



1st Capacity building workshop

Closing Session Presentation

Nicolae LUCANU

Technical University Gheorghe Asachi from
Iasi



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Project Overview

BrainTwin

Development of a World-Level Neuroengineering Research Centre by European Twinning

WIDESPREAD-05-2020: Twinning

Scope: Twinning aims at significantly strengthening a defined field of research (neuro-engineering) in a university (Technical University Gheorghe Asachi from Iasi - TUIASI) or research organisation from a Widening country (Romania) by linking it with at least two internationally-leading research institutions from two different Member States or Associated Countries (Fraunhofer from Germany and Salamanca University from Spain).



Project Overview

PROJECT CONSORTIUM

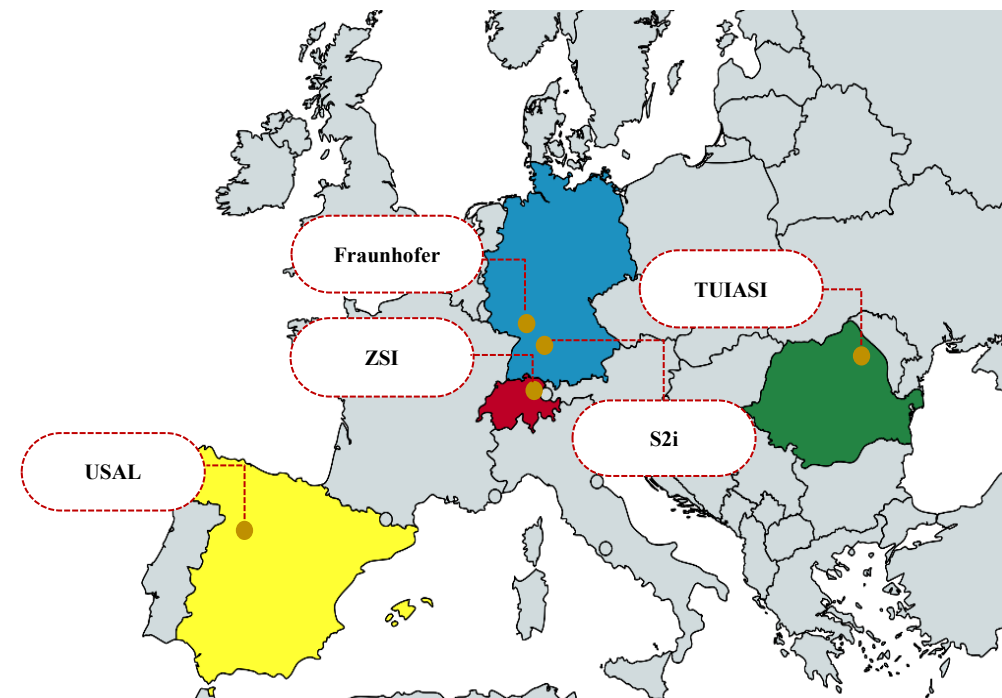
- Technical University Gheorghe Asachi from Iasi (Romania) – Coordinator
- Project Group for Automation in Medicine and Biotechnology PAMB from Fraunhofer IPA (Germany)
- The Institute of Neurosciences of Castilla y Leon from the University of Salamanca (Spain)
- Steinbeis 2i (Germany)
- Centre for Social Innovation (Austria)

PROJECT DURATION

- 36 months

PROJECT BUDGET

- 900.000 €



Task 3.2 Capacity building workshops

Workshops will be centered on capacity building and transfer of knowledge, methodology and current approaches as well as on developing and documenting research protocols.

- **Workshop1 - the Consortium members meet each other, learn about the current scientific infrastructure in Romania, analyse particular situation in TUIASI, and to elaborate a precise and specific plan of how the overall project line will develop.**

- **Workshop2 - Participants: group leaders, staff members, young researchers and students from TUIASI and all Participants.**

Workshop-3 - Will analyse the progress in the project development and success in the execution of major tasks, as well as will work out new ideas for the following collaboration between the groups involved.

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Aims:

- 1) Meet each other;
- 2) Exchange research interests;
- 3) Identify mutual interest topics;
- 4) Identify possible project ideas;
- 5) Identify topics for Ph. D. students visits.



12 Universities and Research Institutes

23 Research Teams

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Attendance:

91 people

From TUIASI - 59 persons **(23 students and ESR)**

From Spain - 18 persons

From Germany - 14 persons

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PARTICIPANT TEAMS

ROMANIA

- Technical University Gheorghe Asachi from Iasi
 - Automatic Control and Computer Engineering Faculty
 - Electronics, Telecommunications & Information Technology Faculty
 - Electrical Engineering Faculty
 - Industrial Design and Business Management Faculty
 - Mechanical Engineering Faculty
 - Chemical Engineering & Environmental Protection Faculty
- "Grigore T. Popa" University of Medicine and Pharmacy Iasi
 - Advanced Center for Research and Development in Experimental Medicine CEMEX
 - Faculty of Medical Bioengineering

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PARTICIPANT TEAMS

GERMANY

- Fraunhofer Institute for Manufacturing Engineering and Automation IPA
 - Project Group for Automation in Medicine and Biotechnology PAMB (Mannheim)
- Fraunhofer Institute for Computer Graphics Research IGD (Darmstadt)
- Fraunhofer Institute for Integrated Circuits IIS (Nürnberg)
- Fraunhofer Institute for Algorithms and Scientific Computing SCAI (Sankt Augustin)
- Central Institute of Mental Health (ZI-Mannheim)

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PARTICIPANT TEAMS

SPAIN

- University of Salamanca
 - Institute of Neuroscience of Castilla y León INCYL
 - Bioinformatics, Intelligent Systems and Educational Technology Group BISITE
 - Group of Robotics and Society GROUSAL
 - Department of Surgery and Anesthesiology
- University Hospital of Salamanca
 - Clinical Neurophysiology Department
 - Rehabilitation Department

January 28th 2021

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PARTICIPANT TEAMS

SPAIN

- National Hospital for Paraplegics
 - Biomechanics and Technical Aids Department
 - Functional Exploration and Neuromodulation of the CNS Department
- University of Navarra
 - Center for Applied Medical Research CIMA
- Miguel Hernández University
 - Systems Engineering and Automation Department

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3 RESEARCH PILLARS, 9 RESEARCH AREAS, 12 ROOMS

| Research Pillar | Research Area | ROOMS | ATTENDANCE |
|--|---|--|------------|
| Early Diagnostic Tools | Biomedical Sensors | Wearable sensors and electromyography | 29 |
| | | Advanced trans-cranial magnetic stimulation, disposable electrodes for EEG and muscle biosensors | 10 |
| | Biomarkers | Development of specific biomarkers / antibodies | 14 |
| | AI for Medical Data Analysis | Deep learning techniques for healthcare. Intelligent Data Analysis | 26 |
| | | Brain Functional Network Extraction and Analysis | 15 |
| | | Comprehensive analysis of medical imaging data | 20 |
| Improved diagnostic & therapy including cooperative robotics | Biomedical Innovative Techniques | Olfaction in neurosciences and GC-IMS | 16 |
| | | Separation, purification and detection of bacteria with magnetic beads | 8 |
| | Innovative systems for minimally invasive interventions | Design and mathematical modelling of innovative systems for minimally invasive interventions | 17 |
| | Cooperative robotics | Human-robot interaction and simulation | 21 |
| Quality of life improvement | E-instruments for Innovative Rehabilitation Methods | Rehabilitation devices | 19 |
| | E-instruments for Improved Communication | E-instruments for improved communication | 19 |

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Next steps:

Establish a Google drive with all presentations

Circulate an Excel file with institution & contact information, collaboration interest, session, link to presentation, project ideas/project calls of interest

Identify Ph.D. students willing to do short-term virtual visits

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SUGGESTIONS

- How to improve the workshop format
- How to better communicate with research partners?
- How to accelerate research collaborations?
- Any other ideas on collaborative research?



Contact

www.braintwin.eu
@H2020Twin

Nicolae Lucanu | project coordinator | nlucanu@etti.tuiasi.ro

Technical University Gheorghe Asachi from Iasi
Electronics, Telecommunications & Information Technology Faculty
Bd. Carol I no. 11A, Iasi

Tel. +40761130011
<http://www.tuiasi.ro>

