

swissuniversities

**Swiss Open Research Data Grants (CHORD): Track C 1st Call
List of Approved Projects**

Call Deadline: 01.12.2022

Decision by the Delegation Open Science: 14.04.2023

Overview Approved Projects Track C 1st Call

Submissions: 3

Approved projects: 2

Funding rate: 67%

Short Title	Full Title	Leading Institution	Project Manager	Total Costs (CHF)	Funds Requested (CHF)
EyeStore	EyeStore: An Openly Available Data Repository for Eye Tracking-While-Reading Experiments	University of Zurich (UZH)	Lenna Jäger	30'000	15'000
OMAHA	Open measurement hardware for scanning probe microscopy	University of Applied Sciences Zurich (ZHAW)	Matthias Rosenthal	30'000	15'000

Short Summaries of the Projects

Abstracts by the applicants:

EyeStore

EyeStore: An Openly Available Data Repository for Eye Tracking-While-Reading Experiments

The objective of this project is to provide a well-managed and well-documented data repository for sharing eye-tracking recordings from reading in a standardized format. We call this repository EyeStore. The project will involve:

1. Providing storage space. Eye-tracking recordings are often large files (<5GB) in their raw formats. This hinders researchers from sharing the raw data of their experiments. Moreover, eye-tracking data files are commonly stored and shared on decentralized university servers, which do not guarantee continuity and versioning. Therefore, we provide an openly available and accessible data repository for storing data from eye-tracking experiments.
2. Defining the initial data formats and processes. Eye-tracking data is most useful to other researchers when shared in various formats, including the raw data, fixation data as well as aggregated reading metrics. However, there is currently no standard available that is compatible with all eye-tracking devices. Therefore, we aim to develop such standardized formats and facilitate the process of uploading and reviewing the data quality.
3. Setting up a framework for documentation and guidelines. In parallel with setting up the data storage solution, we will develop a set of documents for users to follow when providing new data or extracting existing data.
4. Establishing preprocessing procedures. We will develop a python package which will facilitate the processing of the raw data into the standard formats and provide a centralized pipeline for extracting reading metrics.

OMAHA

Open measurement hardware for scanning probe microscopy

The OMAHA project is a Track C open hardware and software contribution focusing to improve the research in scanning probe microscopy and enable new research in measurement technologies in general. All hardware schematics and software for the new measurement system are published according to FAIR principles. At the same time, the new system allows research laboratories to create new software add-ons and new measurement data according to ORD principles.

Today's commercial scientific instruments are sophisticated systems consisting of complex hardware, electronics, and software components. Hardware changes are mostly not feasible, making certain experiments impossible and hindering new innovations at academic institutions. The Institute of Embedded Systems (InES) at ZHAW (Zurich University of Applied Sciences) developed a novel open measurement hardware (project name OMAHA), which can be used in many ways by research communities and laboratories for high-speed measurements and signal analysis, e.g. in optics and photonics, nanotechnologies, and sensors. It bridges the gap between the high-speed digital and analog domain and can be used as the key element for a versatile reconfigurable instrument replacing other expensive laboratory equipment. The first application will be scanning probe microscopy, for which the design was specified in close collaboration with the laboratory for Bio- and Nano- Instrumentation (LBNI) at EPFL. The system is extendable with contributions from the community such as digital signal processing in the FPGA or additional hardware components.