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Organ-on-a-Chip Focused Strategic Partnership (OrChESTRA)

Deliverable D5.2

Plan for Dissemination and Exploitation including Communication Activities-2

Work Package 5

Dissemination, exploitation, communication and outreach

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0 INTRODUCTION

This document presents the updated plan for dissemination, communication, and exploitation (DCE) activities implemented throughout the entire duration of the OrChESTRA project. Building on the strategy defined in D5.1 Plan for Dissemination and Exploitation including Communication Activities-1, this report provides an overview of how the project's DCE actions have been executed and monitored to enhance outreach impact, visibility, and stakeholder engagement across academia, industry, and the public sector.

While D5.1 outlined the main framework and initial strategy for promoting the project and ensuring efficient knowledge transfer, this updated version focuses on the implementation progress, performance indicators, and outcomes achieved during the course of the project. It also highlights how communication and dissemination measures have supported exploitation and long-term sustainability of the project's results.

ODTÜ MEMS, continued to coordinate the project's DCE activities and ensure consistency and alignment across partners. Under the guidance of the Dissemination and Communication Manager, Dr Can Dinçer (UFR), all partners actively contributed to the implementation of outreach, visibility, and exploitation actions within their respective networks. Following Dr. Dincer's transition to Technical University of Munich, ODTU MEMS coordination team took over the responsibility to maintain continuity and ensure uninterrupted progress.

The present document thus serves as a comprehensive summary of the strategies and results achieved in the dissemination, communication, and exploitation domains during the three-year implementation of the OrChESTRA project, forming the basis for continued visibility and sustainability beyond its completion.

1 DISSEMINATION AND COMMUNICATION STRATEGY OVERVIEW

The dissemination and communication (D&C) strategy of the OrChESTRA project, initially defined in D5.1, established a comprehensive framework for maximising visibility, promoting knowledge transfer, and fostering stakeholder engagement across the microfluidics and organ-on-chip domains. Over the course of the project, this strategy was refined and adapted to the evolving needs of the consortium and the external environment, ensuring effective alignment between dissemination, communication, and exploitation efforts.

The original strategy focused on building a coherent identity for OrChESTRA, ensuring that all partners communicated project objectives, progress, and outcomes in a coordinated and complementary manner. Core principles included: (i) increasing the project's visibility and positioning ODTÜ MEMS and its partners as leading actors in the European microfluidics ecosystem, (ii) supporting open and efficient knowledge sharing through publications, events, and digital channels, and (iii) fostering multi-stakeholder collaboration and community-building around OrChESTRA's thematic areas. As the project matured, the D&C approach evolved from awareness-building to engagement and impact generation, structured around three main pillars:

- **Visibility and Branding:** Ensuring consistent visual identity and coordinated outreach through the project website, social media, and participation in key national and international events.
- **Knowledge Transfer and Engagement:** Disseminating research results through workshops, seminars, training sessions, and joint events such as the BioMEMS Workshops, Summer Schools, and Brokerage Event, thereby bridging academic, industrial, and public audiences.
- **Sustainability and Exploitation Alignment:** Linking dissemination and communication actions with the project's Key Exploitable Results (KERs) and sustainability planning to support long-term utilisation of outcomes.

Within WP5, dissemination and communication efforts were continuously refined to ensure alignment with the project's scientific and collaboration goals. Coordination mechanisms between partners facilitated regular updates, joint visibility actions, and consistent messaging across all dissemination channels. Rather than operating as stand-alone activities, D&C efforts were integrated with ongoing research, training, and collaboration actions, ensuring that every scientific milestone, workshop, or outreach event contributed to OrChESTRA's overall visibility and impact.

2 DISSEMINATION AND COMMUNICATION CHANNELS AND TOOLS

The dissemination and communication (D&C) strategy of the OrChESTRA project was implemented through multiple complementary channels, designed to maximise outreach, ensure the visibility of project achievements, and support the long-term exploitation of results. The consortium continuously improved the quality, frequency, and consistency of its dissemination activities, particularly following the feedback received during the interim review.

2.1 Project Website

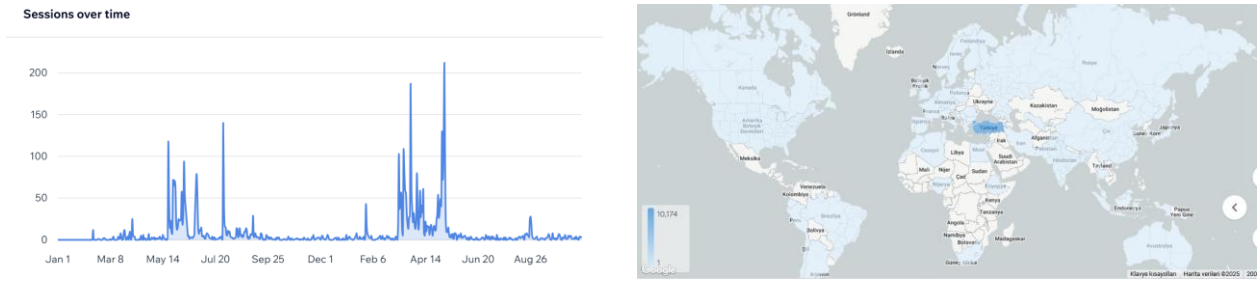
The OrChESTRA project website (www.orchestra-project.eu) served as the main hub for communication, visibility, and knowledge exchange throughout the project. Following the interim review, where more regular and energetic updates were underlined, the website was significantly enhanced in both content and structure.

A new, more professional layout was introduced to improve user experience, and the information scope was expanded to include regular updates on publications, newsletters, workshops, training activities, conferences, and outreach events. The "Publications" section was updated with open-access documents, while "Events" page was actively used for upcoming activities.

Since these updates, the website has become a dynamic and comprehensive information source for both national and international stakeholders, regularly featuring news on consortium achievements, event summaries, and downloadable materials such as newsletters, workshop programmes, and abstract books. These improvements resulted in visibly increased web traffic and engagement metrics during the second and third project years. Between January 2024 and October 2025, the website recorded a total of 12.576 page visits, with the highest engagement from Türkiye (10.174 visits), followed by the Netherlands (336), the United States (247), Germany (246), India (256), and Belgium (58). The corresponding web analytics data are shown in Figure 1, illustrating significant traffic peaks and a broad international reach.

Analytics also indicate a notable increase in traffic between March and June 2025, coinciding with major outreach activities such as the 4th BioMEMS & Microfluidic Technologies Workshop and the Brokerage Events. These data confirm a strong and growing interest in project outcomes within and beyond the consortium countries.

The website will remain publicly available for at least two years beyond the project's end to ensure the long-term accessibility of project results and deliverables.



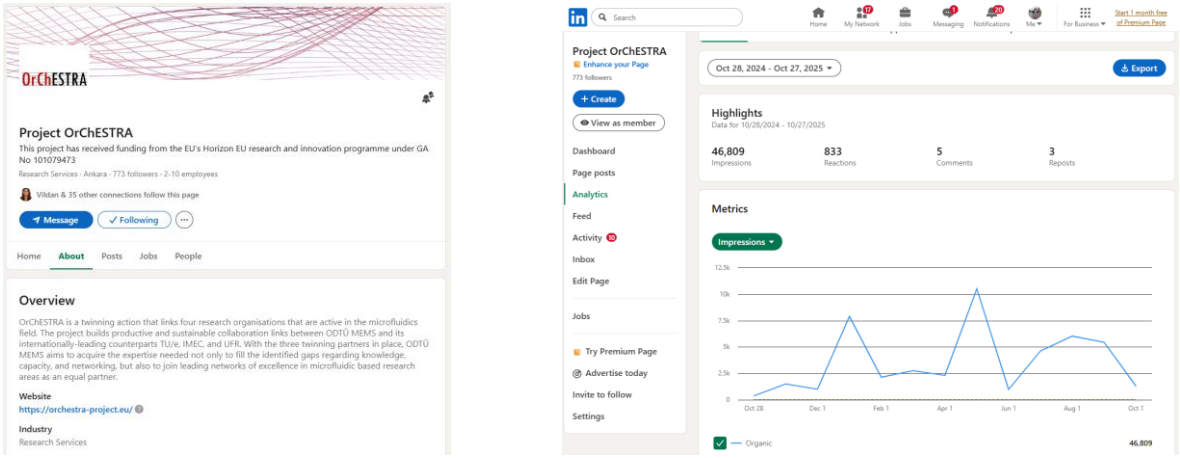
(a) (b)

Figure 1: (a) Website traffic trends between January 2024 and October 2025; (b) Geographic distribution of website visitors, highlighting broad international reach.

2.2 Social Media Channels

Social media presence was strengthened through active use of the OrChESTRA LinkedIn page (https://www.linkedin.com/company/project-orchestra/), which became the consortium's main interactive dissemination tool. Regular posts highlighted project achievements, publications, upcoming events, and opportunities for collaboration. The LinkedIn page became one of the most effective communication channels of the project, sharing high-quality visual content, event summaries, and partner highlights. Posts about the BioMEMS and Microfluidic Technologies Workshops, Career Development Programme, staff exchanges, and brokerage events generated strong engagement and extended the project's visibility to new audiences across Europe.

Between October 2024 and October 2025, the OrChESTRA LinkedIn page achieved a strong and steadily growing digital presence, reflecting the project's high visibility and engagement across scientific and industrial communities. During this period, the page recorded 46,809 total impressions, 833 reactions, 5 comments, and 3 reposts, reaching a follower base of 773 by October 2025. Peaks in impressions corresponded to key dissemination activities such as the BioMEMS Workshops, staff exchanges, and brokerage events (LinkedIn analytics only provide data for the past 12 months). Figure 2 shows LinkedIn page analytics.



(a) (b)

Figure 2: (a) OrChESTRA LinkedIn page; (b) impressions trend chart illustrating peak visibility periods (between October 2024 and October 2025).

Analytics showed growing interaction rates, particularly from research organisations, industry representatives, and policymakers interested in organ-on-chip and microfluidics. The LinkedIn and YouTube channels together evolved into key tools for community building and maintaining post-project visibility.

In addition to LinkedIn, video-based dissemination was also pursued (Figure 3). A short film introducing ODTÜ MEMS and the OrChESTRA project was featured on YouTube, providing a visual overview of the centre's research environment and highlighting its role within the OrChESTRA consortium, while effectively conveying the project's mission, objectives, and international collaboration framework to both scientific and general audiences, thereby enhancing public awareness and visibility of the consortium's research activities. (https://www.youtube.com/watch?v=9TaennVus_E)

Figure 3: Screenshot from the OrChESTRA promotional video.

2.3 Promotional Materials

To ensure a consistent and recognisable project identity, a wide range of promotional materials were produced and used across all OrChESTRA dissemination and outreach activities. These materials have played a vital role in strengthening the project's professional visibility at national and international events, while maintaining full compliance with Horizon Europe visibility guidelines.

A dedicated OrChESTRA roll-up was among the first visual materials produced under the project and has been used consistently since the early months of implementation. The roll-up includes the project logo, funding acknowledgement, and partner list, providing a strong visual identity across seminars, workshops, and training events. It has been regularly displayed at all OrChESTRA and related events, serving as a consistent visual element for presentations and photo documentation (Figure 4).

(a) (b)

Figure 4: (a) OrChESTRA roll-up; (b) Scene from a seminar held at ODTÜ MEMS

Complementing the roll-up, the BioMEMS and Microfluidic Technologies Workshop banner served as one of the main visual identity elements of the project, co-branded with the MAESTRO platform to highlight the

synergy between the two initiatives coordinated by ODTÜ MEMS. The banner was regularly displayed during workshops, providing a cohesive and recognisable visual representation of the consortium (see Figure 5).

(a)

(b)

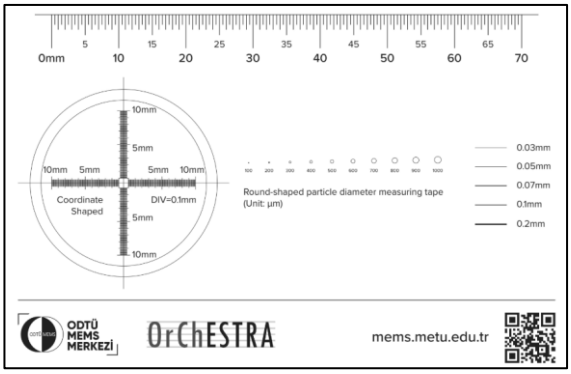
(c)

Figure 5: (a) OrChESTRA banner for the International BioMEMS and Microfluidic Technologies Workshop; (b) installation at ODTÜ MEMS, Ankara; (c) installation at İzmir Institute of Technology (İYTE), İzmir.

The promotional set also included custom-designed pens bearing the OrChESTRA logo and the official "Funded by the European Union" emblem. These were distributed during workshops, meetings, and outreach events, enhancing the project's recognisability among external stakeholders and participants (Figure 6 (a)).

Another unique promotional item developed under the project was a custom microscope calibration gauge (Figure 6 (b)). This precision tool, used for calibration reference tool for size and distance measurement under microscope, reflects the project's strong technological focus and was distributed to researchers and students as a symbolic token connecting OrChESTRA's identity with microfabrication and measurement technologies.

(a)



(b)

Figure 6: (a) OrChESTRA pen; (b) OrChESTRA microscope calibration gauge

In addition to physical materials, digital templates were prepared for all partners, including official PowerPoint presentation and Word deliverable templates. These templates ensured visual coherence, consistency, and recognisability across all project outputs, presentations, and communication materials.

2.4 Media and Press Coverage

Media and press coverage throughout the project period has helped increase OrChESTRA's visibility among national and international audiences. Several articles have introduced the project as an ODTÜ MEMS led initiative advancing organ-on-chip systems with the aim of reducing reliance on animal testing. These reports described the project's consortium and objectives, including research on organ-on-chip platforms and sensor integration for real-time measurements. Details of the coverage can be found in the Anadolu Agency's feature at https://www.aa.com.tr/tr/bilim-teknoloji/turk-arastirmacilarin-liderliginde-deney-hayvanlarinin-yerini-alacak-cip-gelistirilecek/3295239.

Following this, the news was also featured by other media outlets, including Daily Sabah (https://www.dailysabah.com/turkiye/turkish-universitys-organ-on-chip-project-targets-animal-free-testing/news) and Rumeli TV (https://rumelitv.com.tr/deney-hayvanlarinin-yerini-alacak-cip-gelistirilecek/), extending the project's visibility to wider audiences.

In parallel, the project has been profiled as a "Success Story" on TÜBİTAK's Ufuk Avrupa portal (https://ufukavrupa.org.tr/tr/basari-hikayeleri/ufuk-avrupa-twinning-orchestra-organ-chip-focused-strategic-partnership), which underscores OrChESTRA's capacity-building goals in microfluidics and organ-on-chip technologies and reinforces its national-level recognition. Figure 7 presents the screenshots of these media coverages.

Figure 7: News articles featuring the OrChESTRA on national and international media platforms.

2.5 Publications and Scientific Dissemination

Scientific dissemination activities within OrChESTRA were carried out through peer-reviewed publications, conference contributions, book chapters, posters, and newsletters, ensuring the broad sharing of research outcomes with both the academic and industrial microfluidics and organ-on-chip communities. These efforts reflected the project's commitment to advancing scientific knowledge and promoting collaboration across its partner institutions; ODTÜ MEMS, TU/e, IMEC, and UFR.

During the project implementation, consortium partners co-authored several joint publications and abstracts acknowledging OrChESTRA support, focusing on key thematic areas such as organ-on-chip integration and electrochemical sensing. The complete list of scientific publications is provided in D4.3 and D4.4 Report on Collaboration Activities – 1,2.

OrChESTRA partners actively contributed to high-impact scientific events to present project-related research and strengthen their visibility in the European research landscape. Dissemination venues included µTAS 2023, EUROoCS 2024, and the International Workshop on Emerging Organ-on-Chip Technologies (Eindhoven, 2024), etc., where researchers shared findings on microphysiological systems and microfabrication advances. Additionally, OrChESTRA's outcomes were presented at the BioMEMS and Microfluidic Technologies Workshops (Ankara and İzmir, 2023–2025), which brought together national and international stakeholders from academia and industry.

To complement formal scientific dissemination, the consortium prepared visually engaging and accessible materials for a broader research audience. Periodic OrChESTRA Newsletters summarised technological developments, standardisation activities, and participation in international events, while project-specific posters showcased ongoing research such as the "Smart Gut-on-Chip System," featuring sensor integration, TEER electrodes, and MIP-based electrochemical detection. These materials were shared through website, conference stands, and digital platforms, reinforcing OrChESTRA's recognition in the microfluidics research ecosystem (see Figure 8).

(a) (b)

Figure 8: OrChESTRA scientific dissemination materials: (a) March 2025 newsletter featuring research updates and upcoming events; (b) "Smart Gut-on-Chip System" poster.

In addition to scientific dissemination, OrChESTRA was represented in strategic policy and collaboration events promoting international research partnerships. The project was showcased during the "Dutch–Turkish Collaboration Opportunities in Horizon Europe: Twinning" Info Day, jointly organised by TÜBİTAK, Boğaziçi University, and the Netherlands Enterprise Agency (RVO). During this event, Prof. Dr. Haluk Külah (ODTÜ MEMS), together with Dr. Hans Wyss (TU/e), presented OrChESTRA under the title "From Idea to Impact: Building World-Class MEMS Research Through Twinning", highlighting the project's achievements in developing sustainable European–Turkish research collaborations in organ-on-chip and microfluidic technologies. The presentation underscored OrChESTRA's role as a successful model for capacity building and international cooperation within Horizon Europe's WIDERA framework. The video of the event is available at https://www.youtube.com/watch?v=2PwAPEOLh5M. Figure 9 presents a frame captured during this online event.

Figure 9: Presentation of the OrChESTRA project at the Dutch–Turkish Collaboration Opportunities in Horizon Europe: Twinning Info Day.

Overall, these dissemination efforts have positioned OrChESTRA and its partners as visible contributors to the European organ-on-chip and microphysiological systems community, demonstrating the consortium's scientific excellence and collaborative impact.

2.6 Events and Workshops

Scientific and networking events were instrumental in achieving OrChESTRA's dissemination, communication, and exploitation (DCE) objectives. Rather than serving as isolated activities, they formed an integrated dissemination framework, providing visibility to the consortium's achievements, supporting stakeholder engagement, and reinforcing OrChESTRA's position within the European organ-on-chip and microfluidics ecosystem.

Throughout the project, events such as the 2nd, 3rd, and 4th International BioMEMS and Microfluidic Technologies Workshops (Ankara 2023, Ankara 2024, İzmir 2025), the International Workshop on Emerging Organ-on-Chip Technologies (Eindhoven 2024), and the two Brokerage Events (Ankara 2025, Freiburg 2025) provided major dissemination interfaces. These activities brought together researchers, SMEs, policy actors, and students, while strengthening OrChESTRA's collaboration network. Similarly, joint attendance at key international conferences (such as µTAS 2023, EUROoCS 2024, BBMEC 2024 and MPS World Summit 2025) further enhanced the project's scientific credibility and community visibility.

Complementary outreach and educational formats were also introduced and institutionalised at ODTÜ MEMS during the project period. Students' Days were organised to introduce undergraduate and graduate students to MEMS technologies and their application areas, while showcasing the Centre's research infrastructure and expertise.

Professionals' Day was held as Organ-on-a-Chip Masterclasses, co-organised by ODTÜ MEMS and AZAR Innovations. The training provided a practical introduction to organ-on-a-chip and microfluidic applications through combined lectures and laboratory sessions. Bringing together participants from academia and industry, it fostered cross-sector learning and strengthened professional links around organ-on-a-chip technologies, in line with the aim of promoting collaboration between ODTÜ MEMS and external stakeholders.

In parallel, Open-Door Days held alongside scientific workshops allowed visiting researchers and the general public to explore ODTÜ MEMS facilities and projects, fostering awareness and collaboration opportunities.

Each of these events was comprehensively documented in D4.5, D4.6 ("Report on Collaboration Activities – 2 and 3"), and D5.4, D5.5 ("Outreach activities reports – 1 and 2). As presented there, they not only achieved wide dissemination but also directly supported the project's exploitation and sustainability goals by creating opportunities for cross-border collaboration, exchange of expertise, and stakeholder feedback.

Each of these events was comprehensively documented in Deliverables D4.5 and D4.6 ("Report on Collaboration Activities – 2 and 3"). As presented there, they not only achieved wide dissemination but also directly supported the project's exploitation and sustainability goals by creating opportunities for cross-border collaboration, exchange of expertise, and stakeholder feedback.

Key Outcomes:

- Over 600 combined participants engaged through OrChESTRA-related events and workshops.
- 334 students introduced to MEMS and microfluidic technologies through Students' Days, now institutionalised as a regular activity at ODTÜ MEMS.
- Enhanced industry-academia interaction through the Organ-on-a-Chip Masterclasses co-organised with AZAR Innovations.
- Formation of new contacts and follow-up Horizon Europe proposal initiatives during Brokerage Events.

- Increased national visibility through media coverage of BioMEMS and Microfluidic Technologies Workshops.
- Integration of event outputs (abstract books, posters, etc.) into project communication channels.
- Enhanced stakeholder awareness contributing to long-term impact and exploitation planning.

These events collectively ensured that OrChESTRA's scientific, networking, and outreach ambitions were met, providing a lasting foundation for future collaborations beyond the project's lifetime.

3 VISUAL IDENTITY

The OrChESTRA visual identity, designed during the proposal phase, has been consistently applied throughout the project to ensure coherence across all dissemination and communication materials. The logo (five grey parallel lines representing staves behind the acronym and the dominant colours red, grey, and black) has become the project's primary visual signature (Figure 10).

During the implementation period, the logo, document templates, and the EU emblem were systematically used across all public materials, presentations, reports, and online channels, ensuring recognisability and compliance with Horizon Europe visibility rules.

Figure 10: The project logo

4 TARGETED STAKEHOLDERS

The stakeholder structure defined in the first version of this report (D5.1) was maintained throughout the implementation period, covering four main groups: Business, Research, Policy, and Public.

During the project, OrChESTRA further expanded its outreach across these groups through workshops, brokerage events, Students' and Professionals' Days, and one-to-one interactions. More than 100 face-to-face meetings were held with academic, industrial, and public stakeholders, complemented by numerous engagement activities organised under WP4 and WP5. These interactions strengthened collaboration, supported knowledge exchange, and contributed to the long-term sustainability of project outcomes.

This consistent stakeholder framework allowed OrChESTRA to maintain targeted communication and strengthen visibility across industrial, scientific, and societal domains.

4.1 Stakeholders' database

The stakeholder database introduced in D5.1 has been continuously updated during the project to record and categorise all engagement activities with external organisations. The database serves as a reference tool for tracking collaborations, communication outcomes, and stakeholder roles (e.g. participant, invited speaker, potential collaborator).

The most recent and detailed overview of stakeholder interactions, including engagement types and outcomes, is presented in D5.4 and D5.5. These documents collectively capture the evolution of OrChESTRA's stakeholder network and its contribution to the project's dissemination, communication, and exploitation objectives.

5 DISSEMINATION STRATEGY

All dissemination actions aimed to maintain a unified communication and visibility strategy established in the first phase of the project (D5.1). Dissemination actions were implemented through multiple channels, including the project website, social media, press releases, and participation in relevant scientific and networking events, ensuring consistent visibility across research, industrial, and public domains.

Dissemination actions were supported by partners through the use of their institutional communication channels, ensuring alignment with the overall OrChESTRA strategy. Regular updates, public deliverables, and workshop announcements were made available online, reinforcing OrChESTRA's recognition within the European organ-on-chip and microfluidics community.

5.1 Dissemination channels

The dissemination channels and tools identified in D5.1 remained the backbone of OrChESTRA's outreach efforts, complemented by new initiatives implemented during the project. Key channels and examples of their utilisation are summarised in Table 1.

Table 1: Dissemination channels and their implementation during the project

Dissemination Tool	Description and Implementation during the Project
OrChESTRA website	The project website remained the main hub for dissemination, providing information on project objectives, partners, events, and deliverables. Regular updates, news on BioMEMS & Microfluidic Technologies Workshops, Brokerage Events, and training activities contributed to increased visibility. Between January 2024 and October 2025, the website recorded 12.576 page visits.
OrChESTRA social media	LinkedIn served as the primary platform for visibility and updates. Posts covered project events and partner news using hashtags such as #organonachip, #microfluidics, and #biosensors. Across the project period, more than 40 posts were shared, generating a cumulative 46.809 impressions and over 800 reactions from the page audience. The most active post alone reached 5.860 impressions and 1.637 engagements, with a 27,9% engagement rate. These activities contributed to increased online visibility and consistent engagement peaks around key events such as the BioMEMS & Microfluidic Technologies Workshop and the OrChESTRA Brokerage Events.
Press releases and newsletters	Press releases were shared through institutional and national channels, while periodic newsletters summarised project highlights, workshops, and partner activities. A total of 8 newsletters and 4 press releases were published.
Promotional materials	Visual and printed materials (roll-ups, banners, pens, microscope calibration gauge) were produced for events, workshops, and meetings to ensure a consistent visual identity. At least 4 different dissemination materials were produced and used at least 8 major events.
Scientific papers and articles	Dissemination through peer-reviewed publications, book chapters, and conference presentations significantly increased during the second and third reporting periods. A total of 6 peer-reviewed journal articles, 1 book chapter (in press), and 13 conference

	presentations/posters were produced with the contribution or acknowledgment of OrChESTRA partners.
Participation in 3rd-party events	Partners participated in relevant scientific and networking events to enhance visibility and foster collaboration (e.g. EUROoCS 2024, µTAS 2023, BBMEC 2024, Phoenix-OoC WS, BioSensors 2025, and MPS World Summit 2025).
Visits / face-to-face meetings	A total of 126 meetings were held with academic, industrial, and policy stakeholders, facilitating cross-sector dialogue and future collaboration opportunities.
Presence in relevant networks	Consortium partners remained engaged with European networks (individual memberships of EUROoCS, individual researchers in CEN/CENELEC OoC focus group, close collaboration with Microfluidic Association members) to align OrChESTRA with ongoing initiatives in organ-on-chip and microfluidics.
Events organised by OrChESTRA	A total of 22 events were organised under WP4 and WP5, including 3 International BioMEMS & Microfluidic Technologies Workshops (Ankara, İzmir), 1 International Workshop on Emerging Organ-on-Chip Technologies (TU/e), 2 Summer Schools, 2 Brokerage Events (Ankara, Freiburg), 12 Students' Days, 1 Open Doors Event, and 1 Professionals' Day. Details of the organised events are summarised in Table 2 under Section 5.2.

5.2 Dissemination and outreach activities

Dissemination activities targeted diverse stakeholder groups including academia, industry, policymakers, and the general public through an integrated communication strategy. The combined use of the project website, social media, publications, and events ensured both scientific visibility and societal outreach. The details of these activities are summarised in the following table.

Table 2: Dissemination and outreach events organised by the OrChESTRA consortium

Event name	Date	Type	Mode
2nd International BioMEMS and Microfluidic Technologies Workshop	28–29/03/2023	BioMEMS WS	Online
Student Day – METU EEE 3rd-year visit	20/10/2023	Outreach	In-person
Student Day – Sinop Deneyap Tech Atelier	13/11/2023	Outreach	In-person
Student Day – METU Physics seniors	14/12/2023	Outreach	In-person
Student Day – Başkent University Biomedical Eng. Students	14/12/2023	Outreach	In-person
Student Day – METU Mechanical Eng. 3rd-year	22/12/2023	Outreach	In-person
Student Day – Aselsan Vocational & Technical HS	05/03/2024	Outreach	In-person
Student Day – Bahçelievler Deneme Anadolu HS	12/03/2024	Outreach	In-person
3rd International BioMEMS and Microfluidic Technologies Workshop	10–11/06/2024	BioMEMS WS	Hybrid
Open-doors event	10/06/2024	Outreach	In-person
International Workshop on Emerging Organ-on-Chip Technologies – Eindhoven	27/06/2024	International WS	Hybrid
Organ-on-a-Chip Masterclass by AZAR Innovations (ODTÜ MEMS)	09–12/07/2024	Professionals' Day	In-person
Summer School-1	16-19/09/2024	Summer school	In-person

Student Day – Ankara Yıldırım B. ME	21/10/2024	Outreach	In-person
Student Day – METU ME+EE	03/01/2025	Outreach	In-person
Student Day – Nermin Çekir Anadolu L.	02/02/2025	Outreach	In-person
Student Day – METU ME	18/03/2025	Outreach	In-person
Student Day – GOP Mesleki ve Teknik Anadolu L.	14/04/2025	Outreach	In-person
4th International BioMEMS and Microfluidic Technologies Workshop	8-9/05/2025	BioMEMS WS, joint attendance	Hybrid
Summer School-2: High school student	2-4/07/2025	summer school	In-person
Brokerage Event - Ankara	26/08/2025	Brokerage Event	In-person
Brokerage Event - Freiburg	27/08/2025	Brokerage Event	Hybrid

6 COMMUNICATION STRATEGY

The communication strategy complemented dissemination and exploitation activities by supporting the project's overall visibility and stakeholder engagement. Its purpose was to ensure consistent and clear messaging about OrChESTRA's objectives, progress, and results across all target audiences — including academic, industrial, policy, and public stakeholders.

The project's communication tools and channels, such as the website, social media, and event-based interactions, served as effective instruments to maintain stakeholder awareness, promote dialogue, and foster collaboration opportunities.

No additional structured feedback campaigns or two-way communication mechanisms were implemented beyond these channels during the reporting period. Instead, communication efforts were mainly aligned with dissemination and outreach actions under WP5, supporting OrChESTRA's visibility at both national and European levels.

OrChESTRA maintained active engagement with its identified stakeholder groups covering research institutes, national public authorities, businesses and international stakeholders, throughout the implementation period. A total of 126 communications were carried out with representatives from the business, research, and policy communities through meetings, bilateral exchanges, conference interactions, and targeted correspondence. The distribution of these communications among different stakeholders is presented in Figure 11. These interactions effectively addressed the key messages and objectives defined in the plan: monitoring the state-of-the-art and identifying industrial application areas; fostering scientific exchange and synergies with research partners; and gaining awareness of policy developments and strategic priorities relevant to the organ-on-chip field.

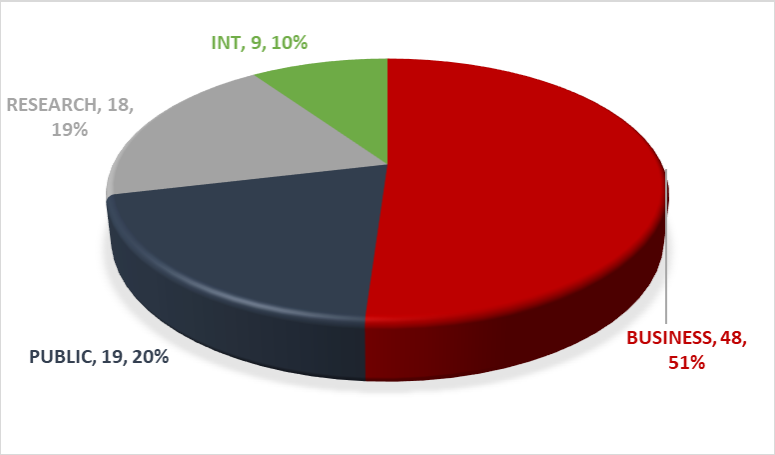


Figure 11: Distribution of communications among research institutions, businesses, public authorities, and international stakeholders. 7 of the 19 public authorities communicated were policy makers.

7 MONITORING OF DISSEMINATION AND COMMUNICATION ACTIVITIES

Monitoring and evaluation of OrChESTRA's dissemination and communication activities were carried out on a continuous basis to ensure that the project effectively reached its targeted stakeholder groups. Both quantitative and qualitative indicators were considered to assess the visibility, coverage, and engagement achieved through the implemented channels.

The overall coordination and tracking of KPIs were performed by ODTÜ MEMS, as the WP5 leader, based on the guidelines and templates defined in D5.1 Plan for D&E incl. Communication Activities-1, and D6.2 Quality Management Plan. Dissemination and communication actions were regularly reviewed during consortium meetings to monitor progress and identify needs for adaptation.

Table 3 provides an overview of the dissemination and communication channels used throughout the project and their respective success indicators.

Table 3: Dissemination and communication tools and their success measures/KPIs

D&C channel	Direction	Targeted stakeholder groups				Success measures/KPIs	Results achieved
		Business	Research	Policy	Public		
Website	One-way	x	x	x	x	>6 blog post per year, >250 members for the mailing list	>12.500 page visits (Jan 2024–Oct 2025), 500 members for the mailing list
Promotional tools and materials	One-way	x	x	x	x	>1000 visits for project videos, >500 brochures distributed, 1 project roll-up for each partner	1 project video was presented onsite to an audience > 600 participants during the EUROoCS Annual Conference 2024. >300 pen and calibration rulers distributed during several events, 1 roll-up prepared at ODTÜ MEMS
Social media	One-way, two-way	x	x	x	x	>200 Twitter followers, >1000 members in the LinkedIn page, >6 posts released per year	773 followers on Linkedin Total of >40 posts during the project lifetime 23 of which in 2025

Press releases and news	One-way	x	x	x	x	>3 press releases or articles published, >2 news on TV	1 press release featured at various media outlets
Scientific papers/articles	One-way	x	x			>9 publications/papers during the project released to journals/conferences	20 publications including 6 journal papers, 1 book chapter, and 13 conference proceedings/abstracts
Participation in 3rd party events	Two-way	x	x	x	x	>10 international events (conferences, fairs etc.) participated during the project	6 conferences
Face-to-face meetings	Two-way	x		x		>15 meetings with the stakeholders	126 stakeholder meetings
OrChESTRA events	One-way, two-way	x	x	x	x	5 international and 9 regional outreach events, >50 attendees for each event	5 international events (3 BioMEMS workshops, 1 International Workshop, 1 Professionals Day), 15 regional events (students' days, summer schools), 135 average number of attendees for international events
Advisory Board (AB) membership	Two-way	x	x	x		>15 AB members, 3 AB meetings	5 AB members, 3 meetings with individual AB members, 1 board meeting

8 EXPLOITATION STRATEGY

During the project lifetime, ODTÜ MEMS developed an integrated organ-on-a-chip platform combining electrochemical sensing and microfluidic modules. The design was inspired by the Translational Organ-on-a-Chip Platform (TOP) developed at the University of Twente, introduced to the consortium during the International Workshop on Emerging Organ-on-Chip Technologies in Eindhoven, by the OrChESTRA Advisory Board member Prof. Andries van der Meer.

The developed system consisted of:

- a standard well-plate–sized fluidic circuit board embedding microchannels connecting several ISO 22916-compliant microfluidic building blocks;
- an electrochemical sensor chip and an organ chip serving as modular microfluidic units;
- fluid reservoirs and commercially available microvalves providing routing and sensor-regeneration capability;
- a control interface and compact electronics enclosed within a single housing that accommodated the fluidic circuit board.

Although the platform demonstrates a significant integration achievement, the overall system architecture does not satisfy the inventive-step criterion because similar modular, standardized concepts are already disclosed in literature and by the TOP platform. Therefore, patent protection for the entire platform is unlikely.

However, the design and manufacturing process of standardized electrochemical sensor chips involve substantial foreground intellectual property generated at ODTÜ MEMS. The background IP derives from pre-existing sensor fabrication know-how developed at ODTÜ MEMS, while the sensing scheme and its

integration strategy were originally devised within the OrChESTRA project. These elements constitute valuable know-how for future R&D and potential licensing.

Table 4: Project results, means/type of exploitation and ownership rights

Foreground knowledge/IP	Means/Type of exploitation	IP ownership
Integrated OoC platform (fluidic circuit board, organ chip, sensor chip, wireless control)	Demonstrator, publication (in preparation), further R&D	All partners
Fabrication know-how for standardized electrochemical sensor chip	Process know-how, licensing, internal use	ODTÜ MEMS
Sensing scheme	Publication	ODTÜ MEMS
Integration protocol for fluidic circuit board with commercial valves	Know-how for internal and collaborative projects	ODTÜ MEMS

8.1 Potential Market Exploitation

The organ-on-a-chip platform developed within OrChESTRA demonstrates a tangible technological outcome with clear potential for future market exploitation. The system integrates electrochemical biosensing with standardized microfluidic modules on a wireless, compact platform that aligns with emerging ISO 22916 standards for microfluidic interoperability. This approach positions ODTÜ MEMS to address a growing segment of the life-sciences instrumentation market—bridging microfabrication, biosensing, and organ-modelling technologies.

The results achieved in OrChESTRA have laid a robust foundation for the commercial maturation of health-related micro-devices and biosensor technologies at ODTÜ MEMS. Building on this foundation, the collaboration among consortium partners—particularly with IMEC—continues to play a central role in shaping market-oriented strategies. IMEC's extensive expertise in technology transfer and market reach in the life-sciences and semiconductor sectors will support ODTÜ MEMS in developing business development and transition mechanisms, including customer discovery, standard-compliant process adaptation, and product qualification workflows.

These continued collaborations will help transform the know-how and processes developed in OrChESTRA into market-relevant offerings such as:

- modular electrochemical sensor chips for organ-on-a-chip and analytical applications,
- standardized microfluidic components compatible with ISO 22916, and
- integrated measurement systems for in-situ monitoring.

Such capabilities are expected to strengthen ODTÜ MEMS's position within the European innovation ecosystem, providing opportunities for joint development with industrial and clinical stakeholders and enabling the transfer of OrChESTRA results toward higher-TRL demonstrations. The market potential of these technologies will therefore be realized through sustained collaboration with the project partners, strategic partnerships, and continued refinement of internal technology-transfer mechanisms.

In order to ensure the effective transition of the OrChESTRA results from research to innovation, potential barriers and enabling factors for market exploitation have been assessed. Table 6 summarises the main barriers identified for the developed platform and outlines the strategic actions taken to ensure long-term impact.

Table 5: OrChESTRA's strategic actions to overcome requirements/potential barriers

Barriers/Obstacles		OrChESTRA Strategy
Economic	• *Lack of a widely established ecosystem on microfluidic devices, biosensors and particularly organ-on-a-chip systems* • *Difficulty to penetrate the market; low initial market acceptance*	➢ As a regional clustering effort, ODTÜ MEMS established a "Micro Medical Technologies Platform" (https://www.maestroplatformu.net/) to initiate a large-scale Research Programme covering 26 actors from universities, research centres and industry partners working on microfluidics and MEMS in Turkey to conduct 9 R&D projects on different applications of microfluidics. ➢ An intense and dedicated dissemination and communication actions taken to raise awareness and gain credibility among key opinion leaders, potential collaborators, policy makers and funding agencies. ➢ Outreach activities to stimulate synergistic clustering mechanisms and close collaboration with the regional actors.
Social	• *Difficulty in acceptance by the community* • *Experienced workforce is limited, as this is an emerging area* • *Losing skilled researchers (brain-drain)*	➢ The technological benefits of the organ-on-a-chip systems communicated to the public via press release. ➢ The project served as a training platform attracting excellent young researchers featured by Career Development Programs, Organ-on-a-chip Masterclass, and Summer Schools.
Governing/Regulatory	• *Lack of incentives of government* • *Lack of standards and regulatory policies* for organ-on-a-chip systems	➢ High level interaction and communication with the regional/national authorities including the Ankara Development Agency and The Presidency of Health Institutes of Türkiye contributing to potential continuation of national investments. ➢ Actively engaged with standardization workgroups taking part in CEN/CENELEC organ on a chip focus group (kept Prof. Andries van der Meer, the focus group leader, in the advisory board). Also, ODTÜ MEMS was involved in The European Organ-on-Chip Society (EUROoCS), and internally adapt the existing standards (ISO22916) in the design and fabrication stages of microfluidics and organ-on-a-chip.
Technological	• *Unavailable infrastructure for organ-on-a-chip start-ups*	➢ ODTÜ MEMS infrastructure was upgraded to include polymer processing equipment, namely an injection moulder and a thermoforming device.

9 ADVISORY BOARD

To maximise the dissemination, communication and exploitation potential of OrChESTRA and to ensure continuous external guidance throughout the project, the Advisory Board (AB) composition was revised and strengthened (Table 6). The updated AB brings together internationally recognised experts representing complementary perspectives across the microfluidics, biosensing and organ-on-a-chip domains, with a balance of academic, industrial and standardisation expertise.

Throughout the project, the AB provided valuable input to guide dissemination and exploitation planning, particularly on standardisation alignment and market transition of the developed organ-on-a-chip platform. Individual consultations were held with Prof. Martinus Gijs, Dr. Vania Silvério and Prof. Fabiana Arduini, enabling in-depth discussion on microfabrication strategies, standard compliance and sensor integration. In addition, one joint Advisory Board meeting was organised with the participation of all members to review

project progress, exchange views on the upcoming exploitation roadmap, and identify opportunities for clustering with other European initiatives.

The continued interaction with the Advisory Board members has ensured that the project remained connected to leading scientific, industrial and standardisation networks. Their contributions have significantly reinforced the credibility, visibility and long-term exploitation potential of the OrChESTRA results.

Table 6: List of Advisory Board members

Adv. Board Member	Position, organisation	Main expertise
Prof. Martinus Gijs	Honorary/emeritus professor at École Polytechnique Fédérale de Lausanne (EPFL)	Microsystem technology: design, simulation, manufacturing and integration of microsystems and microfluidic systems; bioMEMS
Prof. Andries van der Meer	Professor, Faculty of Science & Technology, University of Twente	Organs-on-Chips technology: microengineered living tissue devices (e.g., retina-on-chip, lung-on-chip, heart-on-chip) with vascular integration; microfluidics, stem-cell based in vitro models for disease modelling and drug discovery
Prof. Fabiana Arduini	Professor in Analytical Chemistry, Department of Chemical Science & Technologies, University of Rome Tor Vergata	Development of miniaturised electrochemical (bio)sensor devices (screen-printed electrodes, nanomaterials, paper-based platforms) for environmental, biomedical, agrifood and defence applications.
Dr. Vania Silverio	Senior Researcher and R&D Microfluidics Scientist at INESC Microsistemas e Nanotecnologias (INESC MN)	Microfluidics / lab-on-chip & organ-on-chip device development: design, fabrication, integration of microfluidic platforms, standardisation of microfluidic devices (ISO/CEN working groups) and nanofabrication.
Dr. Paul Vulto	CEO & Co-founder of MIMETAS B.V.	Organs-on-a-chip systems: microfluidic tissue culture chips, 3D human tissue models for drug testing, scaling high-throughput micro-physiological systems.