Ai-Hand

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	D1.4 – DISSEMINATION AND COMMUNICATION PLAN Version 1 – Draft PUBLIC
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Dissemination and communication plan

Acronym	**AI-Hand**
Project Name:	Advanced Intelligent stimulation device: HAND movement restoration
Grant Agreement No:	**101099916**
Start Date:	**01/08/2023**
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0.0	Emilie Blotiere (INRIA)	Draft
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1	Emilie Blotiere (INRIA)	Final draft

Table of content

Table of figures

Table of table

Acronyms

AIMD	Active Implanted Medical Device
CA	Consortium Agreement
CAMIN	Artificial Motion Control and Intuitive Neuroprostheses
ES	Electrical Stimulation
GA	Grant Agreement
IP	Intellectual Property
IPR	Intellectual Property Rights
KOL	Key Opinion Leaders
KPI	Key Performance Indicator
PNS	Peripheral Nervous System
WLT	Work Package Leaders Team
WP	Work Package

PUBLISHABLE SUMMARY

The AI-HAND project proposes new paradigms of electrical stimulation (ES) of the peripheral nervous system (PNS) requiring disruptive methods and technologies that will open breakthrough therapeutic perspectives. To date, patients with a complete quadriplegia have no solution to restore hand movements; they will be the first to benefit from AI-HAND new approach. Indeed, multiphasic stimulus waveforms, multiple synchronized currents sources for 3D current shaping over a multi contact neural cuff electrode and complex interleaved stimulation instead of standard rectangular single-source sequenced stimulation, are the strong breakthrough innovations proposed that will allow to answer unmet needs in a wide range of medical applications. AI-HAND proposes to implement the cutting-edge findings in electrophysiology through radically innovative, fully safe and software-free implant technologies that would lead to a generic powerful new generation of AIMD.

The project is funded under the Horizon Europe Framework Programme (Horizon Europe) and started 1st August 2023 for 42 months. It gathers six European partners (five beneficiaries and one Associated Partner):

- INRIA, the French national institute in computer science and new digital technologies,
- Neurinnov, a French private company developing advanced neurostimulation solutions,
- Rehazenter, the National Center for Functional Re-education and Rehabilitation in Luxembourg,
- USSAP, the health and social union for support and prevention in Perpignan France
- UFR, Albert-Ludwigs University in Freiburg in Germany,
- CorTec neuro GmbH as an affiliated entity, a private company, provide components, interfaces and active systems to enable the communication with the brain or other parts of the nervous system.

The report D1.4 is the first version of the dissemination and communication and will be updated at the end of the project in M42 (January 2027).

1| INTRODUCTION

Dissemination and communication actions are structured and set up within the Coordination & Communication WP1. The task1.2 foresees three main pillars

- Internal communication management
- External communication and dissemination management
- Coordination of open science publications in accordance with IPR, exploitation and IPR management

The dissemination and communication plan has been set up at the beginning of the project to define the precise communication strategy and to promote the project over different audiences (scientific, stakeholders, popularization). Inria, the coordinator, is in charge of developing & operating communication channels and coordinating contributions from the communication services of the other partners. The first version of this plan will be updated throughout the project, and a final version of this plan will be submitted at the very end of the project to reflect the whole communication and dissemination actions experienced during the project (D1.7 Final version of the Dissemination and communication plan is scheduled in January 2027 M42).

1. INTERNAL COMMUNICATION

1. Meetings organization

1. Consortium meetings

The consortium meets at least once a year. A first Kick-off meeting was organised in October 2023 remotely to officially launch the project and start discussing the main stages of the project. A second Kick-Off took place 22&23 January 2024, face to face in INRIA premises, in Montpellier. This meeting gathered all the partners and focused on operational discussions under the form of workshop to facilitate cross exchanges between the work packages. The EU project Officer attended remotely and presented the main obligations of the consortium in terms of legal actions, GDPR compliance, ethics, reporting and results exploitation in accordance with the EU Pathfinder 01-01 funding programme.

The next consortium meetings are already planned in the GANTT to fit with the main steps that are the periodic reports:

- June 2024
- June 2025
- June 2026
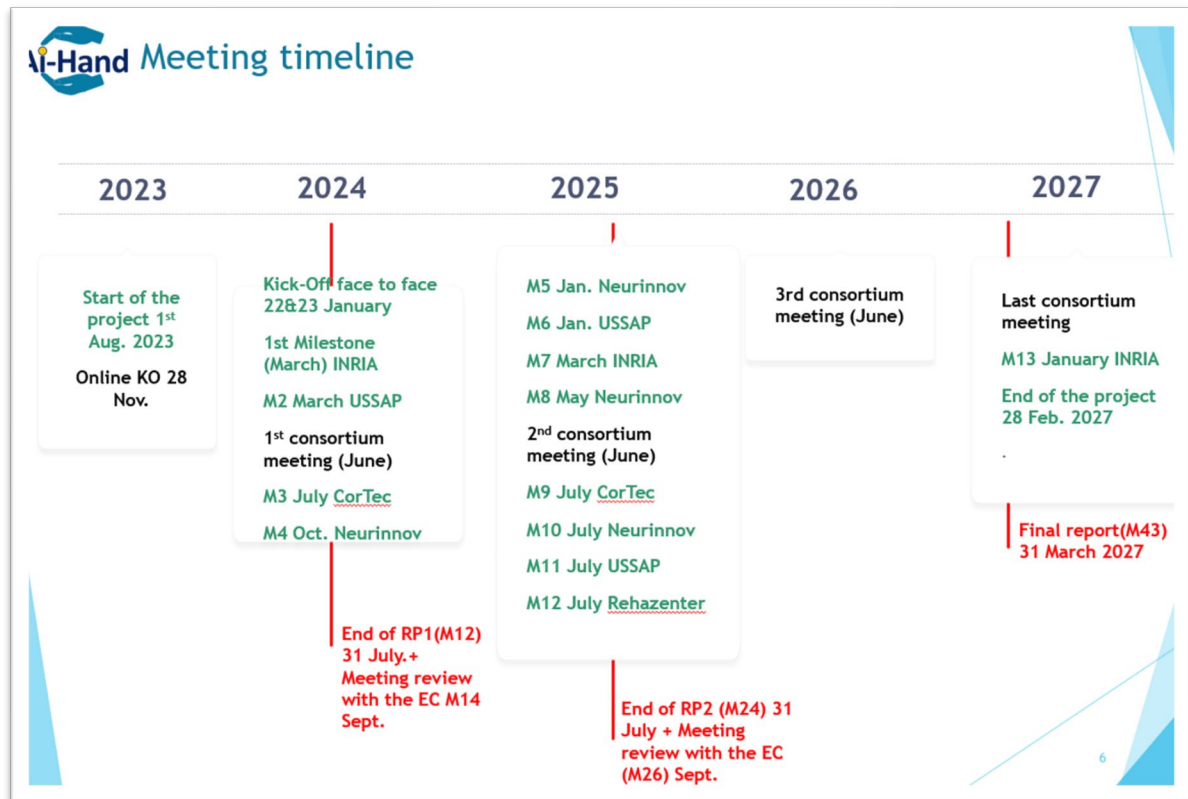- Eventually if needed, a very last consortium meeting early 2027

FIGURE 2 AI-HAND MAIN STAGES RETROPLANNING

2. WLT meetings

The governance of the project is composed of three main entities, as described in the Consortium Agreement (currently under signature):

- The consortium body
- The WP leaders' team
- The coordination team

The WP leaders' team is composed of at least one representative of each beneficiary and currently nine collaborators are part of this body that meets every two months or at any time upon written request of any Member of the WP Leaders Team.

The WLT is the main decision body of the consortium. The team is in charge of ensuring that the tasks run smoothly in accordance with the description of the GA and facilitate the information and knowledge sharing. It also supports the coordinator in preparing meetings with the European Commission and in preparing related data and deliverables. It also takes part in preparing the content and timing of press releases and joint publications by the consortium.

Meetings are held remotely and dates are already known as the "WLT team" meets the second Friday of every two months at 9am.
In 2024:
- Friday 9 February
- Friday 12 April
- Friday 14 June
- Friday 09 August
- Friday 11 October
- Friday 13 December

Meetings' agenda and rolling minutes are prepared and sent by the coordinator also in charge of managing the meetings. Working documents are accessible in the project management tool to the WP leaders in modification mode.

3. Scientific meetings

Scientific meetings are organised per WP to conduct operational tasks and coordinate between the work packages.
Bi-weekly WP5 (electrophysiological assessments) and WP6 (closed-loop control and gesture assessment) meetings are ensuring for the progress of the tasks involving different partners. Similarly, WP7 meeting are organized once a month. Rolling-minutes are held and communicated by the WP coordinator. For confidential reason, the minutes are not on the project management tool but on a secured internal INRIA tool[1]. More technical WPs (WP2 WP3 and WP4) have regular meetings with confidential minutes almost every week from the beginning of the project.
Regular smaller meetings are organised upon request each time it is needed. The consortium is small and has known each other for more than 10 years: the previous AGILIS project[2] already involved a number of AI-Hand partners. This structural advantage offers flexibility of action and an efficient level of information.

2. Collaborative workspaces

1. Mailing lists

Three mailing lists facilitate the consortium internal exchanges and a top-down information flow from WP Leaders to other partners involved.
- The general mailing list (ai_hand@inria.fr) with currently 27 subscribers, used for formal communication from the coordinator to the consortium as a whole. It is for instance used for the organization of consortium meetings, sharing deliverables and periodic reports timing and reminders.
- The coordination team mailing list with 6 subscribers composed of the CAMIN and Neurinnov team and the project manager (ai-hand_montpellier@inria.fr).

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[1] Notes https://notes.inria.fr/

[2] https://www.inria.fr/en/restoring-movement-through-neurostimulation-objective-achieved-agilis-project-phase-two

- The WLT mailing list composed of the WP leaders (ai-hand-wlt@inria.fr).

The owners of the lists are the scientific coordinator and the project manager. Both have the access in adding, deleting subscribers and set up the distribution criteria. This service is harvested and handled by the INRIA based on SYMPA software, developed and maintained by Renater. This service is used to manage mailing lists for internal or external use.

2. SHARE

The coordination team agreed to use an internal INRIA tool named SHARE. This tool is indeed provided by the IT service department of INRIA and ensures the security of the data by controlling the access. This tool offers at the same time top security level in terms of harvesting data and flexibility access for external partners.

The AI-Hand site allows to store all legal and working documents, the site is currently composed of six main folders for the legal EU documents and one folder per each Work Package. The site uses the language of the web browser which ensures to be accessible in an understandable language for all partners. More information is available in the D1.2 Collaborative workspaces accessible from the project website[3].

Confidential and sensitive documents linked to the technology are shared with part of the partners through a k-drive secured server managed by Neurinnov.

Other local repositories are used by each beneficiary and this process is described in the D1.3 Data Management Plan.

3. Mattermost

Mattermost[4] is an instant messaging service designed to strengthen and streamline exchanges between the partners. Exchanges are organised as follows:
- directly between two or more partners for private chat
- from a "Team" (a department or a project team, for example) comprising a group of employees within each team, it is possible to create public (for all team members) or private (all or a subset of team members) discussion threads ("Channels").

In parallel to the classic mailing lists which are dedicated to formal and official information, the coordination team uses the Mattermost chat device for daily operational topics. The Mattermost open-source tool allows to create channels (public or private) and to invite colleagues per channel and per discussion. A tracking thread allows an easy access to documents.

So far, three channels are devoted to the AI-Hand project management and concern only the internal coordination communication:
- AI-Hand CAMIN: Five colleagues directly involved in the management of the project
- AI-HAND CAMIN Neurinnov: 12 colleagues from CAMIN and Neurinnov to discuss scientific topics of WP5 and WP6

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[3] https://project.inria.fr/aihand/projects-outputs/

[4] https://docs.mattermost.com/guides/use-mattermost.html

- AI-Hand management: 7 colleagues including CAMIN, INRIA and Neurinnov for legal, administrative and financial topics

The channels are attached to the Mattermost CAMIN account, also harvested and handled by INRIA IT.

The communication among the consortium is done mainly by e-mail and through regular meetings online and face to face. The coordination team made the decision not to add another communication tool, to avoid create confusion and messages duplication.

2.   EXTERNAL COMMUNICATION AND DISSEMINATION MANAGEMENT

1. Definition

1.   Communication activities

The communication activities should promote the entire action, both the project itself and its ongoing activities and results, to a wider range of audiences, including the general public, traditional and social media. The aim is not only to demonstrate how the EU funding is being used and contributes to societal challenges, but also to take the opportunity for potential engagement of the public and build on the feedback arising from an open dialogue with particular audiences.

2.   Dissemination activities

Dissemination and exploitation shall provide direct outreach to the main stakeholders and potential users of project results and outcomes, aiming to facilitate uptake and prospective use of the results. Without awareness-raising from the very beginning of the project, the results and the benefits of using them as the basis for further research, development or deployment will not be fully accessible to these target groups.

2. Target audience

1.   Biomedical engineering and research community

The biomedical engineering and research community is the traditional dissemination target for the topics raised in the project (IEEE EMBS, IFESS, REHABWEEK). The AI-Hand consortium also expects to reach a larger audience as described below:

2.   Patient organisations

The consortium will keep informed these organisations about project results throughout dedicated communication and they will be invited in the workshop.

3.   Associations of medical doctors

Orthopedic and neuro-surgeons will join the final workshop to identify expectations and concerns related to AIMD.

4. European and national policy-makers

The consortium specifically targets the institutions involved in healthcare, industry and innovation policy, through Maison Irène et Frédéric Joliot-Curie[5] at Brussels which brings together French operators in higher education, research and innovation who wish to pool their resources and coordinate their work with European institutions and other European networks in Brussels. The institution leads promotional actions concerning higher education, research and innovation. It strengthens the interface between the members themselves and with their European contacts. It represents major actors of French research and education (CLORA) and INRIA is a member of it and aims at acting as a catalyst between researchers and European policy-makers.

3. Tools and Measures

1. Communication channels

1. PROJECT WEBSITE

The project website has been set up by the scientific coordinator of the project via the INRIA WordPress template. The website is regularly updated by the scientific coordinator and the project manager, notably by adding publications, public deliverables and consortium description. Communication activities such as podcasts or news related to the consortium regularly feed the website. The current version of the website sums up the project, describes the objectives and the consortium. Each beneficiary is described, A tab is devoted to the latest news and shares and spreads for instance news & content about AI-HAND activities. Public deliverables, publications and events attendance will be highlighted in the website to give a global and precise overview of the project progress.

The Service uses purely technical cookies which are necessary for the operation of the Service, the provision of services and the protection of the Service. They are essential and cannot be deactivated on the Service. However, the User or Visitor may configure their browser to block these cookies (see details in article 5), but certain functions of the Service may then no longer function optimally[6]. As these cookies do not store any Personal Data, they are not subject to the User's or Visitor's consent.
The Coordination Team uses Matomo.js as audience measurement tracker to count visits and sources of traffic on the service, in order to establish anonymous statistics of frequentation and to improve the functioning and performance of the Service. The Matomo software instance is hosted by Inria. The software is accredited by the Commission Nationale de l'Informatique et des Libertés (CNIL)[7] and is configured in accordance with its recommendations, in order to fall within the scope of the exemption from the collection of consent. The visitor is invited to consult these recommendations at the following address: https://www.cnil.fr/fr/cookies-et-autres-traceurs/regles/cookies-solutions-pour-les-outils-de-mesure-daudience.

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[5] https://www.maison-joliot-curie.eu/

[6] https://iww.inria.fr/mentionslegales/cookies/

[7] https://www.cnil.fr/en

Recently the University of Montpellier interviewed the scientific coordinator (Christine Azevedo Coste) and shared a podcast about the innovation nature of the Ai-Hand project. This podcast has been relayed in the website (see Fig. 2 and 3) and the link shared on X[8].
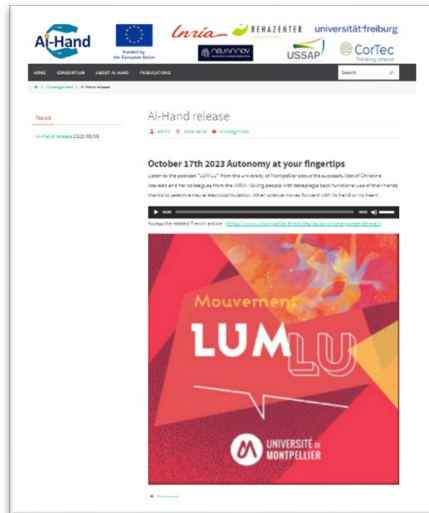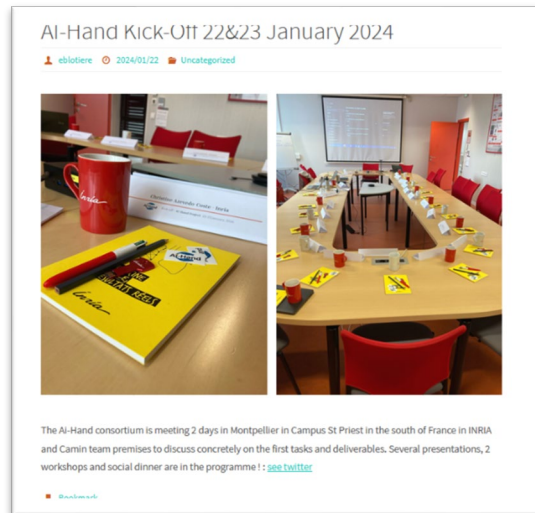

FIGURE 2 AI-HAND RELEASE

FIGURE 3 KICK OFF POST

2. SOCIAL MEDIA

Social media are unavoidable vehicles for publicizing the project. By using relevant tags and hashtags, it allows to reach a wide and also targeted audience, maximising the impact and successful exploitation of the project research projects[9]. In the particular case of AI-Hand, social media will:

- Manage the consortium reputation and wield influence in debates on science and innovation with a wider audience
- Build networks to help find new research partners and access additional expertise
- Informally pre-review works in progress, gaining consensus on and/or feedback about the work

The consortium already benefited, via a former project (AGILIS)[10] from social media and gained in visibility via the INRIA professional accounts. The project relies so far on existing social media accounts:

1. X (former twitter)

- Two INRIA X accounts:

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[8] https://twitter.com/

[9] EU Grants: HE Social Media Guide: V1.0 – 01.10.2023

[10] https://www.inria.fr/en/agilis-project-getting-back-track

- o @Inria national account (87 752 subscribers) the main events of the project and the attendance of the scientific teams to conferences.
    - o @inria_sophia (3787 subscribers) is an efficient relay at the regional level. It shares for instance the progress of the project and the main events such as publications, events, recruitments and new arrivals of Postdoc or PhD to take part in the project.
- The @CaminTeam account[11] (108 subscribers)

2. LinkedIn

- o The AI-Hand project page (#ai_hand2023)[12] has recently been created and 48 visitors have subscribed to the page so far to be continuously informed of the project progress.
- o The INRIA national account for sharing paramount progress and announcements of project related-events.
- o The CAMIN Team account (94 relations and 116 subscribers) which communicated recently on an AI-Hand short podcast (see Fig.4)
- o The Neurinnov account (461 subscribers) which communicated on the online kick off the project end of November 2023 (see Fig.5 below)
- o The CorTec account (3364 subscribers) (see Fig.6)

We emphasized LinkedIn that is currently less controversial than X and brings together more and more scientific communities as well as professional and industrial accounts.

Therefore, LinkedIn will help to grow the AI-HAND community network, increase the visibility of our solutions to help connections to potential investors. Partners contribute to communication through their own X and LinkedIn accounts with the hashtag #ai_hand2023 and the European hashtag and tags @HorizonEU, @EU_Commission. The INRIA Communication department set up a Mattermost board to coordinate a social media plan with the project coordination team.
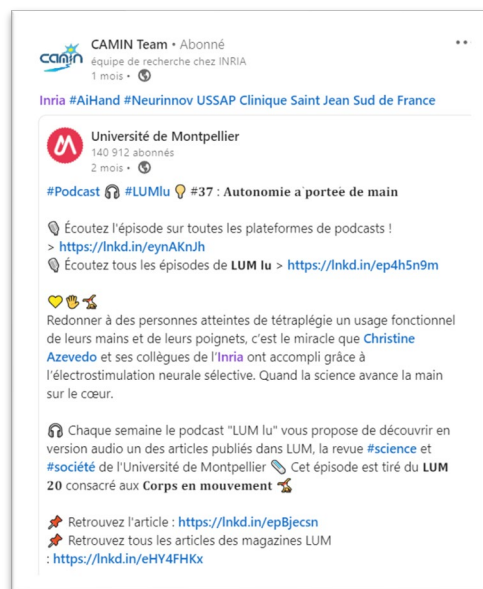

FIGURE 4 CAMIN TEAM LINKEDIN POST

FIGURE 5 NEURINNOV AI-HAND LINKEDIN POST

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[11] https://twitter.com/CaminTeam

[12] https://www.linkedin.com/company/ai-hand-2023-project

FIGURE 6 CORTEC POST ABOUT THE AI-HAND KICK-OFF

Social media communication is co-coordinated with the project coordination team and with the INRIA communication service. Several actions throughout the project are planned such as:

- Publish a press release on the INRIA website
- Publish a scientific article
- 3 steps Kick-Off communication
- Relays via the INRIA Newsletter (publication of the full article) and announcement of the Kick-Off
- Upload the social media posts on the website via the RSS feed.

The social media is accessible on a Mattermost board, created for this purpose (see Fig.7).
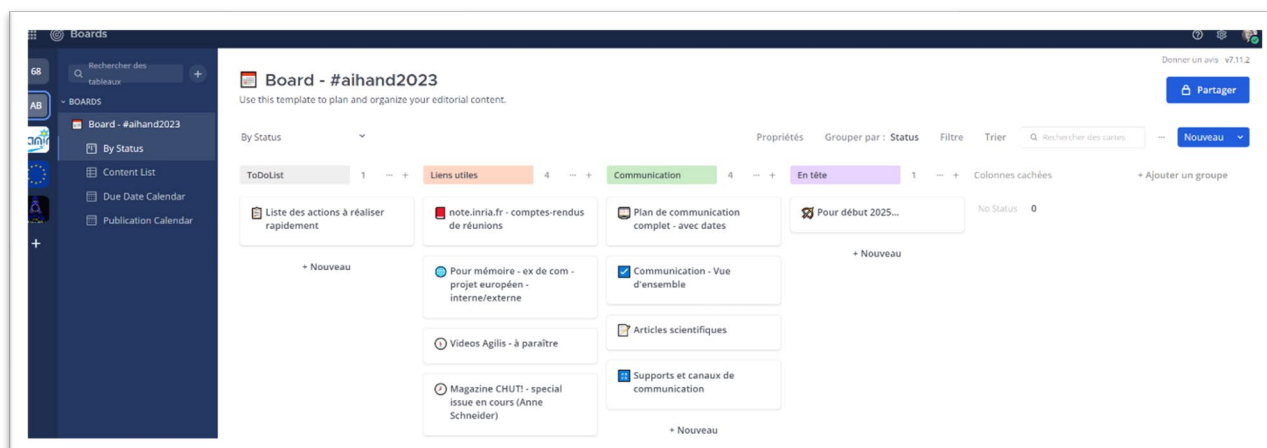

FIGURE 7 BOARD #AIHAND2023

2.   Dissemination actions

Dissemination is achieved through the following means:

1. PUBLICATIONS IN SCIENTIFIC JOURNALS AND CONFERENCES

Due to a short timing and limited budget the consortium gives priority to publications and events with high impact factors. A preliminary list of journals of interest has been identified:
Nature Biomedical Engineering, Science Translational Medicine, J. of Neural Engineering; *IEEE TNSRE, IEEE TBME, Archives of Physical Medicine & Rehabilitation; Neurorehabilitation & Neural Repair, and J. of Neurotrauma.*
New videos on the AGILIS project[13] have been recently published on the website and on social media.

The AI-HAND partners will also participate to selected events, among which: *IEEE EMBC, IEEE NER* and refer to the Ai-hand project by mentioning the name and the EU-funding programme in their presentations. The coordinator plans to attend the IFESS 2024 International conference[14] organised by the International Functional Electrical Stimulation Society (IFESS) to promote research, application and understanding of electrical stimulation technologies in rehabilitation and medicine.
In order to follow the consortium activities, monitoring spreadsheets are continuously completed and updated during the WLT meetings, every two months with the following data:

- Title of the publication
- Type of publication
- Last name, firs name and affiliation of authors
- Title of journal
- Volume/issue number
- Year/date of the publication
- Page range

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[13]https://www.inria.fr/en/restoring-movement-through-neurostimulation-objective-achieved-agilis-project-phase-two

[14] https://ifess.org/ifess-uk-2024-2/#tab-31423

- Publisher
- Place of publication
- DOI
- ISBN/SSN
- Online address/URL
- Open Access
- Peer-review

Each time a French academic author is involved in a publication, AI-HAND follows the open access principles by providing online access to scientific information: peer-reviewed scientific research articles, conference papers and research data and publish them on HAL[15]. Publications are easy to find by an international large public and interconnected with other services such as ORCID and preprint servers. The platform also guarantees the long-term preservation of the publications.

Open science is a strong initiative of INRIA (hal.archives-ouvertes.fr) with full texts deposit whenever it is possible. Open-source codes are made available, limited to the scientific data processing to ensure reproducibility of the method. AIMD embedded software developed by industrial partners are Medical Device software that cannot be disclosed for confidentiality and safety reasons (subject to ISO 62304). However, all their features needed to scientifically assess the project are disclosed.

2. EVENTS ATTENDANCE

The same functioning is applied for the upcoming events, a spreadsheet is accessible to the consortium in the project management tool to fill their events attendance. The WLT is and the spreadsheet is discussed during the WLT meetings. The spreadsheet monitors the target audience, the estimated outreach and the number of external events (scientific or large public).

These iterative monitoring measures track the efficiency of the events attendance and the relevance according to the target audience and allows if needed to correct the actions by putting more efforts on a neglected audience for instance.

Neurinnov notably intervened at the *After Hours Innovation 2024* on 30 January 2024 organised by the Montpellier University. Neurinnov made a presentation entitled from paralysis to movement, which is at the heart of the project. This conference focuses on innovative medical services and is reserved to the members of the University and their partners and among which some private companies.

3. ORGANIZATION OF AN INTERNATIONAL WORKSHOP

During the last year of the project a final workshop will be publicly organised to share the projects outputs and scientific progress about neuroprosthesis for people with high impairments. This final event will gather European medical doctors, patients, researchers and policy makers. The medical KOL (Key Opinion Leaders) of the four relevant countries in Europe (France, Spain, Germany Benelux) will be invited.

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[15] https://hal.science/

4. INDUSTRIAL PROFESSIONAL NETWORK

AI-HAND results will be IP protected so big AIMD companies and the network of identified start-ups will benefit from our generic technology through licensing. The consortium has the intention to attend the major professional meetings such as MEDICA Trade Fair[16] and the INS (International Neuropsychological Society)[17] meeting. The INS promotes the international and interdisciplinary study of brain-behavioral relationships throughout the lifespan with the objective of emphasizing science, education, and the applications of scientific knowledge.

Larger network can be used as for instance the entrepreneurial press. The French "Journal des entreprises" published an article in January 2024 entitled "*Birth of AI-Hand, a consortium aiming to restore the use of the hand*" reserved for subscribers and company directors.

4. Key Performance Indicators

The above list of communication and dissemination actions derives from the DoA. The current status of each of them is first described in qualitative terms and then with reference to the (one or more) KPIs to monitor and evaluate the related progress and achievements.

Communication KPIs		
Project website	Website updates	42 updates throughout the project
	Website visits	50 visitors per year with progressive increase
Social media	X	1 update per month
	LinkedIn	1 update per month
	LinkedIn project page	100 subscribers by the end of the project
Videos	Creation of videos	At least 3 videos throughout the project
Dissemination KPIs		
Publications	Scientific publications	At least 5 during the project
	Preprints	At least 3 during the project
	Thesis	At least 1 during the project
Events	External workshops	3 during the project with Ai-Hand presentation
	External conferences	5 during the project with AI-hand presentation
	Industry focused events	3 during the project with AI-hand presentation
	Training sessions	2 during the project

TABLE 1 KPIS

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[16]https://www.medica tradefair.com/en/Exhibit/Become_an_exhibitor/Online_registration ?gad_source=1&gclid=CjwKCAiAvoqsBhB9EiwA9XTWGTZg6tQeTAXNH6ruFzC roN-MuHRsjzohwqQD7ypZ_U9sDtA5s_1sBoCJ3kQAvD_BwE

[17] https://the-ins.org/meetings/future-ins-meetings/

3. IPR EXPLOITATION AND MANAGEMENT

The IPR are described in the Consortium Agreement. The IPR management of the project will be described in the deliverable 1.5 Exploitation & IPR strategy plan due end of July 2024. However, we can already state that the project is aligned with the IPR obligations described in the Grant Agreement in the Art. 16 *Intellectual property rights – background and results – access rights and right to use*. The beneficiaries described limited access, when necessary, of their results and know-how in the Attachment 1 of the Consortium Agreement.