ARTEMIS

The Power of Virtual Twins to Fight MASLD

D1.3 – RECORD OF DISSEMINATION AND COMMUNICATION ACTIONS UNDERTAKEN IN THE PREVIOUS 12 MONTHS, AND UPDATED PLAN

Project Full Title: *AcceleRating the Translation of virtual twins towards a pErsonalised Management of steatotic liver patients*
Project acronym: *ARTEMIs*
Project type: Horizon Europe | RIA (Topic HORIZON-HLTH-2023-TOOL-05-03)
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Disclaimer

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Change explanation	Pages affected	Change made by (Name & surname)	Date

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This document is a deliverable of the ARTEMIs project. The ARTEMIs Project is funded by the European Union within the Horizon Europe program under grant agreement No 101136299.

INTRODUCTION

The primary goal of this deliverable is to outline the communication tools and materials developed by ARTEMIS partners, under ELPA's guidance, over the past year to reach the different target groups.

This annual report summarises the dissemination and communication activities undertaken in the project year 1 by the Consortium members.

The target segment of patients and the civil society is of particular interest. This deliverable also compiles actions targeted to project's followers and civil society, informed and involved by sharing the project's achievements and their significance. To ensure accessibility, both the language and format of these materials have been carefully tailored to meet the needs of this audience.

The key objectives of Communication and Dissemination Work Package include:

- Bridging the gap between scientific, commercial, and patient-centered information;
- Increasing public awareness;
- Translating scientific findings into commercially relevant insights for stakeholders;
- Informing patients and the public about the study's progress;
- Sharing results in both traditional and online formats, aimed at commercial, medical, and patient audiences.

1. Legal basis

The project is funded by the Horizon Europe programme of the European Union (EU), aligned with Grant Agreement No. 101136299. Both the Grant Agreement and Consortium Agreement hold authority over this document, with the Grant Agreement taking precedence in all situations.

2. Digital presence

In EU research initiatives, a strong digital presence is indispensable. It embodies transparency, accessibility, and collaboration, creating a network that connects researchers, patients, policymakers, and the general public.

At the foundation of this digital landscape are the principles of openness and accessibility. By leveraging dedicated websites, social media, and online databases, EU research projects make information available to the public and interested stakeholders, ensuring that updates on current programs, progress, and key data are easily accessible. This openness fosters an inclusive environment where anyone can explore the latest research developments in detail.

A robust digital presence also facilitates the effective dissemination of essential information. Findings, publications, and breakthroughs can be shared promptly across multiple digital platforms, not only educating the audience but also encouraging collaboration and innovation within the research community. This real-time sharing sparks dialogue and feedback, advancing the collective pursuit of knowledge.

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Beyond academia, a strong digital presence empowers patients and the general public by offering understandable insights into complex scientific topics. Accessible language, interactive content, and multimedia simplify research, helping individuals make informed decisions and increasing awareness of health-related issues. This aspect promotes public health literacy, creating a more informed society that engages with ongoing research.

Moreover, an effective digital presence enhances visibility and support. Showcasing success stories, impactful outcomes, and the societal importance of research draws attention from a wide range of stakeholders, emphasizing the value of these initiatives and boosting their potential for positive change.

The adaptability of digital platforms also supports the evolution of EU research projects. Integrating new technologies, interactive features, and multimedia ensures that these initiatives stay relevant, responsive to emerging needs, and capable of engaging diverse audiences effectively.

In short, a well-established digital presence is essential for EU research projects. It promotes accessibility, transparency, engagement, empowerment, visibility, and adaptability, bridging the gap between science and society to ensure that impactful research resonates with and benefits the wider world.

2.1 ARTEMIS website

The ARTEMIS website (artemis-euproject.eu) has been launched in July 2024 and has had already 6872 individual visitors since its launch, and 15 108 visits in total. The website is used as the primary platform for public communication, dissemination, and engagement. It hosts essential information, project updates, results, scientific publications, public deliverables, and other reports generated by the project. The website also serves as a central hub for training, learning activities, and patient engagement, providing a comprehensive knowledge center for all stakeholders. Visitors can learn about the project's objectives and methodology, explore the various work packages, and find an in-depth overview of each partner. Downloadable resources and explanatory materials are already available to the public, with additional resources to be added as the project advances.

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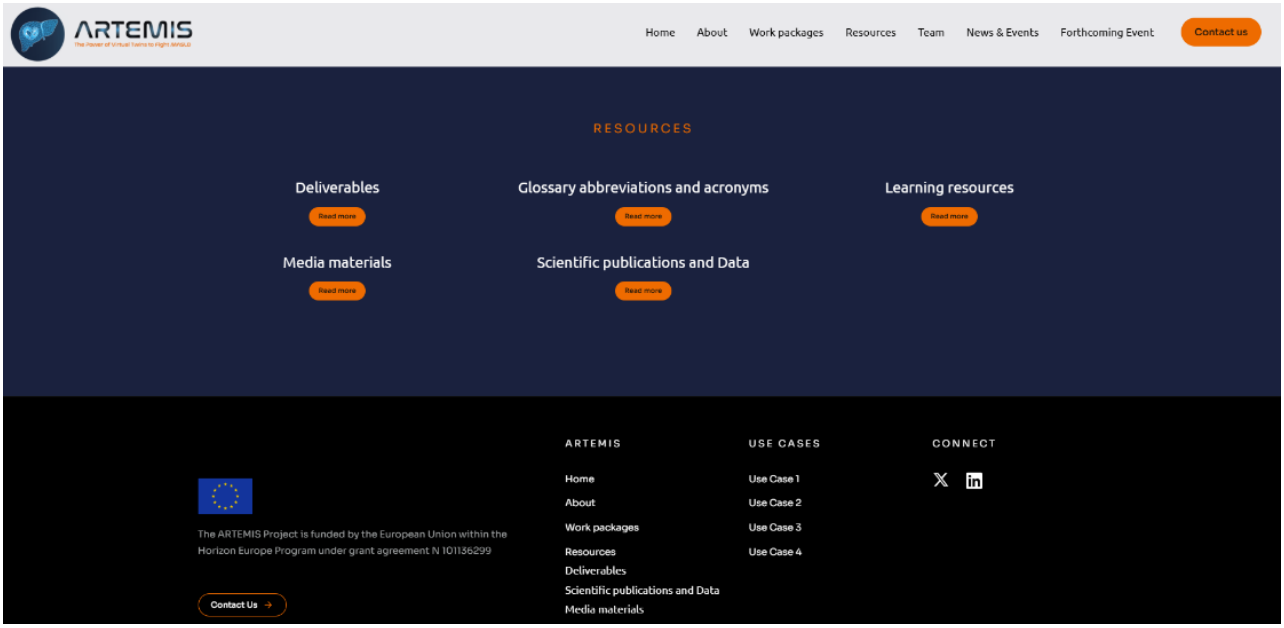
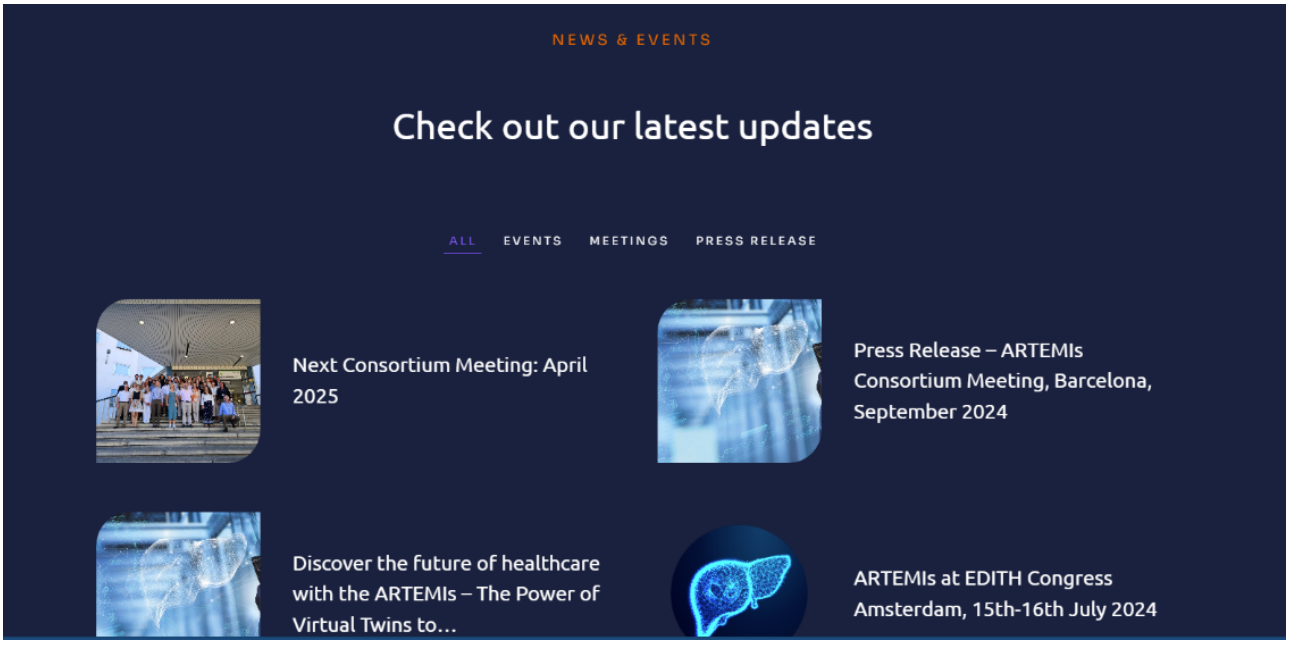
Dedicated Patient Section:
Acknowledging the essential role of patients, ARTEMIS offers a section specifically designed for them. This space provides accessible information, helpful resources, and relevant updates to support and empower patients and their families throughout their journey.



Events Space:
A dedicated section features an overview of upcoming workshops, seminars, and conferences. These events provide valuable opportunities for knowledge sharing among researchers, healthcare professionals, patients, and other stakeholders.



ARTEMIS website is also shared on the ELPA website, in the EU Research projects section:

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14. Artemis

www.artemis-euproject.eu/

In 2023, ELPA web page traffic counted more than a million visitors.

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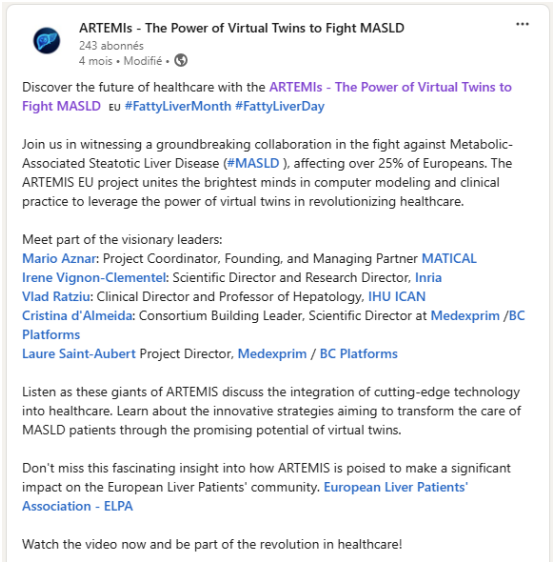
2.2 Scientific publications

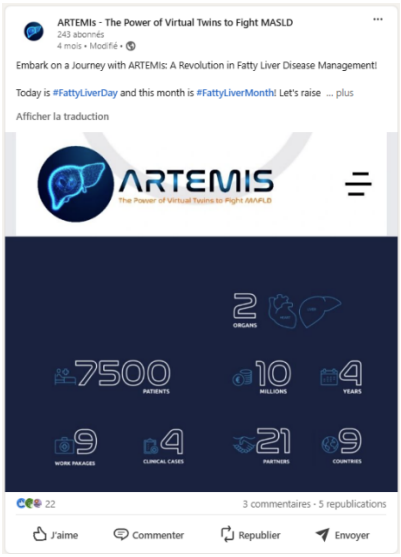
As of yet, there is no scientific publications for year 1 of the ARTEMIS project.

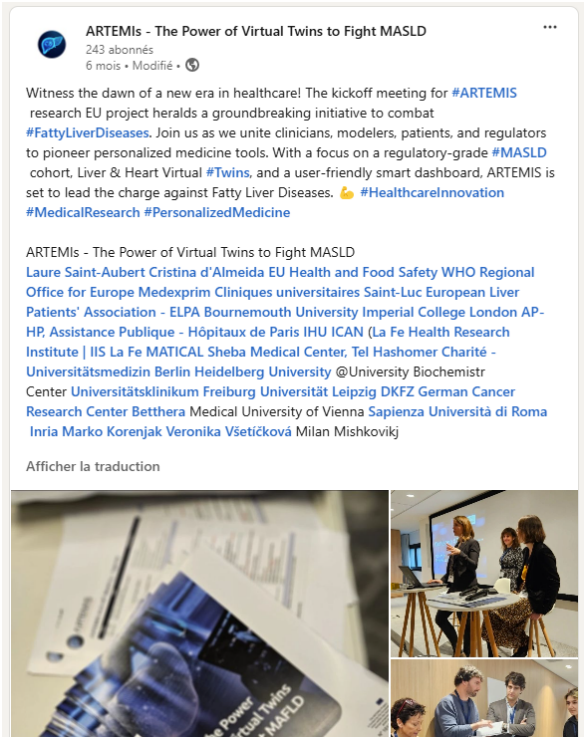
2.3 Social media presence

The ARTEMIS projects owns 2 social media accounts. On X, ARTEMIS counts 55 followers, and 241 on LinkedIn.

Those social media accounts are mainly used to publish updates on project progress and share important insights relevant to our followers in a language that is easily understandable by the general public.







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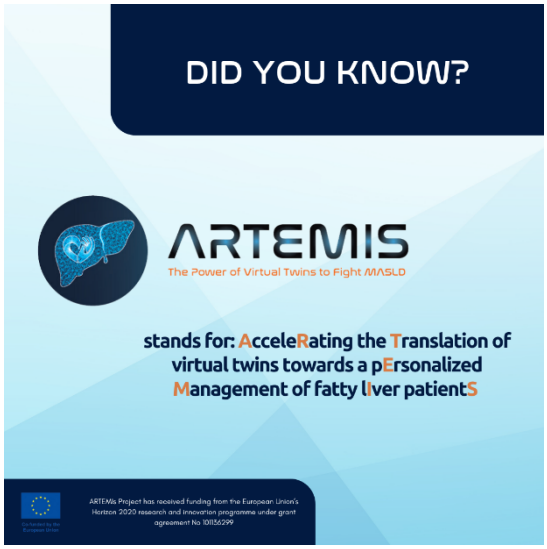
ARTEMIS's social media accounts are also used to post ambitious social media campaigns explaining the project with more details.

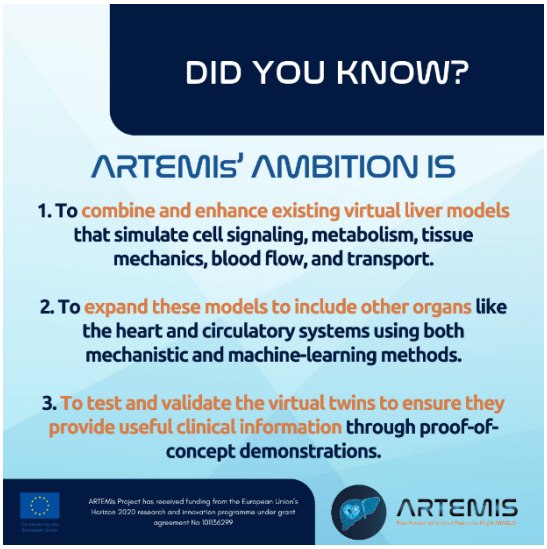
2.3.1 Social Media Campaign – ARTEMIS' partners

Starting at the end of the year 2024, ELPA developed 21 posts about the ARTEMIS project partners that were disseminated on LinkedIn and X. Visuals that incorporated the ARTEMIS' graphic style were created, with the inclusion of the logo of the partner and the country they are based in, to increase interest of the public in the ARTEMIS project and its partners.

2.3.2 Social Media campaign – Facts about the project

A second social media campaign was disseminated at the same time, consisting of 19 informative posts about the ARTEMIS project to increase visibility and curiosity of the general population.





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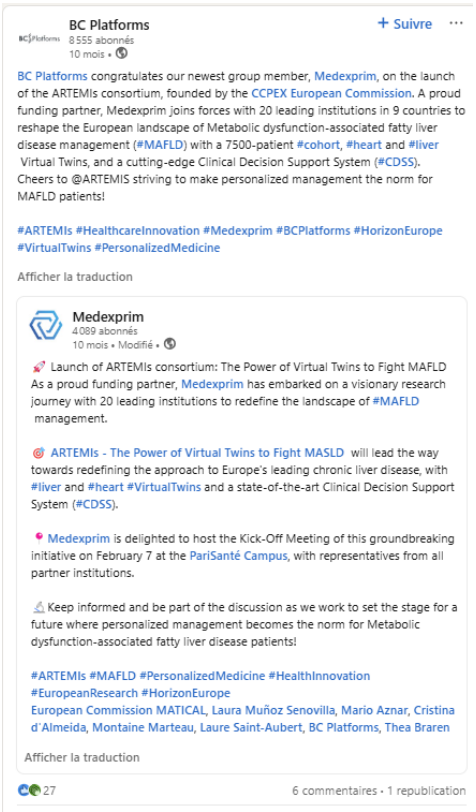
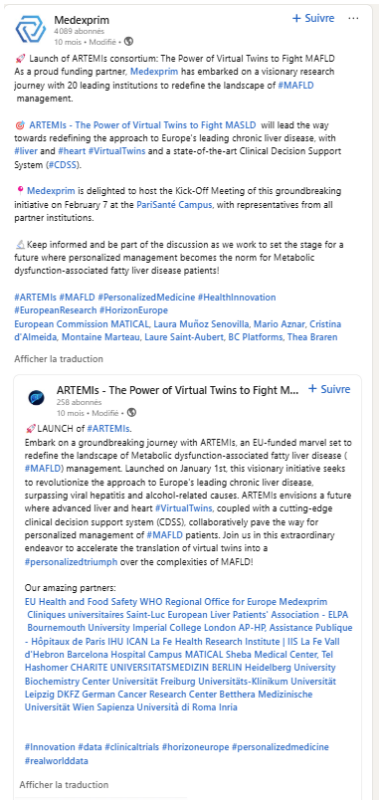
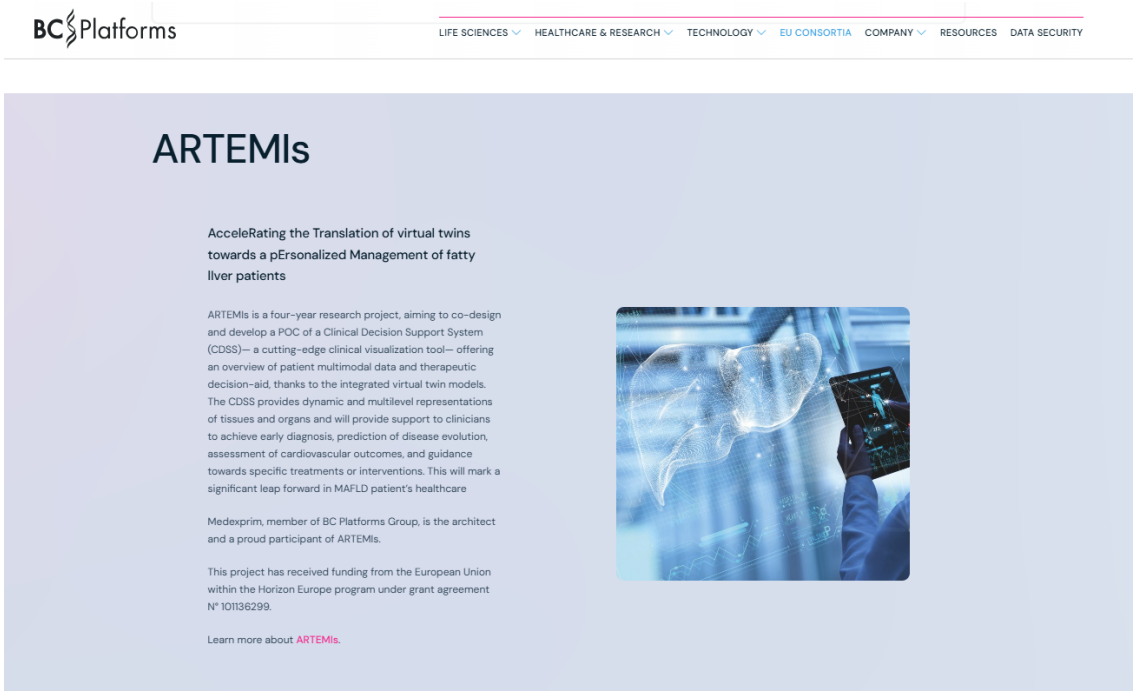
2.3.3 ARTEMIS on other partners' social media

ARTEMIS' partners also contributed in promoting the project through social media.

-*Medexprim/BC Platforms* shared a few LinkedIn posts about the ARTEMIS project, notably on the launch of the project at the beginning of the year, as well as a couple reposts from other partners. The BC Platforms website with an ARTEMIs section in the EU Consortia page was also launched this year.







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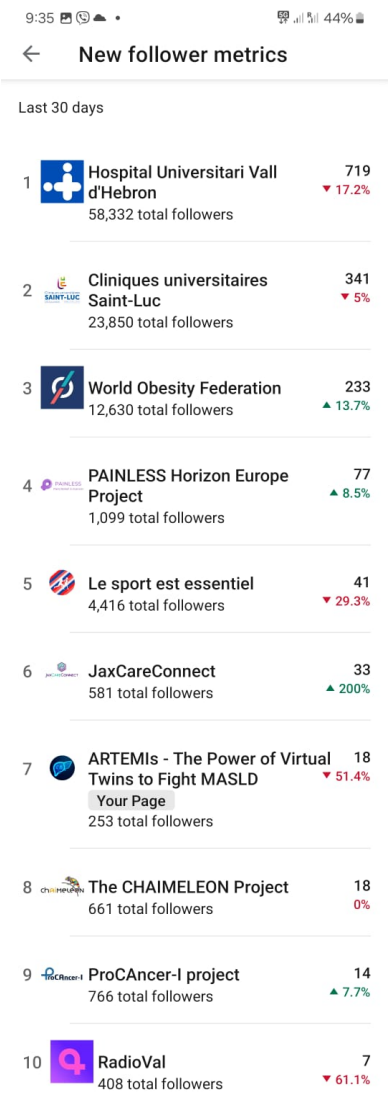
-ARTEMIS partners participated in promoting the ARTEMIS project on social media, by posting their original content, or by reposting other partners' content.

2.4 Social media - analytics

Twitter/X: Since the creation of ARTEMIS' X account, the follower count went from 0 to 55 followers, demonstrating strong growth for a new presence. In total, the ARTEMIS X account posted or reposted 71 times, accumulating 122,300 impressions, reflecting substantial reach and visibility. Engagement metrics show a total of 177 likes and 160 retweets. The most engaged hashtags were #MASH, #MASLD, and #LIVERCANCER, indicating the content resonated well with communities around these topics.

LinkedIn: Starting at 0, the account grew to 253 followers/connections, showing impressive growth within a professional network. LinkedIn's 57 posts achieved a total of 26,261 impressions, highlighting robust content visibility. LinkedIn posts saw significant interaction with 858 combined reactions, 33 comments, 27 reposts, and 2,433 clicks. In total, ARTEMIS' posts reached 13,738 members, showcasing meaningful outreach within the platform's audience.



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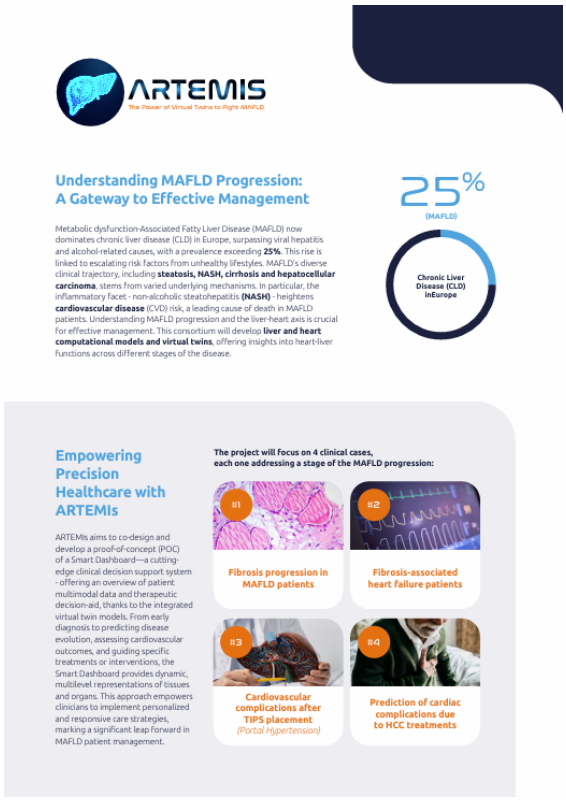
3. Physical presence

3.1 Informative materials

Informational materials like booklets and flyers are invaluable resources for any EU project, providing clear, accessible summaries of complex research, objectives, and outcomes. These tools effectively engage diverse audiences—including stakeholders, policymakers, researchers, and the public—by presenting a tangible overview of the project. Booklets offer in-depth insights into the project's goals, methods, and accomplishments, while flyers serve as concise visual aids that capture attention and communicate key messages efficiently. Together, these materials enhance visibility and understanding, broadening the project's outreach and conveying its importance and impact on society.

3.1.1 ARTEMIS' project brochure

A brochure introducing the ARTEMIS project was written, highlighting the project's dedication to combating Metabolic Dysfunction-Associated Fatty Liver Disease (MAFLD) by developing innovative tools like virtual twin models and a Smart Dashboard. The brochure also highlights the project's scope, including the collaboration across nine countries, the cohort of 7,500 patients, and the integration of cutting-edge computational models. It outlines ARTEMIs' commitment to improving patient outcomes and fostering precision medicine for liver health.



A second brochure was also published, providing an overview of the **ARTEMIs Clinical Use Cases**, showcasing the project's four key focus areas for improving the management of MASLD and associated conditions. Each use case is explained in detail, highlighting its primary and secondary objectives, inclusion and exclusion criteria, and expected outcomes. Through these use cases, the brochure emphasizes the application of virtual twin models and advanced computational tools to support clinicians in personalizing treatment and improving outcomes for patients.

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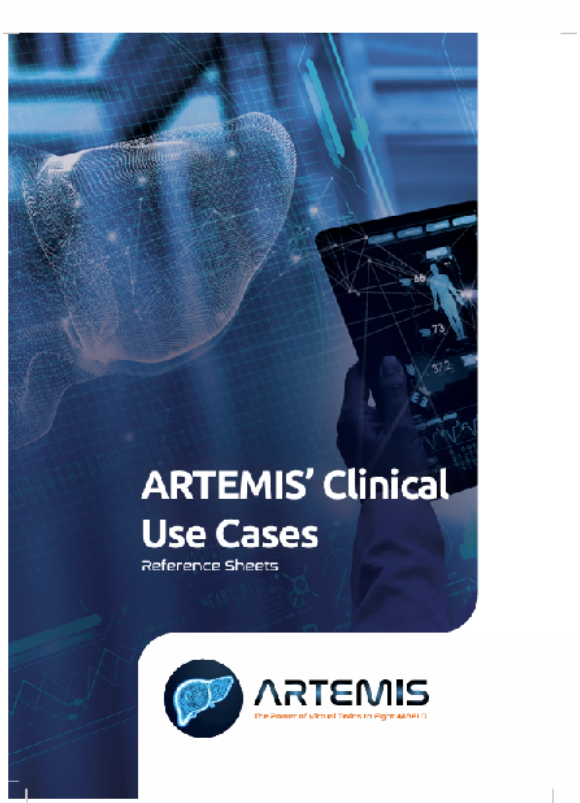
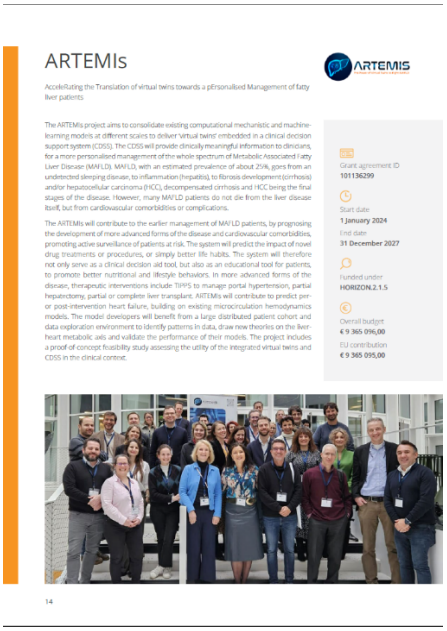


3.1.2 ELPA's brochure

ELPA also made sure to include ARTEMIS in the "ELPA Scientific Booklet", which is a brochure presenting all European projects ELPA is currently supporting. The brochure reflects ELPA's mission to enhance patient care, promote research, and provide a bridge between the scientific community, policymakers, and patients. It highlights ARTEMIs as one of many innovative projects demonstrating ELPA's commitment to fostering collaboration and advocating for equitable and effective healthcare solutions for liver patients.



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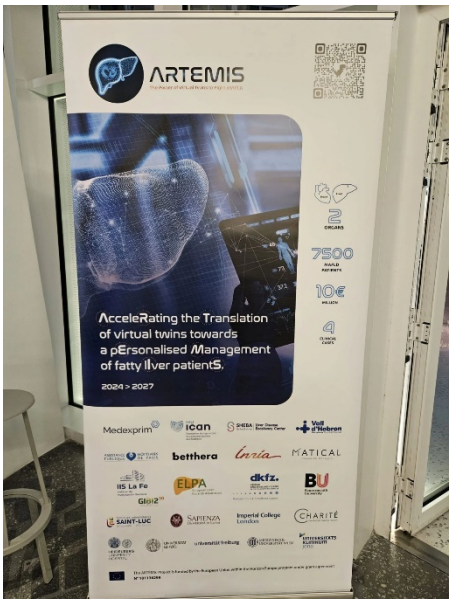
3.2 Promotional materials

To mark the kick-off meeting of the **ARTEMIS project**, a range of promotional materials were developed to enhance visibility and foster engagement. These materials included branded notebooks, pens, and banners, all designed to reflect the project's identity and mission. The items were distributed during the event, serving as both practical tools and reminders of the project's goals. The banners prominently showcased the ARTEMIS logo, partners and key messaging, ensuring a professional and cohesive presence throughout the meeting. These efforts underscored the commitment to building a strong, recognizable brand for the project from its inception.



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3.3 Events

3.3.1 ARTEMIS Consortium events

Kick-off meeting – 6th February 2024, Paris

The ARTEMIS project kick-off meeting was held on the 6th of February 2024. This meeting took place in the PariSanté Campus in Paris, France. Representatives from all 21 partner institutions were present to the meeting, all united with the will to massively improve the management of MASLD.

The meeting started with a welcome speech, presenting ARTEMIS governance, the clinical cases, and the consortium members, led by the project officer and various leaders. The introductory session was followed by a presentation on administrative tasks, an overview of timelines, reporting procedures, and compliance under Horizon Europe.

The afternoon sessions were on more specific topics, such as fibrosis and MASLD evolution, cirrhosis and cardiac complications, and hepatocellular carcinoma challenges. To follow these sessions, a team of modelers and clinicians identified transversal actions and specific strategies.

To close, the outcomes of the kick-off meeting were summarized into actionable steps for the next six months, followed by brainstorming and a welcome dinner to encourage networking among the different partners.

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ARTEMIS Consortium meeting – 26th and 27th September 2024, Barcelona

Taking place on the 26th and 27th of September in Barcelona, Spain, the ARTEMIS Consortium meeting was hosted by the Vall d'Hebron Institute for Research.

Day 1: Clinical focus

The day started with an opening session, with welcoming remarks and an overall project overview, followed by discussions on ARTEMIS cohorts, use cases, and data availability. A **clinical workshop** then took place, with sessions focusing on MASLD, including its pathophysiology, natural history, diagnosis, monitoring, and management. The day ended with key takeaways, discussions on integrating clinical insights, imaging, and management strategies for MASLD progression.

Day 2: Technical and collaborative focus

The second day opened with technical sessions, discussions on data infrastructure, processing pipelines, and compliance with ethical and legal standards. Tools for data extraction and harmonization were also presented. An introduction on model development also took place, with a focus on machine learning, deep learning submodels, and integration techniques for liver and cardiac interactions.

The day ended with conclusive remarks and a general wrap-up with critical action points and a roadmap for the next year.

3.3.2 Scientific conferences and workshops

The ARTEMIs partners have presented and promoted the Project at scientific conferences, workshops, and events. The overview is provided below.

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EASL – From the 5th to the 8th June 2024, Milan

ARTEMIS proudly took part in the 2024 EASL Congress in Milan, Europe's premier event for the liver health community. The Pr.Dr. Raluca Pais delivered an insightful session on "Measuring Progression and Monitoring Treatment in MASLD", and the Pr.Dr Vald Ratziu gave an informative talk on: "MAFLD to MASLD: Where we are after one year".

This prestigious platform highlighted ARTEMIS' dedication to advancing liver health, fostering collaboration, and driving progress in research and treatment across Europe.

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EDITH-CSA – 15th and 16th July 2024, Amsterdam

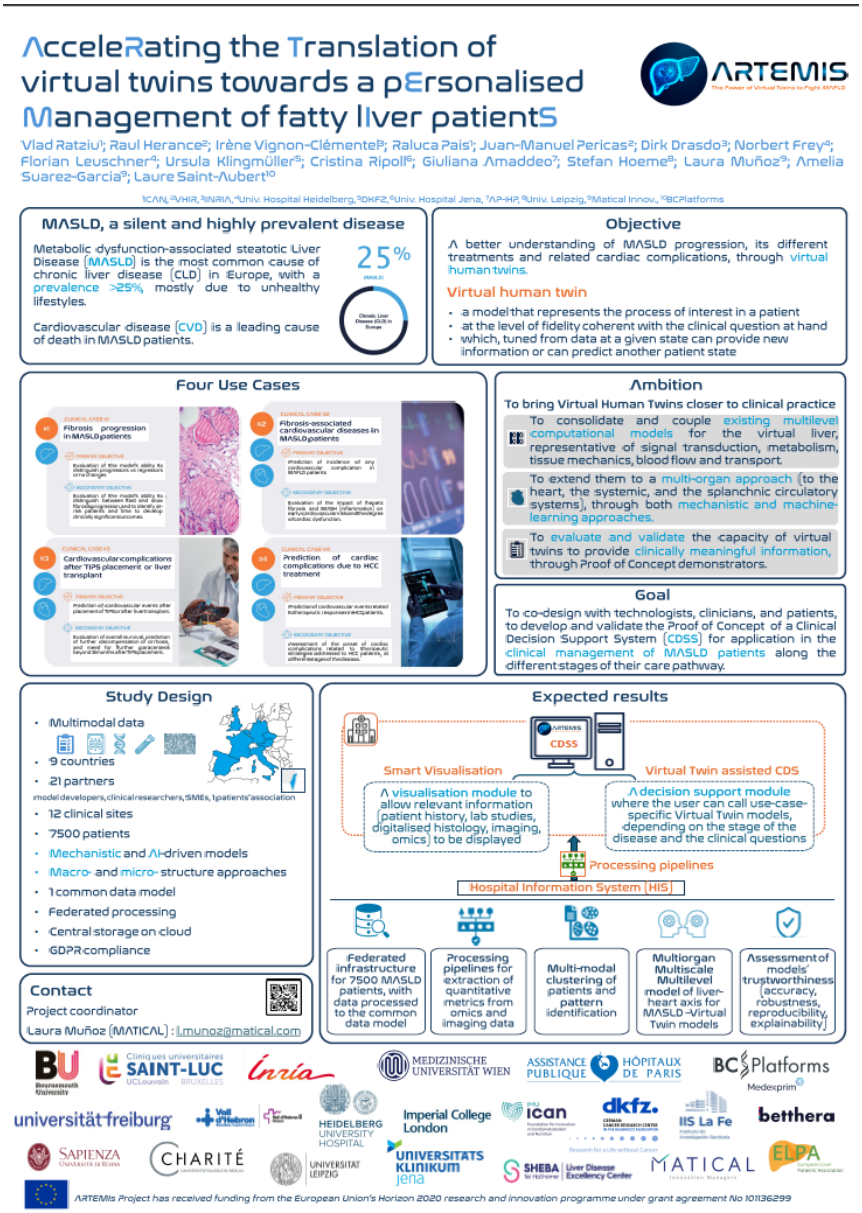
On July 15th and 16th 2024, ARTEMIS was showcased at the second and final EDITH-CSA meeting at the KIT Royal Tropical Institute in Amsterdam.

The EDITH project, funded by the European Commission, focuses on advancing digital technologies, high-performance computing, and enhancing the accessibility of healthcare and research data across Europe. As part of its mission, EDITH has been tasked with uniting the Virtual Human Twin (VHT) ecosystem and guiding the creation of a roadmap to achieve VHT goals.

ARTEMIS attended the EDITH-CSA meeting, specifically due to the focus around the *Virtual Twin* concept. As part of its mission to revolutionize liver disease management through AI-driven solutions, ARTEMIS engaged with stakeholders to explore the potential of virtual twin technology in advancing personalized and precision healthcare.

Final EDITH-CSA Ecosystem Meeting

Below is the infographic created for this event, concisely presenting ARTEMIS, while keeping as much detail as possible on the project.



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3.3.3 Fair Trades

Networking meeting for Horizon Europe Health projects – 26 June 2024, OnLine

ARTEMIS´coordinator, Matical Innovation, attended an online meeting organised by the HaDEA, with the coordinators of the other EU projects funded under different topics. This event included presentations by the HADEA staff aimed to ensure a good collaboration between the Projects and the agency, and to introduce the support services that they make available. These presentations were followed by a Breakout session for each topic. Under Topic HORIZON-HLTH-2023-TOOL-05-03, Laura Senovilla (MAT) gave a short presentation of ARTEMIS. This event was the origin of the Cluster activities (see section 4).

COMPAMED Fair Trade – 11-14th of November 2024, Düsseldorf

From the 11th to the 14th of November 2024, ARTEMIS' partner Bettera was an exhibitor at COMPAMED Fair Trade, the leading international trade fair for the medical technology supplier sector, where they promoted the project.

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3.3.4 Other events

Partner	Type of activy	Type of activity & Title of dissemination	Name of event	Place, Country	Date (DD/MM/YYYY)	Type of audience reached	Estimated Number of persons reached
BETT	Workshop attendance/ organisation	Workshop presentation	Workshop on Medical Device Regulation Course	Ostrava, Czech Republic	13th-14th January 2024	Research communities	20
BETT	Workshop attendance/ organisation	Workshop presentation	Digital Pioneering in Healthcare	Prague, Czech Republic	6th February 2024	Research communities	30
BETT	Conference poster	Poster on the conference	Prague Bio Conference 2024	Prague, Czech Republic	26th September 2024	Research communities	100
DKFZ	Conference papers/ proceedings	Talk	e:MED Hamburg	Hamburg, Germany	21-23 Nov. 2024	Research communities	50
BU	Conference papers/ proceedings	Keynote speech: A Short Overview of AI in Systems Medicine: Multi-omics integration and more	The 9th Conference on Systems Medicine & Mammal Cell Biology	Leipzig, Germany	13-15 May 2024	Research communities	100
MATICAL	Workshop attendance/ organisation	Oral Presentation	Presentation of the Virtual Human Twins initiative by the EC	Virtual	26/06/24	Research communities	50
MATICAL	Workshop attendance/ organisation	Oral Presentation	Virtual Human Twins HE projects Networking meeting	Virtual	08/07/2024	Research communities	20
MATICAL	Workshop attendance/ organisation	Oral Presentation	Horizon Europe Health Programme Committee Meeting (Cluster 1- Health)	Virtual	12/12/2024	National authorities	200
BC Platforms	Workshop attendance/ organisation	Attendance / one-to-one meetings	ESMO Congress	Barcelona, Spain	13-17 September 2024	Research communities	20

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4. CLUSTER ACTIVITIES

The ARTEMIS Coordinator is working with the HADEA staff and the coordinators of the other projects funded under the Topic HORIZON-HLTH-2023-TOOL-05-03 "Integrated, multi-scale computational models of patient patho-physiology ('virtual twins') for personalised disease management" to launch a set of Cluster activities. The table below indicates the complete list of projects.

#	Title	Acronym
1	AcceleRating the Translation of virtual twins towards a pErsonalised Management of fatty lIver patients	ARTEMIS
2	Towards GEMINI: A Generation of Multi-scale Digital Twins of Ischaemic and Haemorrhagic Stroke Patients	GEMINI
3	Health virtual twins for the personalised management of stroke related to atrial fibrillation	TARGET
4	VIrtual Twins as tools for personalised clinicAL care	VITAL
5	A CEllulaR immunoTherapy virtuAl twin for personalIsed cancer treatmeNT	CERTAINTY
6	Stratification, Management, and Guidance of Hypertrophic Cardiomyopathy Patients using Hybrid Digital Twin Solutions	SMASH-HCM
7	Virtual Brain Twin for personalised treatment of Psychiatric Disorders	VIRTUAL BRAIN TWIN
8	Federated virtual twins for privacy-preserving personalised outcome prediction of type 2 diabetes treatment	dAIbetes

The Cluster activities will be joint actions for networking, knowledge and best practise sharing. These activities are typically articulated around some verticals of particular synergy, such as communication and dissemination, standardisation and data sustainability, to name some.

5. CONCLUSION

Throughout 2024, the ARTEMIS project has made substantial strides in establishing a comprehensive communication and dissemination framework to support its goals. A central digital presence, including the ARTEMIS website, has facilitated engagement and transparency, making project updates, scientific findings, and resources accessible to a wide audience. Targeted sections, such as the Dedicated Patient Section and an engaging Events Space, have empowered patients and provided essential forums for knowledge exchange among researchers, medical professionals, and other stakeholders.

The ARTEMIS social media platforms, further enhanced public engagement with timely updates and a targeted campaign that expanded project visibility. Informational materials, including booklets and flyers, complemented these digital efforts by offering accessible summaries of the project's objectives and achievements, allowing ARTEMIS to reach diverse audiences and broaden its societal impact.

This year's communication and dissemination efforts have laid a strong foundation for ARTEMIS to continue expanding its outreach, improving public health literacy, and fostering collaboration. The ongoing work will build on this progress, advancing the project's mission to benefit steatotic liver patients and the broader medical and research communities.

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6. FUTURE WORK

- *Annual communication report* (Deliverable D1.5, Month 24): a record of all dissemination and communication actions conducted in the first 24 months, along with an updated plan for future activities will be released at the end of 2025. Those reports will be updated after each year until the end of the project.
- *Project website and social media:* ongoing updates to the project website and social media (Twitter and LinkedIn) are planned in the next twelve months and after, with the goal of sharing monthly posts about new events, publications, interviews, and contributions to open science. Metrics aim for over 100 website visits per week and more than 500 followers across ARTEMIS project social media channels.
- *Public engagement and layperson events:* ELPA is tasked with organizing two public-facing events targeted at patients and the broader society to communicate project achievements and expected impacts. These events will include interviews with principal investigators and aim to simplify project goals for public understanding.
- *Scientific publications and contributions to scientific conferences:* scientific partners will continue with their active participation in international conferences, and their activity in the elaboration of scientific articles will progressively intensify as first scientific results are delivered. The aim is to disseminate their findings to the research community in academia and industry.
- The expected outcomes of this communication and dissemination strategy are: to increase public awareness by enhancing visibility through social media, press releases, and events, and through events and informative content, the project aims to engage patients and medical practitioners, promoting the potential benefits of the ARTEMIS platform for personalized disease management.

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