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NON-DESTRUCTIVE INSPECTION SERVICES FOR DIGITALLY ENHANCED ZERO WASTE MANUFACTURING

D10.2 Target-Driven Dissemination Strategy, Plan & Reporting – M18

V1.0

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ABBREVIATIONS / ACRONYMS

ACRONYM	MEANING
AG	Advisory Group
DMIS	Digital Manufacturing Industrial Summit
DOA	Description of Action
DOI	Digital Object Identifier
KPI	Key Performance Indicators
LCA	Life Cycle Assessment
LCC	Life Cycle Cost
NDI	Non-destructive Inspection
PEDR	Plan for Exploitation & Dissemination of results
SIA	Social Impact Assessment
T	Tasks
WP	Work Package
ZDM	Zero Defect Manufacturing
4ZDM	Zero Defect Manufacturing Cluster

EXECUTIVE SUMMARY

Deliverable “D10.2: Target-Driven Dissemination Strategy, Plan & Reporting – M18” is directly associated with ZDZW task T10.1 within “WP10: IMPACT: Dissemination and Impact Maximisation”. D10.2 is an updated version of D10.1 and reports the period between M4 and M18. It details activities related to expected dissemination and reports the outcomes of tasks T10.2-10.7 within “WP10: IMPACT: Dissemination and Impact Maximisation”. Dissemination activity has been broad and varied and is outlined in detail in this document. Note that D10.2 is highly linked to the D3.3 Plan for Exploitation & Dissem. of results – PEDR – M18. **D10.2 has been used to report dissemination outcomes and updates to the dissemination strategy and plan (if needed) are included in D3.3.**

The headline items are as follows:

- The **website, social media** and **ZDZW Community** have been regularly updated.
- A wide range of **dissemination materials** have been prepared.
- The project has been widely represented at international events:
 - **ZDZW workshop** at Digital Manufacturing Industrial Summit (DMIS)
 - **Thirteen** presentations at major **conferences** (eight of them with DOI proceedings).
 - Representation at **seventeen project exhibitions** and **ten industrial conferences**.
 - **Four speaker slots** at other relevant events.
- **Two refereed journal papers** were published in this period and several new papers are in preparation.
- **Two advisory group meetings** have been placed.
- ZDZW has joined **two EU clusters**: Zero Defect Manufacturing Cluster (4ZDM) and ForeSee.

1 DISSEMINATION TOOLS AND IMPACT ACTIVITIES AT 18M

This section contains the dissemination materials produced in the last 15 months of the project and details the different activities carried out during this period to raise awareness of the project and its results.

1.1 Public Website

The [ZDZW website](#) has been maintained and **regularly updated** since M3. In addition to keeping it up to date with **project news, events, dissemination materials** and **outcomes**, it was decided to include a new section that was not included in the first release of the website, a **blog** to collect different technical articles generated periodically by the project partners and that are disseminated through social media and **ZDZW** community. The project blog is active since November 2022.

Other relevant updates were:

- Inclusion of the **ZDZW introductory video** on the homepage.
- **Announcement of the Beta Testing Campaign** on the homepage (see Figure 1).
- **Explanatory posters of each pilot** on the pilots' page.
- **Description of the ZDZW solutions** (elevator pitches) as significant project outcome.

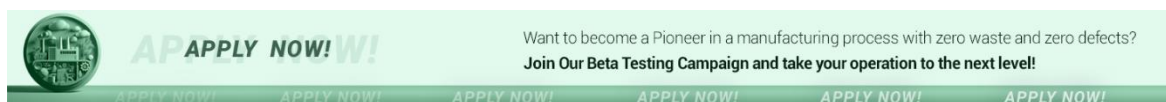


FIGURE 1. ANNOUNCEMENT OF THE BETA TESTING CAMPAIGN.

From October 2022 to January 2024, the project website had **21.599 unique visitors** and **80.069 total requests**. The visitors are from worldwide as shown in Figure 2. These metrics confirm that the dissemination actions performed in the project are effective.

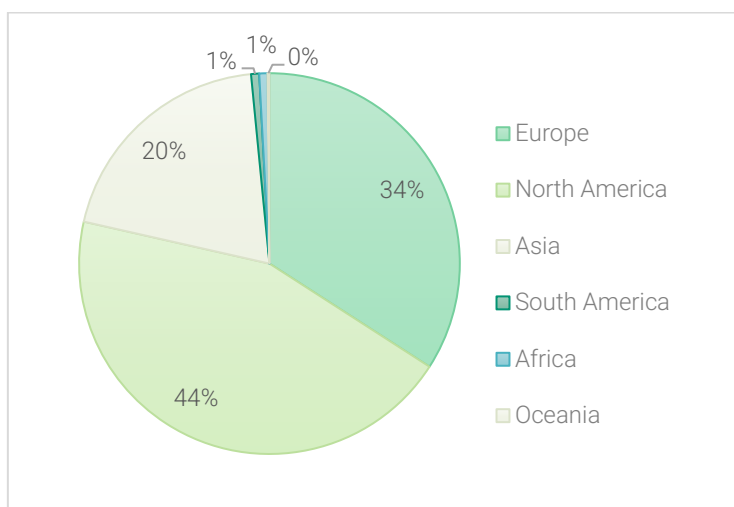


FIGURE 2. GEO-LOCATION OF THE UNIQUE VISITORS OF THE ZDZW WEBPAGE.

1.2 Brochures and Outreach Material

ZDZW designs and products outreach materials to reach the expected impact as this material is needed. Three elements of outreach material were produced for the M3 milestone in the Project and were included in the previous version of this deliverable (D10.1): project poster, 1-slide presentation and public project presentation. From M4 to M18 the following elements have been generated:

- **New project poster** (Figure 3). A0 poster following the ZDZW brand guidelines. It is focused on project objectives and key areas of the project and gives an overview of the 6 industrial scenarios on which ZDZW will demonstrate its zero-defect and zero-waste approach.
- **Brochure** (Figure 4). Brochure to promote ZDZW in events of interest. It basically includes the same information that the poster but in different format. A first batch of brochures was printed and distributed to all the beneficiaries. An updated version of the brochure will be prepared soon.
- **Pilot posters** (Figure 5). Portrait and landscape posters to describe the ZDZW pilots in more detail. They include information about the pilot objective, context, solution provided by ZDZW, expected scenario and expected impact on KPIs.



FIGURE 3. NEW ZDZW POSTER.

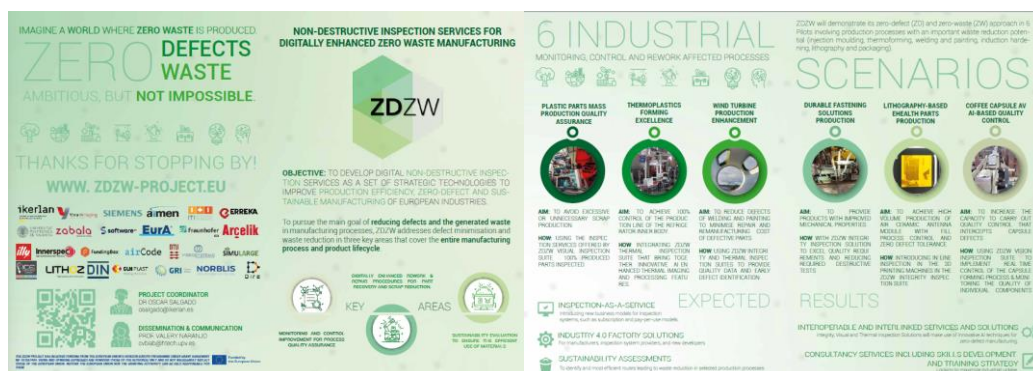


FIGURE 4. ZDZW BROCHURE.

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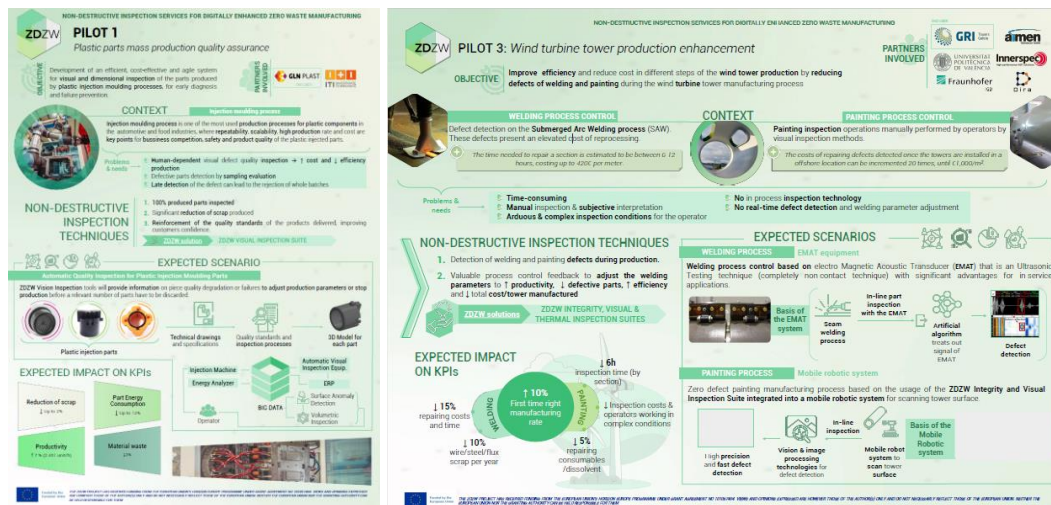


FIGURE 5. EXAMPLE OF PORTRAIT AND LANDSCAPE PILOT POSTERS.

- **Banner** (Figure 6). Roll up banner to identify ZDZW in fairs / conferences / exhibitions.

- **Videos**. A series of videos with promotional purposes have been or are being produced:

Introductory animated video of ZDZW of 3 minutes: <https://youtu.be/Awwlv0XtVr8?si=L-cl1t721sk5cJhS>

A set of short videos (1 minute) optimized to be shared on social networks. The first one promotes the [ZDZW Open Beta Testing Pilot](#) and the second one the [ZDZW technical webinars](#). Others focused on the eleven solutions that are being developed in the project are currently under production and will be released when deemed appropriate.

- **Elevator pitches** (Figure 7). Elevator pitch documents for each ZDZW solution have been crafted and will be employed to promote the beta testing campaign, attracting early adopters. Elevator pitches include in a concise way solution description, main benefits of the solution and success stories.

All of them were approved for public use by the consortium and are available from the outcomes page of the public website: <https://www.zdzw-project.eu/outcomes/>



FIGURE 6. ZDZW BANNER.

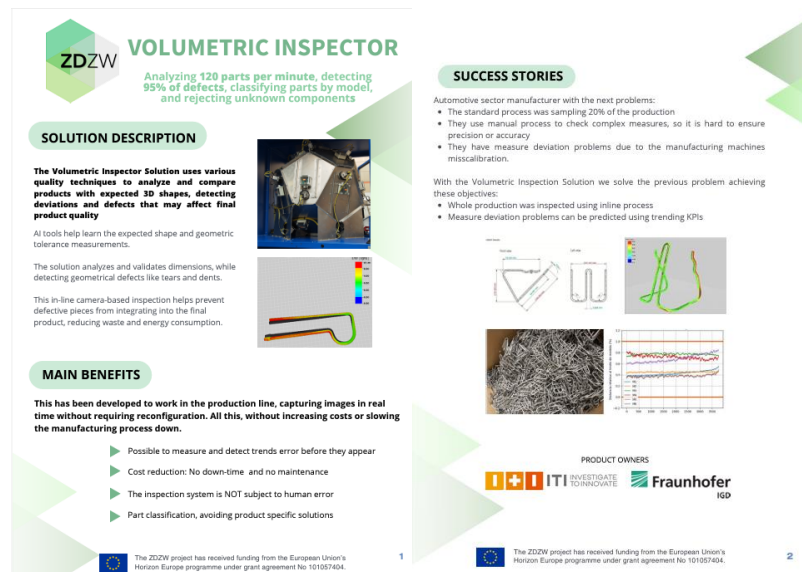


FIGURE 7. EXAMPLE OF ELEVATOR PITCH OF ONE ZDZW SOLUTION.

1.3 E-newsletter

Two **ZDZW** newsletters have been released from the beginning of the project until M18, in M8 (apr-23) and M15 (nov-23), respectively (Figure 8). The **first newsletter** outlined the main objectives of the project and the **second newsletter** introduced the **ZDZW** Open Beta Testing Pilot. In addition, both included information about what happened in the last months of the project [publications, events and updates of the **ZDZW** Community]. This structure will be maintained in all the issues. Next newsletter will be issued in M19 (mar-24).



FIGURE 8. ZDZW NEWSLETTERS.

1.4 Press Releases

Two press releases have been published during the first 18 months of the project. They are available on the project website and were spread by the beneficiaries in their respective countries as well as internationally through the [Alpha Galileo](#) platform. The first one was issued in apr-23 (M8) as a [project presentation](#) and the second one in may-23 (M9) [summarizing the participation of ZDZW in the Digital Manufacturing Industrial Summit](#) (DMIS). Other press releases may be issued during the second reporting period of the project.

1.5 Trade Fairs, Exhibitions, Industrial Conferences and Workshops

Table 1 details national and international ZDZW-related events attended by any beneficiary of the consortium during the first reporting period where they had the opportunity of promoting the Project. The colour of the rows indicates the type of the participation in those events by differentiating among only attendance, project exhibitions, speaker slots and industrial conferences. The participation in these events resulted in **15 project exhibitions, 4 speaker slots and 9 participations in industrial conferences**. Note that not all the events attended during the first 3 months of the project were included in D10.1 and, for that reason, Table 1 reports the events from the beginning of the project.

TABLE 1. PARTICIPATION IN NATIONAL AND INTERNATIONAL EVENTS FROM M1 TO M18.

	TRADE FAIRS, EXHIBITIONS, AND INDUSTRIAL CONFERENCES	ATTENDEES	DATE
Only Attendance	EMC 2022 : European Manufacturing Conference	IKER	27-28 Sep 2022
	VISION 2022 : Trade fair for machine vision	ITI	4-6 Oct 2022
	WCEAM 2022 : 16 th world congress on engineering asset management	IKER	5-7 Oct 2022
	ITAP 2022 : Industrial Transformation Asia-Pacific	SAG, IGD	18-Oct-2022
	Digital Transformation Summit : Workshop about Smart Manufacturing	DIN	24-27 Oct 2022
	ConnectedFactories2 and EFPE projects Final Event	IKER	23-24 Nov 2022
	WAICF 2023 – World AI Cannes Festival	VSYS	8-Feb-2023
Project Exhibitions	I4MS Stakeholders Event : European leadership and digital game-changers of the manufacturing industry	FBA	19-Oct-2022
	A&T 2023 : Automation & testing fair	VSYS	22-Feb-2023
	Made in Steel 2023 : Conference and exhibition for the steel industry	VSYS	9-May-2023
	SPS 2023 : Smart production solutions	VSYS	23-May-2023
	MAINTENANCE 2023 : International trade fair for industrial maintenance	DIRA	6-8 Jun 2023
	METEC 2023 – International Metallurgic Trade Fair with Congresses	VSYS	12-Jun-2023
	Digitalization, sustainability and people day by GRI	GRI	21-Jun-2023
	21st European Week of Regions and Cities	FBA	12-Oct-2023
	CMH 2023 : 23 rd Manufacturing Congress	IKER	25-27 Oct 2023
	A&T 2023 : Automation & testing fair	VSYS	26-Oct-2023

	Conference between companies of the GLN Holding company	GLN	16-Nov-2023
	SPIE Photonics West Exhibition	NOR, DTU	30-Jan 1-Feb 2024
	SamuExpo 2024 : Metalworking, subcontracting and plastic expo	VSYS	1-3 Feb 2024
	Web Summit Qatar	SIM	26-29 Feb 2024
Speaker Slots	Zero-defect manufacturing cluster Workshop by 4ZDM Cluster and ZDM Sub-platform under Manufuture	IKER	23-Nov-2022
	Digitalization Working Group Workshop : Circularity and human-centricity aspects in European manufacturing solutions	IKER	25-May-2023
	EFFRA Manufacturing partnership day	IKER	26-Sep-2023
	Ecosistemi per l'Innovazione - Udine	VSYS	23-Oct-2023
Industrial Conferences	DMIS 2023 : Digital Manufacturing Industrial Summit	IKER, SIM, EUR, ZAB, SAG, UPV, AIM	25-27 Apr 2023
	EBDVF 2023 : European Big Data Value Forum	SAG	25-27 Oct 2023
	Southern Manufacturing & Electronics 2024	FFIT	6-8 Feb 2024

1.6 Publications

ZDZW has published the technical results achieved to date in the following scientific journals and conferences.

Articles in refereed scientific journals

1. R.E. Hansen, C.R. Smith, A. Moltke, C.R. Petersen, S. Raghuraman, S. Yoo, O. Bang, Mid-IR Supercontinuum Noise Reduction Using a Short Piece of Normal Dispersion Fiber - A General Mechanism, *Laser & Photonics Reviews* 17(6), 2200776 (1-8) (2023). <https://doi.org/10.1002/lpor.202200776>
2. C.R. Petersen, S. Fæster, J.I. Bech, K.M. Jespersen, N.M. Israelsen, O. Bang, Non-destructive and contactless defect detection inside leading edge coatings for wind turbine blades using mid-infrared optical coherence tomography, *Wind Energy* 26(5), 458-468 (2023). <https://doi.org/10.1002/we.2810>

Conference papers:

1. N.M. Israelsen, R.E. Hansen, C. Lapre, C.R. Petersen, O. Bang, Looking into eggs by mid-infrared OCT for non-destructive inspection, *Photonics West 2024, SPIE OPTO, Conference on Terahertz, RF, Millimeter, and Submillimeter-Wave Technology and Applications XVII*, <https://spie.org/OE106>, 27. Jan – 1. Feb., 2024, San Francisco, USA. Oral presentation 12885-19 (2024)
2. R.E. Hansen, C.R. Smith, A.M. Moltke, C.R. Petersen, S. Raghuraman, S. Yoo, O. Bang, Mid-IR supercontinuum noise reduction by SPM, *Photonics West 2024, SPIE LASE, conference on Fiber Lasers XXI: Technology and Systems*,

<https://spie.org/LA102>. 27. Jan – 1. Feb., 2024, San Francisco, USA. Oral presentation 12865-49 (2024).

3. C.R. Smith, C.R. Petersen, O. Bang, Noise characterization of mid-infrared supercontinuum generated through gain-switched pumping, Photonics West 2024, SPIE LASE, conference on Nonlinear Frequency Generation and Conversion: Materials and Devices XXIII, <https://spie.org/LA201>. 27. Jan – 1. Feb., 2024, San Francisco, USA. Oral presentation 12869-38 (2024).
4. C. Lapre, C.R. Petersen, P. Nielsen, T. Wulf, J.I. Bech, S. Fæster, N.M. Israelsen, O. Bang, Non-destructive inspection of wind turbine blades with mid-infrared optical coherence tomography, Photonics West 2024, SPIE OPTO, Conference on Terahertz, RF, Millimeter, and Submillimeter-Wave Technology and Applications XVII, <https://spie.org/OE106>, 27. Jan – 1. Feb., 2024, San Francisco, USA. Oral presentation 12885-49 (2024).
5. R.E. Hansen, C.R. Smith, A.M. Moltke, C.R. Petersen, S. Raghuraman, S. Yoo, O. Bang, Supercontinuum noise reduction with short normal dispersion fibers – a simple and general technique, Optica Nonlinear Optics Topical Meeting, <https://doi.org/10.1364/NLO.2023.Tu3A.2>, 10-13 July, 2023, Honolulu, Hawaii, USA. Oral presentation No. Tu3A.2.
6. García-de-la-Puente, N.P., del Amor, R., García-Torres, F., Colomer, A., Naranjo, V. (2023). Unsupervised Defect Detection for Infrastructure Inspection. In: Quaresma, P., Camacho, D., Yin, H., Gonçalves, T., Julian, V., Tallón-Ballesteros, A.J. (eds) Intelligent Data Engineering and Automated Learning – IDEAL 2023. IDEAL 2023. Lecture Notes in Computer Science, vol 14404. Springer, Cham. https://doi.org/10.1007/978-3-031-48232-8_14
7. Lario, J., Mateos, J., Poler, R., Ortiz, Á. (2023). Collaborative Network for the Development of Non-Destructive Inspection Technologies: Elicitation Requirements in an Industrial Environment. In: Camarinha-Matos, L.M., Boucher, X., Ortiz, A. (eds) Collaborative Networks in Digitalization and Society 5.0. PRO-VE 2023. IFIP Advances in Information and Communication Technology, vol 688. Springer, Cham. https://doi.org/10.1007/978-3-031-42622-3_42
8. Lario-Femenía, Joan; Mateos-Luengo, Javier; Ortiz Bas, Ángel (2023). Non-Destructive inspection solutions in the EU industrial sector for sustainable manufacturing . EN XXVII Congreso de Ingeniería de Organización (CIO 2023). 17th International Conference on Industrial Engineering and Industrial Management (ICIEIM 2023) . Barcelona, España.
9. C. Lapre, R.E. Hansen, C.R. Petersen, N.M. Israelsen, O. Bang, Mid-infrared OCT for non-destructive sub-surface inspection and in-line production monitoring, Conference on Lasers and Electro-Optics®/Europe – European Quantum Electronics Conference (CLEO®/Europe-EQEC Conference), part of the 2023 World of Photonics Congress, June 26-30, Munich, Germany. Serial number: 2045, Oral presentation CH-1.4 (2023).

10. C.R. Smith, C.R. Petersen, O. Bang, MIR Supercontinuum Using Gain-Switched and Modelocked Pumping, Conference on Lasers and Electro-Optics®/Europe – European Quantum Electronics Conference (CLEO®/Europe-EQEC Conference), part of the 2023 World of Photonics Congress, June 26-30, Munich, Germany. Serial number: 79, Poster presentation CD-P.23 (2023).
11. C.R. Smith, C.R. Petersen, O. Bang, Diode-pumped MIR supercontinuum source, In Danish Optical Society (DOPS) National Optics Congress 2022, Nov. 30 – Dec. 1, 2022, Aarhus, Denmark. Poster presentation (2022).
12. S. Yang, Y. Shi, C.R. Robertson, C.R. Rosenberg, O. Bang, High energy ultrafast laser generation from a Tm-doped Mamyshev oscillator, In Danish Optical Society (DOPS) National Optics Congress 2022, Nov. 30 – Dec. 1, 2022, Aarhus, Denmark. Poster presentation (2022).
13. Y. Shi, C.R. Smith, S. Yang, C.R. Rosenberg, O. Bang, 2.7um Er-doped fluoride pulsed fiber laser, In Danish Optical Society (DOPS) National Optics Congress 2022, Nov. 30 – Dec. 1, 2022, Aarhus, Denmark. Poster presentation (2022).

1.7 ZDZW Community

The [ZDZW community](#) is a rich ecosystem of active members to find synergies. It is being used as a place to interact, foster cooperation and keep stakeholders up to date with the [ZDZW](#) project evolution. There **news and announcements** related to the project are issued, **events of interest** are disseminated and **technical content** generated by the [ZDZW](#) partners according to their field of expertise is published. More details about the [ZDZW](#) community can be found in D3.3. Table 2 details the technical articles published during the first 18 months of the project.

TABLE 2. ZDZW COMMUNITY PUBLICATIONS.

ARTICLES IN ZDZW COMMUNITY	PARTNER	DATE
The ZDZW approach for Zero-Waste Manufacturing - Does the concept of "Zero Defect Manufacturing" ring a bell? - Are you curious how to get the most out of this idea to boost your productivity?	IKER	13-Dec-2022
Containerisation as a tool for interoperability - The Containerisation concept - Containerisation in the ZDZW project approach - Kubernetes: the leader technology in container orchestration. - Helm/Rancher package manager for Kubernetes	ICE	11-May-2023
Revolutionizing Manufacturing: Automated 3D Vision Systems for Zero Defects What is the significance of industrial inspection for manufacturing competitiveness, and what are the challenges with current visual inspection processes?	ITI	22-Sep-2023

- How does the new vision inspection technology overcome these challenges? - How does an automated vision system contribute to achieving zero defects?		
<u>Sustainability assessment tools for zero defect and zero waste manufacturing practices</u> - Life Cycle Assessment (LCA), - Life cycle cost (LCC) - Social Impact Assessment (SIA)	EUR	11-Oct-2023

1.8 Industrial Advisory Group

The **first** of the 4 planned **Advisory Group (AG) workshops** already outlined in a previous deliverable (D10.1) was held online on 6 June 2023.

Part of the **attendees** can be seen in Figure 9. First AG workshop., which is a post published in LinkedIn.

The **aim** of the meeting was to obtain feedback from advisors on the objectives and expected results of the project. To this end, the vision and general objectives of the project, the Exploitation and Dissemination Plan (PEDR) and the industrial scenarios defined for the validation of the project results were presented.

As shown in the **agenda** below, after each presentation the advisors discussed the topic with the consortium partners and provided their suggestions for improvement.

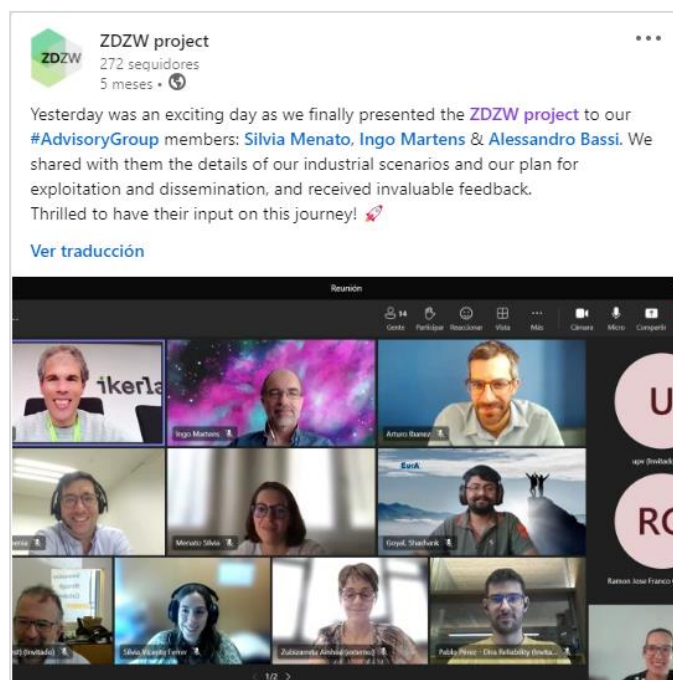


FIGURE 9. FIRST AG WORKSHOP.

DETAILED AGENDA

Tuesday, 2023-06-27

When	Who	What
09:00	IKER/Oscar-Ainhoa	Kick-off, Welcome Agenda Review
09:15	All	AG members intro and short Tour de la Table
09:30	IKER/Oscar	Project Overview – Vision and Objectives
10:00	AG members	Feedback
10:15	UPV/Sandra FBA/Arturo	Plan of Exploitation and Dissemination of Results Exploitation Strategy, Business Model Canvas, and Value Proposition
11:00	AG members	Feedback
11:15	All	Coffee Break - Group Picture
11:30	UPV/Joan	Industrial Scenarios
12:15	AG members	Feedback
12:30	IKER/Oscar AG members	Closure and Final Feedback: • Silvia Menato • Gofna Liss • Alessandro Bassi • Ingo Martens

FIGURE 10. DETAILED AGENDA OF THE FIRST AG WORKSHOP.

It is worth mentioning that the most interesting deliverables related to the topics presented were previously shared with the advisors through the Sharepoint portal created for this purpose (see Figure 11).

Before accessing project information, all AG members signed a non-disclosure agreement already mentioned and included in D10.1.

The workshop was very productive and provided valuable advice and practical tips from advisors that can be applied along the related WPs. The recording from the workshop offered valuable support in understanding thoroughly and compiling all contributions into a file that was afterwards shared with consortium members for the definition of actions to address them.

It consists of a living document that will be continuously updated with feedback from upcoming AG workshops. Each of the defined actions has an assigned responsible to implement it and update its progress status, which is evidently linked to the planning of the involved tasks. The overall progress is monitored periodically.

The last update in January 2024 shows Figure 12. Of the 18 actions defined, 7 have already

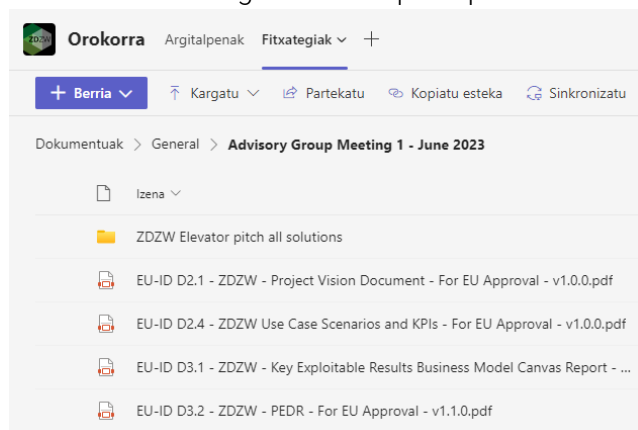


FIGURE 11. INFORMATION SHARED WITH ADVISORS.

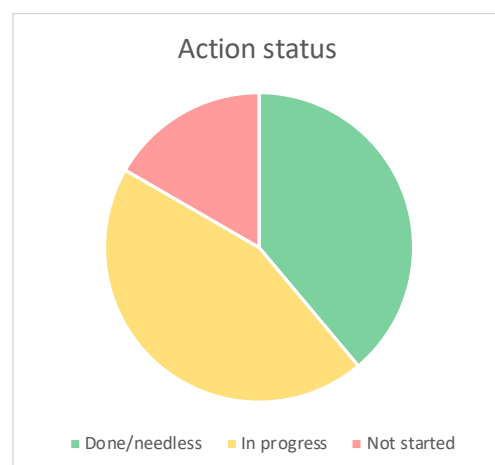


FIGURE 12. ACTION STATUS.

been finalised or do not need to be done, 7 are in progress and 3 will be addressed later (when the related project step is reached).

Annex A displays the list of suggestions and the corresponding actions. In summary, it can be said that the advisors were positively impressed by the quality of the work carried out, both in the definition of the PEDR and the definition of the scenarios. As hoped, they provided the market's point of view, focusing on aspects directly related to impact: business model, value proposition and related differential value, dissemination targets and KPIs, solutions performance related KPIs, and son on.

The **second AG workshop** was held on 2 February 2024, just after the 5th plenary meeting. Efforts were made to meet the advisors face-to-face at the meeting, but this was not possible due to unavailability to travel, so they connected online.

24 people attended the meeting, including 3 advisors who provided feedback on the technical approach and tech developments, and initial pilot sustainability status. Figure 13 shows the advisors and part of the partners.

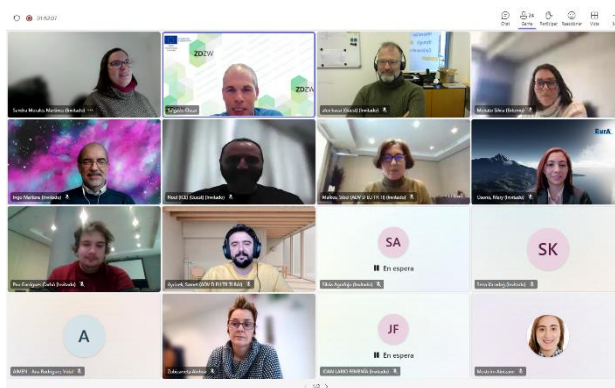


FIGURE 13. SECOND AG WORKSHOP.

The detailed **agenda** of the meeting was as follows:

DETAILED AGENDA

Friday, 2024-02-02

When	Who	What
9:30	IKER/Oscar	Welcome and Introduction Progress since AG Meeting 1
10:00	IKER/Oscar ICE/Noel FBA/Thibaud	Tech Approach and Inspection as a Service Concept AG Members Comments and Discussion
10:30	IKER/Marcos	Integrity Inspection Services
10:50	All	Coffee Break
11:00	ITI/Pau	Visual Inspection Services
11:20	SIEM/Sibel	Thermal Inspection Services
11:40		AG Members Comments and Discussion
12:00	EURA/Shashank ARC/Sena	Pilot Sustainability Assessment – Initial Status
12:20		AG Members Comments and Discussion
12:30	IKER/Oscar	Recap and closure
13:00	All	End of meeting

FIGURE 14. DETAILED AGENDA OF THE SECOND AG WORKSHOP.

The advisors' perception of the progress of the project was very positive. At the time of writing this deliverable, the detailed analysis of the comments provided and the definition of actions to address them was ongoing. So, the updated action table including them will be provided in the next release.

1.9 ZDZW Workshops

On 25-27 April 2023 (M8), the [Digital Manufacturing Industrial Summit \(DMIS\)](#) took place in Valencia, Spain. The conference was organized jointly by the [Zero-Defect Manufacturing Platform](#) and a large pool of other EU funded research and innovation projects, including [ZDZW](#).

The aim of the summit was to facilitate cross-cutting discussion, co-operation, and networking between manufacturers, developers, researchers, and policy makers. The cornerstone of the event was discussion around how cutting-edge technologies are transforming modern manufacturing, moving from Industry 4.0 to 5.0, and the benefits of such a transformation, with a focus on achieving zero defects and zero waste in the manufacturing process, which is the main aim of [ZDZW](#).

More than 25 [ZDZW](#) members attended the event and actively participated in the conference based on their expertise. [ZDZW](#) led **three sessions** on quality assurance, zero defects and green manufacturing; moderated **two round tables** on policy recommendations to support non-destructive inspection (NDI) technologies and on green transition; and provided **two keynotes** and **other speeches** related to the project topics. See Table 3 for details.

TABLE 3. PARTICIPATION OF ZDZW AT DMIS.

	SESSION / SPEECH TITLE	MODERATOR / SPEAKER
Moderated Sessions	Quality Assurance: Product Inspection Technologies	Oscar Salgado (IKER)
	Zero Defects Driving Success	Oscar Salgado (IKER)
	Green Manufacturing Transition	Shashank Goyal (EUR)
Moderated Round Tables	What could policy makers do to support the deployment of non-destructive inspection technologies in SMEs?	Francisco de Arístegui (ZAB)
	What are the Challenges and Opportunities in Green Manufacturing Transition?	Shashank Goyal (EUR)
Keynotes Speeches	The Future of Manufacturing: how edge computing, AI and IIoT are reshaping industry operations	Alessandro Liani (VSYS)
	Revolutionizing Manufacturing: Combining Centuries of Experience with AI Technology	Büryan Turan (SIM)
Other speeches	Non-Destructive Inspection Services for Zero Waste Manufacturing	Oscar Salgado (IKER)
	Zero Defect approach to welding	Álvaro Souto (AIM)
	Artificial Intelligence in NDT Inspection – a review and future directions	Fernando García-Torres (UPV)
	Counting the Benefits: The Importance of Green Manufacturing Transition in Driving Sustainable Growth	Shashank Goyal (EUR)

1.10 EU Clustering and Regional Interactions

From November 2022, [ZDZW](#) is part of [the 4ZDM cluster and the ZDM Manufature sub-platform](#). It actively participates in its regular meetings, which take place on the third Monday of every two months, as well as in other cluster activities such as a joint end of the year calendar to promote the interaction among sisters projects (Figure 15).

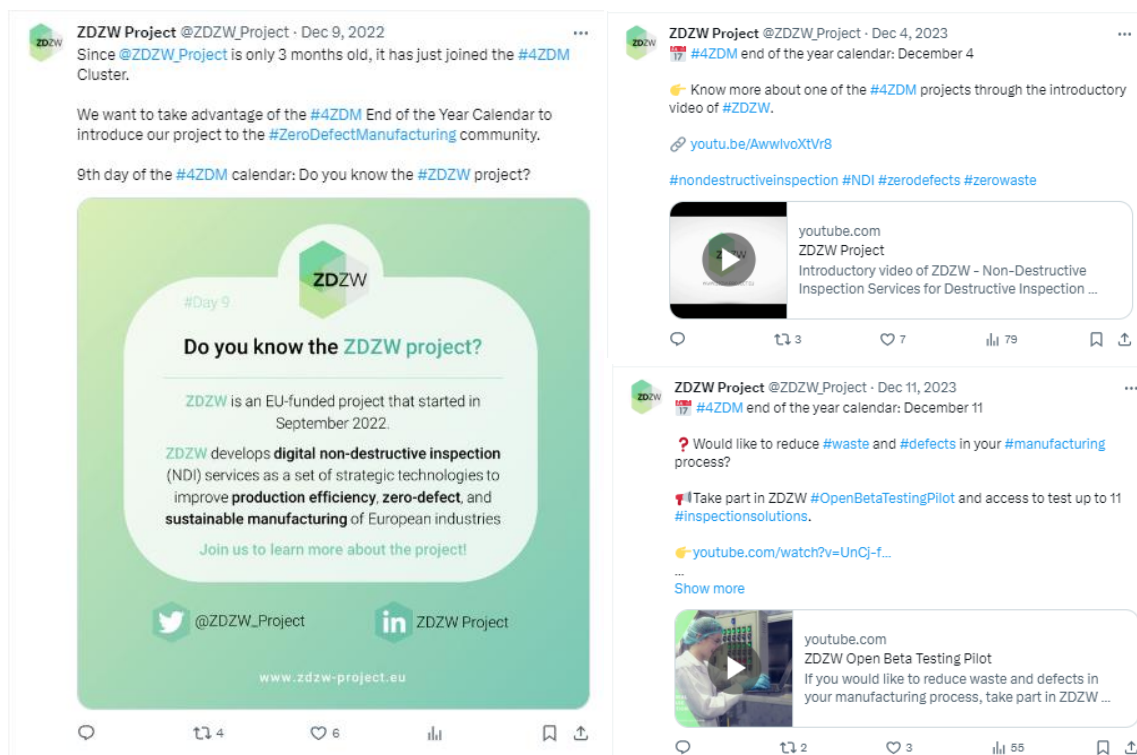


FIGURE 15. SOME POSTS FROM 2022 & 2023 4ZDM END-OF-THE-YEAR CALENDAR.

In January 2023, [ZDZW](#) was also invited to participate in another running cluster: [ForeSee Cluster](#) focused on predictive maintenance.

2 CONCLUSIONS: DISSEMINATION STATUS AT M18

Over the past 15 months, ZDZW has engaged in **extensive and diverse dissemination activities**, as outlined in the preceding section. At this stage, ZDZW is pleased to report significant achievements in dissemination, evident in metrics such as **website and social media engagement, dissemination material generation, representation at international events, publication of some journal papers, feedback from the ZDZW Advisory Group, and participation in EU cluster initiatives.**

In summary, similar to the approach taken in the initial version of this deliverable (D10.1), Table 4 provides updated information on the status and metrics for each dissemination activity within the project. It's important to note that this table is supplemented by the Plan for Exploitation & Dissem. of results – PEDR (D3.3).

TABLE 4. DISSEMINATION STATUS AND METRICS.

ACTIVITY STATUS						
 open  pending  in progress  completed  updates required						
DISSEMINATION ACTIVITY	DUE DATE	M3	M18	M36	TARGET KPI	CURRENT METRICS
Project Identity - Logo	M1				-	-
Project Identity - Brand guidelines	M3				-	Logo, colour palette, typography and image background
Project Identity - Presentation template	M3				-	2 versions available
Project Identity - Deliverable template	M3				-	2 versions available
Project Identity - Document template	M3				-	1st version available
Project Identity - Poster template	M4				-	1st version available
Website creation	M3				-	Online since 15-nov-22
Website update	M36				100 updates	40 updates, 21.599 unique visitors and 80.069 total requests
Intranet creation	M1				-	Created Sep 2022
Intranet update	M36				-	~34.900 uploaded elements
Social Media creation	M1					Joined Twitter, LinkedIn and Youtube Sep 2022
Social Media update	M36				>10.000 interactions, 150 followers/year, 1 post/week and 3.000-5.000 impressions/year	368 followers, 169 posts, 2.552 interactions and 41.428 impressions (*)
Promotional poster (online)	M36				1	2nd version available
Promotional slide (online)	M36				1	1st version available
Promotional presentation (online)	M36				1	1st version available

(*) Interactions refer to the total number of engagements or contacts made through clicks, reactions, comments, or reposts. Impressions refer to the total number of times the posts are shown. We consider at the DoA the KPIs of the interactions and impressions were inverted by mistake since not everybody that sees a post interacts with it, so that impressions should be greater than interactions.

ACTIVITY STATUS						
 open  pending  in progress  completed  updates required						
DISSEMINATION ACTIVITY	DUE DATE	M3	M18	M36	TARGET KPI	METRICS
Printed Media - Brochure	M6				1	1st version printed
Printed Media - Banner	M36				1	2 versions available
Printed Media - Flyers	M36				2	-
Posters per pilot	M36				6	Portrait and landscape versions of the 6 pilots available
Infographics	M36				1	-
Promotional Videos	M36				1	Animated ZDZW introductory video and short video on Open Beta Testing Pilot.
Merchandise	TBD				-	-
eNewsletter	M36				8	First 2 issues published
Press Releases	M36				2	2 press releases: ZDZW introduction and DMIS
Trade fairs, exhibitions, industrial conferences and workshops	M36				10 industrial conferences, 5 speaker slots and 4 project exhibitions.	10 industrial conferences, 4 speaker slots and 17 project exhibitions.
Conference publications	M36				>10 publications in scientific conferences	13 publications in scientific conferences
Journal publications	M36				>5 publications to industrial journals and magazines. >10 publications in scientific journals.	2 publications in scientific journals
ZDZW community creation	M3				-	Online since 4-nov-22
ZDZW community	M36				~400 Stakeholders contacted; ~10 entities engaged as Supportive partners, 7 ambassadors (2 posts/each), organization of 6 webinars/Q&A sessions	3 ambassadors (6 posts each), 1 MATTCH webinar
Industrial advisory group	M36				Up to 5 members, 4 AG workshops	First and second AG workshops in Jun 2023 and Feb 2024
ZDZW workshops	M36				2 (20-50 participants each)	First WS in DMIS with 250 participants
EU clustering participation	M36				Invite 8 EU Networks or projects for cross-dissemination purpose, joint events workshops, webinar, round tables, panel presentations	Part of the 4ZDM and ForeSee clusters
ZDZW webinars	M36				>=2 dedicated training sessions with pilot partners, >=5 info webinars, >100 participants	-

ANNEX. ACTIONS DERIVED FROM AG FEEDBACK

AG member	Comment	Derived action(s)	Action Status	Assigned WP	Responsible partner(s)	Additional comments
Silvia Menato	Where is the impact on sustainability considered in the pathway to impact?	Not necessary	Needless	-	-	Explained in detail later on in the workshop (scenarios presentation)
Silvia Menato	Do the inspection suites act as a decision support system to suggest the possible outcome strategy (repair strategy, defect prevention, etc.)?	Not necessary	Needless	-	-	Data resulting from the solutions could be used in a DDS, but the project is neither focused on this integration nor there is any use case demonstrating this potential usage
Ingo Martens Alex Bassi	What is the cost of implementation these technologies? And derived from this question, what is the cost/price for a customer?	Estimate costs of implementation of solutions when possible: price of purchasing, licensing, etc. (any bussiness model offered)	Not started	WP3	FBA	The pricing will be addressed with the selected early adopters in the beta testing campaign; they will test the solutions and be able to provide feedback on the pricing considering the services received.
Alex Bassi	Which is the Business Model(s) behind the project? This is the very first aspect a potential customer wants to see, together with how much it is going to cost them	Define the business model from the very beginning and update it as the project progresses	In progress	WP3	FBA	The business model is currently being built on a twofold approach: product owners share their preferences, which will then be validated with the early adopters.
Silvia Menato	In one of the deliverables the business model "Inspection as a service" is mentioned. My remark for the next phases of the project it is to focus in how to realize that kind of business model (analyze the ecosystem, the value chain and bring differentiation to the market). It is important to consider the business model from the beginning, without leaving it to the end.	Define the business model from the very beginning and update it as the project progresses	In progress	WP3	FBA	The business model is currently being addressed. This will specially be determined in the interviews with the applicants, together with the results of the actions carried out by EURA.
Alex Bassi	Have you consider profit sharing in the business model (ie go to a customer selling them the idea of zero cost if the implementation of the solutions does not go well, but sharing benefits if it goes well). It is a business model option that could be interesting to evaluate.	Review the business model approach	In progress	WP3	FBA	Different business models for the ZDZW solutions are being considered, and the one that fits best will be determined by the feedback from early adopters.
Ingo Martens Alex Bassi	Companies are more interested in knowing what they can expect from the solutions, rather than the technologies they include, so, avoid scientific explanations and focus on the differential value they provide: "What I have to implement and what I can expect and the end - e.g. 50% scrap reduction". Explain solutions based on the value they can provide to specific target groups. Time to convince a company's CEO/COO (decision makers) is 20 seconds (elevator pitch). Request the support of the main players in the industry in redirecting the message (understandable and engaging).	Review and update messages (value proposition / elevator pitch) based on target groups	Done	WP3	FBA	A dedicated buyer persona workshop was hosted with the product owners to define the ideal customer and formulate the communication strategy for the beta testing campaign.
		Check the constreated message with the main players in the industry	In progress	WP3	FBA	The beta testing campaign and the associated communication efforts will assist us in refining our pitch, both at the solution and project levels.
		Consider it in the beta testign campaign materials	Done	WP3	FBA	Elevator pitches for each solution have been crafted and will now be employed to promote the beta testing campaign, attracting early adopters.

		Review and update existing dissemination material	In progress	WP10	UPV	New dissemination material has been / is being prepared: 1-minute videos for promotion of EOI and webinars on social media, elevator pitches for each solution, 1-min videos associated with elevator pitches, posters for each pilot emphasizing expected impact and newsletter focused on EOI and ZDZW solutions.
Alex Bassi	In dissemination, beware of false KPIs, and make sure to reach the target: for example, having many random followers on Twitter is worthless if they do not belong to the target audience (It is better to have 200 really interested followers than 2000 random ones). Efficient dissemination (no excessive effort/posts... but well-directed). Use messages that engage those who are really interested.		In progress	WP10	UPV	Efforts were made to involve all the partners in interaction with the messages shared on the social networks of the project to reach partners' contacts who may not be ZDZW followers in addition to the ambassador program composed of a relevant pool of experts that is going to be released by FBA with social media campaigns-adds.
Alex Bassi	Imagine an ideal company for the solution. Contact to industrial networks/associations to get which are the main players in the area. Try to contact them. Build a network around the project.	Awareness raising and retention campaign to be implemented during the beta testing campaign	In progress	WP3	FBA	Several leads have been gathered during events, and more are expected as we promote the beta testing campaign. The ideal scenario is to create a community around this, regardless of whether all members participate in the beta testing campaign.
Silvia Menato	Make use of results from project results (pilots, solutions) to raise interest from external applicants if the timelines apply	Review and update existing dissemination material for the beta testing campaign	In progress	WP3	FBA	The beta testing campaign is scheduled for launch in February 2024. During this period, the solutions will be actively promoted to attract potential early adopters.
Silvia Menato	Is it defined how to calculate the KPIs?	A first detailed approach already exists and can be found in the deliverable	Done	WP8	EURA	It was not shown in the presentation made in the AG workshop, but there is a first detailed approach in the deliverable (methodology, calculation method, etc.). Progress the KPIs will be achieved in following stages of the project.
Silvia Menato	In case the assessed companies are interested, will the information related to KPIs be used for any certification? (e.g., certification related to sustainability)	The certification topic it is out of scope	Needless	WP8	EURA	It is not foreseen, the certification topic it is out of scope. WP8 is dealing with the sustainability and details the methodology, sustainability-related KPIs, etc.
Silvia Menato	Start collecting data from the beginning of the project in order to calculate the KPIs. It is common to start at the end, when it is too late.	Collect information on KPIs as it is available	Not started	WP9	ARC	It is planned to collect information on the KPIs depending on the availability of such information. The KPIs to be calculated in the first approach are already identified.
Ingo Martens	Do you see dependency between the KPIs energy consumption and productivity? Are we talking about production energy consumption or testing energy consumption?	Not necessary	Needless	-	-	The objective is to reduce energy consumption during the manufacturing process (by producing less defective). So, we talk about production energy consumption.
Silvia Menato	When will the cost-benefit analysis be performed?	Perform cost-benefit analysis	Not started	WP8	EURA	Social, ecological and economic aspects will be analyzed at the end of the project.



CHANGE LOG

VERSION	DESCRIPTION OF CHANGE
V0.1	First draft to be reviewed
V0.2	Implementation of recommendations from reviewers
V1.0	Submitted version