Virtual Access to the Datasets

WHAT IS VIRTUAL ACCESS?

To promote Open Research, VITALISE Project grants convenient Virtual Access to research datasets provided by the VITALISE Living Lab Network, selected during the Joint Research Activities and the ICT tools developed in the project. External researchers will be provided with the e-infrastructures needed to perform data analysis in existing datasets without the need for full access to data, thus providing **effective data access, curation and analysis procedures.**

Virtual Access will be implemented through the **Discovery Portal**. The Discovery Portal is **a cloud-based platform** designed to facilitate access and discovery of health-related datasets, with a particular focus on datasets that may not conform to a specific data model (Non-Data Model compliant datasets) and datasets indexed according to the VITALISE Data Model.

Through the Discovery Portal, users can navigate and discover tools to explore experiments performed by the Living Labs. To ensure the long-term availability and to secure research analysis results, the RAI Cloud Server registers information and research assets used in scientific experiments upon request from researchers.

AVAILABLE DATASETS

The datasets that VITALISE makes available to researchers are described below and are classified into two categories: 1) Active and Healthy Ageing; 2) Health. They are mostly in .csv format and are GDPR compliant data.

ACTIVE AND HEALTHY AGEING   +

ACTIVE AND HEALTHY AGEING

Aging and wellbeing (~ 1.000 users)

Keywords: Aging, elderly, wellbeing

This dataset provides a comprehensive collection of variables related to the quality of life, socio-demographic characteristics, and physical activity of older individuals. It includes data from validated quality of life questionnaires (such as EQ5D3L and UCLA) and offers insights into the well-being and lifestyle of this demographic.

This dataset offers a valuable resource for researchers interested in enhancing the understanding of older adults' quality of life, health, and lifestyle choices. It can inform interventions, policy decisions, and healthcare strategies aimed at improving the well-being of this demographic.

Older adults and technological innovations (~ 27 users)

Keywords: Older adults, technological innovation, qualitative data, user café

This dataset presents qualitative data gathered during two user café sessions involving older adults. In each

session, participants engaged in discussions about three Nordic innovations. These discussions encompassed questions arising from product introductions, deliberations on the pros and cons of the innovations, and suggestions regarding potential target groups for these innovations.

This dataset offers valuable qualitative information for researchers interested in user-centered innovation development and understanding how older adults perceive and engage with novel products and technologies. It can inform product refinement, marketing strategies, and innovation targeting in the Nordic context.

ehcoBUTLER (~ 210 users)

Keywords: Older adults (60+), very mild and mild cognitive decline, technology usability, adherence, user experience and suitability

This dataset is associated with the ehcoBUTLER project, which aims to develop an ICT technology platform with leisure and care applications specifically designed for older people with cognitive impairment. The project focuses on improving the emotional well-being and lifestyle of older individuals, their families, and caregivers. The dataset encompasses various assessment aspects and intervention data to evaluate the usability, suitability, and impact of ehcoBUTLER. Additionally, this dataset offers insights into mood and anxiety levels tracked over a 4-month intervention period. It also includes pre and post assessments using validated instruments such as the Clinical Dementia Rating (CDR), Clock Drawing Test (CDT), Geriatric Depression Scale (GDS), and Mini-Mental State Examination (MMSE).

This dataset provides valuable information for researchers interested in the intersection of technology, aging, and cognitive impairment. It supports efforts to enhance the quality of life and care for older individuals and their families through innovative digital solutions.

Senior balance test (~ 126 users)

Keywords: senior, balance, physical functioning, balance board

This dataset involves the utilization of the Standout Balance Board, developed by Smartifier Ltd (https://www.standoutbalance.com/), for balance testing in individuals aged 65 and older. The Standout Balance Board is a standard balance board with a 40cm diameter and 7cm height, equipped with a built-in 3D accelerometer, gyrometer, and magnetometer. It connects to smartphones, tablets, and other devices via Bluetooth. The primary assessment method employed in this study involves a 30-second erect stance on the board with eyes open.

This dataset offers valuable information for researchers interested in balance assessment technology and its application in monitoring and improving the balance of older individuals. It can inform further research into fall prevention strategies and the development of personalized balance training programs.

HEALTH   +

HEALTH

Captive motion VR mirror therapy (1 subject with ~35.000 rows)

Keywords: Captive angles VR mirror therapy

This dataset contains motion data collected using Captive IMU (Inertial Measurement Unit) sensors. The subject of the study is a colleague from Thomas More Mobilab&Care, who performed various movements while wearing the Captive IMU sensors. The dataset includes recorded angles for different body parts. This dataset offers valuable information for researchers interested in motion analysis and understanding the kinematics of various body movements. It can be a valuable resource for studying human movement patterns and developing

various body movements. It can be a valuable resource for studying human movement patterns and developing applications in fields such as rehabilitation, sports science, and ergonomics.

COVID-X cough dataset (~ 700 rows)

Keywords: COVID-19, cough, health

This dataset comprises audio recordings collected during the COVID-X EU project, focusing on monitoring COVID-19 patients with varying symptom severity. A sound recorder was employed to capture all sounds, with a specific threshold for recording applied. The dataset consists of two categories of audio data: 1) Cough Data: Audio recordings of cough sounds from COVID-19 patients and 2) No-Cough Data: Audio recordings capturing sounds other than coughs from the same patients.

This dataset serves as a valuable resource for researchers working on audio-based diagnostics and monitoring in the context of COVID-19. It can aid in the development of innovative tools and technologies for remote patient monitoring and early symptom detection.

GameBus reinforcement schedules monetary incentives (~ 60 users)

Keywords: mHealth, behaviour change, gamification, rewards

This dataset stems from a six-week, three-arm randomized intervention trial conducted with university staff members and students (N = 61). The study explores the use of mHealth apps in promoting health behaviour change via financial rewards. Researchers assessed the impact of various reinforcement schedules on app engagement levels.

This dataset offers valuable insights for researchers aiming to optimize mHealth interventions and encourage healthier behaviours through app design and reward systems.

MS-NEUROPLAST_H (~ 528.000.000 rows)

Keywords: Patients with Multiple sclerosis, Healthy Controls, Electroencephalography

This dataset comprises EEG (Electroencephalogram) measurements obtained using a 128-channel EEG system. The EEG recordings were conducted both before and after a cognitive training intervention in two groups: patients diagnosed with Multiple Sclerosis (MS) and a group of healthy control participants. The dataset allows for the examination of how cognitive training impacts EEG patterns in these two distinct populations.

This dataset offers valuable insights for researchers interested in neurocognitive assessments, the impact of cognitive training on brain activity, and how these effects may differ between individuals with Multiple Sclerosis and healthy controls. It can inform the development of targeted interventions to enhance cognitive function in MS patients.

MS-NEUROPLAST_Ψ (~ 160 rows)

Keywords: Patients with Multiple sclerosis, Healthy Controls, Neuropsychological evaluation

This dataset includes results from a battery of neuropsychological tests administered to two groups: patients diagnosed with Multiple Sclerosis (MS) and a group of healthy control participants. The tests were conducted both before and after a cognitive training intervention. The dataset allows for the examination of changes in cognitive performance in response to cognitive training in these two distinct populations.

This dataset provides valuable information for researchers interested in cognitive assessments, the efficacy of cognitive training interventions, and the cognitive differences between individuals with Multiple Sclerosis and healthy controls. It can aid in the development of tailored cognitive training programs for MS patients to improve cognitive function and quality of life.

MS-NEUROPLAST_Σ (~ 160 rows)

This dataset contains results from a battery of somatic tests administered to two groups: patients diagnosed with Multiple Sclerosis (MS) and a group of healthy control participants. These somatic tests were conducted both before and after a cognitive training intervention. The dataset enables the investigation of changes in somatic health indicators and physical well-being in response to cognitive training within these two distinct populations.

This dataset provides valuable insights for researchers interested in somatic assessments, the potential benefits of cognitive training interventions on physical health, and the differences in somatic health outcomes between individuals with Multiple Sclerosis and healthy controls. It can inform holistic approaches to managing the well-being of MS patients.

MS-NEUROPLAST_E (~ 30.000 rows)

This dataset provides information related to the usage of a cognitive training platform over a 3-month period by two groups: patients diagnosed with Multiple Sclerosis (MS) and a group of healthy control participants. It also includes detailed records of each participant's performance on cognitive training tasks administered through the platform.

This dataset offers valuable insights for researchers interested in cognitive rehabilitation, cognitive training interventions, and the comparative analysis of cognitive performance between MS patients and healthy individuals. It can inform the development of targeted cognitive training programs for individuals with Multiple Sclerosis to enhance cognitive function and quality of life.

MS-NEUROPLAST_Φ (~ 31.500 rows)

This dataset comprises comprehensive information regarding the 3-month monitoring of participants using wearable devices. The study includes two groups: patients diagnosed with Multiple Sclerosis (MS) and a group of healthy control participants. Data collected from the wearable devices provides insights into various aspects of participants' daily lives, including activity levels, sleep patterns, heart rate, and more.

This dataset offers valuable insights for researchers interested in remote monitoring, daily activity assessments, and the impact of Multiple Sclerosis on the daily lives of patients. It can inform interventions and support strategies to improve the overall quality of life for individuals living with MS.

INADVANCE (multiple datasets)

This dataset consists of questionnaire responses collected from 120 patients and 40 caregivers participating in a randomized control trial (RCT) aimed at monitoring individuals receiving palliative care compared to those who are not. The dataset includes questionnaire packages administered at four distinct time slots (initial, 6 weeks, 6 months, one year). The questionnaires cover a range of topics related to the patients' health, well-being, and caregiving experiences.

This dataset provides valuable insights for researchers interested in palliative care interventions, patient-reported outcomes, and the dynamics of caregiving. It can inform the development of support strategies for patients and caregivers in palliative care settings and contribute to evidence-based practices in healthcare.

JRAs – Upcoming

The VITALISE project will soon publish on the VITALISE discovery portal the datasets selected during the Joint Research Activities (official announcement will follow).

The research domains of the VITALISE project's Joint Research Activities are the following:

JRA1 REHABILITATION SUPPORTED BY TECHNOLOGY +

JRA 1: Rehabilitation Supported by Technology

Objective: With this JRA, we primarily aim to gain insight on each Living Lab's infrastructure and procedures in order to harmonize health and wellbeing Living Lab procedures and infrastructures in Europe and beyond, in particular in the context of rehabilitation. Secondly, we aim to investigate the potential of innovative technologies for rehabilitation through Living Lab methodologies.

Methods: The study has a mixed-methods design comprising multiple phases. There are two main phases of data collection, co-creation (phase 1) and small-scale pilots (phase 2), which are preceded by a preliminary harmonization of procedures between the different international Living Labs. An intermediate phase further allows to implement minor adjustments to the intervention or protocol depending on the input that was obtained in the co-creation phase. Six small-scale pilots using innovative technologies for intervention or data collection will be performed across four countries. A third and final phase involves Delphi procedures to reach consensus on harmonized procedures and protocols.

Results: Phase 1 data collection will begin in March 2022 while phase 2 data collection will startin June 2022. Results will include output of the co-creation sessions, small-scale pilots and advice on harmonizing procedures and protocols for health and wellbeing Living Labs focusing on rehabilitation.

Conclusions: The knowledge gained by the execution of this research will lead to harmonized procedures and protocols in a rehabilitation context for health and wellbeing Living Labs in Europe and beyond. In addition to the harmonized procedures and protocols in rehabilitation, we will also be able to provide new insights for improving implementation of innovative technologies in rehabilitation.

Keywords: Living Lab, Rehabilitation, Technology, Harmonization, Co-creation, Small-scale real-life testing

JRA 2 TRANSITIONAL CARE +

JRA 2: Transitional Care

Objective: This study primarily aims to evaluate the feasibility and benefit of collecting multichannel data across Living Labs on the topic of transitional care and to harmonize the data processes and collection. Secondly, we aim to investigate the collection and use of digital biomarkers and explore initial patterns in the data that demonstrate the potential to predict transition outcomes such as readmissions and adverse events.

Methods: The current research protocol presents a multi-center, prospective, observational cohort study that will consist of three phases, running consecutively in multiple sites: a co-creation phase, a testing and simulation phase and a transnational pilot phase. The co-creation phase aims to build a common understanding among different sites, investigate the differences of hospitalization discharge management among countries and the willingness of different stakeholders to use technological solutions in the transitional care process. The testing and simulation phase aims to explore ways of integrating observation of a patient's clinical condition, patient involvement and discharge education in transitional care. The objective of the simulation phase is to evaluate the feasibility and the barriers that are faced by a healthcare professional in assessing transition readiness. The transnational pilot phase takes input from co-creation and testing and stimulation phase. The aim is to pilot the already designed activities from previous phases and collect data to conduct a first predictive analysis.

Results: The co-creation phase will be completed by April 2022. The testing and simulation phase will begin in September 2022 and will partially overlap with the deployment of the transnational pilot phase that will start the same month. The data collection of the transnational pilots will be finalized by the end of June 2023. Data processing is expected to be completed by March 2024. The results will consist of guidelines and implementation pathway for large scale study and the analysis for identifying initial patterns in the acquired data.

Conclusions: The knowledge acquired though this research will lead to harmonized procedures and data collection for Living Labs that support transitions in care. In addition, this research contributes to the increase in capacity to perform Big Data analytics while accounting for each local context and across Living Labs.

Keywords: Living Lab, Co-creation, Transitional care, Technology, Feasibility study

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JRA3 EVERYDAY LIVING ENVIRONMENTS   +

JRA 3: Everyday Living Environments
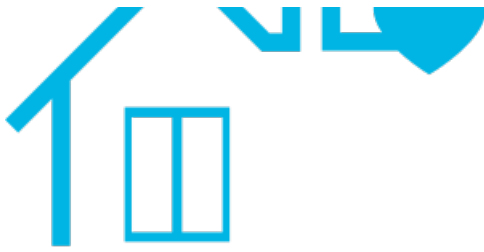
Objective: The main aim is to co-create and test harmonized research protocol for developing big data driven hybrid personas – hypothetical user archetypes created to represent a user community. Secondly, utilization and applicability of innovative technologies is investigated in context of various everyday living and living lab environments.

Methods: In phase 1 surveys and structured interviews are utilized to identifying the most suitable living lab methods, tools and instruments for health-related research among VITALISE-project living labs (N=10). A series of online co-creation workshops and iterative co-writing process are applied to define the initial protocols. In phase 2 five small-scale case studies are carried by out to test the co-created research protocols in various real-life everyday living settings and living lab infrastructures. In phase 3 a cross-case analysis grounded on semi-structured interviews is conducted to identify the challenges and benefits of using the proposed research protocols. Furthermore, a series of co-creation workshops and consensus Delphi process is carried out in parallel to co-create and validate the acceptance of the defined harmonized research protocols among wider living lab community.

Results: As of September 30, 2021, project deliverables "Ethics and safety manual" and "Living lab standard version 1" have been submitted to European Commission review process. The study will be finished by March 2024.

Conclusions: The outcome of this research will lead to harmonized procedures and protocols in context of big data driven hybrid personas development among health and wellbeing living labs in Europe and beyond. Harmonized protocols enable living labs to exploit similar research protocols, devices, hardware and software for interventions and complex data collection purposes. Economies of scale and improved use of resources will speed-up and improve the research quality and offer novel possibilities for open data sharing, multidisciplinary research and comparative studies beyond current practices. Case studies provide also novel insights for implementing innovative technologies in context of everyday living lab research.

Keywords: Living lab; Everyday living; Technology; Big data; Harmonization; Personas; Small-scale real−life testing

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APPLY FOR VIRTUAL ACCESS

- **Who can apply**

Single researchers or teams of researchers up to 5 members will be granted **remote access to datasets** provided both by the VITALISE Living Lab Network and those collected during the Joint Research Activities for further analysis. There is no charge to access and use these datasets so there is no reimbursement for expenses.

Virtual Access is available through a registration procedure available on the VITALISE Discovery Portal (see link below). Virtual Access applicants are invited to provide their personal information, their compliance to the established eligibility criteria, a brief description of the purpose, scope and objectives of their research project and the access duration to the datasets. During the registration procedure, applicants will be required to declare to meet the following eligibility criteria:

- They should work in an institution established in a Member State of the European Union or in a state associated to the

H2020 Programme [Check the List of countries eligible for funding]. Researchers working in other countries can apply but they cannot represent more than 20% of the total number of researchers that will access the VITALISE facilities.

- They cannot have Russian or Belarusian origin.
- They must disseminate the results acknowledging the source of the data (see paragraph 8).
- If the application is submitted by a master's students, at least 1 member of the team must hold a Master's degree and act as supervisor of the TA.
- If the research team also includes an undergraduate/bachelor student, the leading applicant should be either a professor or a postdoc affiliated to a University or Research Centre.

For more information and guidance regarding Virtual Access, please read the Application Manual available at this link.

APPLY FOR VIRTUAL ACCESS - VISIT THE DISCOVERY PORTAL

Tweets by VITALISEproject