DAIsy – Developing AI ecosystems improving diagnosis and care of mental diseases

ITEA 4 – 21016

Work package 7 (WP7)

Dissemination & Exploitation

Deliverable 7.1. Dissemination Strategy

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25 years ITEA 4 Community 1998–2023

HISTORY

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1	Dec 2023	Initial version
2		Final version

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1 Dissemination strategy

This task focuses on the dissemination of scientific- and technological results through national and international publishing channels, targeting the mental healthcare community. In a scientific context, we will send results to scientific publishers in Turkey/Portugal/Germany, and the Netherlands.

Commercial dissemination will be targeting potential users and patient associations by actively being involved in relevant health information online trading shows, social media events, and network events. For these purposes, a variety of dissemination actions will be performed participation in mental healthcare conferences in 2023 onwards, healthcare & AI- events, workshops, and targeted presentations to exhibitions and/or prospective customers.

At the start of the project, public available- and potential customer portal will be published as an interactive website, providing the latest project developments and trial applications for customers.

The overall dissemination strategy is to provide the Daisy results across the targeted regions, academic networks of health care providers. The goal is to increase the reach of evidence with the message of the Daisy result of improving diagnosis and care of mental diseases with the Daisy AI ecosystems.

The latest findings, results and demo's are material to publish through the website, during the project and after the project end. The website will be live after the project end to assist in future exploitation.

During the project we will evaluate on the effectiveness of the dissemination strategy and improve the strategy accordingly.

The strategy is to publish and spread the information on:

- Achievements
- Exploitable results

Achievements includes publications and posters, attending and organizing conference, workshops and tradeshows.

Exploitable result includes open-source solution and new product applications.

2 Publications

Relevant publications will be mentioned on the website, feedback on the publications will be measured and evaluated during the project in order to improve the effectiveness (eg feedback from the market/academia).

Publication strategy:

In order to publish effectively all partners will send their coming publication topic and which publisher they will send out the publication.

Publications by multiple partners will be coordinated to achieve maximum effect. This will be the case of uses cases where more partners are involved. Depending on the case, it can be decided to focus on specific countries or international publishing.

The joint publication plan is to publish important findings during and at the end of the project. Attached there are examples of relevant publications.

3 Conferences

The strategy is to coordinating attend relevant national and international conferences and provide feedback after the conference with an action plan.

Partners will provide every half year their conferences and discuss which partners attend in order to avoid doubles.

Attached there are conferences which are relevant for the upcoming period.

4 Public Website

The project website is https://daisy-project.org/

The website will be useful to the healthcare community with an interest of the last innovations on diagnosis accuracy and treatment selection in Major Depressive Disorder (MDD) and Eating Disorder (ED).

The website contains the introduction to the project, use cases, consortium information, blog posts and news and articles of our latest developments.

The publication strategy is to publish latest news, developments and findings on the website.

Attached screenshots of the website.

5 Attachments

Conference Paper:

A conference paper titled "Developing Advanced AI Ecosystems to Enhance Diagnosis and Care for Patients with Depression" was presented at Conference EFMI STC 2023 in Torino, Italy on the 24th of October 2023 and has been published in the proceedings, available at

https://ebooks.iospress.nl/volumearticle/64995.

Telehealth Ecosystems in Practice
M. Giacomini et al. (Eds.)

doi:10.3233/SHTI230731

Developing Advanced AI Ecosystems to Enhance Diagnosis and Care for Patients with Depression

Franziska KLEIN[a,b,1], Frerk MÜLLER-VON ASCHWEGE[a], Patrick ELFERT[a], Julien RÄKER[a], Alexandra PHILIPSEN[c], Niclas BRAUN[c], Benjamin SELASKOWSKI[c], Annika WIEBE[c], Matthias GUTH[c], Johannes SPALLEK[d], Sigrid SEUSS[d], Benjamin STOREY[e], Leo N. GEPPERT[f], Ingo LÜCK[f] and Andreas HEIN[a,g]

[a]*R&D Division Health, OFFIS e.V., Oldenburg, Germany*
[b]*Department for Psychiatry, Psychotherapy and Psychosomatics, RWTH University Hospital Aachen, Germany*
[c]*Department of Psychiatry and Psychotherapy, University Hospital Bonn, Germany*
[d]*Medical Science, BEE Medic GmbH, Singen, Germany*
[e]*Research and Innovation Department, Ascora GmbH, Ganderkesee, Germany*
[f]*Materna Information & Communications SE, Dortmund, Germany*
[g]*Assistance Systems and Medical Technology, University of Oldenburg, Germany*
ORCiD ID: Franziska Klein https://orcid.org/0000-0002-9752-5203

Abstract. Major Depressive Disorder (MDD) has a significant impact on the daily lives of those affected. This concept paper presents a project that aims at addressing MDD challenges through innovative therapy systems. The project consists of two use cases: a multimodal neurofeedback (NFB) therapy and an AI-based virtual therapy assistant (VTA). The multimodal NFB integrates EEG and fNIRS to comprehensively assess brain function. The goal is to develop an open-source NFB toolbox for EEG-fNIRS integration, augmented by the VTA for optimized efficacy. The VTA will be able to collect behavioral data, provide personalized feedback and support MDD patients in their daily lives. This project aims to improve depression treatment by bringing together digital therapy, AI and mobile apps to potentially improve outcomes and accessibility for people living with depression.

Keywords. Depression, virtual therapy assistant, neurofeedback therapy, smartphone, wearables, fNIRS, EEG, AI

Journal paper:

A review paper 'Optimizing real-time fNIRS in BCI and neurofeedback: A comprehensive overview of strategies to improve reliability, spatial specificity, and signal quality' was submitted to the special issue 'Advances in Mobile Optical Brain Activity Monitoring' in the Journal 'Frontiers in Neuroergonomics - Neurotechnology and Systems Neuroergonomics' and is currently under review.

Preprint available at: https://osf.io/9bgku/.

Optimizing real-time fNIRS in BCI and neurofeedback: A comprehensive overview of strategies to improve reliability, spatial specificity, and signal quality

Franziska Klein [1,2,3*]

[1] *Biomedical Devices and Systems Group, R&D Division Health, OFFIS - Institute for Information Technology, Oldenburg, Germany*
[2] *Department of Psychiatry, Psychotherapy and Psychosomatics, Medical School, RWTH Aachen University, Germany*
[3] *Neurocognition and functional Neurorehabilitation Group, Neuropsychology Lab, Department of Psychology, University of Oldenburg, Germany*

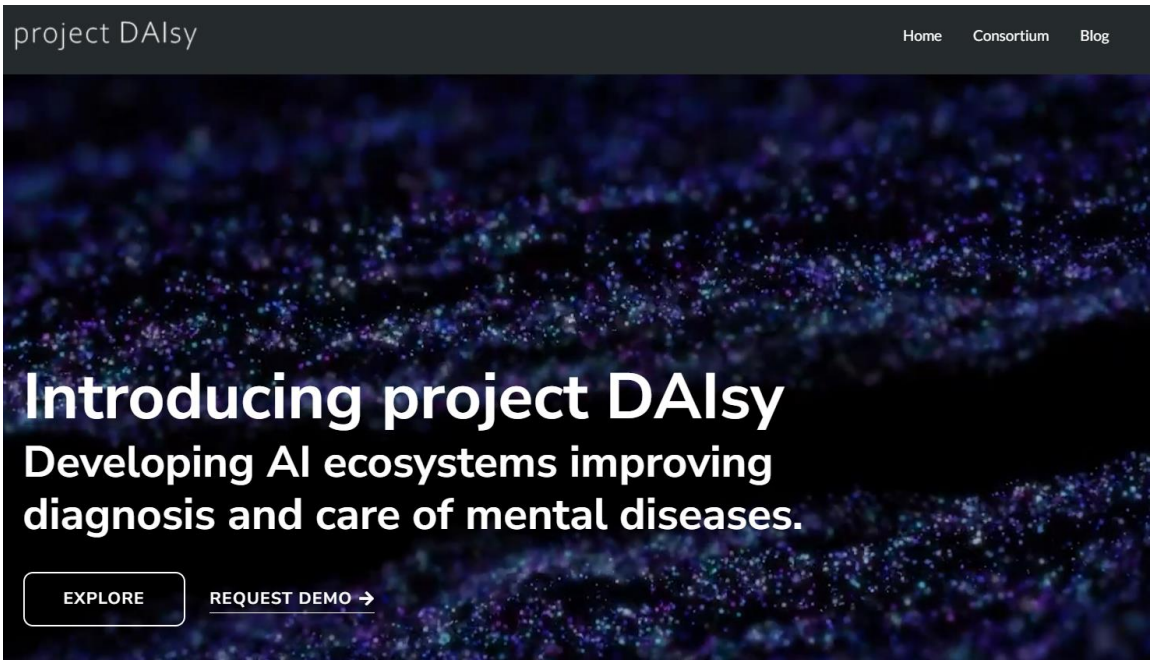
Correspondence*:
Franziska Klein
franziska.klein@offis.de

ABSTRACT

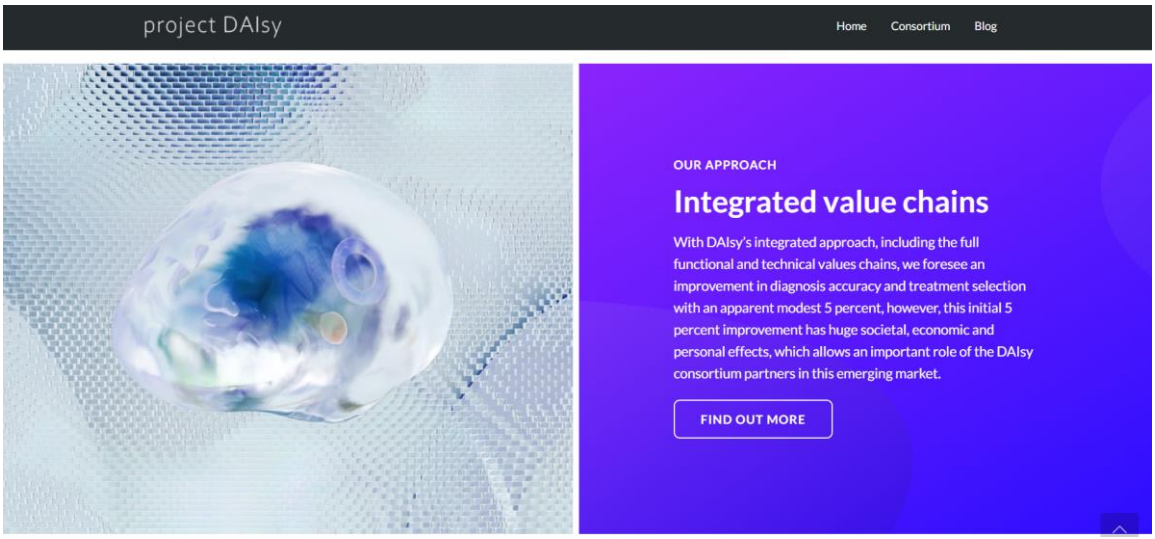
The optical brain imaging method functional near infrared spectroscopy (fNIRS) is a promising tool for real-time applications such as neurofeedback and brain-computer interfaces. Its combination of spatial specificity and mobility makes it particularly attractive for clinical use, both at the bedside and in patients' homes. However, achieving reliable and high-quality signals in real-time fNIRS applications requires careful consideration of two crucial aspects during the preparation and execution phases. First, while fNIRS shows good spatial specificity in capturing superficial cortical brain regions, reliably and consistently targeting specific areas within this region can be challenging, especially when repeated measurements are required. In addition, the variability of cap placement can cause problems due to a lack of anatomical information. Second, minimizing noise in signals used for real-time applications is crucial to ensure that they largely reflect the true underlying brain activity. However, fNIRS signals are prone to contamination from cerebral and extracerebral systemic confounds as well as from motion artifacts. Inadequate real-time preprocessing can result in the system running on noise rather than reliable brain activity.
This review article aims to help advance fNIRS-based real-time applications by covering various strategies to improve spatial specificity and signal quality. For this purpose, possible optimization options are discussed, which should help to improve the planning process and the implementation of real-time studies and thus facilitate the development of future real-time applications. Based on the existing expertise of fNIRS researchers, recommendations are made that could help to improve the reliability and repeatability of these applications.

Keywords: fNIRS, real-time, preprocessing, neurofeedback, BCI, noise reduction, systemic activity, motion artifacts, spatial specificity

Home Page:



Project Information



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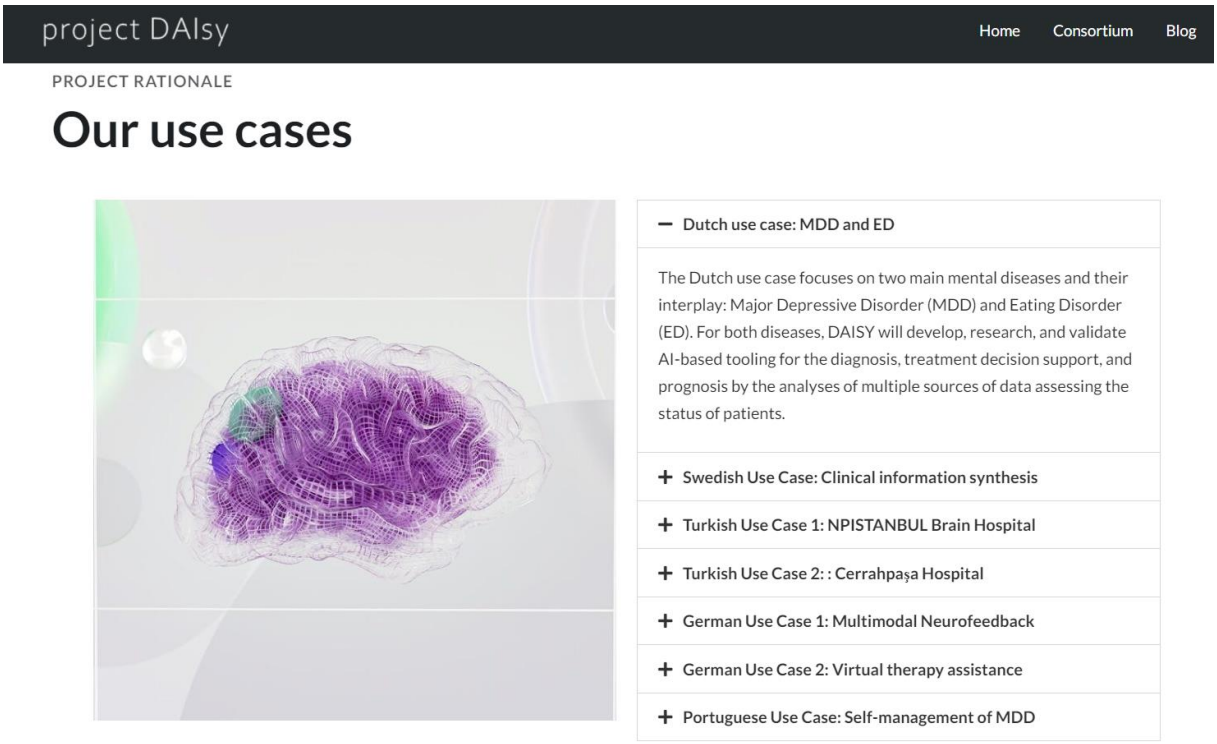
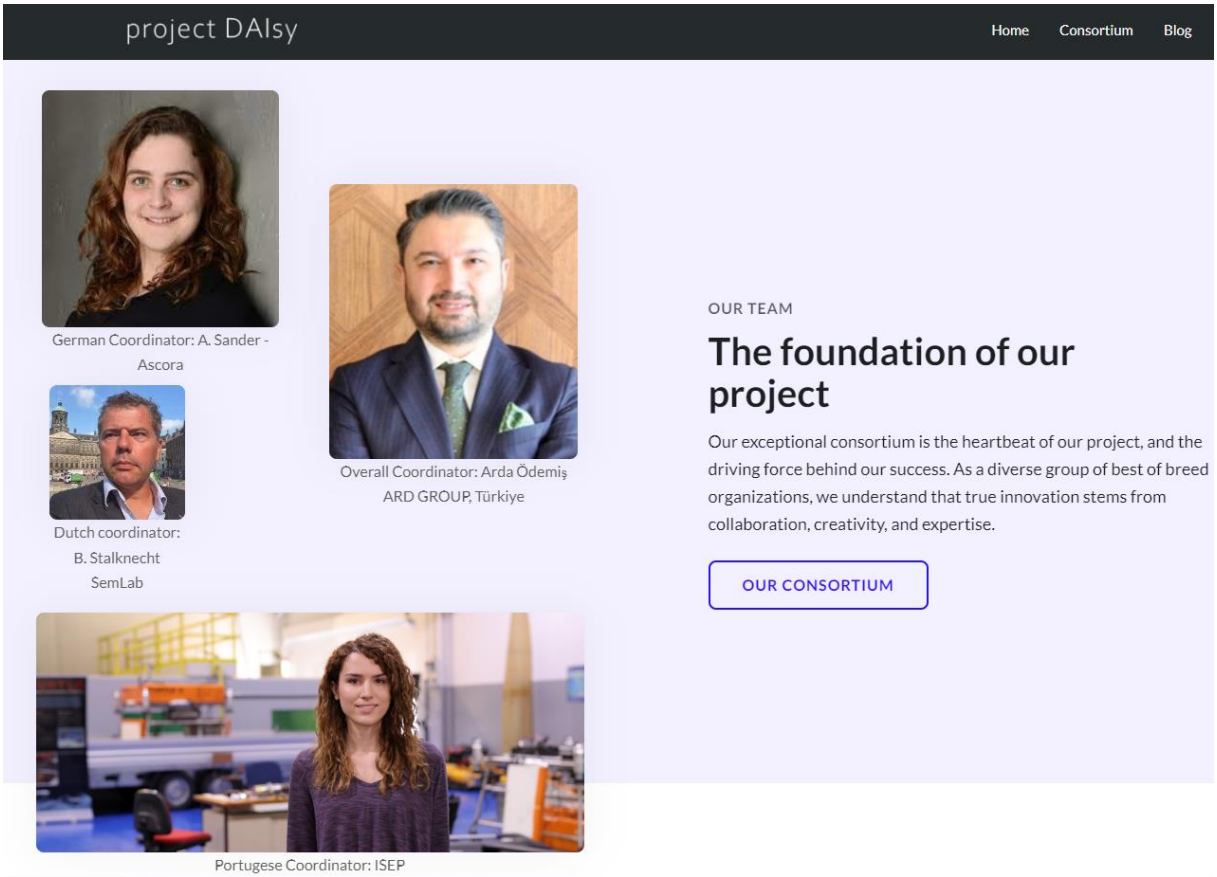


Project Consortium:



News & Articles: