



AGILEHAND

D8.1 –

AGILEHAND

Dissemination,
Communication
and Community
Building &
Standardization
v1

WP8 – IMPACT:

Dissemination, Exploitation
and Standardisation



Document Information

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READING NOTES	None			
ABSTRACT	This document outlines the main methods by which the AGILEHAND project's solutions will be communicated and distributed, as well as the information that has already been produced. The AGILEHAND community growth strategy is also included, outlining the steps used to establish, develop, and spread the community. The calendar of events, some information on the first Advisory Board workshop, and information on the creation of the Advisory Board are also included. In addition to identifying the pertinent standards committees and standards, a broad overview of standardization is provided.			

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0.3	11/12/2023	2° draft	2° draft of the document	UPM+FBC+IVLAB
0.4	22/12/2023	Final version	Final document	UPM+FBC+IVLAB

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ABBREVIATIONS/ACRONYMS

AI	Artificial Intelligence
AB	Advisory Board
API	Application Programming Interface
BI	Business Intelligence
C&D	Communication & Dissemination
CD	Committee Draft
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
CWA	European Workshop Agreement
DMIS	Digital Manufacturing Industrial Summit
DIH	Digital Innovations Hubs
DIH4CPS	DIHs for Embedding Interoperability in Cyber-Physical Systems
DIS	Draft International Standard
DoA	Description of Action
EFTA	European Free Trade Association
ETSI	European Telecommunications Standards Institute
FDIS	Final Draft International Standard
IoT	Internet of Things
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
ITU	International Telecommunication Union
KER	Key Exploitable Result
KPI	Key Performance Indicator
MIDIH	Manufacturing Industry Digital Innovation Hubs
ML	Machine Learning

NMC	National Mirror Committee
NSBs	national standardisation bodies
OER	Other Exploitable Result
PBL	Project-Based Learning
prEN	draft European standard
R&D	Research and Development
SME	Small and Medium Enterprise
TC	Technical Committee
TR	Technical Reports
TS	Technical Specification
WD	Working Draft
WP	Work Package
WGs	Working Groups

Executive summary

The primary topics of this deliverable, which provides the initial report on the actions finished during the project's first year, are dissemination, communication, and community building, as well as advisory board and standardization related issues. The AGILEHAND initiative has two iterations for reporting the aforementioned activities. As previously mentioned, this first version, which is due in month 12, compiles and summarizes everything that has happened in this regard from the project's start in January 2023 through month 12, and a second version, which will include a report on the activities conducted from month 13 through the project's end in month 36. The final goal of the dissemination strategy, as with all AGILEHAND project activities, is the achievement of the project's overall objectives, in this case through dissemination activities. In order to accomplish the following goals, partnerships and engagements must be formed with other projects, networks, entities, etc. that have the potential to advance what AGILEHAND stands for and aspires to accomplish. Additionally, procedures and methodologies must be established for tracking and evaluating the effects of dissemination and communication activities throughout the project. The project is still in progress, and the AGILEHAND website and social media are active. Additionally active is the AGILEHAND internet community. The initial materials are already available, noteworthy occasions have occurred, the initial technical and scientific articles have been published, and networking efforts are beginning to show results. The key performance indicators (KPIs) that enable for first assessments of the impact of dissemination and communication activities are laid out in this first report. The foundation of the AGILEHAND Community began with the creation of a dedicated space within the Smart Manufacturing Community. Moreover, the Growth Hacking Plan for the AGILEHAND Online Community has been developed.

In order to maximize the project's effect and exploitation, an advisory board has been established to provide recommendations and objective input. As a result, a board with the expertise of 5 specialists with complementary profiles (market, technology, business, entrepreneurship, etc.), has been formed. The first AB workshop was held online on September 7, 2023. The agenda of this online workshop was focused on the project objectives, the project partners and the first results already reached. It was agreed to hold biannual workshops to get periodic recommendations from AB members. Before this first AB workshop, all members of the AB have reviewed, approved, and signed the Service Agreement, which governs the AB's purpose, role, costs, confidentiality, and other related things.

It is important to pay close attention to standardization efforts since they are crucial to ensuring the transnational harmonisation of standardization documents, which is the cornerstone of the European Union's common economic space. AGILEHAND's primary technological advancements are technologies for grading, handling and packaging autonomously soft and deformable products, as a strategic instrument to improve flexibility, agility and reconfigurability of production and logistic systems in order to support European industrial system. Therefore, it is crucial to guarantee the relevance, credibility, and compliance of AGILEHAND. This necessitates that AGILEHAND solutions adhere to regulations, guidelines, and technological requirements.

Document structure

Section 1: Introduction

Section 2: Dissemination and Communication

Section 3: Community Building

Section 4: Advisory Board

Section 5: Standardization

Section 6: Conclusions

Annex 1: AGILEHAND Community Growth Hacking Plan

Annex 2: Agilehand standard Keywords and database

1. Introduction

The DoA of the Grant Agreement contains all of the commitments made in relation to the dissemination and communication strategy, as well as those related to the standardization for the AGILEHAND project. These commitments include those made with regard to the project's goals, a description of its activities, the partners' contributions, committed deliverables with deadlines, milestones, and a list of critical risks.

Two deliverables must be submitted as part of the dissemination, communication, and standardization activities over the course of the project: deliverable D8.3, "Dissemination, Communication, and Community Building & Standardization v2," which must be submitted in month 36, and deliverable D8.1, "Dissemination, Communication, and Community Building & Standardization v1," which must be submitted in month 12 and whose beneficiary leader is IVLAB. All of the dissemination, communication, and standardization advancements made during the project's first 12 months are detailed in this document, deliverable D8.1, which has helped to solidify the committed strategies with regard to: the use of social media or the project website as communication channels; the publication and presentation of research findings; participation in events; the development of the AGILEHAND community; and the holding of webinars and workshops.

The two milestones from the project's first twelve months that had an impact on this deliverable are milestone 2 "Project Dissemination Strategy implemented" (M3) and milestone 6 "Freedom to operate of the KERs confirmed; Exploitation strategy plan developed; Standardisation needs identified" (M12) for what concern the Standardization. In particular the main goal of milestone 2 was to ensure that in month three, the project's initial dissemination strategy would be defined, the AGILEHAND website would be up and running, and dissemination materials would already be available.

Based on the foregoing, the goal of this deliverable is to give a summary of how the activities have been organized and to provide information on the monitoring of the dissemination and communication activities (project tasks T8.1 and T8.2), the advisory board activity (project task T8.3), the community and ecosystem building (project task T8.4), and the standardization activity (project task T8.7) and its outcomes.

The document has six sections total, including this introduction, for this purpose. It is divided into three main areas that cover standardization (section 5), advisory board (section 4), and the contents and information linked to dissemination, communication (section 2), and community building (section 3).

After the first year of operation of the AGILEHAND project, there is a common section of conclusions that gathers the key points and provides a first coherent picture. This section, which naturally takes into account the outcome of the monitoring of the KPIs by highlighting the key accomplishments, concludes the report.

2. Dissemination and Communication

2.1. Communication & Dissemination Strategy and Plan

The main goal of the communication and dissemination strategy plan is to raise awareness and make knowledge available in a suitable format to enterprises in the entire supply chain and final consumers to increase the adoption of AGILEHAND Solutions. To reach this goal, the project has defined the objectives, the targets and the communication tools.

Objectives

There are three main objectives:

- The promotion of AGILEHAND project, objectives and results to the different identified target audiences
- Raising awareness of AGILEHAND activities **among different stakeholders**
- Establishing potential collaborations and engagement with other European initiatives, especially other *Made In Europe* projects

Targets

In accordance with the objectives, the target groups have been defined as follows:

- Industrial audience: every manufacturing company that has practical applicability for AGILEHAND results.
- Partnerships and DIHs, including other European actions: EU funded projects, Made In Europe, EFFRA, Digital Innovations Hubs and networks of DIHs (e.g. MIDIH, DIH4CPS, etc.).
- Scientific & Research audience: organisations that are interested in AGILEHAND research approach and scientific outcomes.
- Certification/standardisation agents and bodies e.g. CEN-CENELEC/TCs, ISO-IEC/TCs, IEEE Committees or platforms like the Platform Industrie 4.0.
- Japan and International, a special plan will be implemented to reach japanese audiences taking into account different writings and cultures.
- Social Sciences community, mainly considering Human Resources Managers who are responsible for supporting digitalization processes and managing its impacts on organizational culture and climate, as well on human resources structure and skills transition.
- Workers and Unions, a specific attention will be given to the workforce in place and future showing benefits by improving working conditions and providing a dedicated programme to reinforce trust and acceptance towards AGILEHAND technologies.
- General audience: wide range of stakeholders interested in project activities and results, from individuals to organisations, public and society.

Dissemination Plan

All Partners are required to contribute to the dissemination, they each have their preferred targets:

- User Enterprises: among their final consumers if retailers and among their supply chain partners if manufacturers.
- Implementers: among the software community and their customers (industrial companies).
- Technology Providers: among the software community and their customers (industrial companies).
- Research Institutions: through scientific publications and presentations in workshops and conferences.
- Specialist Companies: through standardisation bodies and innovation activities.

As a whole the consortium needs to follow the global strategy and to better monitor and encourage the partners in their dissemination activities, a shared document has been made available in the AGILEHAND SharePoint (DISSEMINATION activities.xlsx (sharepoint.com)). Moreover, an AGILEHAND Zenodo Community has been developed. This is the link of AGILEHAND Zenodo Community:

<https://zenodo.org/communities/agilehand?q=&l=list&p=1&s=10&sort=newest>

Each partner can add their upcoming activities or suggest new one allowing for a good visibility of the overall actions.

A short report of the dissemination action will be required to better assess the impact (audience type and numbers, etc.).

A meeting of the WP8 will be organized every 2 months to follow the different actions and activities.

Tools

The dissemination tools are relevant if they give visibility and awareness to the project. The following tools are planned:

Tools	Targets	Status
Project Logo, Project presentation templates,	All Scientific & Research Audience	In use
Project Website	All	In use
AGILEHAND Sharepoint (internal)	Partners	In use
Social Channels	General Audience Other EU initiatives	In use
Community building activities	Industrial audience Scientific & Research Audience Other EU Actions	In place

Videos	General Audience	Planned for M12
Newsletters	General Audience	In use
Traditional Communication Material	General Audience	In use, more to be added in the next period
Webinars	Industrial Audience General Audience Other EU Actions	TBD
Workshops	Industrial Audience General Audience Other EU Actions	In place
Presentations, conferences, etc.	Scientific & Research Audience	In Place
Publications	Scientific & Research Audience Standardisation bodies Industrial Audience	TBA
Collaborations	Other EU Actions	In place, more to be developed in Y2
Standards	Standardisation bodies Industrial Audience	In place

Table 1. Communication & Dissemination tools

Here is a further description of the tools already in use:

1.Identity

The **AGILEHAND** brand is intended to abbreviate the project name "Smart grading, handling, and packaging solutions for soft and deformable products in agile and reconfigurable lines" while still expressing what the project means and stands for and with an easy-to-remember register. Regardless of the intended goal or the channel employed, the project name must always be spelt appropriately for consistent branding.

The visual identity of **AGILEHAND** is mainly based on its main logo (coloured) and the project colours, which are to be used in documents, presentations, marketing materials, website, social networks, etc.

Figure 1. AGILEHAND main logo



Regarding the typography, the typeface used by the AGILEHAND project in its written communications is PT Sans (<https://fonts.google.com/specimen/PT+Sans>). As to templates, the project manages templates for deliverables, presentations and internal review forms. They all are uploaded to the AGILEHAND SharePoint. Figures 2 and 3 show images to get a bird's eye view of its general appearance.

Figure 2. AGILEHAND deliverables template



AGILEHAND

DX.X – DELIVERABLE NAME

WPx – WP Name

AGILEHAND

Document Information

GRANT AGREEMENT NUMBER	101092043	ACRONYM	AGILEHAND
FULL TITLE	Smart grading, handling, and packaging solutions for soft and deformable products in agile and reconfigurable lines		
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PROJECT URL	---		
DELIVERABLE	DXx – Deliverable name		
WORK PACKAGE	WPx – Work package name		
DATE OF DELIVERY	CONTRACTUAL	---	ACTUAL
NATURE	Report	DISSEMINATION LEVEL	Public/Sensitive
LEAD BENEFICIARY	UNIVPM		
RESPONSIBLE AUTHOR	-		
CONTRIBUTORS FROM	---		
TARGET AUDIENCE	This document is xxx. Its relationship to other documents is as follows: - DXx Title: xxx		
DELIVERABLE CONTEXT/DEPENDENCIES	OR This document has no preceding documents or further iterations		
EXTERNAL ANNEXES/SUPPORTING DOCUMENTS	None (or list the annexes that you're adding to this document)		
READING NOTES	None (or list the reading notes you're adding to this document)		
ABSTRACT			

AGILEHAND

Document History

VERSION	ISSUE DATE	STAGE	DESCRIPTION	CONTRIBUTOR

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AGILEHAND has received the funding from the European Union under grant agreement No 101092043

AGILEHAND DX.X – Deliverable name

1

AGILEHAND DX.X – Deliverable name

2

Figure 3. Aspect of the AGILEHAND PowerPoint template



2.The project website

The project website <https://www.agilehand.eu/> is up and running.

Figure 4. AGILEHAND website



AGILEHAND

Introduction

Market evolution and the rapid change of consumers' needs have highlighted the imminent disappearance of many mass production methods in favor of new solutions that are able to quickly respond to spontaneous needs and trends. It is necessary for workpiece handling and, more generally, in-bound logistics systems to become easily adaptable to different goods, more quickly and efficiently.

Europe plays an important role in the sector of conveyor system, covering 23% of the global market. **Food industry** is expected to be a leading segment. It is used to enhance food **quality, productivity, operational efficiencies, and safety**. The material handling robotics market value is rocketing up. A growing number of manufacturers are implementing more affordable, versatile and agile robots to optimize operations, like **assembly, picking, packing, palletizing, part transfer** and **machine tending**.

It is intended as the main information source for all people and organisations interested in AGILEHAND. The website will include all the information regarding the project (consortium, pilots, news, events, dissemination material, public deliverables, etc). It therefore needs to be continuously updated.

3.Social Media channels

Three social media accounts have been set up:

- LinkedIn : <https://www.linkedin.com/company/agilehand-project/>
- Twitter: <https://twitter.com/AgileHand>
- Youtube: [@agilehandproject](https://www.youtube.com/@agilehandproject)
- Facebook : <https://www.facebook.com/AgileHand-Project-103757465944502>

To ensure participation from the whole consortium, a shared social media calendar was created where each Partner is asked to contribute with a tweet.

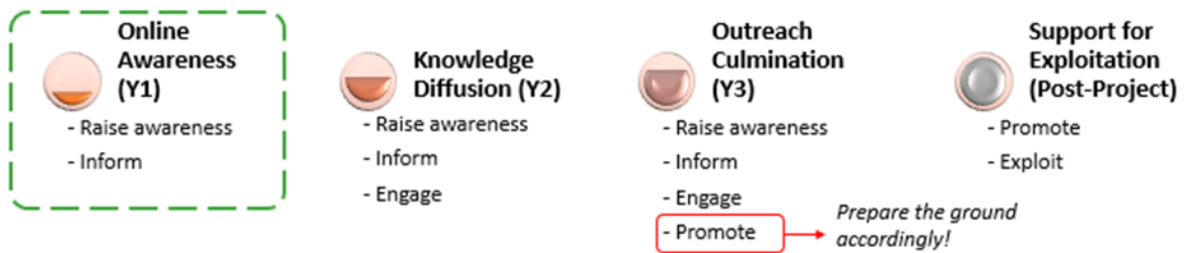
[SOCIAL CALENDAR - AGILEHAND.xlsx \(sharepoint.com\)](#)

Figure 5. Example of post on LinkedIn for DMIS event



The plan for the social media is represented in the figure below:

Figure 6. Social media activity global plan & Timeline



The goal for the first year is to prepare solid accounts, to be able to engage as soon as the first results will appear. The primary goal is to increase public knowledge of the initiative as a whole using the dissemination tools previously described. The goal of including the pertinent stakeholders will define the second year with defined needs and challenges, with early findings to share, and with numerous demonstrative activities, like webinars or workshops. After networking becomes more prominent, the connection to EU activities will present fresh chances for idea sharing and comparing approaches to dissemination. In the third year, the various outcomes will be promoted. Together with the partners, specific distribution plans will be created that are mostly based on the outcomes of the technological solutions, with a focus on integrating the solutions into the creation of pilots for validation. Lastly, in order to facilitate the utilisation of the findings following the project's conclusion, dissemination and communication efforts will be crucial.

4. Newsletter

A first newsletter was disseminated at M6 and one at M12.

They are created with the same software as the website (WordPress) to enable the project to easily reach its newsletter subscribers.

The first Newsletter is a general presentation of the project with a first report on participation to events. The second one presents the Pilots, and the future ones will present the different achievements of the project.

5. Posters & Roll-up

A first version of the roll-up was created and is currently used in different events.

This first iteration is a very broad presentation of the project and updated versions will be developed in the future.

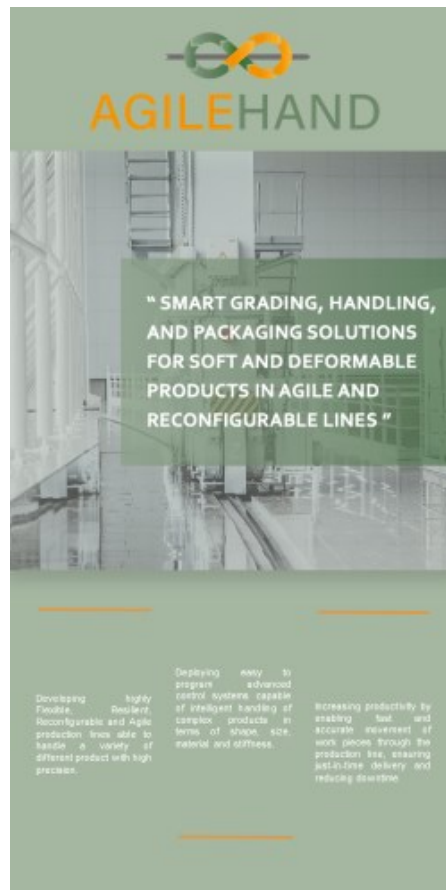
Figure 7. AGILEHAND Roll-up @ the DMIS (April 2023)



6. Brochure & flyers

The first flyer presenting the project is available. A trifold will follow focusing on the pilots.

Figure 8. AGILEHAND Flyer



7.Workshops

Several workshops are planned during the time of the project. One has already taken place in Valencia at the DMIS - Digital Manufacturing Industrial Summit (Valencia, Spain, from 25/04/2023 to 27/04/2023). The AGILEHAND project was one of the co-organizers.

Figure 9. AGILEHAND workshop at DMIS



Figure 10. Workshop of AGILEHAND Project inside the DMIS 2023 agenda.

Process Optimisation: Solutions for Manufacturers

Tuesday, 25th April 2023 14:00 - *Assembly Hall Yellow Cube*

Moderator: Giulio Marcucci - *Researcher at Università Politecnica delle Marche*

The session focuses on how manufacturers can improve their processes to increase efficiency and reduce costs. The session will present a range of tools and techniques that can be used to optimize manufacturing processes, including but not limited to lean manufacturing principles, Six Sigma, and process mapping.

- Smart Autonomous Infrastructure Monitoring for Efficient Detection of Machine Malfunctions

Speaker: Spyridon Paraschos - *Research Associate at CERTH*

- Process monitoring for Zero-Defect manufacturing: from sensors to AI

Speaker: Xavier Beudaert - *Senior Researcher at IDEKO*

- Smart grading, handling, and packaging solutions for soft and deformable products in agile and reconfigurable lines

Speaker: Giulio Marcucci - *Researcher at Università Politecnica delle Marche*

- Soft Sensors as a Decision Support Tool for Minimizing Defects

Speaker: Christina Tsita - *Research Associate at CERTH*

- Toward Zero Defect Manufacturing: Agile optimization teams

Speaker: Alfredo Gimenez - *Innovation Director at Factor Ingeniería s.l.*

Part of the sessions will be organized by the project, leveraging the **AGILEHAND** Community Platform established on the FundingBox Community Platform. The rest of the sessions will be carried out within conferences, congresses or other events of a technical or scientific nature as discussed in the previous section. Several of the project partners provided speakers and session moderators but, additionally, on the 27th of April a workshop called "Process Optimization: Solutions for Manufacturers" was held in the Assembly Hall Yellow Cube of the building complex called Ciudad Politécnica de la Innovación of the Vera Campus of the Universitat Politècnica de València (UPV). In this session, held for more than two hours, a total of five presentations were given on various topics of interest (Figure 10).

Some workshops will be organized in 2024 during the 12th I-ESA2024 conference (<https://mklab.itl.gr/iesa2024/>) on April 10th-12th, 2024 in Crete and 30th ICE2024 Conference on June 24-28 in Madeira ([Madeira Digital Transformation Week \(digit-madeira.pt\)](https://digit-madeira.pt)).

1 Advisory Board workshops has been developed (September 7, 2023) and bi-annual workshops will be held.

8. Conferences

For the scientific community, Scientific and technical results will be published at workshops and conferences and in scientific journals in accordance with the principles of open access. Some examples of these conferences and events are: IEEE International Conference on Industrial Informatics, International Conference on Interoperability for Enterprise Systems and Applications, IEEE Conference on Decision and Control. All publications produced under the umbrella of AGILEHAND must mention the funding of the project by the Horizon Europe Programme. This should be done in the acknowledgements section using the following text: "The research leading to these results received funding from the European Union Horizon Europe Programme with grant

agreement No 101092043, project AGILEHAND (Smart Grading, Handling and Packaging Solutions for Soft and Deformable Products in Agile and Reconfigurable Lines).

In particular:

- Participation in the Workshop for European Robotics Forum 2023, from 14 – 16 March, 2023, Odense, Denmark, Human-Robot Collaboration & AI in challenging and emerging industrial applications. Presentation of the paper titled “How can HRC+AI solutions be trusted in the soft-fruit industry” by FBK (chippendale@fbk.eu). Audience: Industry + Academic.
- APQ Journal "Qualidade", 1st quarter of 2023, article about Agilehand project, at page 26 by APQ (eduardo.luis.morgado@gmail.com).
- The second event has been held in Brussels during the INTEROP VLab Geeneral Assembly week, June 28th, Brussels. Audience: Industry + Academic. During this event a Presentation of the Project + the use-case Santorsola have been proposed.
- Partecipation in the 35th European Modeling & Simulation Symposium - 20th International Multidisciplinary Modeling & Simulation Multiconference, on 18 September 2023, Athens. Presentation of the article "Artificial Neural Networks approach for Digital Twin modelling of an ejector", authors: Ilaria Pietrangeli, Giovanni Mazzuto, Filippo Emanuele Ciarapica, Maurizio Bevilacqua, UNIVPM. Thanks to this article, the authors (UNIVPM) were honoured to receive "The Gianni Cantice Research Award for Gifted Simulation Students". Audience: Industry + Academic.

9. Scientific papers

A scientific article has been published to date:

- Journal of King Saud University - Computer and Information Sciences, 15-Nov-23. This paper analyses recent trends in digital twins, tracing their evolution from traditional concepts and applications to a nuanced digital triplet hierarchy that incorporates human intuition, knowledge, and creativity within cyberspace, UNIVPM, scientific article, <https://doi.org/10.1016/j.jksuci.2023.101846>. This paper is the scientific basis for the development of Task 6.2 of AGILEHAND project.

2.2. Assessment of the impact

It is crucial to be able to evaluate the dissemination activities. It enables the project to set goals and to be able to redirect our efforts in case of issues. I-VLab will closely monitor the activities. The DOA already defined the following KPIs to be achieved:

How	Action	Target KPI
Publications in Industrial Specialised Press	Publication to industrial journals and magazines	> 6 publications
Presentations at Industrial Conferences	Attendance and speaking slots	5 speaker slots + 10 conferences + 4 project exhibitions

Publication of technical and scientific papers	Publication in scientific conferences and prestigious journals	> 10 scientific papers
Website	100 updates and Search Engine Optimisation	50% yearly growth in website traffic yearly
Social Media	Sharing and Liking	150 new followers/year + 1 post/week + 3.000-5.000 impressions/year
eNewsletters	Regular eNewsletter	8 newsletters
Materials	To be distributed at project presentations / Events	1 brochure + 2 movies / podcasts + Posters per pilot + 2 flyers
Education programme	Courses for workers	2 MOOCs
AGILEHAND online Community	Setting up the community site, sharing updates about AGILEHAND platform.	300 community members
Webinars and Q&A Sessions	Will be organised on AGILEHAND Community Platform every 6 months	5 webinars/Q&A sessions within the project duration
Connection with the DIHs	Mapping and contacting the most important DIHs related to AGILEHAND topic	20 relevant DIHs engaged and added to the community
Stakeholders	Mapping and aggregating the stakeholders into a database for the e-newsletter	100 relevant stakeholders in EU mapped and contacted
Supporting partners	A set of partners who are spreading the word about AGILEHAND in their specialised networks.	30 entities registered in community as Supportive Partners and spreading the word about AGILEHAND project
EU networks	Dissemination through other relevant industry and EU clusters	10 EU Networks or projects invited to the community for cross-dissemination purpose
Workshops	AGILEHAND hosted dissemination workshops	2 workshops / 20-50 participants each + 4 workshops with Advisory Board (AB)

Table 2. Communication & Dissemination metrics

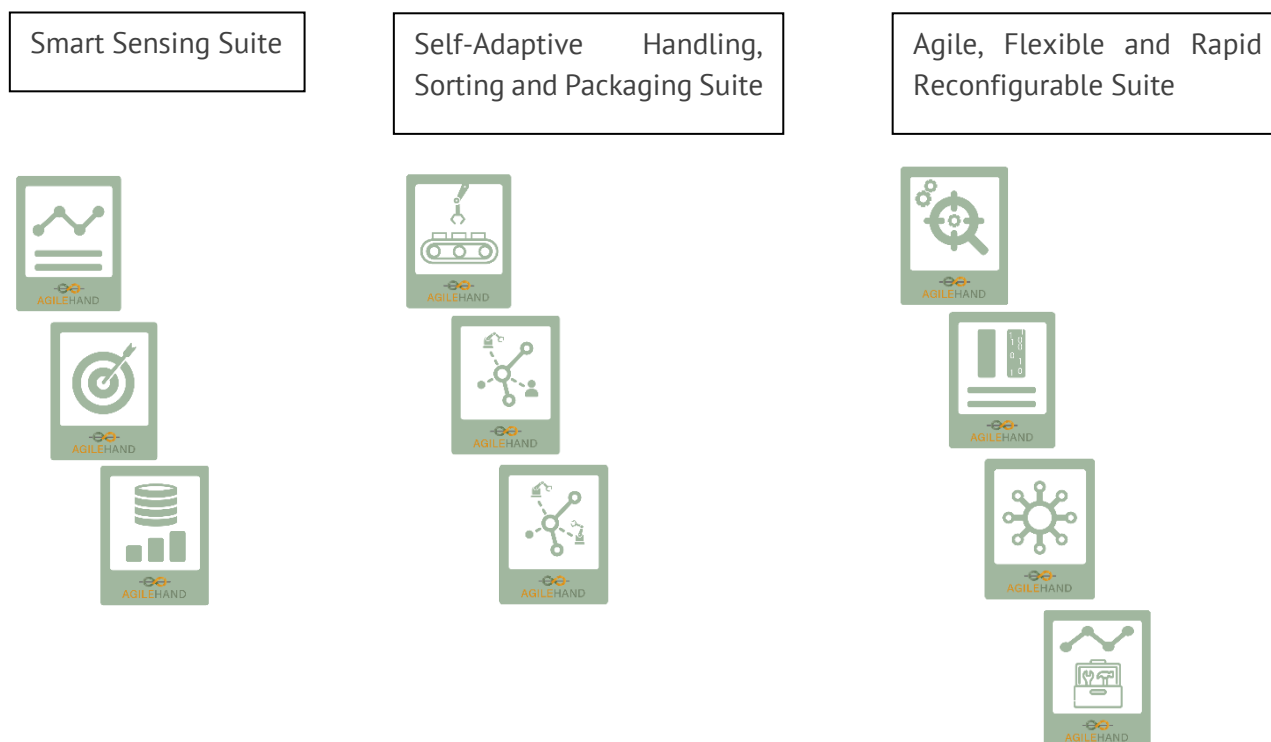
First Results

Regarding Communication and dissemination activities, the consortium has done a great work, and most of the tools were ready early enough in the project to get familiar smoothly with them.

The status of the tools and KPIs are reported in the following tables.

In accordance with the graphics chart of the project, dedicated icons were designed by IVLAB to illustrate all the technical solutions (see **Figure 11**). It participates to the visual identity of AGILEHAND.

Figure 11. Icons of the AGILEHAND solutions



How	Action	Target KPI	STATUS
Logo and graphics element	Identity of the project	1 logo, icons for solution	Logo Icons
Materials	To be distributed at project presentations / events	1 brochure + 2 movies / podcasts + Posters per pilot + 2 flyers	1 Flyer 1 movie 1 Roll-up

Table 3. C&D metrics status_1

The project has a strong online presence with a public website and active social media accounts. The KPIs are in line with what is expected.

How	Action	Target KPI	STATUS
Website	100 updates and Search Engine Optimisation	50% yearly growth in website traffic yearly	496 sessions 895 page views
Social Media	Sharing and Liking	150 new followers/year + 1 post/week + 3.000-5.000 impressions/year	223 followers 39 posts 4856 impressions
AGILEHAND online community	Setting up the community site,	300 community members	Please see Section 3 of this deliverable

	sharing updates about AGILEHAND platform.		
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Table 4. C&D metrics status_2

Regarding the dissemination, the results are only beginning. Several papers are expected in 2024 and the number of publications should exceed the initial targets showing the great quality of the scientific work developed.

How	Action	Target KPI	STATUS
Publications in Industrial Specialised Press	Publication to industrial journals and magazines	> 6 publications	1 publication
Publication of technical and scientific papers	Publication in scientific conferences and prestigious journals	> 10 scientific papers	3 articles
eNewsletters	Regular eNewsletter	8 newsletters	2 newsletters
Presentations at Industrial Conferences	Attendance and speaking slots	5 speaker slots + 10 conferences + 4 project exhibitions	3 speaker slots 4 conferences 1 project exhibition

Table 5. C&D metrics status_3

For the workshops, one was organized in collaboration with other EU projects in the frame of the DMIS. Two other ones are planned for 2024, one during the I-ESA conference and the other one during the ICE conference.

How	Action	Target KPI	STATUS
Education programme	Courses for workers	2 MOOCs	Planned the structure of the 2 MOOCs
Webinars and Q&A sessions	Will be organised on AGILEHAND Community Platform every 6 months	5 webinars/Q&A sessions within the project duration	First one planned in February 2024
Workshops	AGILEHAND hosted dissemination workshops	2 workshops / 20-50 participants each + 4 workshops with Advisory Board (AB)	1 workshop (during DMIS) + 1 workshop with AB

Table 6. C&D metrics status_4

Regarding collaborations and networking, these activities have just begun. Two collaborations are running, one with TRACEBOT and one with the “sister projects” HARTU, SMARTHANDLE and MASTERLY. Common activities are ongoing (cross links, common dissemination website, newsletter communities...).

Figure 12. Sister projects cluster meeting



How	Action	Target KPI	STATUS
Connection with the DIHs	Mapping and contacting the most important DIHs related to AGILEHAND topic	20 relevant DIHs engaged and added to the community	20 mapped (not contacted yet)
Stakeholders	Mapping and aggregating the stakeholders into a database for the e-newsletter	100 relevant stakeholders in EU mapped and contacted	86
Supporting partners	A set of partners who are spreading the word about AGILEHAND in their specialised networks.	30 entities registered in community as Supportive Partners and spreading the word about AGILEHAND project	30 Mapped 4 contacted
EU networks	Dissemination through other relevant industry and EU clusters	10 EU Networks or projects invited to the community for cross-dissemination purpose	4 EU projects

Table 7. C&D metrics status_5

3. Community Building

3.1. Community Set-Up

The foundation of the AGILEHAND Community began with the creation of a dedicated space within the Smart Manufacturing Community, in the FundingBox Platform. This platform serves as the primary hub for our community members to interact, collaborate, and share their knowledge. Integrating the AGILEHAND Community into the broader Smart Manufacturing Community is a strategic move that brings significant benefits. With over 2400 members, the Smart Manufacturing Community serves as a powerful platform for information exchange, collaboration, and industry networking. By being part of this extensive network, AGILEHAND gains access to a diverse pool of expertise, potential partnerships, and shared resources. It enhances visibility and credibility within the industry, positioning AGILEHAND as an active contributor to the collective advancement of manufacturing technologies.

The community set-up phase involved the following key activities:

- **Platform Selection:** We selected the FundingBox Platform as the hosting environment for the AGILEHAND Community, leveraging its capabilities for community management and engagement.
- **Participant Information:** We presented the community to all the AGILEHAND partners in order to collaborate and engage with the community.

In the figure below, it's shown where AGILEHAND project is located within the Smart Manufacturing Community (2402 interactive users).

Figure 13. AGILEHAND within Smart Manufacturing Community

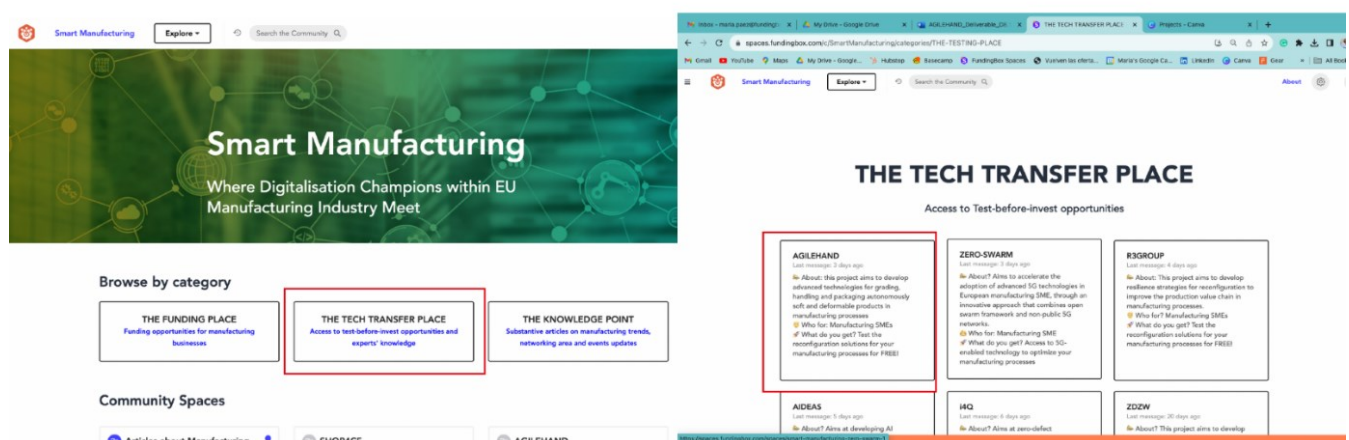
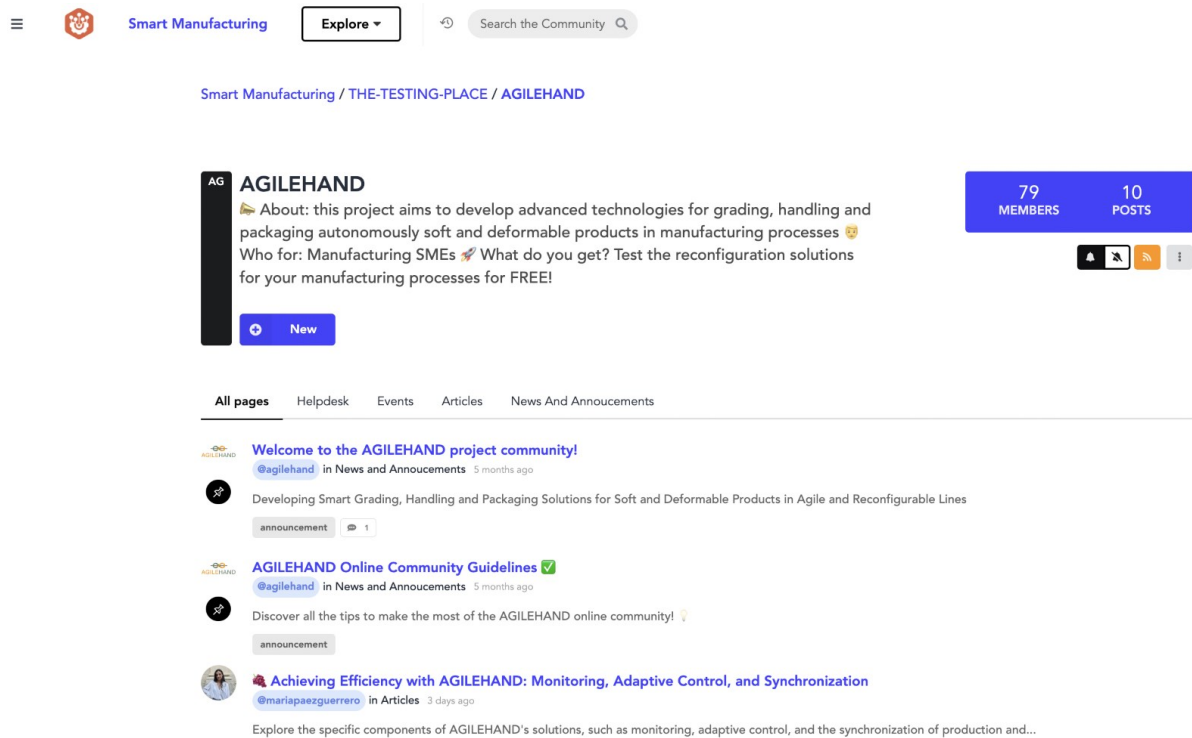


Figure 14. AGILEHAND Community



3.2. Community Building Objectives

The objectives of the AGILEHAND Community-building effort are as follows:

- **Community Growth:** To achieve a significant increase in the number of active community members, with a target of approximately 300 community Interacting Users.
- **Engagement and Interaction:** To foster meaningful interactions and engagement among community members, creating a vibrant and collaborative environment.
- **Knowledge Sharing:** To facilitate the sharing of knowledge and expertise among community members, enabling the dissemination of valuable information in the Advanced Manufacturing domain.
- **Supportive Partner Collaboration:** To establish partnerships with 30 entities within the Advanced Manufacturing ecosystem, enhancing the community's resources and reach.
- **Content Relevance:** To ensure that community content remains timely, informative, and valuable, meeting the evolving needs and interests of community members.
- **Data-Driven Decision Making:** To use data analytics to make informed decisions and optimize community-building strategies, ensuring effectiveness and adaptability.
- **Expert Involvement:** To attract industry experts and thought leaders to enrich the community's knowledge pool and provide valuable insights to members.

3.3. Community Growth Hacking Strategy

The success of the AGILEHAND Community relies on a well-defined growth hacking strategy. During this phase, we formulated a comprehensive strategy designed to attract, engage, and retain community members. Key activities included:

- Growth Hacking Plan: Development of a strategic roadmap outlining growth hacking tactics and objectives to achieve community expansion. The Annex 1 explains in detail the plan, with its different stages.
- Stakeholder Mapping: Identification and categorization of stakeholders within the Advanced Manufacturing domain, enabling us to target the right audience effectively. Annex 1 provides an overview of project mapped stakeholders.
- Supportive Partners Engagement: Outreach to potential supportive partners, fostering collaboration and cooperation to create a mutually beneficial ecosystem. Our goal was to engage approximately 30 entities as supportive partners.
- Content Strategy: Definition of a content strategy to guide community interactions, including content themes, topics, and posting schedules. The Annex 1 shows also the keyword research and the content calendar that the community is following.
- Digital Campaign: Launching a digital campaign aimed at promoting the AGILEHAND Community at the EU level within the Advanced Manufacturing ecosystem. Utilized activation techniques such as SEO (Search Engine Optimization), SMO (Social Media Optimization), email marketing, online advertising, retargeting, and lead magnets. Leveraged Owned Media (project social media channels), Paid Media (marketing automation services), and Shared Media (partner social media channels) for maximum exposure.

4. Advisory Board

In order to maximize the project's impact and exploitation, the Industrial Advisory Board (AB) activity's GA goal was to "direct the project with recommendations and neutral feedback and provide a fresh and relatively neutral view on the project and its developments." The fact that it will be consulted "with a strong focus on the applicability of AGILEHAND in the marketplace" is another crucial distinction. In light of this, the initial step of the activity was to create an AB that includes about all the abilities and information required to deliver high-caliber feedback. In order to do that, a list of qualities was presented at the project kick-off meeting, and it took the cooperation of all the partners to identify suitable members.

Five professionals were hired to be members of the AGILEHAND AB after making first contact through partners, sharing information and resolving doubts via emails and telcos. So, in late March (M3), a qualified board with complementary characteristics (market, technology, business, entrepreneurship, etc.) was officially approved. The group includes:

AB MEMBER	COMPANY AND ROLE	CURRICULUM
Gianluca Di Buo	CEO & Co-Founder of IDEA srl company	https://www.linkedin.com/in/gianluca-di-buo
Tal Soffer	Prof. University of Tel Aviv	https://www.linkedin.com/in/tal-soffer
Paulo Soares	Manager at RAISTONE company	https://univpm.sharepoint.com/AGILEHAND/PaulSoeiroProfile
Leonardo Postacchini	Board of Directors of EcoElpidiense	https://univpm.sharepoint.com/AGILEHAND/LeonardoPostacchini
João Paulo Carvalho	Manager VANGUARDA company	https://www.linkedin.com-paulo-carvalho

Table 8. AB members

The next stage was to define the operating protocol. On the one hand, access permissions were granted to members of AB and a specific folder for AB was created in the SharePoint where the project data is kept. Additionally, a specific mailing list was made for making direct contact with AB members. The first AB workshop was held online on September 7, 2023. The agenda of this online workshop was focused on the project objectives, the project partners and the first results already reached. It was agreed to hold biannual workshops to get periodic recommendations from AB members. Before this first AB workshop, all members of the AB have reviewed, approved, and signed the Service Agreement, which governs the AB's purpose, role, costs, confidentiality, and other related things. The project consortium had approved the Service Agreement before sharing it with the AB member for signature.

5. Standardization

The scope of this section is to provide information on standardisation and to report on the activities of T8.7 Standardisation. Standardisation activities within the variety of EU framework programmes are an excellent tool for filling the gap between standards and the innovative results required in today's global market. The joint participation of researchers, innovators and national standardisation bodies in this process promotes customer confidence in the solutions designed, the interoperability of the services created with solutions already on the market and consequently trust in the innovative results achieved. The analysis of existing standards and standardisation activities relevant to the project was the starting point for T8.7 and will be used as the basis for all further activities. Within T8.7, existing standards were researched according to the keywords identified for the project and subsequently evaluated by the partners based on their relevance to the technical WPs of the Agilehand project. This process ensures that all partners are informed about the existing standards and specifications and can use these documents to adapt their processes, products, etc. As a result, the outcomes of the project should be compatible with the state of the art, which is mainly represented by standards. The validation of this process will help the consortium to identify gaps and create new solutions which could be reported to the relevant Technical Committees (TC) and which could become standards, disseminating the results of Agilehand more widely. In addition to using existing standards in their work, projects can directly participate in standardisation activities. There are several ways to get involved. A project can contribute to ongoing standardisation activities (e.g. commenting on draft standards through a liaison with a Technical Committee) or initiate its own standardisation activities (e.g. developing a standardisation document). The search for standards (result of Task 8.7) shows the current state of the art and will be the basis for identifying gaps in the standards repository that could be filled by the results of the Agilehand project.

5.1 Standardisation: players and products

5.1.1 Overview

Agilehand aims to develop advanced technologies for autonomous sorting, handling, and packaging of soft and deformable products as a strategic tool to improve the flexibility, agility and reconfigurability of European manufacturing companies' production and logistics systems. When implementing new technologies or services into companies, it is important to consider key aspects such as privacy, safety, data security, usability, interoperability, and accessibility. These factors are crucial for ensuring a sustainable and lifelong implementation.. Standardisation activities are the best choice to support these efforts. Standardisation is the process of creating provisions for common and repeatable use in order to achieve the optimal degree of order in a given context, in relation to actual or potential problems. It is therefore an important strategic tool for agreeing terminology, methods, requirements, characteristics, etc. in a given field to make a product, process or service fit for purpose. In this way, standardisation can promote innovative outcomes by agreeing on common product requirements, such as interoperability, quality or safety, and providing guidelines on how to achieve them. Standardisation can support the creation of a generic language that is understandable to all, thus contributing to a common understanding.

This result is due to the participation of relevant stakeholders from different countries and different contexts, who combine their efforts to create a common understanding. The standardisation process produces a document that outlines regulations, recommendations, or attributes for activities or their outcomes. These documents and their application can have many positive aspects for stakeholders, including enhancing product safety, encouraging economies of scale, enabling manufacturers to comply with European legislation, promoting product and service interoperability, and facilitating the uptake of innovation in the marketplace. In addition to that standardisation can promote competition, reduce trade barriers, support environmental sustainability, reflect the results of research and development projects and promote common understanding.

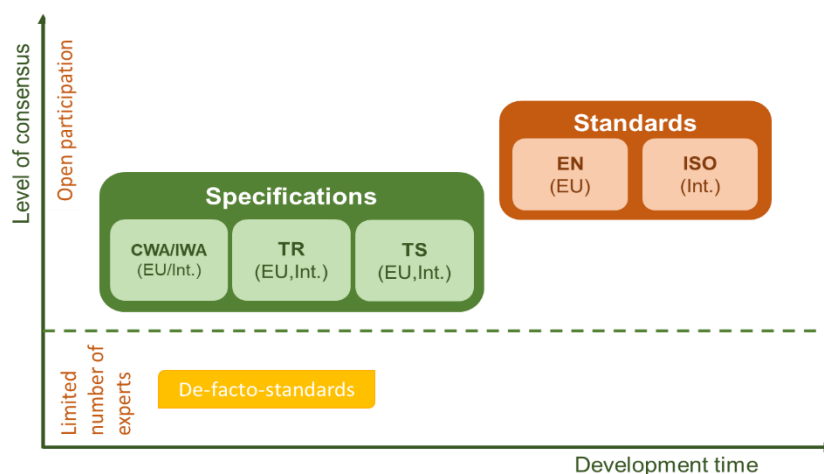
The benefits of these documents and their application vary and depend on the different types of documents.

5.1.2 Types of standardisation documents

General

As previously mentioned, standardisation results in a technical document that defines requirements for products, services or processes. However, there are differences in their development process and purpose, which are described below. The main difference is based on the level of consensus reached during the development of the document.

Figure 15. Types of standardization documents in relation to their level of consensus and development time



De-facto-standard

A characteristic of de facto standards is that these documents are usually developed by a limited number of experts, which distinguishes them from specifications and standards. Not all interested parties are involved in the development of de facto standards. An example of such a document is an industry-specific or company standard, produced by one or more companies. A de facto standard may meet the definition of a standard in that procedures etc. can be defined, but these documents are often produced privately for a particular group, are not freely available and are

not developed for general use. De-facto standards are not developed under the auspices of standards bodies. Since dissemination and exploitation play an important role in the use of results for an R&D project, de-facto standards are not an objective of the standardisation plan.

- **Specifications**

Specifications can be referred to as normative or informative documents. There are three types of specification:

- **Workshop Agreement**

A Workshop Agreement¹ is a document agreed upon by the participants of a temporary workshop, which is designed to meet an immediate need and form the basis for future standardisation activities. The workshop is open to the direct participation of anyone with an interest in its development. Because of the direct involvement of stakeholders and its rapid development (10-12 months), the Workshop Agreement is considered particularly attractive for research projects that need to deliver results within the project timeframe. Since the Workshop Agreement is developed outside the normal Technical Committee structure, it does not have the status of a standard and must not conflict with any standard.

- **Technical Report**

Technical Reports (TR) are informal documents that are developed and approved by a Technical Committee. A TR provides information on technical content and standardisation work.

- **Technical Specification**

A Technical Specification (TS) is considered a normative document and is developed and approved by a Technical Committee. A TS at European level cannot conflict with a European Standard, but it can conflict with national standards.

- **Standard**

A standard is defined as a document, established by consensus and approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context. Consensus in this case refers to the general agreement of all interested parties, characterised by the absence of sustained opposition to key content. The main purpose of consensus is to consider the opinions of all involved parties and address any opposing arguments.

Standards can be classified² according to their focus or topic of interest:

Foundational standard	standard that has a wide-ranging coverage or contains general provisions for one particular field.
Terminology standard	standard that is concerned with terms, usually accompanied by their definitions, and sometimes by explanatory notes, illustrations, examples, etc.

¹ CEN Guide 29 <https://boss.cen.eu/media/Guides/CEN-CLC/cenclcguid29.pdf>

² EN 45020:2006 Standardization and related activities - General

Testing standard	standard that is concerned with testing methods, sometimes supplemented with other provisions related to testing, such as sampling, use of statistical methods, sequence of tests.
Product standard	standard that specifies requirements to be fulfilled by a product or a group of products, to establish its fitness of purpose.
Process standard	standard that specifies requirements to be fulfilled by a process, to establish its fitness of purpose.
Service standard	standard that specifies requirements to be fulfilled by a service to establish its fitness of purpose.
Interface standard	standard that specifies requirements concerned with the compatibility of products or systems at their points of interconnection.
Standard on data to be provided	standard that contains a list of characteristics for which values or other data are to be stated for specifying the product, process, or service.

Table 9. Standards classification

Standardisation bodies, which are responsible for the development and acceptance of Standards within their Technical Committees, exist at national, European and international levels as shown in figure 16.

Figure 16. Overview of the organizational structure of the standards body



- **National Standardisation Body**

Broad participation is one of the principles of standardisation work. All interested parties must have an equal opportunity to participate in standardisation activities by submitting contributions and/or opinions. National standards are developed in committees composed of experts representing interested parties. Each TC has responsibility for a particular area of activity and

coordinates the relevant standards activities within this area. To represent their interests in standardisation work and to benefit from networking and information, interested stakeholders can send their experts to the national TCs.

▪ European Standardisation Bodies

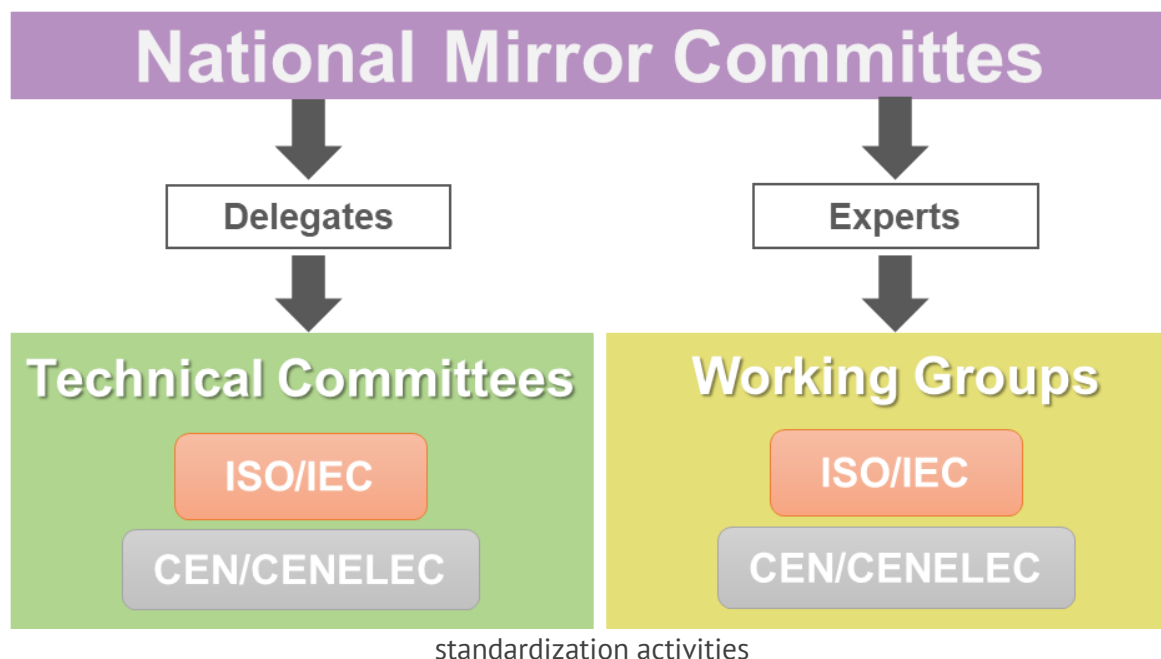
The primary aim of standardisation at the European level is to harmonise the national standards of the European Union (EU) Member States. This involves adopting international standards uniformly and creating European standards.

At the European level, standards are developed by:

- the European Committee for Standardisation (CEN), which manages all the non-elektrotechnical activities;
- the European Committee for Electrotechnical Standardisation (CENELEC), which manages the electrotechnical activities;
- the European Telecommunications Standards Institute (ETSI), which manages the telecommunications activities.

CEN and CENELEC consist of the national standards organisations of the EU and EFTA (European Free Trade Association) countries, plus those applying for membership, bringing together 34 national standards bodies.

Figure 17. National Mirror Committees contributions to European and international



The delegation principle forms the foundation for participation in CEN and CENELEC standardisation work. The Technical Committees comprise representatives of CEN and CENELEC and are open to all CEN/CENELEC National Members. Each country is allowed to have only one joint delegation, and the representatives are appointed by the CEN/CENELEC members in that country. CEN/CENELEC national members must consider of all interests affected by the work when forming their delegations.

In contrast, ETSI members are directly companies, institutes and organisations, and the delegation principle does not apply. In order to participate in CEN/CENELEC standardisation activities at European level, the interested stakeholder must be a member of the National Mirror Committee (NMC) of the relevant TC.

To ensure that national interests are taken into account, national bodies are responsible for establishing NMCs, national structures set up to mirror the work of the European Technical Committees. The NMC brings stakeholders together to establish a national consensus position on the work and is responsible for collecting national stakeholder input and/or opinion on the specific area of the TC. Each European/international TC can define a specific substructure through the creation of Working Groups (WGs), who are responsible for the actual development of standards and are set up to undertake short-term tasks within the guidelines received from their parent committee. NMCs can nominate experts to the WGs (see Figure 17). In the NMCs, the work of the TC and the results achieved are discussed and, if requested, a national position/opinion is developed. In addition, the NMCs vote on the different stages of the standardisation process. Only when a draft European standard (prEN) has been agreed by a sufficiently large majority of the national standards organisations will it be adopted and published as a European standard (EN).

European standards must be automatically adopted by the EU Member States and the overlapping national standards withdrawn.

International Standardisation Bodies

At the International level, standards are developed by:

- a. ISO (International Organization for Standardization), responsible for all non-electrotechnical standardisation activities;
- b. IEC (International Electrotechnical Commission), responsible for the electrotechnical standardisation activities;
- c. ITU (International Telecommunication Union), responsible for the standardisation activities related to the telecommunications field at the international level.

As shown per the European context, the delegation principle is valid to the international activities as well (figure 17) and to be accepted and published as an International standard, the document produced by a TC must be endorsed by an appropriate majority of national standards bodies.

Unlike European standardisation rules, European National bodies are not obliged to adopt international standards. However, it is possible to adopt international standards at European and national level. As international standards are relevant for international trade and global stakeholders, conflicting standards should be avoided. In some cases, standards are developed in parallel at international and European level.

5.1.3 Standards development process

■ European and International standardisation phases

Submitting a standardisation proposal to a Technical Committee initiates the standard development process. A project for a new work item can be made within the scope of an existing Technical Committee or subcommittee by a national standards body or the secretariat of that Technical Committee or subcommittee. Ideas can also be presented by other Technical

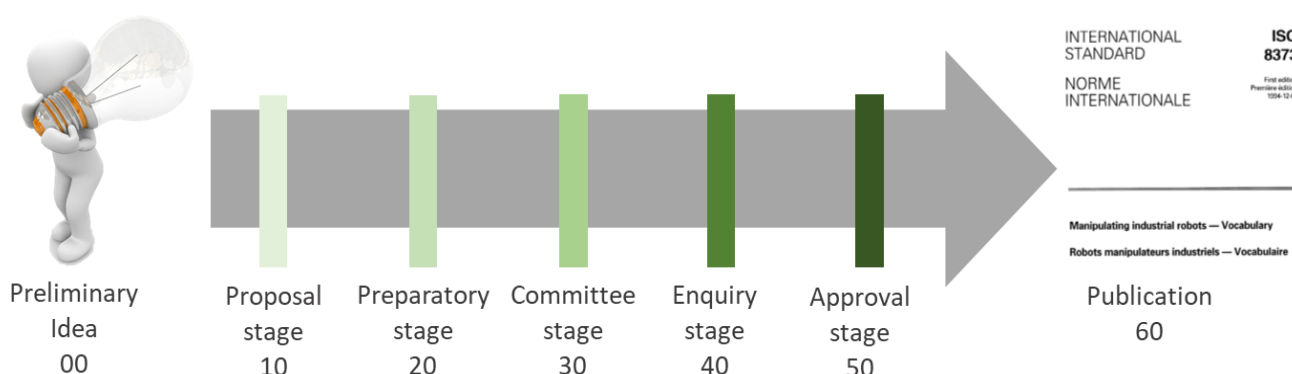
Committees and/or Subcommittees, organisations with Liaison A, the Technical Board, or one of its Advisory Groups.

The Technical Committee assesses the need for the standard and checks whether standardisation work is already in progress or whether standards are already in existence. The committee may then initiate the development of the new standard if there is interest within it and no standards on the same topic exist.

If the committee decides on the development of the document, the drafting phase starts within the relevant WG of the responsible TC. A new WG may be established within the TC if there is no WG where the topic fits thematically.

All standards have a numeric code which indicates the progress of the document . Figure 18 shows the different codes.

Figure 18. Standard development: stages codes



As shown in figure 18, the codes represents a maturity stage of the document under development:

- 00 - Indicates that a new idea has been proposed to the TC.
- 10 - The project has been registered as a new proposal.
- 20 - If the committee decides to proceed with the project, the proposal phase begins. The document (called a Working Draft - WD) is produced.
- 30 - A WD is the subject of discussion and comment only within the WG. If the WG approves the WD, then the next stage is started. At this stage the TC is involved and the document is called a CD (Committee Draft).
- 40 - If the CD is approved by the TC members, the next phase (40 enquiry) commences. The international document is registered as a DIS (Draft International Standard) and the European document as a prEN (draft European standard) at the end of this phase.
- 50 - The DIS/prEN is published for a public comment period. All comments received must be discussed in the WG. If technical changes are required, stage 50.00 Approval and registration as FDIS (International) or FprEN (European) is reached, otherwise the document goes directly to publication.
- 60 - Once approved, the document is then published by consensus.

In general the process of developing a standard (at international and/or European level) is time-consuming and incompatible with the limited duration of a funded research project such as

Agilehand, whereas the development of a European Workshop Agreement (CWA) is more appropriate.

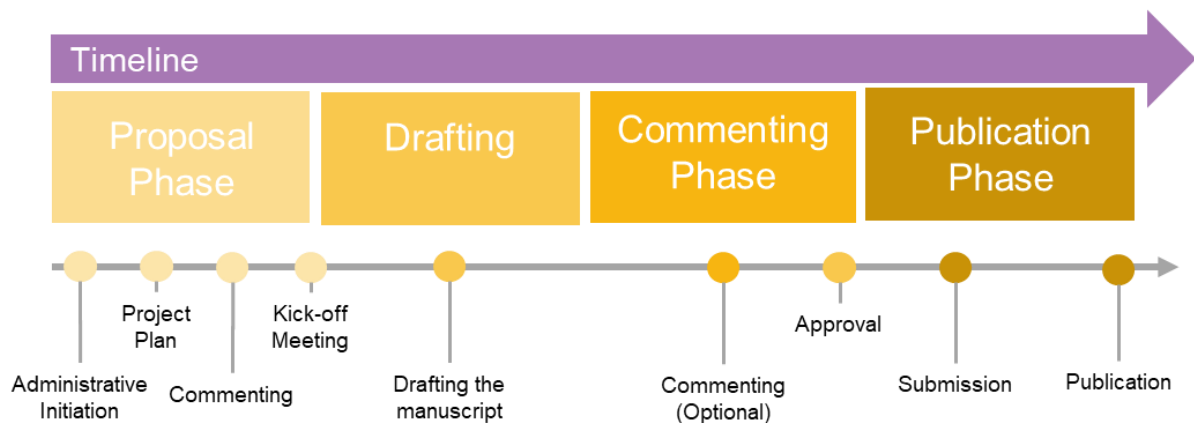
5.1.4 European Workshop Agreement (CWA) development process

The consensus required to publish a standard is not immediate and can take years. The development of Workshop Agreements takes less time and can be used as a rapid standardisation tool at European level for EU funded research projects. These Workshop Agreements can be initiated from within an R&D project and can be produced and published within the timeframe of the project.

The CWA is described as a document agreed by the participants of a workshop in the CEN/CENELEC Guide 29. A CWA can therefore be developed outside the normal CEN/CENELEC Technical Committee structure, as the participants do not have to be members of a Technical Committee. The workshop is open to anyone interested in the development of the document and the CWA is a publication of CEN.

Developing a CWA follows a specific process. The process can generally be divided into different phases, starting with the proposal phase, followed by a drafting phase in which the manuscript is written; a development phase in which the workshop members further discuss and improve the manuscript; an optional comments phase (mandatory if the CWA deals with safety aspects) in which the public can comment on the manuscript; and finally the publication phase. Figure 19 provides an overview of the main steps in the process.

Figure 19. CWA development process – main phases



The proposal phase is the starting point for the development of a CWA. Anyone can propose a new CWA to CEN or to the national standards body concerned. During this phase the formal initiation of the standardisation project takes place between the initiator of a proposed idea and the standardisation body. This will enable them to assess whether existing standards or standards activities exist on their subject which could support development of a CWA. A CWA must not conflict with any standards. If there is a gap in the standardisation that can be filled by the proposed idea, then the next step can be initiated.

With the help of a Standardisation Body, proposers must draw up a project plan (PP). The project plan is published for 30 days, as the aim of the project plan is to inform the public about the idea. It includes the background to the proposed PP, the motivation for establishing the WS, and information on the market and regulatory context, including lists of existing standards and related activities and documents. Information on those proposing and participating in the workshop, including a brief description of their background, is also included. The scope needs to be defined and should be very clear, outlining what is included and what is excluded. The CWA's target audience should be mentioned. The project plan and schedule should be presented, including the work already done. Other sections, usually completed by the proposed secretary of the workshop, relate to the structure of the workshop, resource requirements, related activities and liaisons. In addition, to ensure the possibility of direct participation by all interested parties, it is important to set a date and venue for the kick-off meeting.

The project plan will be sent to the CCMC (CEN-CENELEC Management Centre) together with the agenda of the kick-off meeting. It will be published by CEN for comments. During the kick-off meeting all contributions received will be discussed. The technical body will be consulted on the CWA proposal if the proposed topic touches a scope of a CEN Technical Committee.

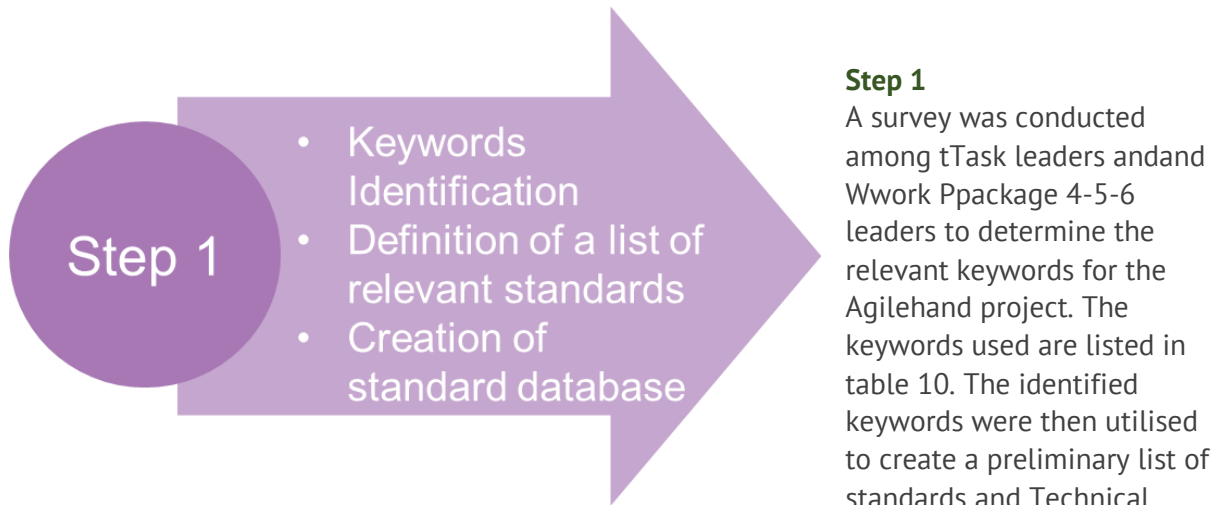
After the end of the first commenting period, the kick-off meeting takes place. The kick-off meeting will be the occasion for the appointment of the workshop chair and the approval of the project plan by the workshop participants. By approving the project plan, each participant in the kick-off meeting who voted to approve the project plan becomes a member of the workshop and the drafting phase begins. The development of the document is then the responsibility of the workshop committee. The draft CWA is published for 30 days if the workshop has decided during the initiation phase that a public consultation should take place. If the CWA includes safety issues, a public comment period of 60 days will be mandatory. If there is a public comment period, each comment must then be the subject of a workshop discussion. The document is published when agreement is reached on the technical content of the CWA.

5.2 Analysis of existing standards and standardization activities

5.2.1 Standard identification process

Knowing the state of the art in the fields of the project is crucial for an R&D project. This knowledge is the basis for the adaptation of the project's results, such as products, services, etc., to current needs.

The approach used to research the Standards was based on the following 3 steps:



Committees by using the ISO website. This list was then used to create a database of standards that was shared among the partners.

Keywords identified

Internet of Things (IoT)	Data Quality
Smart Manufacturing	Traceability
Digital Twin	Industrial data
Sensor Networks	Robotics
Industrial IoT	Machine learning (ML)
Big Data	Data Quality
Artificial Intelligence (AI)	Traceability

Table 10. Agilehand keywords

The preliminary desk research had as outcome a list of almost 1200 standards coming from 35 Technical Committees.

In order to ensure the applicability of the standardisation landscape, it was necessary to narrow down the list by considering only those standards that are closest to the objectives of the project. The final result has been a database composed by 130 standards which will be used as reference for the partners (see Annex 2.).

Step 2



In order to cover all the important aspects of the project, the standard database has been sent to all partners to collect their feedback. Each partner has been asked to evaluate the standards as follows:

0. Not relevant
1. Slightly relevant
2. Relevant
3. Usable for the project purposes

This exercise would provide an indication of the real needs of pilots' companies, while highlighting any gaps that may exist.

Step 3



An overview of the standardisation landscape related to Agilehand is provided by analysing the results of step 2. Based on this, it is possible to assess which Agilehand results have the potential to trigger new standardising activities. Moreover, the interoperability of project results with products already on the market is ensured by

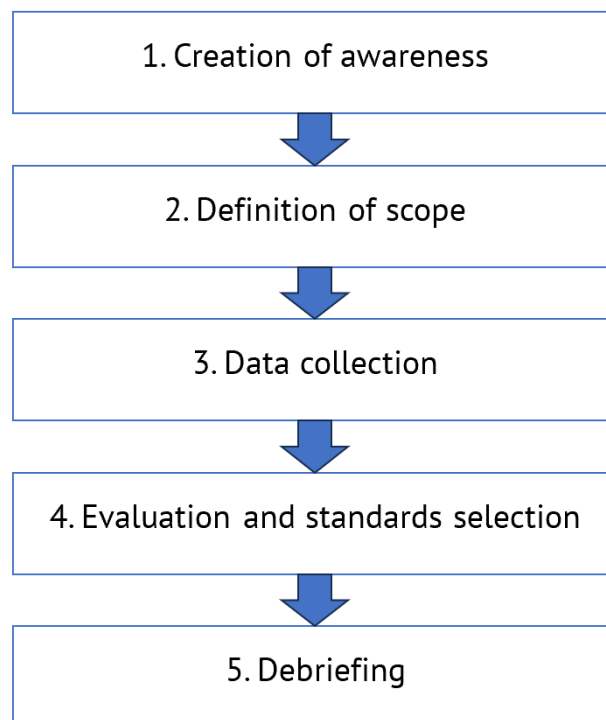
considering standardisation at an early stage of the project. The planned standardisation activities in WP8, e.g. by providing standardisation documents or input to ongoing standardisation activities, will support a sustainable transfer of project results to the market. In addition, standardisation is also an important tool for the support of the dissemination and exploitation of Agilehand results.

5.2.2 Activities description and next steps

In this context, one of the main objective of Task 8.7 is to spread the culture of using standardization in industrial contexts in order to demonstrate how Small and Medium Enterprises (SMEs) could benefit from the use of standards in their operations. According to the evidences emerged in the project, the difficulties faced by SMEs in acquiring a "standards" culture arises from the lack of awareness of standardized procedures and from the limited capabilities in sorting out and obtaining the relevant documents. Scientific divulgation and dissemination activities are pursued with the objective of elucidating the role of intermediary organizations in bridging the

gap between industry partners and the ‘standardization world’. After providing a preliminary information on finding relevant standards the projects’ industrial have been involved in the assessment of the standards which may be used as a reference for studying and implementing specific solutions across various use cases considered by the project. This process facilitates a full understanding of the cases and improves the acquisition of more reliable data. The standardization assessment approach adopted within Task 8.7 consists of five sequential phases (see figure 20), which aim at addressing the standard culture issue trying to enable the active involvement of the companies in specific situational contexts.

Figure 20. Proposed standardization maturity assessment approach



The initial phase involved raising awareness by presenting an overview of standardization processes related to digital transformation, with a focus on the industry 4.0 paradigm, including its technologies and use cases. This phase was executed through pilot visits and workshops with experts, with the aim of inspiring possibilities and highlighting the implications of standardization. The companies participating in the pilots presented an overview of their operational context, including their organizational structure, core processes, and key performance indicators.

A second step consisted in the definition of scope, with the aim of clarifying the role of the standardization approach in the specific contexts considered. With the aim of highlighting emerging standardisation needs, collaborative problem-scoping is operationalised through input from companies on their current and future development prospects. The establishment of a keyword-based approach allowed to have a formal reference model of the scope of the project, and to sort-out the relevant documents in the standards database. A brief set of criteria was established to conduct a data collection exercise as the third phase, with the objective of

obtaining information about the company within the defined assessment scope. Based on the information provided by the company and in accordance with the defined assessment scope, a self-assessment procedure was developed. This procedure involved the industrial partners to “score” their interest towards the topics selected by means of the 4-values scale provided below.

- 0 - not relevant;
- 1 - slightly relevant;
- 2 - relevant;
- 3 - usable for the project purposes.

This scoring step involved selected entities of the industry partners (e.g. managers of functional areas involved in the digital transformation within the assessment scope) designed after mapping the partners with the keywords based on the information previously gathered, as reported in the following table.

Keywords	Partners
Internet of Things (IoT)	UPM, KBZ, UNI, UPV, B2A
Smart Manufacturing	UPM, KBZ, UNI
Digital Twin	UPM
Sensor Networks	FBK, UNI, TAU
Industrial IoT	
Big Data	UPM, UNI
Artificial Intelligence (AI)	UPV, FBK, FHG, TAU, B2A
Data Quality	
Traceability	FHG, UPM, UPV, B2A
Industrial data	FBK, UNI, KBZ, B2A
Robotics	TAU, UPV, B2A
Machine learning (ML)	

Table 11. Agilehand keywords in relations to the evaluating partners

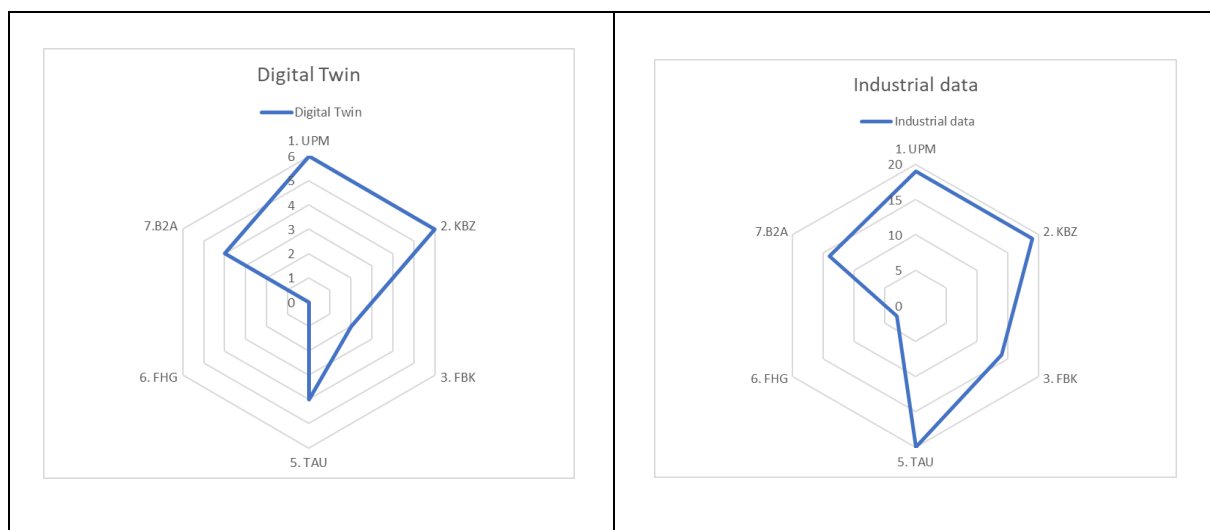
A subsequent stage in which the collected data - consisting of the scores of the company representatives - are grouped according to their relationship to the different maturity dimensions is then proposed for the evaluation and selection of standards. The results obtained from the rating exercise have been screened in order to obtain a initial rank of the most relevant standards. The preliminary conclusion The initial findings suggest that the most important standards are those that focus on Digital Twins, Industry Data, Internet of Things and Robotics, while those that focus on Traceability, AI and Sensor Network are of moderate importance. The overall ranking is reported in table 12.

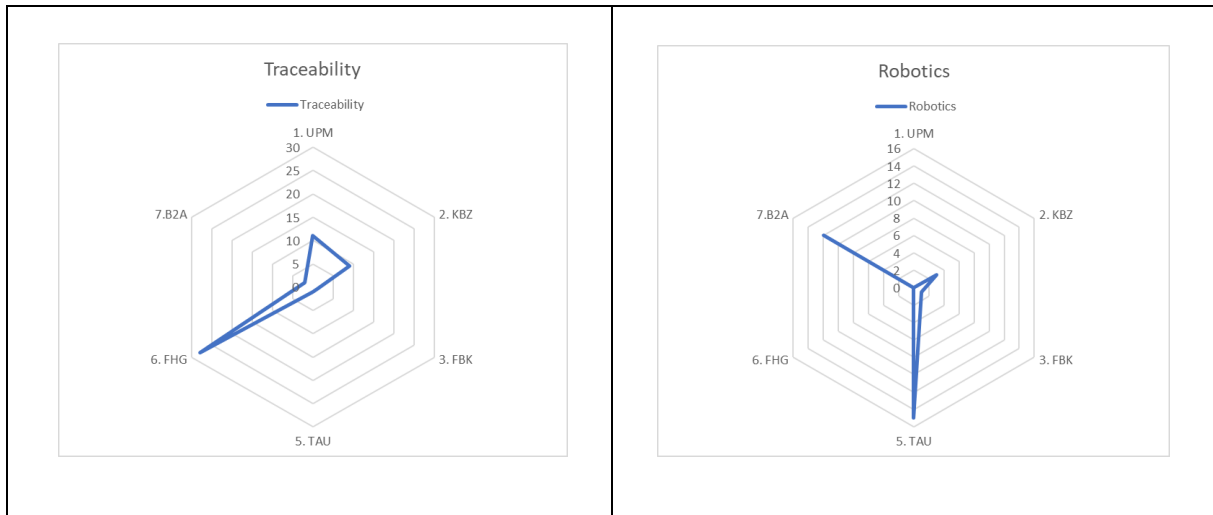
	#standards	Keywords	Partners
relevant	2	Digital Twin	UPM
	19	Industrial data	FBK, UNI, KBZ, B2A
	13	Internet of Things	UPM, KBZ, UNI, UPV, B2A
	7	Robotics	TAU, UPV, B2A
slightly relevant	13	Traceability	FHG, UPM, UPV, B2A
	37	Artificial Intelligence	UPV, FBK, FHG, TAU, B2A
	9	Sensor Network	FBK, UNI, TAU
not relevant	5	Data Quality	UPV, FBK, FHG
	3	Big Data	UPM, UNI

Table 12. Overall ranking

Once the standards have been ranked, the results of the rating process have been further analyzed in order to obtain deeper insights about the relevance of the standards evaluated. In particular, in order to better understand whether the relevance rank obtained is consequent to a strong interest by a limited number of partners or to a more smooth and shared vision, a radar graph has been generated for each thematic area (keyword) analyzed. The results of this analysis revealed how in some cases the relevance results from a shared interest from the industrial partners. For example, the radar graphs related to the keywords “Digital Twin” and “Industrial Data” show a much broader area compared e.g. to “Traceability” and “Robotics”. Despite the overall rank obtained, these charts reveal how the relevance of first two keywords results from a much more shared vision, compared to the two others, although a very strong interest from a limited number of industry partners is also taken into consideration.

Figure 21. Keywords relevance





For each cluster of dimensions, the next phase will determine the maturity stage by identifying where most of the statements regarding digital maturity fall and the emerging "key gaps" in order to raise awareness.

A debriefing session will be held to discuss the assessment outcome with company representatives. The session will follow the Project-Based Learning (PBL) model principle and will identify 'key gaps' and recommend short, medium, and long-term actions to establish a standardization culture.

5.3 Agilehand standard analysis first conclusions and next steps

- Standardisation is crucial in reducing the divide between the innovative results of an R&D project and the global market. This is particularly important within Research and Development projects under the different EU Framework Programmes. In a vast and intricate landscape where Small and Medium Enterprises (SMEs) struggle to make progress based solely on their own abilities and expertise, the implementation of standardisation in industrial settings becomes crucial for SMEs to appreciate the advantages of utilising standards in their operations.
- By establishing a constructive dialogue with intermediary organizations, industrial organizations can take advantage of experts facilitating their self-assessment of the maturity level towards the acquisition of a standardization culture.
- The approach of the rating process based on keywords allowed the mapping of the most relevant topics for the industrial partners of Agilehand, thus forming the basis for recognizing standardization gaps and creating a more open environment for standard usage.
- The future steps of the standardisation task will be:

- Establish a strong dialogue with partners developing solutions within the AgileHand project to promote the use of standards and identify gaps in standardisation.
- Study the relevant standardisation areas and establish liaisons with appropriate technical committees to participate in ongoing standardisation activities.
- If a new standardisation activity is required, explore the option of developing a CEN workshop agreement (CWA) as a preliminary step towards standardisation in the future.

6. Conclusion

This deliverable presents the overall status of the impact activities planned in the beginning of AGILEHAND project and carried out across the six tasks that comprises WP8 IMPACT: Communication, Dissemination, Exploitation and Standardisation.

In section 1 the list of the planned activities, their targeted audience, its future interactions and KPIs are presented. All partners involved in AGILEHAND consortium are actively contributing to the success of the dissemination and communication of project results. A report on the results achieved so far is presented, by means of table, to guarantee that each activity follows the same reporting template.

AGILEHAND project has managed to make available most of its communication and dissemination channels. This will be continued during the rest of the project. With technical solutions becoming available and their integration in the pilot's strategy, a second phase of dissemination will begin with an increased production of publications and scientific/technical outcomes engaging other stakeholders. The results will be promoted during the third year with special focus on partnerships involving the community, DIHs and EU projects.

The foundation of the AGILEHAND Community began with the creation of a dedicated space within the Smart Manufacturing Community. Moreover, the Growth Hacking Plan for the AGILEHAND Online Community has been developed.

A strong AB was established in the first months of the project, and the necessary steps were taken to start operating. The main related results are: 1) Advisory Board established: a consistent expert group, with comprehensive knowledge and experience on market, technology, business, entrepreneurship, European funding programs and so on; 2) Operating protocol and facilities (SharePoint, etc.) set up; 3) Service Agreement drawn up and signed; 4) Iteration plan defined (bi-annual workshops); 5) First Workshop held on September 7, 2023.

Generally, the present deliverable provides an overview of the standardisation landscape related to AGILEHAND and therefore summarizes one section of the results in Task 8.7 - Standardisation. The knowledge about existing standards is important for the project since it enables the development of solutions which are compliant with the latest standards and further paves the way for upcoming liaison activities with relevant technical committees. Therefore, a standards database in form of a dashboard was created, which includes 130 standards that could be relevant for the project. These standards were evaluated by the project partners to identify the standards that would be useful to them and that they could use. Moreover, a workshop has been held in M12 to raise the knowledge of AGILEHAND partners on standardisation processes and to analyse the need for standardisation.

7. Annex 1 – AGILEHAND Community Growth Hacking Plan



ONLINE COMMUNITY GROWTH HACKING PLAN

María Páez Guerrero (FBC)

Inés Dintén (FBC)

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1. Introduction

A strong Growth Hacking Plan is key for the AGILEHAND Online Community as it serves as the **strategic roadmap to propel the community's growth**, engagement, and long-term sustainability. In the dynamic landscape of the Advanced Manufacturing domain, where AGILEHAND operates, having a well-crafted Growth Hacking Plan ensures not only the acquisition of the right audience but also the continuous activation, retention, and referral of community members.

2. What is it a Growth Hacking Plan?

A Growth Hacking Plan is a strategic blueprint designed to drive rapid and sustainable expansion for an online community or business. Rooted in the principles of growth hacking, this plan leverages innovative and unconventional strategies to acquire, activate, retain, and convert users. Unlike traditional marketing plans, a Growth Hacking Plan emphasizes agility, experimentation, and a data-driven approach to achieve scalable and measurable results. It's divided into the following stages:

1. **Acquisition**: Attract the right audience through influencer outreach, SEO, and targeted online presence.
2. **Activation**: Ensure a positive initial experience with engaging content, effective onboarding, and personalized email marketing.
3. **Retention**: Keep members engaged through regular content updates, feedback loops, and interactive initiatives.
4. **Revenue**: Ensure community sustainability through collaborations with partners and exploring monetization options.
5. **Referral**: Encourage existing members to refer others through reposting content, communication toolkits, and social media campaigns.

3. Benefits of a Growth Hacking Plan for the Agilehand Manufacturing Community

By incorporating innovative strategies and adaptive approaches, the plan not only positions AGILEHAND for immediate success but also ensures its resilience and relevance in an ever-evolving industry. It has some advantages, such as:

- **Accelerated Community Growth:** A structured plan accelerates the growth of the AGILEHAND community by systematically attracting and onboarding new members, expanding its reach within the Advanced Manufacturing ecosystem.
- **Enhanced User Experience:** Through onboarding processes, personalized communications, and diverse content strategies, the plan ensures that community members have a positive and enriching experience from the outset.
- **Long-Term Member Retention:** By focusing on continuous engagement, feedback loops, and exclusive access, the plan cultivates long-term member retention, creating a loyal and invested user base.
- **Community Advocacy and Referrals:** By incentivizing referrals and recognizing community ambassadors, the plan turns existing members into advocates, organically driving new member acquisition.

4. Stage 1: Acquisition

The objective of this stage is to attract the right audience to the AGILEHAND Community. To achieve so, the following tasks are being implemented:

- **Stakeholder Mapping and Persona Development.** Identify and categorize key stakeholders within the Advanced Manufacturing domain. Create detailed user personas to understand their motivations and pain points.

Figure 1. Agilehand Stakeholder Mapping

AGILEHAND STAKEHOLDERS MAPPING					
Organisation Name	Organisation type	Stakeholders type	Website	Contact person (if possible)	Email
IPC	Research and Technology Center	Others	https://ct-ipc.com/	Ronan	ronan.legoff@ct-ipc.com
LMS	Research and Technology Center	Others	https://lms.mech.upatras.gr/	Harry Bikas	bikas@lms.mech.upatras.gr
AIMEN	Research and Technology Center	Others	https://www.aimen.es/	Daniel Gesto	dgesto@aimen.es
INTRA	Research and Technology Center	Others	https://netcompany.com/	Raimund Broechler	Raimund.BROECHLER@netcompany.com
Sqetch	Manufacturing SME	Early adopter	https://sqetch.co/	Marte Hentschel	marte@sqetch.co
Gorenje	Research and Technology Center	Others	http://www.gorenje-rodjama.si/en/	Igor Breznikar	igor.breznikar@gorenje.si
ZLC	Research and Technology Center	Others	https://www.zlc.edu.es/es/	Teresa de la Cruz	mdelacruz@zlc.edu.es
CASP	Other	Others	https://www.casp.gr/	George Papanikolopoulos	gpap@casp.gr
FILL	Other	Others	https://www.fill.co.at/de	Harald Sehrschon	harald.seherschon@fill.co.at
EIT M_CLC SE	EU Organisation	Others	https://www.eitmanufacturing.eu/	Niki Kousi	niki.kousi@eitmanufacturing.eu
Katty Fashion	Manufacturing SME	Early adopter	https://katty-fashion.com/	Caterina Aliesei	katty.aliesei@katty-fashion.com
TUI (Technical University of Iasi)	Research and Technology Center	Others	https://www.tuiasi.ro/	Emil Loghin	emil-constantin@tuiasi.ro
ENSAM	Research and Technology Center	Others	https://artsetmetiers.fr/en	Benjamin Poussard	benjamin.poussard@artsetmetiers.fr
EMPHASISDW	Manufacturing SME	Early adopter	https://www.emphasisdw.com/	Giorgos Papanagiotakis	gpap@emphasisdw.com
GLN (Molds and Plast)	Manufacturing SME	Others	https://gln.pl/en/	Simone Roque	simone.roque@gln.pl
ZLC (Zaragoza Logistic Center)	Research and Technology Center	Others	https://www.zlc.edu.es/es/	Yasel Costa	ycosta@zlc.edu.es
LMS	Research and Technology Center	Others	https://lms.mech.upatras.gr/	Christos Papaionnou	papaionnou@lms.mech.upatras.gr
AUTOTECH (GESTAMP)	Manufacturing SME	Others	https://www.gestamp.com/en/horizontales	Joaquín Piccini	jpccini@gestamp.com
UC (University of Coimbra)	Research and Technology Center	Others	https://www.uc.pt/	Mihail Babcinski	mihail.babcinski@ucp.pt
Made2Flow	Manufacturing SME	Others	https://www.made2flow.com/	Atnyel Guedj	atnyel@made2flow.com

- **SEO Optimization.** Optimize content for search engines and app stores to improve discoverability. Implement keyword research and on-page SEO techniques. We identify core keywords, focus on keywords related to Agile Manufacturing, such as "Flexible Production Lines," "Smart Sensing Systems," "AI Product Grading," "Smart Manipulator Systems," and "Smart Conveyance Systems."

Figure 2. Keyword research

MAIN KEYWORDS	RELATED KEYWORDS	
AUTOMATION AND CONTROL SYSTEMS	what is system and control	Smart Grading Systems
Flexible Production Lines	control y automatizac	Soft Product Handling
Smart Sensing Systems	journal of control automation and systems	Deformable Product Packaging
AI Product Grading	control systems questions	Agile Manufacturing
Smart Manipulator Systems	control system and automation	Reconfigurable Production Lines
Smart Conveyance Systems	automatizac youtube	Product Quality Control
	automation systems & controls pty ltd	Automated Grading Solutions
	automation and control solutions	Flexible Packaging Solutions
	automation control and intelligent systems	Industry 4.0 Technologies
	automation control jobs	Smart Manufacturing
	journal of control automation and electrical systems impact factor	Quality Assurance in Soft Product Manufacturing
	automatic control and systems engineering	Packaging Innovation
	what is automation control system	Efficient Product Handling
	integrated automation control and monitoring system	Robotics in Soft Product Industry
	control systems quiz	Supply Chain Optimization
	control system questions and answers	IoT in Manufacturing
	4 control systems	Packaging Automation
	automated building control systems inc	Quality Inspection Solutions
	what are automated control systems	Agile Production Strategies
	ads automation and control systems	Reconfigurable Assembly Lines
	arc automation and control systems	Soft Goods Manufacturing Trends
	automated control systems dothan ai	Smart Sensors in Grading
	cyber security for industrial automation and control systems	Deformable Product Sorting
	automated management systems definition	Sustainable Packaging for Soft Products
	automation control systems examples	Lean Manufacturing in Soft Goods Industry
		Adaptive Production Systems
		AI-Powered Grading and Packaging
		Customizable Manufacturing Lines
		Soft Product Traceability

5.Stage 2: Activation

On this stage, we ensure that new community members have a positive initial experience and engage with them with interesting content about trending topics of handling soft and deformable products technologies.

- **Content Strategy.** Develop a content plan with informative posts, event announcements, and interactive activities. Create a content calendar for consistent engagement.

Figure 3. Agilehand Community Content Calendar

DATE	Partner responsible	Article's name	Status: (draft, published)	Link to the post	Draft
January	K&Z				
January	UPV				
27/12/2023	BDA		Contacted		n/a
29/12/2023	TAU		Contacted		n/a
12/12/2023	Maria Páez (Fundingbox)	PSDT's article (Multiscan, Santonola, Produman, Mantec)	Scheduled		n/a
5/12/2023	Mohamed Lamine (P&S)	British Machine Vision Conference	Scheduled		n/a
29/11/2023	Maria Páez (Fundingbox)	AGILEHAND General Assembly meeting - November 2023 - Vila	Scheduled		
11/11/2023	Maria Páez (Fundingbox)	Achieving Efficiency with AGILEHAND: Monitoring, Adaptive Control		https://spaces.fundingbox.com/spaces/smart-manufacturing-agilehand/	n/a
October	MAR		Postponed		
16/10/2023	Mohamed Lamine, Paul Chippendale and Fabio	The Role of Artificial Intelligence in Self Product Grading	Published	https://spaces.fundingbox.com/spaces/smart-manufacturing-agilehand/	n/a
22/9/2023	Maria Páez (Fundingbox)	Digital twins in food processing: A conceptual approach to develop	Published	https://spaces.fundingbox.com/spaces/smart-manufacturing-agilehand/	n/a
5/9/2023	Maria Páez (Fundingbox)	AGILEHAND Official website	Published	https://spaces.fundingbox.com/spaces/smart-manufacturing-agilehand/	n/a
27/07/2023	Maria Páez (Fundingbox)	AGILEHAND General Assembly meeting - July 2023 - Valencia, Spain	Published	https://spaces.fundingbox.com/spaces/smart-manufacturing-agilehand/	n/a
28/06/2023	Maria Páez (Fundingbox)	Smart sensors: Information recording devices that eliminates no	Published	https://spaces.fundingbox.com/spaces/smart-manufacturing-agilehand/	n/a
14/06/2023	Maria Páez (Fundingbox)	AGILEHAND Community Guidelines	Published	Link	n/a
13/06/2023	Maria Páez (Fundingbox)	Welcome to the Community!	Published	Link	n/a
26/01/2023	Fabrizio Spadoni (UNINFC)	Agilehand launch and Plenary Meeting	Published	https://uninfo.it/index_pages/news/focus/2490363359796.html	
29/09/2023	Fabrizio Spadoni (UNINFC)	Agilehand first General Assembly meeting	Published	https://uninfo.it/index_pages/news/focus/2489203832727.html	

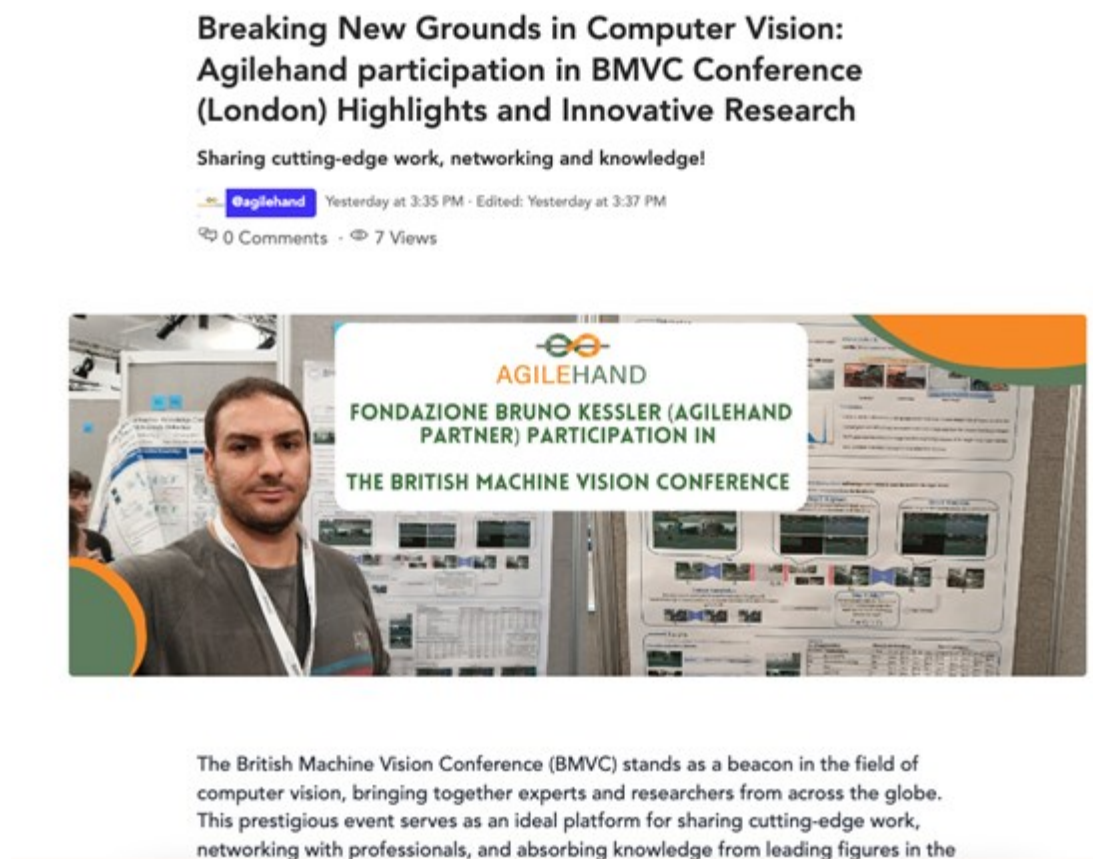
- **Onboarding.** Implement an onboarding process for new members, guiding them on how to get started and engage with the community effectively. Users can read [Agilehand welcome to the community](#) and [Agilehand community guidelines](#) to understand how the community works and what information they can find there.
- **Email Marketing and Personalization.** Use email marketing to welcome new members and provide them with valuable resources.
- **Personalize email content** to cater to different user segments.

6.Stage 3: Retention

After introducing the community members into the platform, the next stop will be to keep them engaged and active over the long term. To achieve this, we propose the following actions:

- **Regular Content Updates.** Continuously create and share valuable content, including posts, event announcements, webinars, and interactive activities.

Figure 4. Example of Agilehand community post



- **Feedback Loop and Engagement Initiatives.** Collect feedback from community members to understand their needs.
- **Organize engagement initiatives** like Q&A sessions, webinars, and success stories to maintain interest.

7. Stage 4: Revenue

This stage is more focused on the sustainability of the community. To bring about this result, the proposed steps are:

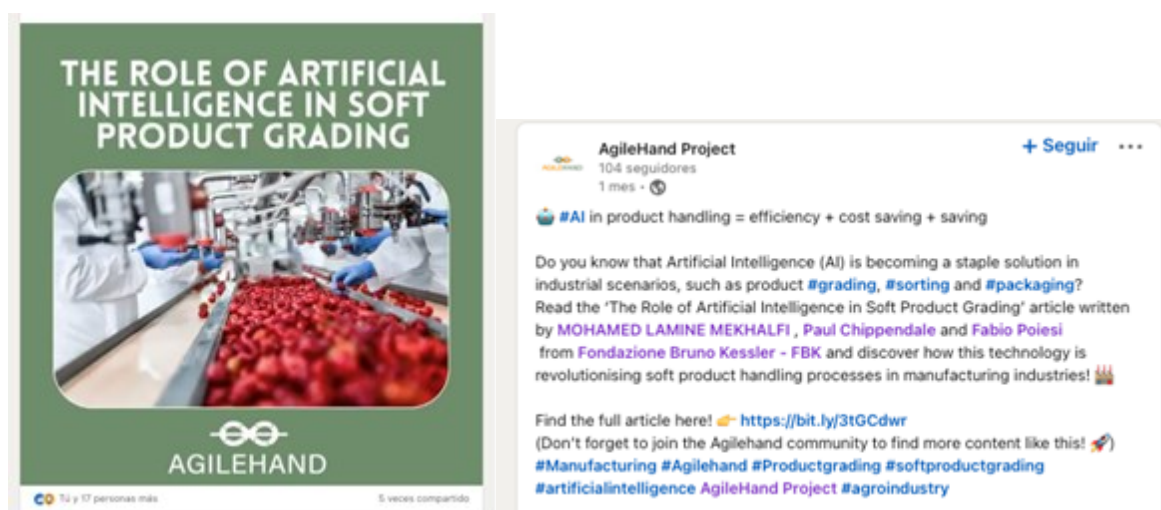
- € **Supportive partners collaboration.** Foster collaborations with organizations and entities to enrich community resources without a profit-oriented approach. This actions will be focused on knowledge sharing, events, or content creation.

8. Stage 5: Referral

We would like to encourage community members to refer others. In pursuit of this, the suggested actions involves:

- Ask users to repost the community articles on their channels.
- Prepare a communication toolkit for Supportive Partners in order to disseminate the content.
- Create social media posts that can be reposted.

Figure 5. Community promotion through Agilehand social media



9. Community Structure

The AgileHand project community is hosted within the expansive Smart Manufacturing Community in the Spaces Platform, empowered by Fundingbox. This bigger community is a hub of approximately 2400 users. Agilehand community is located in the 'Tech Transfer' category.

The positioning of AgileHand within this broad community offers vital benefits, including access to a vast network of expertise and the collaborative synergy of a larger group of digitalisation champions in the EU manufacturing industry. The AgileHand online space is dynamic and categorized into various types of posts that members can engage with:

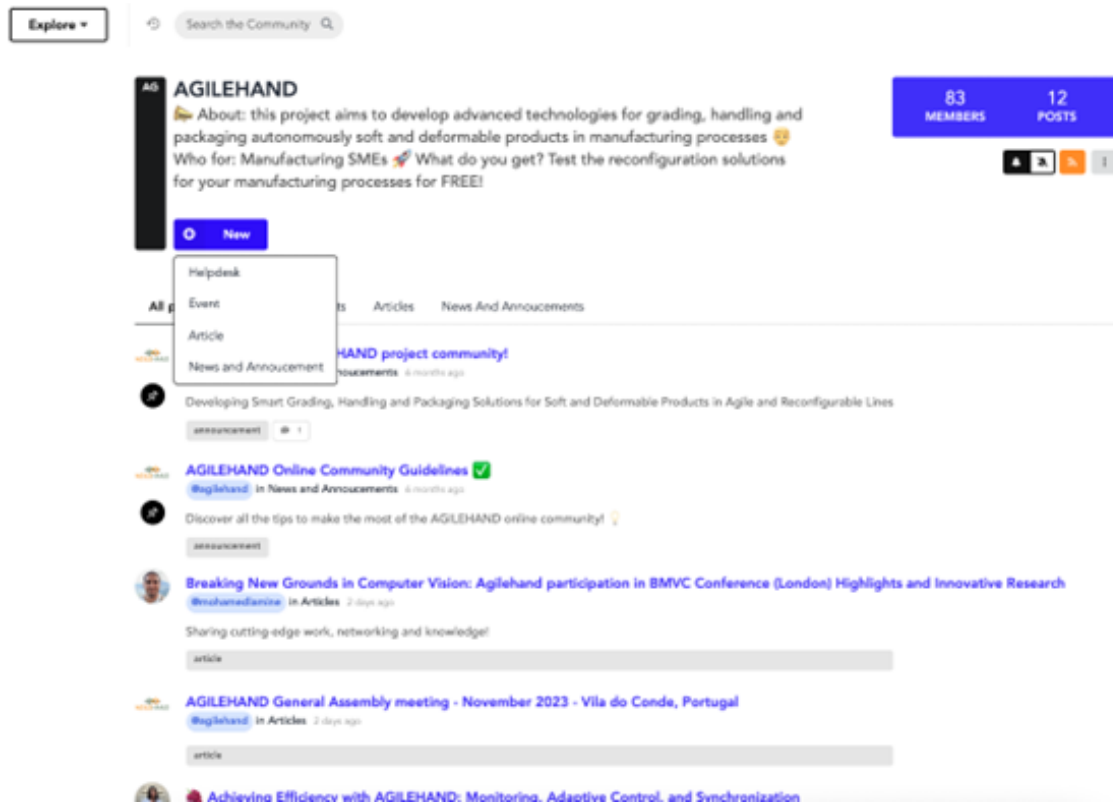
- € **Articles:** Members can delve into detailed explorations of technologies and methodologies, sharing insights and advancements that propel manufacturing processes forward.
- € **News and Announcements:** This section serves as the bulletin for the latest updates, keeping the community abreast of recent developments and upcoming opportunities.
- € **Helpdesk:** Acting as a support hub, the helpdesk allows members to seek and offer assistance, fostering a collaborative environment for problem-solving.
- € **Events:** The community calendar, where webinars, conferences, and meetings are announced and detailed, facilitating real-time engagement and networking.

In december 2023, the community has 83 members and 12 posts.

Figure 6. Agilehand community location in the Smart Manufacturing Community



Figure 7. Agilehand community structure



10. Conclusion

In conclusion, the Growth Hacking Plan outlined for the AGILEHAND Online Community is not merely a strategic document; it is the dynamic blueprint that charts the course for community development in the fast-paced realm of Advanced Manufacturing. By addressing the stages of Acquisition, Activation, Retention, Revenue, and Referral, this plan is poised to fortify AGILEHAND's position as a vibrant hub within the industry.

By establishing a vibrant and engaged community, we aim to create a dynamic ecosystem where project stakeholders can collaborate effectively, align their goals, and drive innovation in the field of Advanced Manufacturing under the Smart Manufacturing community umbrella. Through careful planning, strategic execution, and continuous engagement, we are confident in our ability to achieve our community building objectives and contribute to the growth and success of AGILEHAND.

8. Annex 2 - Agilehand standard Keywords and database

Keywords

Internet of Things (IoT)	Data Quality
Smart Manufacturing	Traceability
Digital Twin	Industrial data
Sensor Networks	Robotics
Industrial IoT	Machine learning (ML)
Big Data	Data Quality
Artificial Intelligence (AI)	Traceability

Table 13. Selected Keywords

Number	Title
IEC/DIS 63339	Unified reference model for smart manufacturing
ISO/IEC AWI 30173	Digital twin – Concepts and terminology
ISO/IEC AWI 30172	Digital Twin – Use cases
ISO/IEC AWI 30149	Internet of things (IoT) – Trustworthiness framework
ISO/IEC 29182-1	Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA) – Part 1: General overview and requirements
ISO/IEC 29182-2	Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA) – Part 2: Vocabulary and terminology
ISO/IEC 29182-4	Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA) – Part 4: Entity models
ISO/IEC 20005	Information technology – Sensor networks – Services and interfaces supporting collaborative information processing in intelligent sensor networks
ISO/IEC 29182-5	Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA) – Part 5: Interface definitions
ISO/IEC 29182-3	Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA) – Part 3: Reference architecture views
ISO/IEC 29182-6	Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA) – Part 6: Applications
ISO/IEC 30128	Information technology – Sensor networks – Generic Sensor Network Application Interface
ISO/IEC 30101	Information technology – Sensor networks: Sensor network and its interfaces for smart grid system

ISO/IEC 29182-7	Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA) – Part 7: Interoperability guidelines
ISO/IEC 19637	Information technology – Sensor network testing framework
ISO/IEC TR 22417	Information technology – Internet of things (IoT) use cases
ISO/IEC 30141	Internet of Things (IoT) – Reference Architecture
ISO/IEC 21823-1	Internet of things (IoT) – Interoperability for IoT systems – Part 1: Framework
ISO/IEC TR 30166	Internet of things (IoT) – Industrial IoT
ISO/IEC 21823-2	Internet of things (IoT) – Interoperability for IoT systems – Part 2: Transport interoperability
ISO/IEC 30161	Internet of Things (IoT) – Requirements of IoT data exchange platform for various IoT services
ISO/IEC 30141	Internet of Things (IoT) – Reference Architecture – Technical Corrigendum 1
ISO/IEC 20924	Information technology – Internet of Things (IoT) – Vocabulary
ISO/IEC 30147	Information technology – Internet of things – Methodology for trustworthiness of IoT system/service
ISO/IEC 30165	Internet of Things (IoT) – Real-time IoT framework
ISO/IEC 21823-3	Internet of things (IoT) – Interoperability for IoT systems – Part 3: Semantic interoperability
ISO/IEC TR 30174	Internet of Things (IoT) – Socialized IoT system resembling human social interaction dynamics
ISO/IEC 30162	Internet of Things (IoT) – Compatibility requirements and model for devices within industrial IoT systems
ISO/IEC 21823-4	Internet of things (IoT) – Interoperability for IoT systems – Part 4: Syntactic interoperability
ISO/IEC 30169	Internet of Things (IoT) – IoT applications for electronic label system (ELS)
ISO/IEC TR 20547-2	Information technology – Big data reference architecture – Part 2: Use cases and derived requirements
ISO/IEC TR 20547-5	Information technology – Big data reference architecture – Part 5: Standards roadmap
ISO/IEC 38507	Information technology – Governance of IT – Governance implications of the use of artificial intelligence by organizations
ISO/IEC AWI TS 29119-11	Software and systems engineering – Software testing – Part 11: Testing of AI systems
ISO/IEC AWI TS 17847	Information technology – Artificial intelligence – Verification and validation analysis of AI systems

ISO/IEC DIS 42001	Information technology – Artificial intelligence – Management system
ISO/IEC CD 42006	Information technology – Artificial intelligence – Requirements for bodies providing audit and certification of artificial intelligence management systems
ISO/IEC AWI 42005	Information technology – Artificial intelligence – AI system impact assessment
ISO/IEC 23053	Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML)
ISO/IEC 22989	Information technology – Artificial intelligence – Artificial intelligence concepts and terminology
ISO/IEC CD 5259-1	Artificial intelligence – Data quality for analytics and machine learning (ML) – Part 1: Overview, terminology, and examples
ISO/IEC CD 5259-3	Artificial intelligence – Data quality for analytics and machine learning (ML) – Part 3: Data quality management requirements and guidelines
ISO/IEC CD 5259-4	Artificial intelligence – Data quality for analytics and machine learning (ML) – Part 4: Data quality process framework
ISO/IEC CD 5259-2	Artificial intelligence – Data quality for analytics and machine learning (ML) – Part 2: Data quality measures
ISO/IEC AWI 5259-5	Artificial intelligence – Data quality for analytics and machine learning (ML) – Part 5: Data quality governance
ISO/IEC FDIS 8183	Information technology – Artificial intelligence – Data life cycle framework
ISO/IEC CD TR 5259-6	Artificial intelligence – Data quality for analytics and machine learning (ML) – Part 6: Visualization framework for data quality
ISO/IEC 20546	Information technology – Big data – Overview and vocabulary
ISO/IEC 20547-3	Information technology – Big data reference architecture – Part 3: Reference architecture
ISO/IEC TR 20547-1	Information technology – Big data reference architecture – Part 1: Framework and application process
ISO/IEC 24668	Information technology – Artificial intelligence – Process management framework for big data analytics
ISO/IEC AWI TS 25058	Software and systems engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – Guidance for quality evaluation of AI systems
ISO/IEC AWI TS 8200	Information technology – Artificial intelligence – Controllability of automated artificial intelligence systems
ISO/IEC AWI 12792	Information technology – Artificial intelligence – Transparency taxonomy of AI systems
ISO/IEC AWI TS 6254	Information technology – Artificial intelligence – Objectives and approaches for explainability of ML models and AI systems

ISO/IEC CD TR 5469	Artificial intelligence – Functional safety and AI systems
ISO/IEC PRF 25059	Software engineering – Systems and software Quality Requirements and Evaluation (SQuaRE) – Quality model for AI systems
ISO/IEC PWI 18966	Artificial intelligence – Oversight of AI systems
ISO/IEC TR 24028	Information technology – Artificial intelligence – Overview of trustworthiness in artificial intelligence
ISO/IEC 23894	Information technology – Artificial intelligence – Guidance on risk management
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Table 14. Agilehand relevant standards

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