have served as valuable learning opportunities. These experiences have informed the development of concrete strategies to streamline processes, optimize resource allocation, and enhance communication channels.

Looking ahead, the lessons learned will guide the refinement of service offerings, ensuring alignment with the evolving needs of SMEs and maximizing the impact of the project. By fostering a culture of adaptability and proactive problem-solving, the EDIH Madrid Region project is well-positioned to continue driving digital transformation and industrial innovation in the region.

Identification of strengths and areas for improvement based on stakeholder input.

Conclusions

The analysis of the services provided during the first year of the EDIH Madrid Region project highlights significant progress in achieving the objectives outlined for WP3. The tailored support for industrial SMEs has not only facilitated their digital transformation but also strengthened their operational efficiency, competitiveness, and technological capabilities. The integration of advanced technologies such as IoT, robotics, AI, and big data has proven to be instrumental in modernizing industrial processes and enabling businesses to adapt to the demands of Industry 4.0.

Additionally, the collaborative efforts among project partners, leveraging their respective strengths and expertise, have ensured the successful delivery of diverse services, including digital maturity assessments, targeted training, and financial advisory. The adoption of these services has been well-received, with measurable improvements in both the skills of SME employees and the quality of their operations.

Overall, the achievements detailed in this report underscore the transformative potential of the EDIH Madrid Region initiative, reinforcing its role as a key enabler of digital innovation and industrial modernization in the region. These findings set a strong precedent for the continuation of the project, laying the groundwork for further impactful outcomes in the upcoming phases.