IM-TWIN: from Intrinsic Motivations to Transitional Wearable INtelligent Companions for autism spectrum disorders

A European Union Horizon 2020 Project

PARTNERS OF THE PROJECT

- National Research Council of Italy (ITA) – through the Institute of Cognitive Sciences and Technologies – expert in Autonomous Robotics and Machine Learning, and coordinator of the project (www.istc.cnr.it);
- Center for Research and Interdisciplinarity (FRA), expert in Developmental Psychology (cri-paris.org);
- University of Rome *Sapienza* (ITA) – through the department of Human Neuroscience, section of Child and Adolescent Neuropsychiatry – expert in diagnosis and treatment of neurodevelopmental disorders (www.uniroma1.it);
- University of Utrecht (NLD) – through the department of Information and Computing Sciences – expert in the study and analysis of emotional and affective physiological states (www.uu.nl);
- Plux Wireless Biosignals S.A. (PRT), a company specialised in the development and production of wearable sensors (www.plux.info).

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PROJECT OVERWIEV

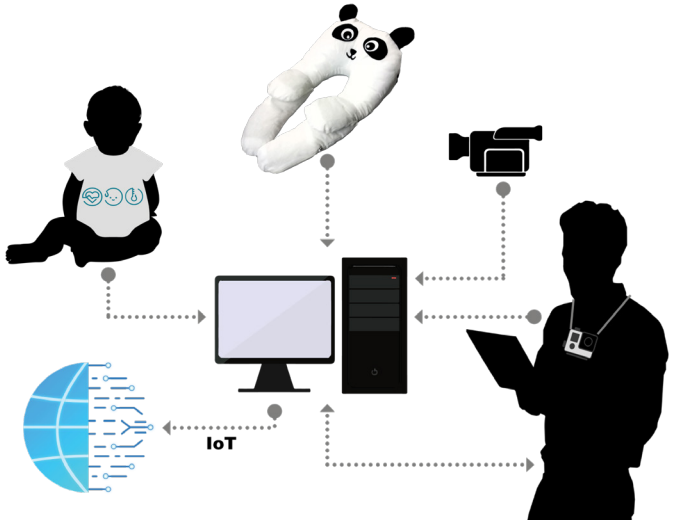
IM-TWIN: from Intrinsic Motivations to Transitional Wearable INtelligent companions for autism spectrum disorder is a research project funded by Horizon H2020, the European financing programme supporting research and innovation. The project's main goal is to develop new technology to support the early therapy of children diagnosed with Autism Spectrum Disorders (ASD). The project, with a duration of 24 months (1 November 2020 - 31 October 2022) and a total budget of € 1.9 million, brings together five international partners with different expertise.

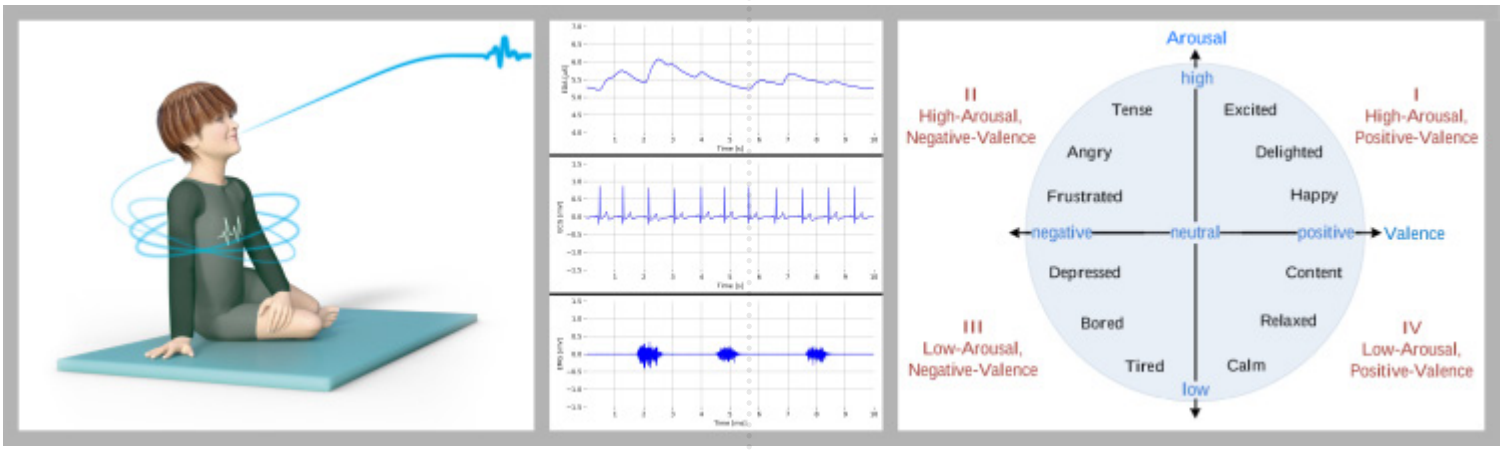
The ambitious goal of IM-TWIN is to develop a technological system which - through Artificial Intelligence, Machine Learning algorithms and innovative interactive devices - will help to "understand" the emotional states of young children (aged between 24 and 48 months) diagnosed with ASD or other neurodevelopmental disorders, characterised by impairments in the social, communicative and affective areas.

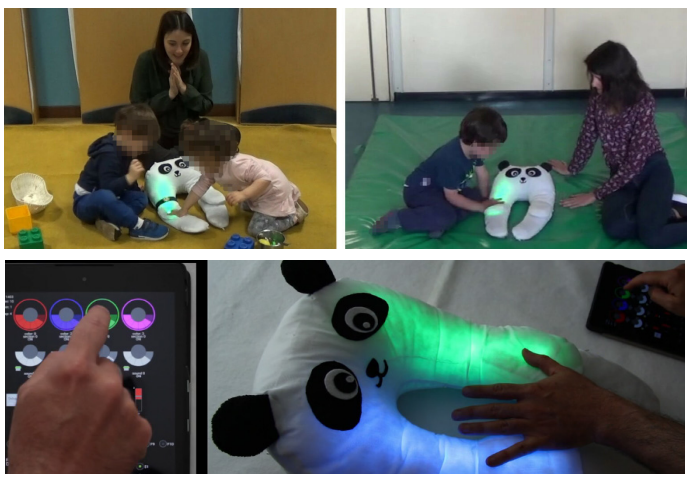
MAIN TOPICS

To achieve its goal, the project will build an "IM-TWIN system" formed by several integrated components:

- wearable sensors to detect and record physiological signals;
- Artificial Intelligence and Machine Learning algorithms to decode the physiological data into clear emotional categories;
- Transitional Wearable Companion, PlusMe interactive toy.







OBJECTIVES

During the implementation of the project, the most successful components will be proposed, through dedicated dissemination activities, to interested therapists, neuropsychiatrists, rehabilitation and research centres, and the wide public. Moreover, they will be proposed to companies and other economic agents for evaluation of their potential market exploitation.

www.im-twin.eu