ITEA 4

Project Profile



MediSpeech

Reducing administrative waste with automated medical reporting

To reduce administrative waste in healthcare, the ITEA project MediSpeech (Automated medical reporting-improved clinical efficiency to enhance the patient experience) will create an open platform for automated medical reporting using AI-powered speech recognition, data interoperability and harmonisation, and advanced clinical decision support.

Addressing the challenge

Administrative tasks consume up to 30% of a clinician's working hours, thereby reducing care quality while introducing unnecessary costs into healthcare systems. Although advanced natural language processing (NLP) and large language models (LLMs) could streamline administrative processes and refocus efforts on patient care, their development and implementation have been hindered by factors that include poor interoperability with electronic health records (EHRs) and low accuracy and recognition.

Proposed solutions

By creating a multi-faceted digital ecosystem for automated medical reporting, MediSpeech aims to transform the current organisation-centred healthcare model into a patient/doctor-centred model. This will be based around four major innovations. Firstly, AI-powered speech recognition – combining real-time, end-to-end automatic speech recognition (ASR) with NLP/LLM technologies – will enable accurate voice-to-text conversion for simplified data entry into EHRs and enhance the system's ability to comprehend complex medical terminology, patient histories, and unstructured data. Secondly, data interoperability and harmonisation will be ensured through open, standardised interfaces for capturing and converting speech-to-text outputs to the right EHR format or integrating further algorithms and applications. Thirdly, for advanced clinical decision support, MediSpeech will introduce a hybrid recommendation system that combines collaborative filtering with knowledge-based recommendations to deliver personalised healthcare recommendations and human-understandable explanations with greater transparency than existing recommendation processes. Lastly, by automating and personalising medical reporting with technologies like knowledge graph-empowered AI, patient-centric data extraction, and predictive analytics, the project will provide the past data-driven knowledge needed to boost effectiveness and reduce medical complication rates.

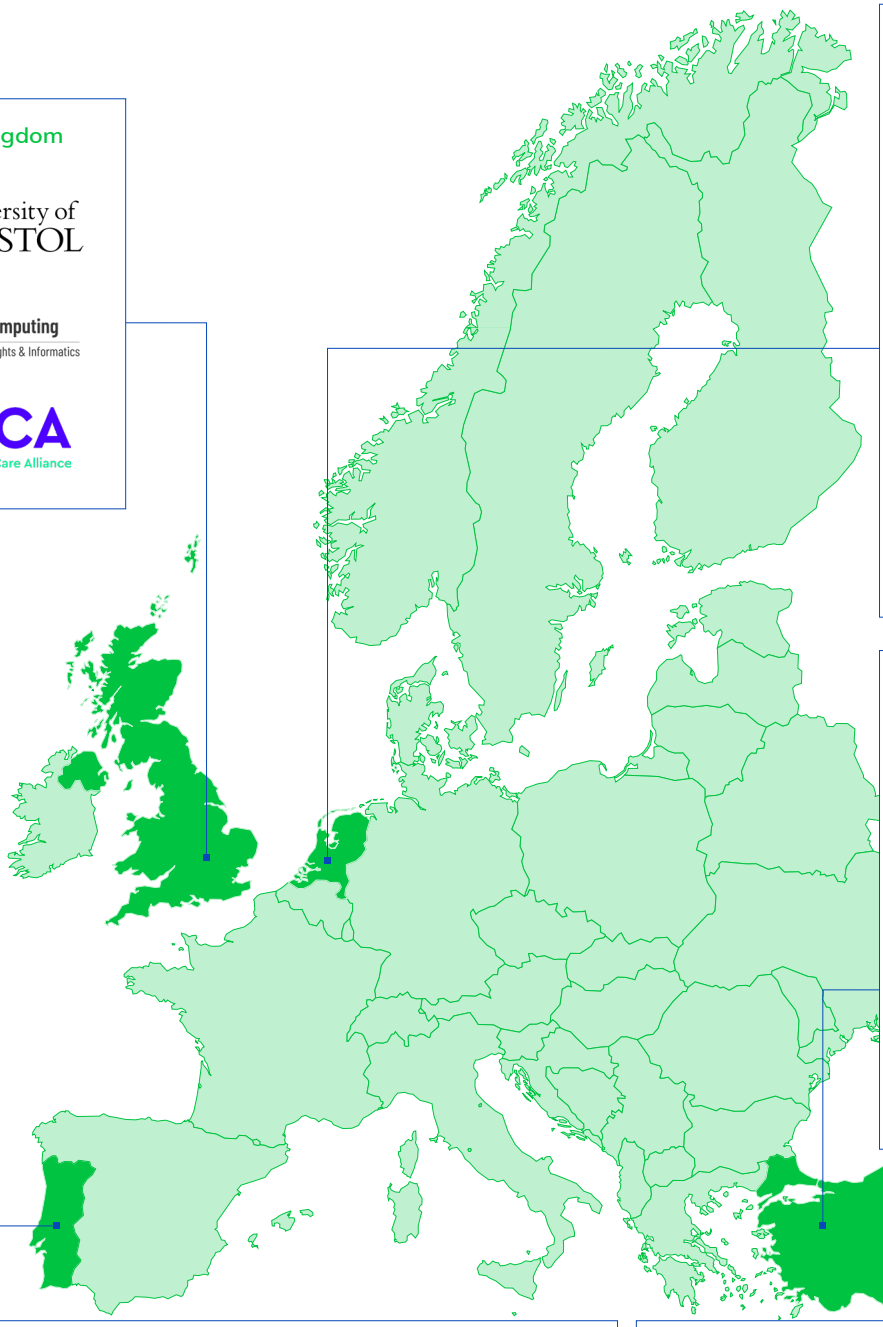


Projected results and impact

By combining these innovations, MediSpeech will ultimately deliver an open platform infrastructure that connects diverse data resources, applications and technologies and enables them to work together seamlessly across diverse use cases. This collaborative, multidisciplinary service for automated medical reporting will bring benefits across the healthcare ecosystem: the project expects to reduce administration from 30% of a clinician's working hours to 20%, helping them to achieve a more efficient and enjoyable balance in their work while allowing them to offer better engagement and more accurate treatment or diagnosis to patients. Care quality will be further assisted by MediSpeech's technological advancements, including an anticipated 20% improvement in the linking of contextually relevant clinical information throughout a patient's treatment journey and a reduction of speech recognition word error rate to below 15% across six languages. Other beneficiaries include hospitals and insurance companies via the corresponding decreased cost of care and infrastructure providers through software-as-a-service opportunities. Finally, the consortium is targeting a market size of approximately USD 328 billion, positioning itself as a major enabler of a future in which personalised health data delivery enables decentralised self-management of healthcare.

Project partners

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United Kingdom

University of Bristol

Chilton Computing
AI-powered Insights & Informatics

DHACA
Digital Health and Care Alliance

The Netherlands

Amsterdam UMC

HealthTalk

MEDrecord
eHealth platform as a Service

Radboud Universiteit Nijmegen

TNO

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medicineone

MTG Research & Development Lab

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TÜBİTAK

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January 2025

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April 2029

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