

IHI Call Days | Call 12

AIDMED:

AI models integrating diverse Data modalities towards advancing MEDical and healthcare domains

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Link to the IHI brokerage platform:

- [Proposal sharing tool](#)
- [Participant profile](#)

Challenges and objectives

❶ What problem(s) are you trying to solve?

Health data in Europe are fragmented across modalities, languages, and institutions, preventing the effective use of AI for early detection, diagnosis, and continuous care. Current models cannot integrate textual, imaging, biosignal, and behavioural data in a scalable, privacy-preserving way.

❷ Which IHI specific objective(s) are you addressing?

AIDMED addresses **IHI Specific Objective 4 – Exploiting the full potential of digitalisation and data exchange in healthcare**, by enabling multimodal, interoperable, and secure AI systems that transform dispersed health data into actionable clinical intelligence.

❸ Which unmet public health need are you addressing?

AIDMED targets the unmet need for **early detection and personalised management** of chronic, cardiovascular, neurodegenerative, and mental health conditions through continuous, data-driven monitoring that improves access, equity, and efficiency in European healthcare systems.

AIDMED Methodology

1. Multimodal Large Language Models (MLLMs)

- Develop advanced **MLLM architectures** capable of integrating **clinical text, medical images, biosignals, and speech**.
- Enable cross-modal reasoning for diagnosis, monitoring, and personalised insights.

2. Federated and Privacy-Preserving Training

- Train models across distributed healthcare datasets using **federated learning**, ensuring compliance with **GDPR** and **EHDS**.

3. Interoperability and Data Exchange

- Leverage **FHIR-compliant pipelines** to harmonise heterogeneous data sources and support cross-border data sharing.

4. Clinical and Ethical Validation

- Validate MLLMs on **real-world multimodal datasets** for chronic, cardiovascular, neurodegenerative, and mental-health domains.

AIDMED's vision

- AIDMED exemplifies IHI's mission to **drive cross-sectoral health innovation**, transform AI research into **translatable, interoperable, and trustworthy digital health solutions**, and strengthen **Europe's competitiveness** in data-driven medicine.
- Industry contribution is essential for AIDMED by advanced AI, data, and device technologies essential for integrating multimodal clinical, imaging, and biosignal data, requiring collaboration across health ICT, medical device, imaging, and biotech sectors to transform research into scalable, interoperable healthcare solutions.

Outcomes and Impact

1 Expected Results & Impact

AIDMED will deliver **multimodal large language models**, **federated AI pipelines**, and **FAIR-compliant datasets** that enable secure integration of text, imaging, biosignal, and behavioural data—powering early diagnosis, prediction, and continuous care across Europe.

2 From Research to Real-World Implementation

Through **clinical pilots**, alignment with **EHDS and AI Act**, and co-creation with clinicians and regulators, AIDMED will translate research into **deployable, interoperable AI tools** ready for integration into healthcare systems.

3 Boosting Europe's Health Industry Competitiveness

AIDMED strengthens Europe's position in **trustworthy, data-driven healthcare**, fostering new industrial value chains across **AI, digital health, and medical technologies** through standardisation and secure data innovation.

4 Tangible Benefits for Patients

Patients gain from **earlier detection, personalised prevention, and continuous monitoring**, leading to fewer hospitalisations, improved adherence, and greater empowerment in managing their health.

We have

- The consortium combines strong expertise in **AI, multimodal data integration, clinical informatics, and digital health**. Capabilities include **large-scale data engineering, federated and privacy-preserving learning, biomedical signal processing, clinical validation, and regulatory alignment**.

We are looking for

- We seek additional expertise in **data interoperability, clinical data standardisation, health economics, and regulatory science**, as well as a formal **IHI private member partner** to reinforce the public-private balance. Partners with **quality-controlled clinical data, HTA and market-access experience, and real-world validation capacity** are particularly valuable.
- The consortium will bring **in-kind operational contributions (IKOP)** in AI infrastructure, data processing, and clinical pilot execution, alongside **in-kind additional activities (IKAA)** supporting standardisation, sustainability, and exploitation.