| D7.1 | SMARTHANDLE Public Web Portal |

Project Title	Resilient manufacturing lines based on smart handling systems
Project Acronym	SMARTHANDLE
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Revisions

Version	Submission date	Comments	Author
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v0.2	10.02.2023	First complete online website version	INTRA
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v.0.4	24.02.2023	Revised draft	INTRA
v.0.5	27.02.2023	Final Version	INTRA

Disclaimer

Executive summary

The goal of this document is to introduce the website and social media accounts of the project, which will serve as the main communication channels for sharing information with the public about the project's updates, outcomes, and accomplishments.

The D7.1 deliverable includes the website and social media accounts and validates their creation, providing an overview of their initial structure. The document also indicates that there will be updates and revisions as the project progresses, with new content becoming available.

Contents

List of Figures

1. Introduction

1.1. **Overview**

The present document is the first deliverable within "WP7- Exploitation, Communication and Dissemination". Here, the SMARTHANDLE website's structure and content will be introduced, providing an overview of the main communication interface of the project. Furthermore, a brief overview for the three SMARTHANDLE social media accounts (LinkedIn, Twitter, YouTube) will be provided. The document will conclude with an opening to the future versions along the progressions of the project.

1.2. **Document's structure**

The Document's structure is the following:

- Chapter 1: Introduction, where an overview of the document is given
- Chapter 2: Project website. This is the main part where the website structure and content
- Chapter 3: Social media, where a brief overview of the SMARTHANDLE social media accounts is provided
- Chapter 4: Conclusions

2. Project Website

2.1. **Introduction**

The website is the main communication channel of SMARTHANDLE's project that will be used to diffuse to our target audiences and stakeholders the project's news, results, and outcomes.

Within the content of SMARTHANDLE project, there are the descriptions of the project's scope, objectives as well as the consortium partners. Also, there will be continuous updates about SMARTHANDLE's events, news, articles, newsletters, media etc.

All partners have the responsibility to contribute to the website's updates, while INTRA is in charge of its design, hosting, and maintenance.

The website of SMARTHANDLE can be found in the following link: https://smarthandle-project.eu

2.2. **Website structure**

The website structure includes a home page that introduces the project's main idea and concept, an "About" section that provides an overview of the project with three subpages: Vision, Objectives,

and Partners. There is also a "Use Cases" section that presents real use cases with distinct application scenarios of the project. In addition, the "News & Events" section announces upcoming events related to the SMARTHANDLE project, and the "Blog" provides a platform for articles contributed by all partners. Finally, the "Results" page showcases the project's main outcomes, such as Deliverables and Publications. The "Library" section will include all dissemination material such as Newsletters, Press releases and images. Furthermore, the synergies section will promote SMARTHANDLE's clustering activities.
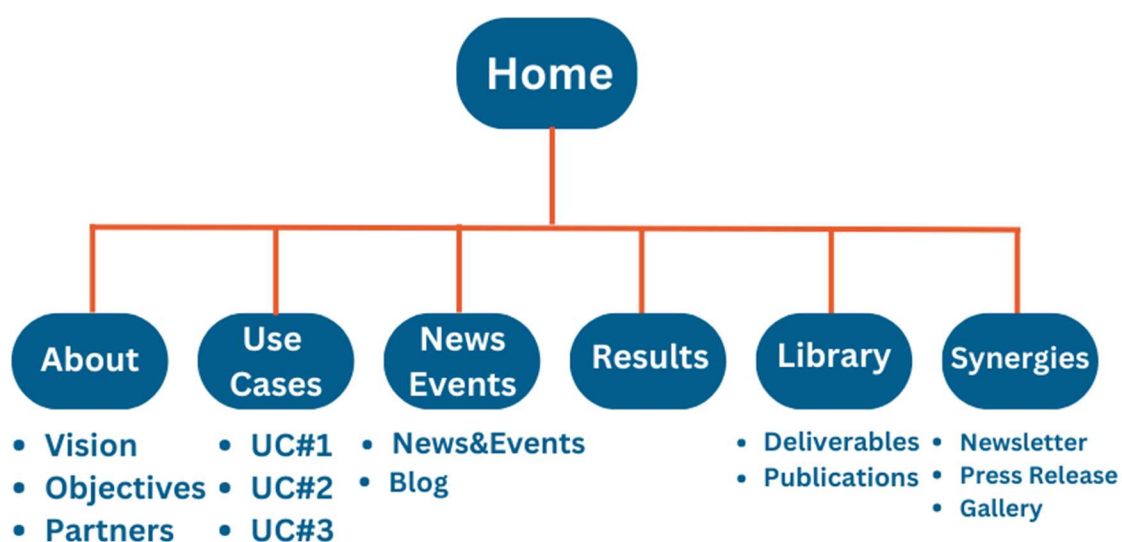

Figure 1. SMARTHANDLE's sitemap

2.3. **Website Content**

2.3.1. **Home page**

Below, we describe the structure of the home page of the SMARTHANDLE website. All site content areas are accessible with links via the home page.

2.3.1.1 *SMARTHANDLE logo*

On the left top corner of SMARTHANDLE, there is the logo of the project designed during M1.

Figure 2. SMARTHANDLE'S logo

2.3.1.2 *Main Menu*

On the top of the page, there is the main menu to facilitate access to the website content areas. See also Figure 1 for the complete website structure.

Figure 3. Main menu for navigating through the website

2.3.1.3 *Main Content Area*

The front page of SMARTHANDLE website is an image depicting a robotic handle in order to instantly reflect the scope and context of the project to the user when entering the webpage. Also, there is a link button ("Read more") directing the user to the project's Vision page.
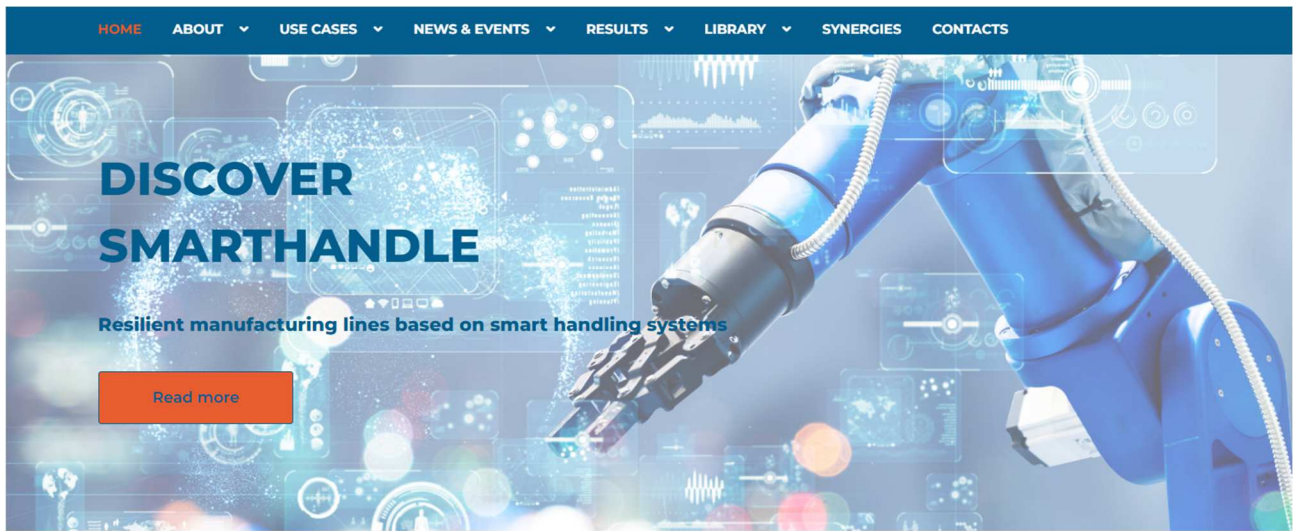
Figure 4. Front page and Main Content Area

2.3.1.4 *Linking Blocks*

Below the front page, there is a 4-block menu directing the user to the project's:

1. Vision
2. Results
3. Use Cases
4. News & Events

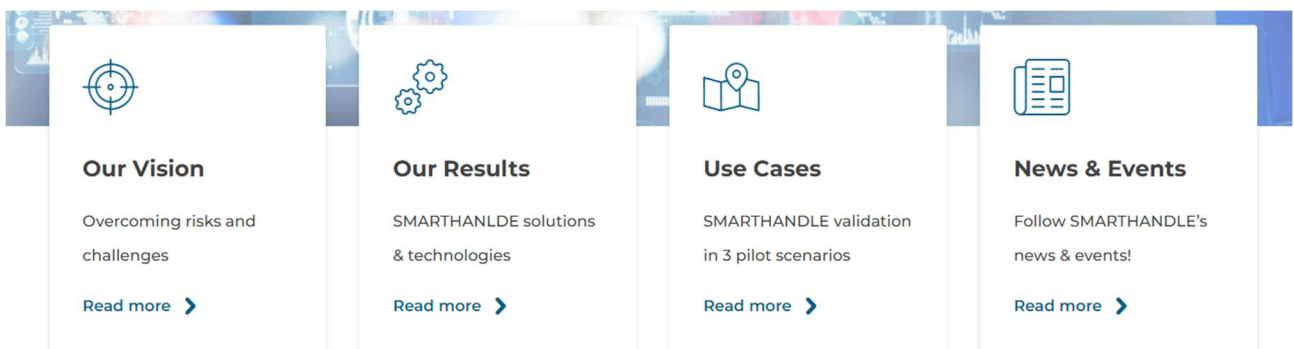*Figure 5. Four linking blocks to content areas*

2.3.1.5 *About Us*

Further scrolling down, the user will see an "About Us" section illustrated with a picture related to robotics in manufacturing, especially related to dexterous manipulations.

ABOUT US

Smart handling systems for resilient manufacturing

Manual and automated production lines must evolve to "produce more and diverse with less", while addressing important shortcomings such as product variabilities, lack of high-level autonomous reasoning and accurate adaptable control and holistic efficient planning systems. SMARTHANDLE will research technologies to address these needs and support European industry.

Figure 6. About SMARTHANDLE small introduction

2.3.1.6 SMARTHANDLE factsheet

Further down, there is a factsheet of the project, where the main elements such as Name, Grant Agreement No, Topic of the call, Duration, level of funding and the coordinator are listed, ensuring transparency of our work to the user.

PROJECT FACTSHEET

SMARTHANDLE Facts & Figures

Project name: Resilient manufacturing lines based on smart handling systems

Grant Agreement No: 101091792

Topic: HORIZON-CL4-2022-TWIN-TRANSITION-01

Duration: 1/1/2023- 31/12/2025

EC Contribution: € 5 995 176,25

Coordinator: FUNDACION TECNALIA RESEARCH & INNOVATION, Spain

Figure 7. SMARTHANDLE's factsheet

2.3.1.7 Use Cases

Here, a dedicated portal to the 3 Use Cases of SMARTHANDLE is presented, along with relevant illustrations for each pilot industry.

USE CASE #1 — **METAL INDUSTRY** — Read More

USE CASE #2 — **CONSUMER GOODS** — Read More

USE CASE #3 — **AUTOMOTIVE** — Read More

Figure 8. Use Cases blocks with links to their description

2.3.1.8 *Partners Section*

Here, we present the consortium partners by listing their respective logos.

PARTNERS

14 partners from 6 European countries

Figure 9. List of partners' logos

2.3.1.9 *Footer*

At the bottom of the home page there is a footer containing information about the:

- coordinator of SMARTHANDLE project
- the project's generic email, info@smarthandle-project.eu
- Social media links
- EU funding acknowledgement
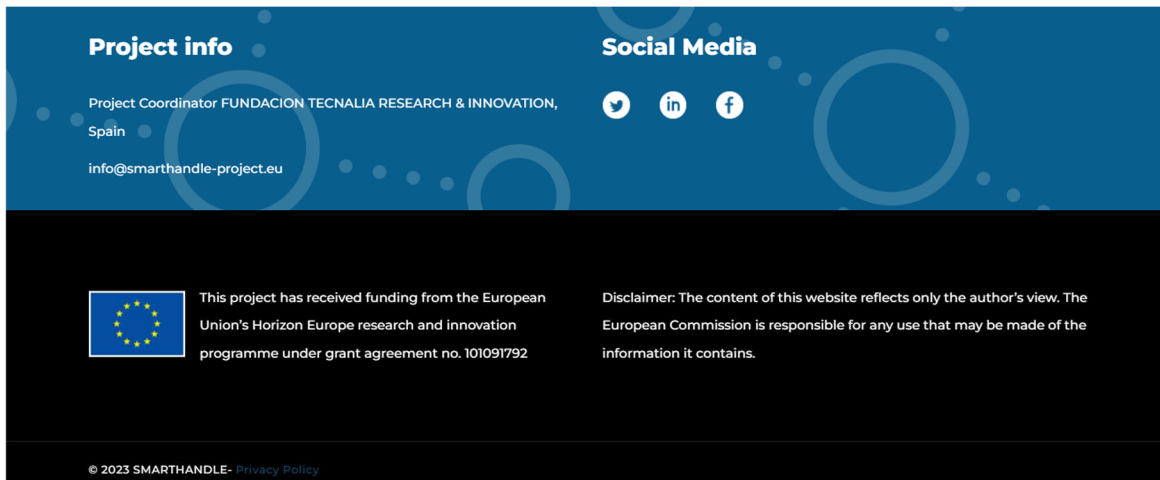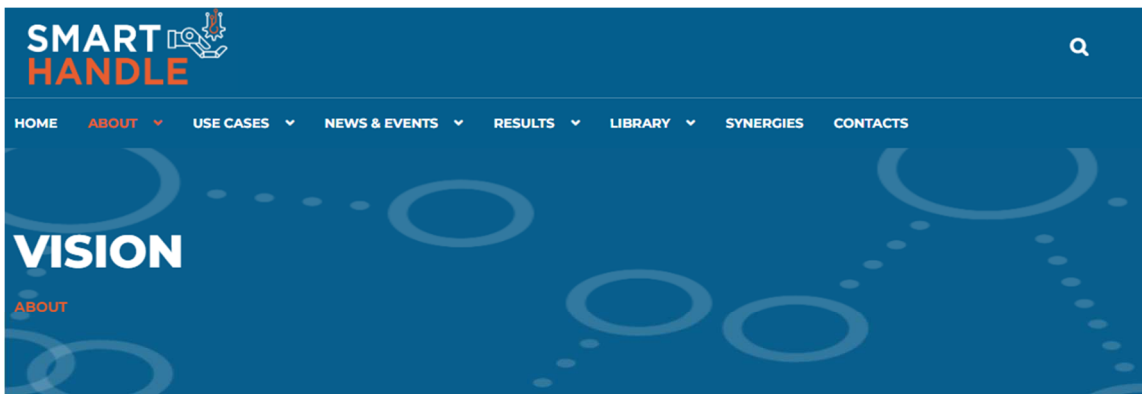- Website Privacy Policy

Figure 10. SMARTHANDLE's homepage footer

2.3.2. About

Here, there are 3 subpages related the project's vision, objectives and partners.

Manual and automated production lines must evolve to "produce more and diverse with less", while addressing important shortcomings such as product variabilities, lack of high-level autonomous reasoning and accurate adaptable control and holistic efficient planning systems. SMARTHANDLE will research technologies to address these needs and support European industry, by implementing:

- intelligent agents providing dexterity for handling applications,
- AI based reasoning enablers
- Higher-level planning and coordination mechanism for successful deployment in real life use cases.

To demonstrate SMARTHANDLE solutions in real-life applications, 3 use cases have been designed from the field of consumer goods requiring delicate and high precision handling (contact lenses), Metal Industries, packaging of large variable section materials (aluminium) and automotive tier-1 suppliers, disassembly of complex products (batteries) involving dexterous operations that are not possible to implement with the existing technologies.

SSH aspects will be addressed, demonstrating benefits for workers by reducing their involvement in unsafe and unhealthy tasks, improving their working conditions when working in areas where the SMARTHANDLE reconfigurable solutions will operate.

Figure 11. SMARTHANDLE's Vision section
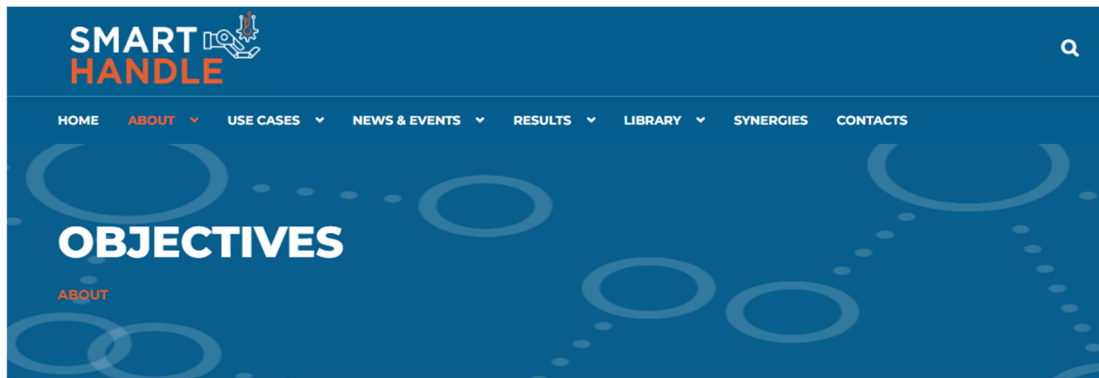
- Development and implementation of intelligent handling procedures with improved perception, cognition and manipulation capabilities for a wide set of workpiece handling, thus augmenting the flexibility of production lines.
- Development of smart tools (HW & SW) for planning and monitoring, based on workpiece features, handling agents' capabilities and real time data, with the aim to decrease the reconfiguration costs.
- Introduce enhanced robotics and multi-level process planning, based on Artificial Intelligence, for better productivity and resilience of production lines, to overcome recurrent changes.
- Implementation of advanced methodologies for human centric design of interfaces, to improve working conditions and operator inclusion in teaching and operating of intelligent reconfigurable systems.

Figure 12. SMARTHANDLE's Objectives Section

OUR PARTNERS

FUTURE MOBILITY

> TECNALIA

> LMS

> Universitat Politècnica de Catalunya –BarcelonaTech– (UPC)

> AIMEN

> Eindhoven University of Technology

> Teaching Factory Competence Center

> KUKA

> Roboception

> Netcompany-Intrasoft

> Demcon

> Alumil

> Menicon BV

Figure 13. SMARTHANDLE's list of partners and their descriptions

2.3.3. **Use Cases**

SMARTHANDLE's dexterity, reconfiguration and reasoning enabling technologies will be validated and will demonstrate their advances through three real-life manufacturing scenarios. Those originate from Metal (ALUMIL), Consumer goods (MENICON) and Automotive tier-one supply (ABEE) industrial sectors. These use cases have been selected for
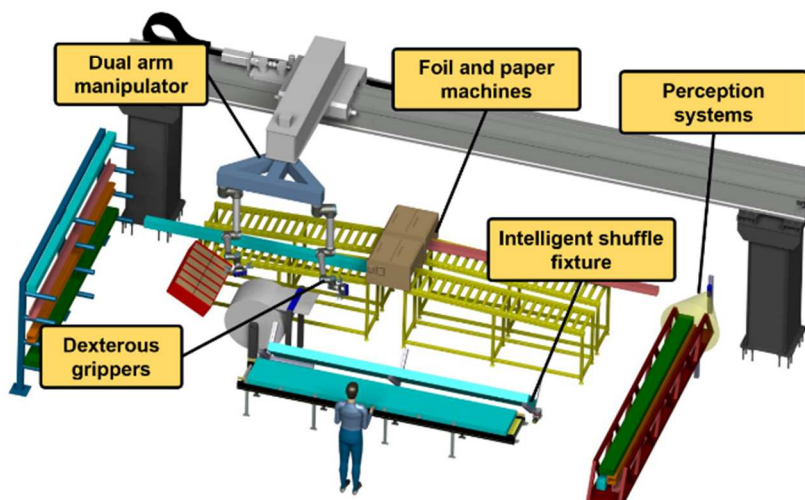

Figure 14. SMARTHANDLE's Use Case #1 - Metal Industry

covering a wide spectrum of dexterous handling operations. In overall, the project's outcomes will tackle handling challenges for small to large sized parts, made from rigid or deformable materials, presenting simple or sophisticated geometries that require conventional or specialized handling treatments.

USE CASE #2 – CONSUMER GOODS

USE CASES

The second SMARTHANDLE Use Case is related to contact lenses production. Full customization, high-volume production techniques and specialized machines are required for contact lenses production. Most of the manufacturing steps are not automated and require manual activity and interventions by operators. Current manufacturing challenges result in errors and lead to a quality rejection of 15% of the produced soft contact lenses. Automation of logistics and machine tending operations will enhance productivity and will contribute to ergonomics improvement. A flexible logistics solution equipped with smart fixtures and dexterous tools will be responsible for handling workpieces between manufacturing line workstations.

The designed dexterous and reconfigurable end-effectors will be able to manipulate all lens variances for all their production step-related shapes. In the same principle, the implemented fixtures will accommodate the lenses for logistics or processing without requiring time demanding hardware modifications.
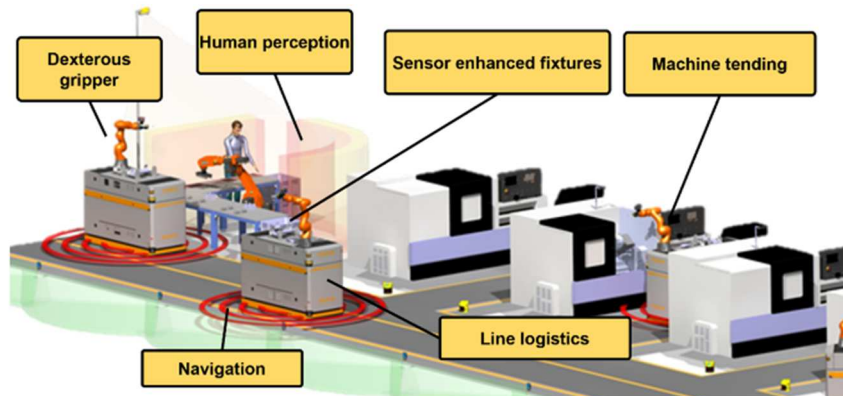
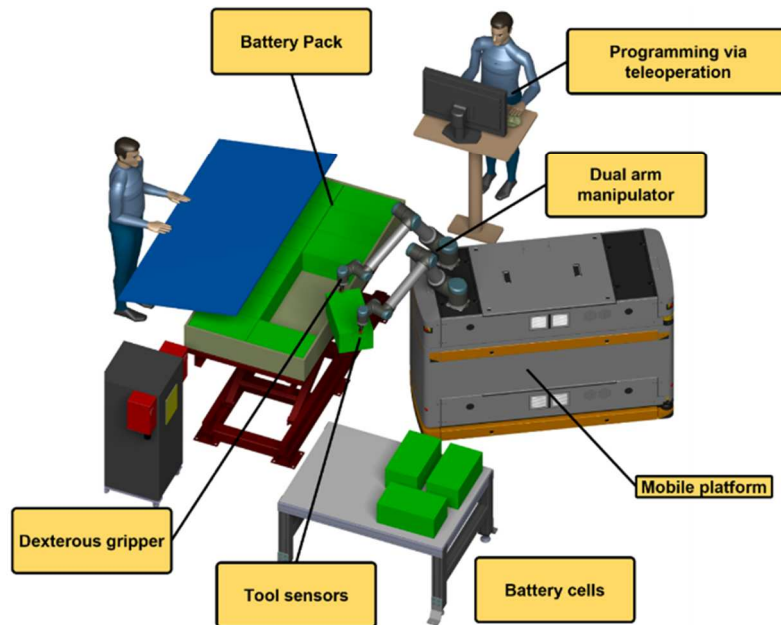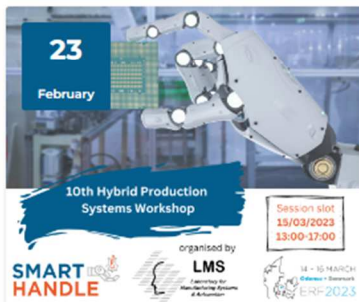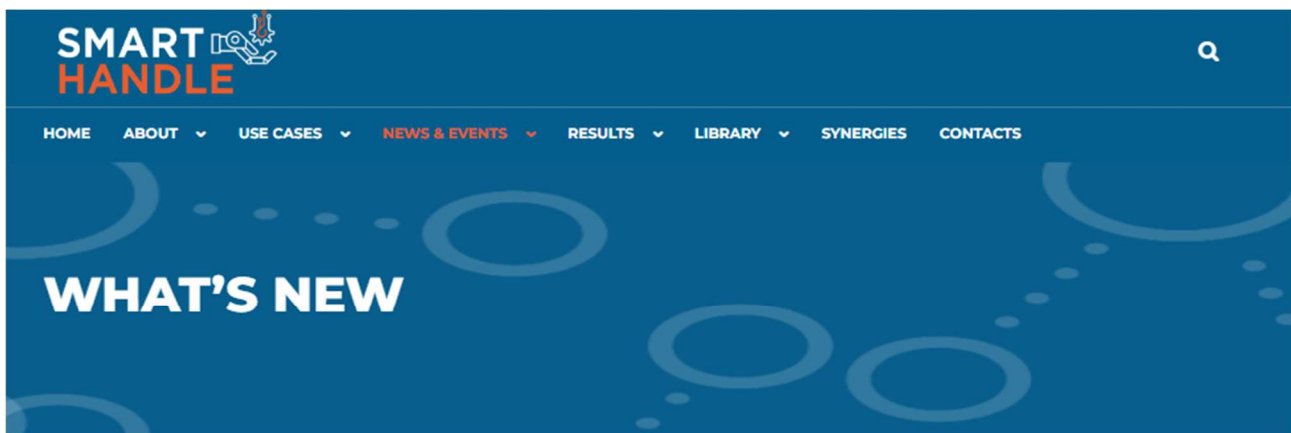*Figure 15. SMARTHANDLE's Use Case #2 - Consumer Goods*

Figure 16. SMARTHANDLE's Use Case #3 - Automotive

2.3.4. **News & Events**

Under the section "News & Events", all events, workshops, webinars as well as articles and blog posts will be diffused.

Figure 17. News articles about SMARTHANDLE project

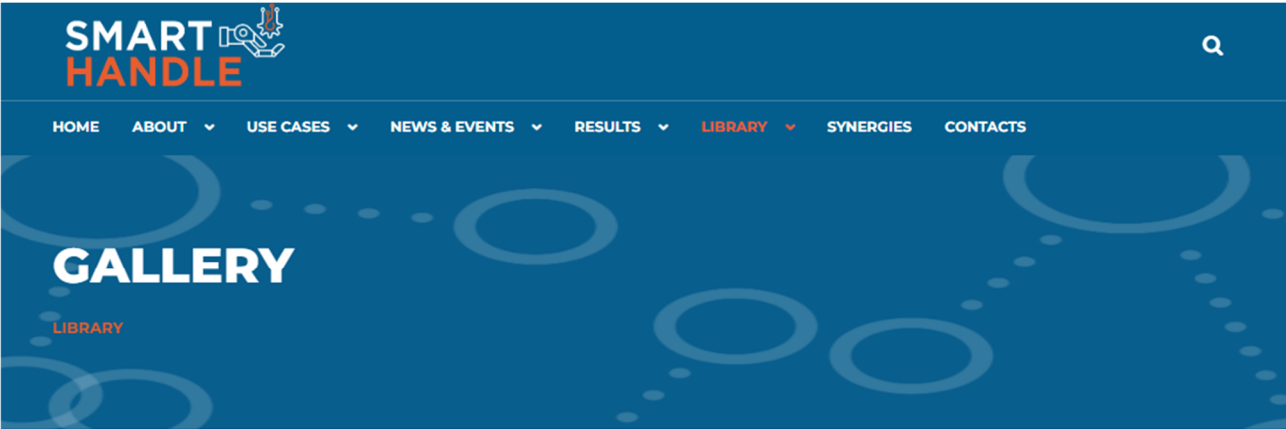Within this section, SMARTHANDLE project's results will be published, especially Public Deliverables and Publications.

2.3.5. **Library**

The section "Library" will be used for gathering all the communication and dissemination material, such as Newsletters, Press Releases and images from events and demonstrations.

Figure 18. Gallery with photos from SMARTHANDLE's Kick-off meeting at TECNALIA's premises

2.3.6. **Synergies**

SYNERGIES WITH SISTER PROJECTS IN THE SAME CALL TWIN-TRANSITION-01-04

One core ambition of European Union is to enhance the impact and effectiveness of its funding programs by promoting collaboration and mutual learning between projects and stakeholders of similar calls, leveraging each one's strengths and resources to achieve common goals. SMARTHANDLE embraces this ambition and emphasizes the importance of establishing synergies and clusters with partners of various backgrounds (academia and industry) to facilitate technology transfer, training and skill development. SMARTHANDLE has agreed upon common activities with the three projects of same European call:

MASTERLY - (Nimble Artificial Intelligence driven robotic solutions for efficient and self-determined handling and assembly operations),

HARTU - Handling with AI-enhanced Robotic Technologies for flexible manufacturing),

AGILEHAND - Smart Grading, Handling and Packaging Solutions for Soft and Deformable Products in Agile and Reconfigurable Lines

The 4 sister projects have already agreed on several ways of collaboration:

1. dissemination activities: conferences and workshops, common newsletters and media posts, white paper at the end of projects, starting off with the interactive ERF2023 workshop on the feasibility of agile manufacturing for SMEs in March.

2. technical collaboration: benchmarking opportunities, shared datasets, common 'taxonomy' to characterize and define the parts, exchange information in soft/deformable/delicate part manipulation, multi-robot applications, mobile manipulators, new gripper concepts, system architectures, standardization efforts, collaboration in similar applications,

3. others: external Advisory Boards, regular meetings to share experiences.

Figure 19. Synergies and Clustering section

2.3.7. **Contact**

Here, we have included a contact form for facilitating the user to contact the project's partners.

Figure 20. SMARTHANDLE's Contact Form

3. Social Media

In addition to the website, social media will be utilized to amplify the reach and effectiveness of the project's communication and dissemination efforts. To establish a cohesive brand name for the project, a uniform visual identity has been adopted for both the website and social media accounts, incorporating identical images, logos, and descriptions

The project's social media accounts will serve as a platform to update the audience on the latest news, outcomes, accomplishments, and participation in events. To maximize the impact of the project's social media accounts, partners will collaborate by promoting the accounts through their own social media channels.

3.1. **LinkedIn**

LinkedIn is a professional networking platform that targets specific professional groups and also serves as a source of information. Hence, it is necessary to maintain a strong presence on the platform. The SMARTHANDLE project has a LinkedIn page (@SMARTHANDLE EU Project) that aims to share the latest news, activities, and developments of the project with experts in the fields of AI for manufacturing and robotics.
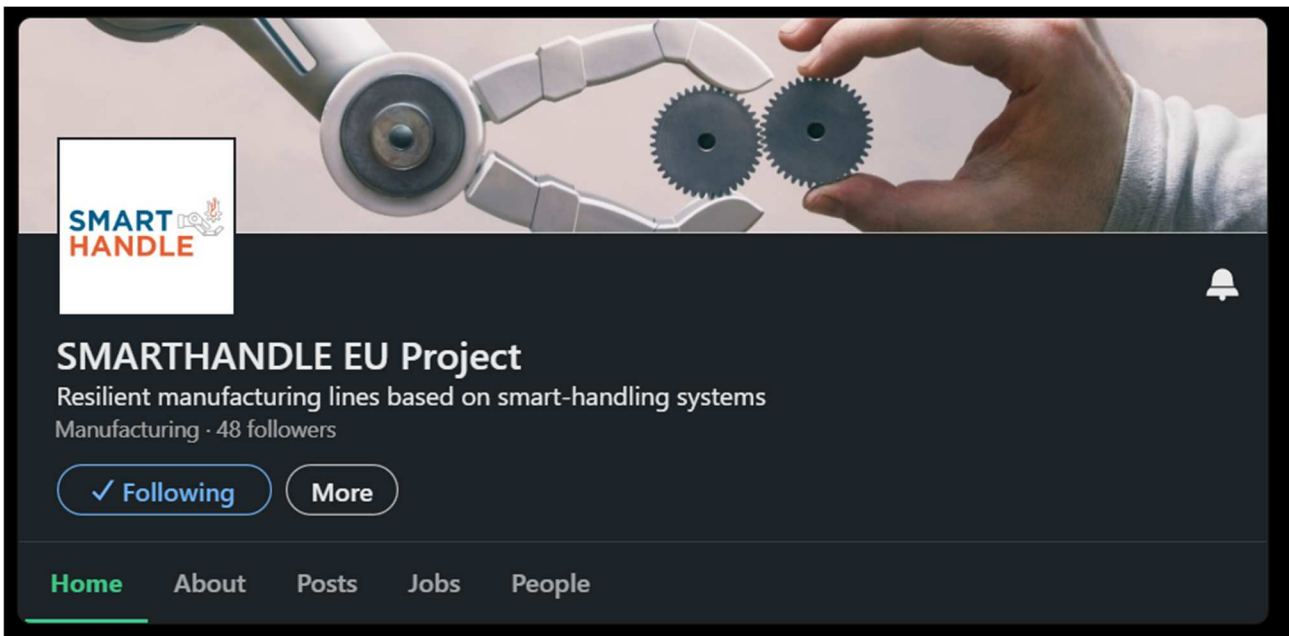
Figure 21. SMARTHANDLE's LinkedIn Page

3.2. **Twitter**

Twitter is a professional online networking platform that enables rapid communication with the SMARTHANDLE target audiences through real-time interactions using hashtags, reposts, images, and thematic tweets. The SMARTHANDLE project has a Twitter account page ([@SmarthandleEU](#)) dedicated to sharing the latest news, events, outcomes, results, milestones, and developments emerging from the project. The page serves to communicate and disseminate information to the project's target audience.

Figure 22. SMARTHANDLE's Twitter Account

3.3. **YouTube channel**

YouTube is a popular online communication platform that aims to share the essential project milestones through creative and high-quality videos. The SMARTHANDLE project has a dedicated YouTube channel ([@smarthandleeuproject](#)) that has been created for this purpose.
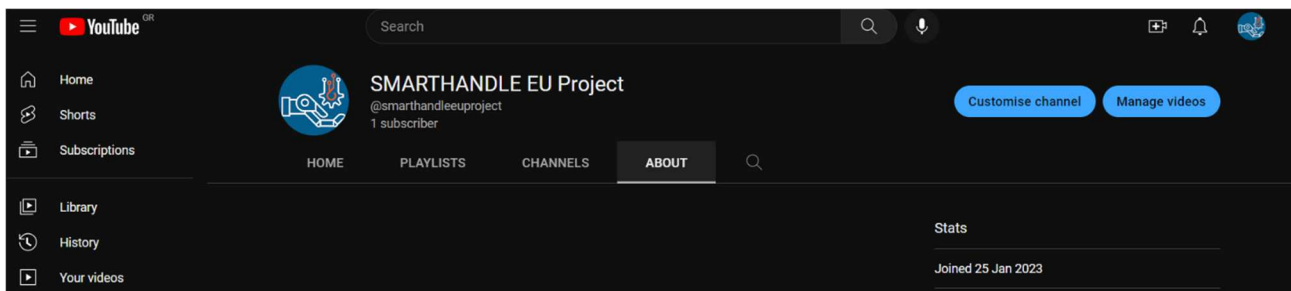

Figure 23. SMARTHANDLE's YouTube account

4. Conclusions

This document outlines the various communication channels that will be used to disseminate information about the SMARTHANDLE project. The project's website will serve as the primary platform for sharing content and has been designed to host all types of dissemination materials. In addition to the website, the project will utilize social media channels to increase visibility and reach

a broader audience, ultimately improving the project's outcomes. These efforts will help to ensure that the project's solutions and achievements are widely disseminated and have a significant impact in the field of manufacturing and robotics.