

D4.2 Dissemination and communication plan

BINGO

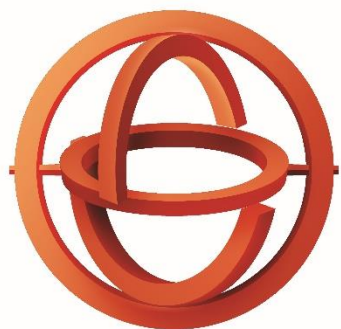
Brain Imagined-Speech Communication



**Funded by the
European Union**
NextGenerationEU

Greece 2.0

NATIONAL RECOVERY AND RESILIENCE PLAN



H.F.R.I.
Hellenic Foundation for
Research & Innovation

The research project is implemented in the framework of H.F.R.I. call “Basic research Financing (Horizontal support of all Sciences)” under the National Recovery and Resilience Plan “Greece 2.0” funded by the European Union – NextGenerationEU (H.F.R.I. Project Number: 15986).

Dissemination level:	Public (PU)
Contractual date of delivery:	Month 12, 27/11/2024
Actual date of delivery:	Month 12, 26/11/2024
Work Package:	WP4 Dissemination, communication and uptake of scientific results
Task:	T4.1 - Project Communication T4.2 - Dissemination - Publications in Scientific Venues
Type:	Report
Approval Status:	final
Version:	v1.0
Number of pages:	21
Filename:	D4.2_DisseminationCommunicationPlan_v1.docx
<p>Executive Summary: The Dissemination and Communication Plan (D4.2) outlines the strategies, methods, and activities designed to maximize the impact of the project through effective communication and continuous dissemination efforts. The plan details how BINGO will engage with key target audiences, including the scientific community, policymakers, industry professionals, and the general public, ensuring that research outcomes are effectively communicated to all relevant stakeholders. Central to the plan is the identification of stakeholders and the development of tailored communication channels, tools, and dissemination activities, all of which will be executed and monitored throughout the project's duration. All research team members will be actively involved in these communication efforts, with responsibilities shared across the related tasks. Additionally, BINGO will seek collaboration and exchange with related projects to amplify its impact and explore synergies, ensuring that the results of the project reach their full potential. The plan also emphasizes the importance of feedback mechanisms and the monitoring of dissemination activities to measure the effectiveness of the communication strategy. Furthermore, the project aims to demonstrate the value of EU funding by fostering networks of stakeholders, establishing team members' links with industry, and contributing to the broader research community through conferences, workshops, and other events. Ultimately, this Communication and Dissemination Plan ensures that the project's outcomes will be widely shared, understood, and used to drive future research, collaboration, and exploitation beyond the project's completion.</p>	
<p>The information in this document reflects only the author's views and the European Community is not liable for any use that may be made of the information contained therein. The information in this document is provided as is and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and liability.</p>	

HISTORY

Version	Date	Reason	Revised by
V0.1	12/10/2024	Table of Contents	Ioulietta Lazarou
V0.2	06/11/2024	Input in different sections	Ioulietta Lazarou
V1.0	26/11/2024	Final	Spiros Nikolopoulos

AUTHOR LIST

Organization	Name	Contact Information
AUTH	Nikos Laskaris	laskaris@csd.auth.gr
CERTH	Spiros Nikolopoulos	nikolopo@iti.gr
CERTH	Kostas Georgiadis	Kostas.georgiadis@iti.gr
CERTH	Fotis Kalaganis	fkalaganis@iti.gr
CERTH	Ioannis Kompatsiaris	ikom@iti.gr

ABBREVIATIONS AND ACRONYMS

Contents

History	4
Author list.....	4
Abbreviations and Acronyms	5
Introduction	7
Methodology.....	8
Define target groups	9
Plan before/during/after main activities	11
Keep track of kpis.....	11
Internal coordination	12
Analysis and Design.....	12
Implementation	12
Evaluation	12
Communication plan.....	13
Communication goals	13
Communication Activities in BINGO	13
Project visual identity.....	14
Communication plan.....	15
Other communication and promotion material	17
Communication feedback and evaluation	19
DISSEMINATION PLAN	20
Dissemination activities	20
Dissemination guidelines	20
Dissemination Strategy in BINGO	20
Social Media and Communication	21
General Social Media Guidelines	21



INTRODUCTION

BINGO aims to develop innovative communication systems based on Brain-Computer Interfaces (BCIs), specifically utilizing the concept of imagined speech. This technology explores how the brain's neural responses to imagined speech — during which the articulators are not engaged — can be decoded and used to facilitate communication, particularly for individuals with severe motor impairments. In this Communication and Dissemination Plan, we will outline the strategies and methods for effectively sharing the project's progress, outcomes, and impact with a wide range of stakeholders, including researchers, healthcare professionals, policymakers, industry team members, and the general public. This deliverable is a dynamic document that will evolve over time to incorporate new opportunities, challenges, and developments related to the communication and dissemination of BINGO's results. It highlights the planned activities, tools, and channels that will be employed to maximize the visibility and impact of the project. The dissemination efforts will focus on increasing awareness of the potential of BCIs in improving communication for individuals with speech impairments, promoting the development of new assistive technologies, and showcasing the project's contributions to advancing healthcare and technology. To successfully disseminate the outcomes of BINGO, the project will:

- Identify key target audiences and stakeholders involved in the fields of assistive technology and neuroscience.
- Promote the adoption of BCI-based communication systems through academic publications, media outreach, and engagement with relevant conferences and workshops.
- Foster collaboration with other national and EU-funded projects and research initiatives to enhance the project's reach and impact.
- Ensure accessibility of information and outcomes to both the scientific community and the general public, highlighting the societal and medical benefits of the project.

Through strategic communication and dissemination efforts, BINGO aims to not only raise awareness of its innovative research but also to establish lasting research team relationships and collaborations. This will ensure that the project's outcomes have a long-term impact, contributing to the development of new communication technologies that can transform the lives of people with disabilities. Additionally, the plan will detail methods for monitoring and evaluating the effectiveness of the dissemination activities, ensuring continuous improvement and maximized impact throughout the project's lifespan.



METHODOLOGY

The communication and dissemination approach for the BINGO project will be proactive, adaptive, and collaborative to ensure the effective promotion and adoption of the innovative BCI technologies developed. Given the interdisciplinary nature of the project, close collaboration at the work package (WP) level is essential to ensure alignment across the various research domains, including neuroscience, engineering, and assistive technology. The methodology will be structured around clear objectives and tailored to the needs of distinct target groups, including researchers, healthcare professionals, people with disabilities, and policymakers. We will ensure that dissemination activities are planned before, during, and after key project milestones, focusing on awareness building, stakeholder engagement, scientific results dissemination, and positioning of BINGO's technology in the broader field of BCI and assistive communication systems. To develop the Dissemination and Communication (DC) plan, all potential dissemination channels, activities, and materials will be identified and structured. Each researcher will develop individual communication and dissemination plans, which will describe how they intend to communicate the project's objectives, research results, and outcomes. This will be facilitated through a questionnaire template provided to each partner to guide their specific dissemination strategies, ensuring coherence and consistency across the project. The results of these individual plans will be integrated into subsequent deliverables, which will be regularly updated to reflect new opportunities and challenges.

The methodology includes the following key steps:

1. **Identification of Target Groups:** Specific target groups will be defined based on the various interests and needs associated with BINGO's research outcomes. This will include stakeholders such as healthcare professionals, researchers in neuroscience and assistive technology, patients with speech impairments, and policymakers.
2. **Selection of Dissemination Channels:** Effective communication channels will be chosen based on the nature of the target group and the type of information being shared. This will include scientific publications, media outreach, social media, project websites, blogs, newsletters, conferences, and workshops. Each channel will be selected for its potential to reach the intended audience and promote active engagement.
3. **Monitoring and Evaluation:** Key performance indicators (KPIs) will be established for each dissemination activity to monitor progress and impact. These KPIs will help assess the reach, effectiveness, and engagement level of the dissemination efforts. Regular monitoring will allow for timely adjustments to strategies and activities.
4. **Engagement with Stakeholders:** The project will actively engage with stakeholders throughout its lifecycle. Specific activities will be planned to foster communication with relevant academic, clinical, and industry communities, ensuring that BINGO's results have a lasting impact. This will involve networking with other relevant European projects, policymakers, and healthcare organizations to expand the reach of the project and enhance its applicability.
5. **Collaboration with Other Projects:** BINGO will seek opportunities to collaborate with other EU-funded projects, particularly those working on related technologies, such as neuroprosthetics or assistive communication systems. These research team members will actively engage and nurture to enhance knowledge exchange and promote synergy.

6. **Dissemination Materials and Events:** Research team members will be responsible for producing high-quality dissemination materials, such as research papers, press releases, brochures, and project updates. These materials will be tailored to suit both scientific and non-scientific audiences. In addition, BINGO will participate in relevant events and organize its own workshops, conferences, and webinars to share project results and foster direct engagement with stakeholders.

Table 1 provides an overview of all communication and dissemination materials that will be created for the project.

Type	Description
Leaflet	BINGO project leaflet including the background of the project, its objectives and basic facts. This leaflet can be adapted to different WP needs for events.
Presentation	PowerPoint template to be used for presentations of the BINGO project.
Deliverable	BINGO deliverable template with formatting examples and a given basic structure.
Project folder	To be used for meeting and conferences including materials like stickers, pens, and bookmarks.
Website	The BINGO website is the main pillar of the project's online presence includes information about the project, news articles, media downloads, and more.
Social posts	Regular posts on the project's Twitter and Facebook channels.
Newsletter	To provide interested audiences with the main actual topics within the project; emitted at least twice a year.

DEFINE TARGET GROUPS

A key part of the dissemination strategy will involve categorizing stakeholders based on their interests and needs. This will help create customized dissemination pathways to reach different groups with content that is most relevant to them.

1. Academia, Researchers, and Scientific Community

Interest: Advancing knowledge on BCIs and their application in assistive communication for people with disabilities.

Mechanism of Engagement: Publications in open-access journals, conference presentations, and collaboration in research initiatives. Communication via the BINGO website and dedicated project channels.

2. Industry (Assistive Technology Manufacturers, Neurotech Companies)

Interest: The integration of BCI-based solutions into assistive technologies and communication devices.

Mechanism of Engagement: Direct team members' hips with industry, participation in industry events, and inclusion of BINGO's results in product development discussions.

3. Healthcare Providers and Professionals

Interest: Exploring the potential of BCIs for improving patient care and communication options for individuals with speech or motor impairments.

Mechanism of Engagement: Focus groups, specialized training sessions, workshops, and online resources such as the BINGO website.

4. Patients and Patient Organizations

Interest: Access to new communication tools that can assist those with severe impairments.

Mechanism of Engagement: Collaboration with patient advocacy groups, dissemination via social media and patient-focused events, and sharing through existing healthcare communication channels.

5. Policy Makers and Regulators

Interest: Development of ethical guidelines and regulatory frameworks for emerging BCI technologies in healthcare.

Mechanism of Engagement: Regulatory workshops, participation in policy development discussions, and presentation of results through governmental and international healthcare platforms.

6. General Public and Society

Interest: Awareness of new innovations in assistive technology and their potential impact on healthcare systems and quality of life for people with disabilities.

Mechanism of Engagement: Public awareness campaigns, social media engagement, and outreach through the BINGO project's website.

Defining DC Activities and Monitoring Impact

The PI will ensure that all D&C activities are properly defined, planned, and executed throughout the project. This includes identifying KPIs for monitoring the success and reach of dissemination efforts. Regular evaluations will be carried out to assess the impact of each communication activity, allowing for adjustments and optimization.

The DC activities will be reviewed and updated regularly, ensuring flexibility and responsiveness to emerging opportunities, changes in stakeholder interests, or new developments within the BINGO project. This proactive and iterative approach will ensure that the project's outcomes are communicated effectively to all stakeholders and that the results are utilized to their full potential across multiple sectors.

PLAN BEFORE/DURING/AFTER MAIN ACTIVITIES

For each dissemination activity, the target groups will vary depending on the focus and objectives. To ensure successful engagement across all stakeholders, BINGO will integrate a range of strategies that cater to different needs and communication preferences.

- **Before:** Initially, we will generate interest and raise awareness about the potential of BCI technologies for improving communication for people with disabilities. This will include posts on the challenges faced by individuals with speech or motor impairments, the opportunities that BCI-based systems present for assistive communication, and positive stories about the potential impact of the project. We will also highlight the potential benefits of BINGO's work, including its ability to revolutionize communication for those unable to use traditional methods. The content will include a mix of text, photos, and videos, sharing success stories or early milestones that showcase the transformative potential of BINGO's research. We will coordinate communication efforts between all research team members, ensuring that key messages are aligned, consistent, and shared across all channels for clarity and predictability.
- **During:** Throughout the project, we will actively share updates and progress through social media, the project website, and other channels. These will include "in-action" posts showcasing the project's developments, breakthroughs, and collaborative efforts. This might involve sharing images, videos, quotes from the research team or stakeholders, and live coverage of events or workshops. These updates will demonstrate the ongoing impact of the project and help keep stakeholders engaged and informed about BINGO's progress.
- **After:** Once key milestones and results are achieved, BINGO will continue to engage stakeholders by posting follow-up updates, including interviews with patients, healthcare professionals, and researchers involved in the project. We will share motivational stories and success stories from participants, showing the tangible benefits and improvements in quality of life that BCI technologies can bring. We will also offer continuous updates on patient involvement and the broader impact of the research outcomes, reinforcing the long-term value of the project.

KEEP TRACK OF KPIS

We will establish clear goals for reach and engagement by tracking KPIs to assess the effectiveness of our communication and dissemination efforts. To support this, we will utilize digital analytics tools such as Google Analytics, Twitter Insights, LinkedIn Analytics, and other relevant platforms to gather data on engagement, reach, and audience interaction. In addition, an internal D&C tracker will be implemented to monitor and continuously refine our outreach activities, ensuring that our strategies evolve based on real-time feedback and performance. These KPIs will serve as the foundation for evaluating the outcomes of the BINGO project's dissemination efforts. By regularly reviewing these indicators, we will ensure that our activities are achieving the desired impact and effectively engaging the intended stakeholders.



INTERNAL COORDINATION

The PI will establish a **weekly meeting** providing guidance, advice, and feedback on the dissemination and communication (DC) activities. Internal coordination for both teams will follow a structured four-stage process:

ANALYSIS AND DESIGN

- The PI will coordinate efforts and collect internal feedback from the team members to ensure alignment and consistency across the project's communication activities.
- The task lead will plan a detailed calendar for upcoming posts and dissemination actions, ensuring timely and strategic communication.

IMPLEMENTATION

- Throughout the course of the project, the PI (Dr Spiros Nikolopoulos) will regularly meet to discuss progress, gather feedback, and ensure all research team members are aligned in their approach. Team members will be encouraged to share their knowledge, results, and experiences, ensuring the maximum value is gained from the collaborative effort. This will help strengthen the project's messaging and improve overall impact.
- The DC plan will be continuously tracked, assessed, and refined to adapt to any new developments, ensuring that communication strategies remain effective.

EVALUATION

- The research team will evaluate feedback and performance metrics from digital channels and other dissemination activities.
- Based on the evaluation, the DC plan will be revised and improved to enhance future communication efforts and address any challenges or emerging opportunities.



COMMUNICATION PLAN

COMMUNICATION GOALS

Based on our understanding of the interests of our target groups (as outlined in Table 1), sharing BINGO's results is crucial for fostering engagement across sectors. To achieve this, we will establish a transparent and comprehensive communication strategy to facilitate effective inter-sectoral collaboration. We will also actively inform relevant stakeholders, such as EFPIA, IHI about upcoming dissemination and communication (D&C) activities to reach broader audiences. Team members will take the lead in disseminating project results and activities through their own channels, including websites, social media, partner newsletters, and other promotional materials. Each partner will contribute to maximizing the visibility and impact of BINGO's findings.

Our overall communication goals for BINGO are:

- Raising awareness among different stakeholders about the potential of BCI technologies for improving communication, particularly for individuals with speech or motor impairments.
- Convincing healthcare professionals and systems to adopt BINGO's innovative approaches to assistive communication and brain-computer interface systems.
- Promoting the use of advanced analytics and AI in the development of next-generation neurotechnologies and communication systems.
- Stimulating collaboration with other relevant EU or international projects to amplify the impact of BINGO's research and innovations.

COMMUNICATION ACTIVITIES IN BINGO

Communication activities play a **crucial role** in the **BINGO** project, as one of its key objectives is to **raise awareness** and **increase the impact** of its outcomes and solutions. By effectively disseminating information, we aim to maximize engagement with relevant stakeholders and ensure the long-term success of the project.

There are three **main channels** for communication activities within **BINGO**:

- **In-person communication** – Engaging directly with stakeholders through **workshops, presentations, conferences, and meetings**.
- **Written channels** – Distributing information via **brochures, posters, leaflets, reports, and publications**.
- **Technology-based channels** – Utilizing **websites, social media platforms, and digital newsletters** to expand outreach and accessibility.

These channels serve to **share project outcomes, build networks and communities, gather feedback, and evaluate new ideas**.

Key Audiences

The main target groups for **BINGO's** communication activities include:

- **Scientific community** – Providing essential research data and fostering collaboration.
- **Industry sector** – Strengthening innovation, enhancing competitiveness, and supporting the European industrial ecosystem.
- **Healthcare sector** – Helping improve services and align with emerging innovation needs.
- **Policy makers** – Contributing to the development of digital and enabling technologies across the European Union.

Types of Communication Activities

The **BINGO** communication efforts can be categorized into three main areas:

- **Promotion** – Raising awareness about **BINGO**, its **objectives, progress, results, and key developments**.
- **Involvement** – Actively engaging **stakeholders** in the project to ensure their participation and contributions.
- **Networking** – Building **strong and sustainable relationships** to enhance the long-term adoption and impact of **BINGO**.

Throughout the project, all **BINGO team members** will engage in communication activities to **maximize awareness, engagement, and impact**.

PROJECT VISUAL IDENTITY

Our team aims a clear and distinctive recognition of the project and outputs. Such an identity, or brand, is vital for our further exploitation which will be described in the Sustainability Plan.

Our project identity consists of four elements:

- A project logo
- Colour palette to be used in logo and documents
- Standardized templates for presentations
- Other promotional materials.

PROJECT LOGO

Our project has adopted a “brain-liked” design to reflect our thematic topic. Few varieties are designed including a white version for use on coloured backgrounds.



Figure 1 *Project logo*

PROJECT COLOURS

The selected colours are FDBFA, F5A86E, CE6566, 3C1549.

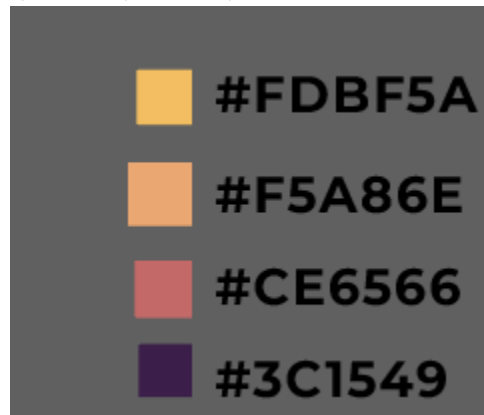


Figure 2 BINGO branding colours

POWERPOINT PRESENTATION TEMPLATE

Two versions of BINGO PowerPoint presentations are produced to presenting the project in a consistent way. The presentation can be adapted by the team members to various audiences.

COMMUNICATION PLAN

The BINGO project will establish a robust and effective communication strategy through multiple channels, including a dedicated project website and an active presence on social media platforms such as LinkedIn and X. These platforms will serve as key tools for sharing project milestones, research findings, and engagement opportunities with a broad audience, including researchers, industry stakeholders, policymakers, and the general public. Furthermore, all BINGO team members are committed to enhancing the project's visibility by disseminating key outputs, updates, and events through their own institutional websites, newsletters, and social media channels. This coordinated effort will create a powerful multiplier effect, significantly extending the project's reach and impact. To maximize visibility and ensure broader dissemination, all D&C activities will also be communicated to relevant stakeholders, for potential publication, collaborations, and engagement with wider National and European and international audiences.

PROJECT WEBSITE

The BINGO project website is currently under development and will be launched at a later stage of the project. Once live, it will serve as a central hub for providing general information about the BINGO project, its objectives, team members, research activities, and key developments. The website will also feature news and event updates, scientific outputs, reports, and opportunities for stakeholder engagement. The development and maintenance of the website will be managed by designated research team members, ensuring that it remains dynamic and up to date with relevant content. Additionally, the BINGO project aims to establish synergies with other EU-funded initiatives to enhance visibility, promote collaboration, and ensure the long-term sustainability of project results.

SOCIAL MEDIA SITES

Our presence on social media is essential to overcoming geographical and time-related barriers, enabling us to engage effectively with stakeholders and maintain continuous interaction.

WHERE

We will establish official social media accounts on LinkedIn and X. Given the project's limited economic resources, these two platforms will be prioritized as the primary channels for communication, knowledge sharing, and stakeholder engagement.

WHO

All social media activities will be led and coordinated by **the PI (Dr Spiros Nikolopoulos)**. Team members will provide with relevant updates on ongoing activities, ensuring valuable content for dissemination. The PI will generate and schedule posts, engage with the audience, and respond to messages. Additionally, team members are encouraged to amplify the project's reach by sharing BINGO-related posts using their organizations' official accounts or personal profiles.

WHAT

The tone and content of social media posts will be tailored to different stakeholder groups, differentiating from the more formal style of the project website. During the early phase of BINGO, the primary focus will be on raising awareness about the project's objectives, expected outcomes, and potential impact. As the project progresses, communication will shift toward highlighting key achievements, including advancements in brain-computer interfaces, speech imagery decoding, and AI-driven assistive technologies. Updates on project milestones, events, and scientific findings will be shared in an engaging and accessible manner, accompanied by relevant images, videos, and public deliverables. To broaden our reach, posts may be translated into additional languages beyond English, targeting specific communities where relevant.

HOW

To ensure timely and strategic communication, a **bi-monthly reporting system** will be established. This will facilitate prompt updates on project news and activities, ensuring a consistent flow of information. Beyond simply sharing updates, BINGO aims to foster active stakeholder engagement and community-building. To expand our social media reach, we will:

- Follow and interact with similar projects, organizations, and professionals in the field.
- Utilize engagement techniques such as retweeting, commenting, and quoting relevant posts.
- Initiate discussions on key topics related to BINGO's research.
- Actively connect with EU and international initiatives, including following and engaging with other national, Horizon Europe and IHI-funded projects.
- Contribute to their Dissemination and Communication (D&C) activities.

By implementing this strategy, BINGO will create a dynamic and interactive social media presence, maximizing visibility, strengthening collaborations, and ensuring broad dissemination of project outcomes.

[Strategies for effectively using social media sites](#)

Social media platforms serve as powerful multipliers of information, amplifying the reach and impact of BINGO's activities. To maximize engagement, visibility, and effectiveness, we will strategically refine our approach, including the use of hashtags, search engine optimization (SEO), risk mitigation, and performance measurement. The strategies will be continuously reviewed and refined in collaboration with the PI and the team members.

Key Strategies:

- **Hashtag Strategy:**
Hashtags will be carefully selected to index relevant keywords and topics, ensuring that users can easily track and engage with BINGO-related discussions. These hashtags will align with broader scientific, technological, and accessibility trends to reach a wider audience.
- **Consistency Across Channels:**
To enhance BINGO's search engine ranking and online presence, it is crucial to maintain alignment between all social media accounts and the project website. Consistent naming conventions, uniform messaging, and synchronized content sharing (including offline materials like brochures) will contribute to stronger branding and improved discoverability.
- **Social Media Risk Mitigation:**
Online risks such as bots, trolling, misinformation, privacy breaches, and spam will be actively monitored. In the event of any emerging threats, the PI will swiftly assess and implement mitigation measures.
- **Performance Monitoring and Analytics:**
Social media impact will be assessed using a combination of **quantitative** and **qualitative** indicators:
 - **Quantitative Metrics:** Number of clicks, shares, tags, video views, new followers, profile visits, engagement rates, and post reach.
 - **Qualitative Insights:** Types and tone of comments, audience demographics, follower interactions, impressions, and traffic data.
 - Advanced analytics tools (e.g., LinkedIn and X insights, SEO reports) will be used to track trends, identify successful engagement strategies, and optimize future content. These evaluations will also be integrated into reporting, ensuring data-driven improvements in BINGO's dissemination and communication efforts.

OTHER COMMUNICATION AND PROMOTION MATERIAL

We plan to create both digital and printed promotional materials to effectively communicate key project details and enhance BINGO's visibility. These materials—such as brochures, flyers, and posters—will provide clear and accessible information about the project's objectives, activities, and impact. Given the project's scope, we will prioritize materials in Greek to maximize outreach and engagement within the local community. Additional translations may be considered based on stakeholder needs. PI and the team members will collaborate closely to ensure the development of high-quality, informative promotional content tailored to BINGO's target audiences.

Concept

BINGO aims to understand and decode the neural processes of imagined speech as registered by means of an EEG device. In plain words, BINGO focuses on creating the essential methodological framework that will translate the imagined pronunciation of words/phonemes/syllables into actual text. BINGO stands over the assumption that EEG signals indeed hold the essential information to discriminate between different imagined speech pronunciations. In order to achieve its ultimate objective (i.e., enabling imagined speech as a robust BCI paradigm), BINGO aims to pass through the following individual challenges that hold the potential to pave the way for natural and intuitive BCI applications. In essence, BINGO is:

- ✧ Developing, neuro-informed, imagined speech decoding schemes (i.e., algorithms tailored to the neural phenomena of imagined speech) for EEG signals.
- ✧ Supporting an incremental vocabulary under the imagined speech paradigm (i.e., support new words using pre-trained classifiers that can learn incrementally using a small number of new trials).
- ✧ Investigating the imagined speech at the level of semantic perception (i.e., compare neural patterns of imagined words of identical meaning expressed in different languages).
- ✧ Creating a publicly available bench-marking framework (experimental protocol, dataset, evaluation metrics) that enables the fair evaluation of computational models dealing with the aforementioned challenges.

Research Objectives



RO.1

Reliable algorithms for imagined speech decoding

Brain decoding algorithms constitute the 'heart' of a BCI system. Hence, the main objective here is to conceive EEG decoding algorithms by combining recent advances in the fields of neuroscience and Machine Learning. Beyond the conceptualization of novel decoding schemes, it is among our objectives to achieve a deeper understanding of the neural processes that are related to the imagined speech and exploit them towards developing reliable and effective Machine Learning algorithms.

RO.2

Incremental vocabulary

The objective is to establish the decoding schemes for an imagined speech BCI system that will be able to incrementally learn how to decode new classes (e.g., new imagined words/phonemes/syllables) using a small number of additional trials, without compromising the robustness of the existing vocabulary.

Research Objectives



RO.3

Connections between same meaning in different languages

The main scope of this objective is to initially study the neural activations when one imagines words with identical meaning but in different languages (e.g., 'no' and 'ochi'; the greek word for no). Then, to establish a framework that uncovers potential interconnections between such activation patterns and apply transfer learning approaches that deal with the aforementioned interconnections.

RO.4

Benchmarking framework

The main concept of this objective is to create a publicly available EEG-based dataset, oriented towards the imagined speech paradigm. The dataset will be formulated accordingly in order to facilitate a benchmarking framework, hence, it will be accompanied by carefully crafted evaluation metrics.



Figure 3 Leaflet Figure of BINGO project

COMMUNICATION FEEDBACK AND EVALUATION

As highlighted earlier, tracking the impact of our dissemination and communication efforts is a crucial step in measuring our progress and refining our strategies. To achieve this, we will establish an internal D&C tracker to systematically collect data on all participants' activities. Additionally, both quantitative and qualitative indicators from social media platforms will be monitored and evaluated. The collected insights will be reviewed quarterly and presented to the PI. This continuous assessment will allow us to adapt our approach as needed, ensuring effectiveness and maximizing outreach. Moreover, this process will serve as a valuable learning experience for team members, strengthening our collective expertise in communication and engagement strategies for future initiatives.



DISSEMINATION PLAN

Dissemination has more specific target audiences than normal communication. Its effective results will pave a good pathway for further exploitation.

DISSEMINATION ACTIVITIES

In the project proposal, the BINGO has shortlisted some important dissemination activities as shown in the following table.

Table 2 Overview of BINGO dissemination activities

Dissemination Activities	Targeted means	Target audiences	KPIs for project duration
Open access scientific publications	Peered-reviewed journals like Journal of Neural Engineering, Human-Computer Interaction, IEEE Trans. on Biomedical Engineering).	Academic and industrial research community, clinicians	Up to 3 publications
Conference presentations	CHI, EUSIPCO and SIGMAP.	Research community focused on biomarkers for neurogenerative disease application of AI/ML in healthcare diagnosis, advancing, and neurology	Min. 3 presentations

DISSEMINATION GUIDELINES

DISSEMINATION STRATEGY IN BINGO

As a guiding principle, dissemination activities in **BINGO** will primarily focus on **scientific, engineering, and technological content**. Since dissemination can impact the project's **novelty, quality, and future potential**, we will ensure a **transparent and structured approach** to maximize its effectiveness.

To achieve this, the **Principal Investigator (PI) and team members** will follow clear dissemination guidelines, including:

- Team members are **encouraged** to propose results for dissemination.
- Any dissemination proposal must be reviewed by the **PI**, who will assess its relevance, potential impact, and alignment with the project's objectives.
- Opportunities for **collaboration** with other research teams or projects will be explored to enhance dissemination impact.
- Any developed results should be assessed for **affordability, availability, and accessibility** under fair and reasonable conditions.

SOCIAL MEDIA AND COMMUNICATION

Most **BINGO** team members actively use social media to engage with **scientific communities, stakeholders, and the public**. To leverage these existing networks and **maximize the project's visibility**, we will integrate our communication efforts with their established pathways.

To ensure **consistent messaging** and mitigate **social media risks**, we will establish a set of **general guidelines** for project-related communication. These guidelines will be a **living document**, regularly updated to align with **evolving project needs and best practices**.

GENERAL SOCIAL MEDIA GUIDELINES

- Team members using their **organization's social media accounts** for **BINGO** communication must adhere to their organization's existing **Code of Conduct, Information Security, and Privacy Policy**.
- Team members should coordinate their social media posts with content published on **BINGO's official social media platforms** to maintain consistency.
 - Key **project events, publications, outputs, and results** should first be posted on **BINGO's** official accounts. Team members are encouraged to **share, retweet, or create their own posts** based on the official content.
- When posting about **BINGO**, team members should use **good judgment, verify facts before posting**, and disclose their affiliation with the project.
- In case of errors or omissions in a social media post, team members should promptly acknowledge and correct the mistake transparently.
- Team members using **personal social media accounts** for **BINGO-related** matters are responsible for their posts and must ensure they reflect accurate and appropriate information.
- Team members must **protect confidential information** and avoid sharing sensitive data, research findings, proprietary knowledge, or intellectual property without proper authorization.

For any **uncertainties** regarding **social media usage**, team members are encouraged to **consult CERTH** for clarification and guidance.