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Project introduction

TC 100 Workshop, Brussels, 22nd of May 2018

Michał Kosiedowski (PSNC), Project coordinator

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 780819.

PSNC

Pädagogische Hochschule HEIDELBERG University of Education

Jožef Stefan Institute

CTIC centro tecnológico

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PSNC
Poznań Supercomputing and Networking Center

Poznań Supercomputing and Networking Center (PSNC)

- ✓ Founded in 1993
- ✓ Affiliated to the Institute of Bioorganic Chemistry of the Polish Academy of Sciences
- ✓ ~300 employees
- ✓ Research and development center as well as leading operator of Polish eInfrastructure

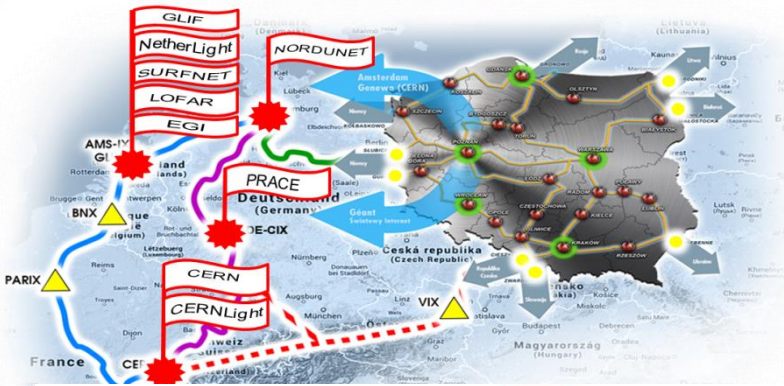
PSNC Activities

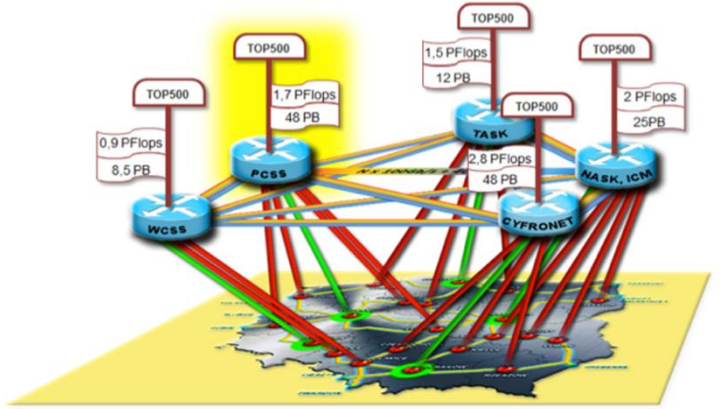
Center of e-Infrastructure

- ✓ National Research and Education Network – PIONIER (Polish Optical Internet)
- ✓ Research Metropolitan Area Network - POZMAN
- ✓ HPC Center
- ✓ Data repositories and Digital Libraries Federation

Center of Research & Development

- ✓ New Generation Networks
- ✓ HPC, Grids & Clouds
- ✓ Grand challenges applications
- ✓ New media and visualization technologies
- ✓ Knowledge Platforms
- ✓ Internet of Things
- ✓ Future Internet - Technology, Applications and Services for IS
- ✓ Cyber Security





Participation in international R&D projects

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Personalized intelligent platform enabling interaction with digital services to individuals with profound and multiple learning disabilities

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PARTNERS:

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The goal

Design and develop an ICT platform that enables persons with profound and multiple learning disabilities (PMLD) to use digital applications and services that:

- **can enhance the quality of their life,**
- **increase their ability to self-determination**
- **and enrich their life.**

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IT IS ENTIRELY POSSIBLE THAT BEHIND THE PERCEPTION OF OUR SENSES, WORLDS ARE HIDDEN OF WHICH WE ARE UNAWARE

Albert Einstein

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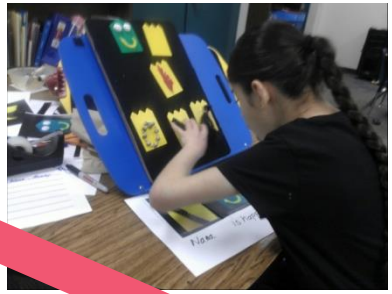
Target users – persons with PMLD

- profound intellectual disability (IQ < 20) combined with other disabilities (e.g. motor impairment, sensorial disabilities (hearing or visual impairment))
- communication: (usually) no verbal language
- (usually) no understanding of symbols
- long-term high need for therapy, care, support (WHOLE LIFE!)

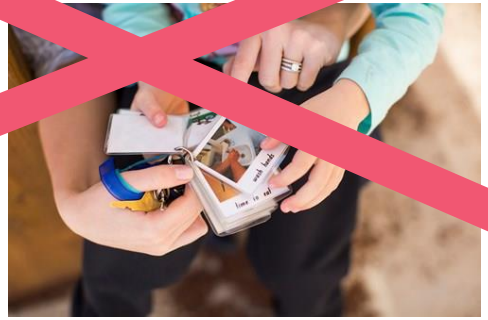
→ difficult social participation!

Non-symbolic interaction (1)



Request an it

Receive the item



AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

Non-symbolic interaction (2)

- Reactions to the happenings around through:
  - gestures
  - facial expressions
  - vocalizations
  - gaze

- These signals are highly individual!

Non-symbolic interaction (3)

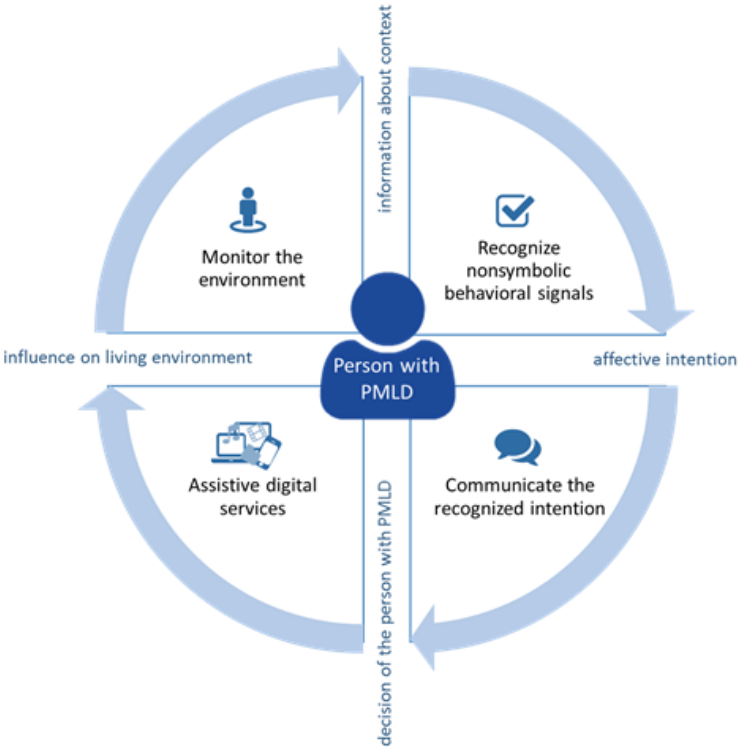
Examples of non-symbolic meaningful behaviors of people with PMLD

Physiological affective response

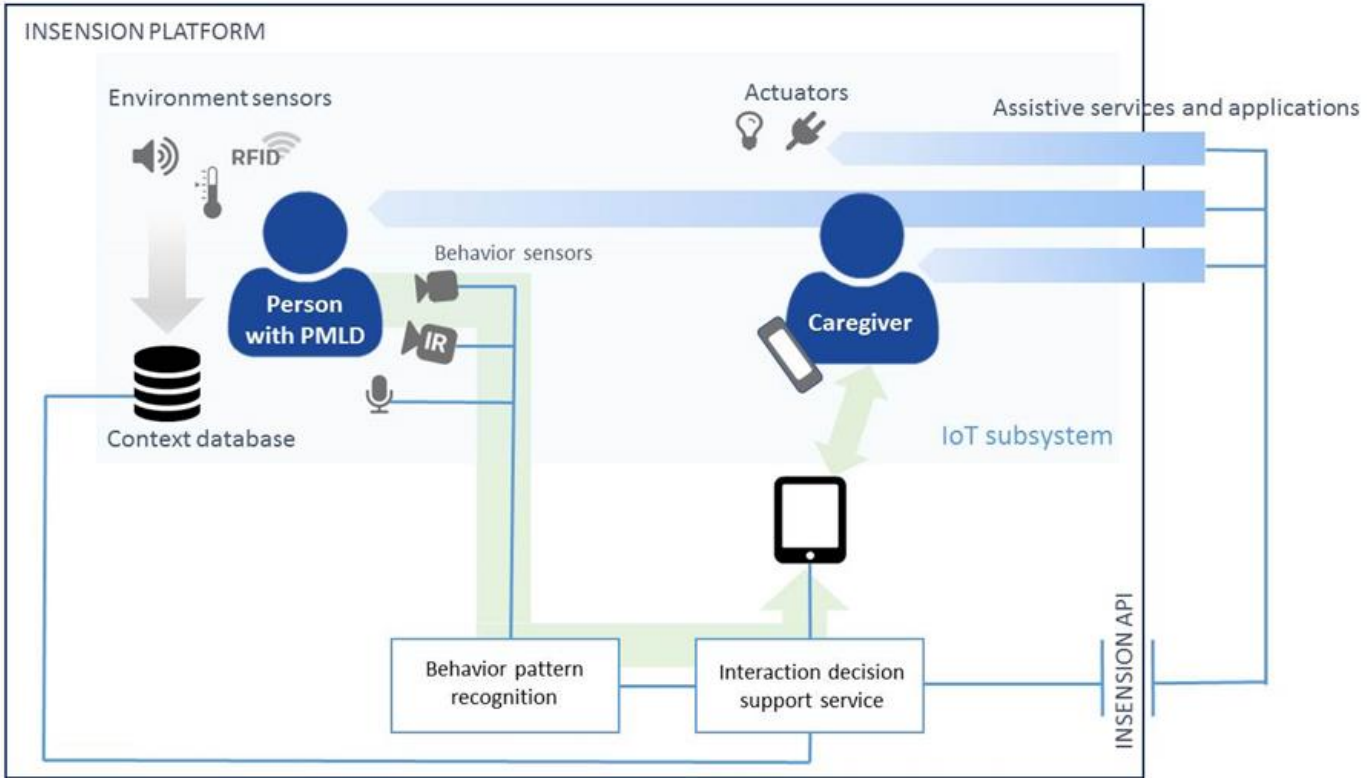
- *„heart rate and skin temperature can give information about the emotions of persons with severe and profound ID”* [Vos et al. 2012]
- *„frequent consistent physiological reactions”* to stimuli [Lima et al. 2013]
- *„a shallow, fast breathing pattern, used less thoracic breathing, had a higher skin conductance and had less RSA when experiencing positive emotions then when experiencing negative emotions”* [Vos et al. 2010]

Physiological response example

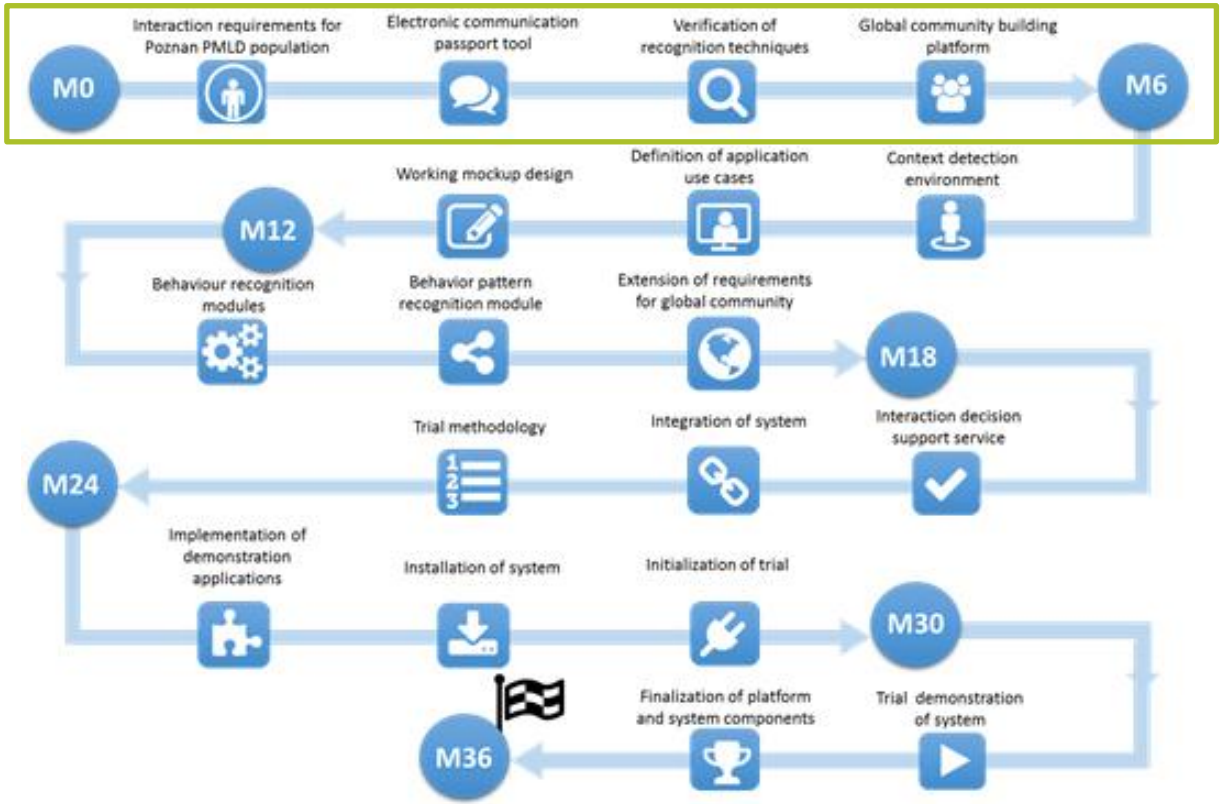
General concept



Insension platform



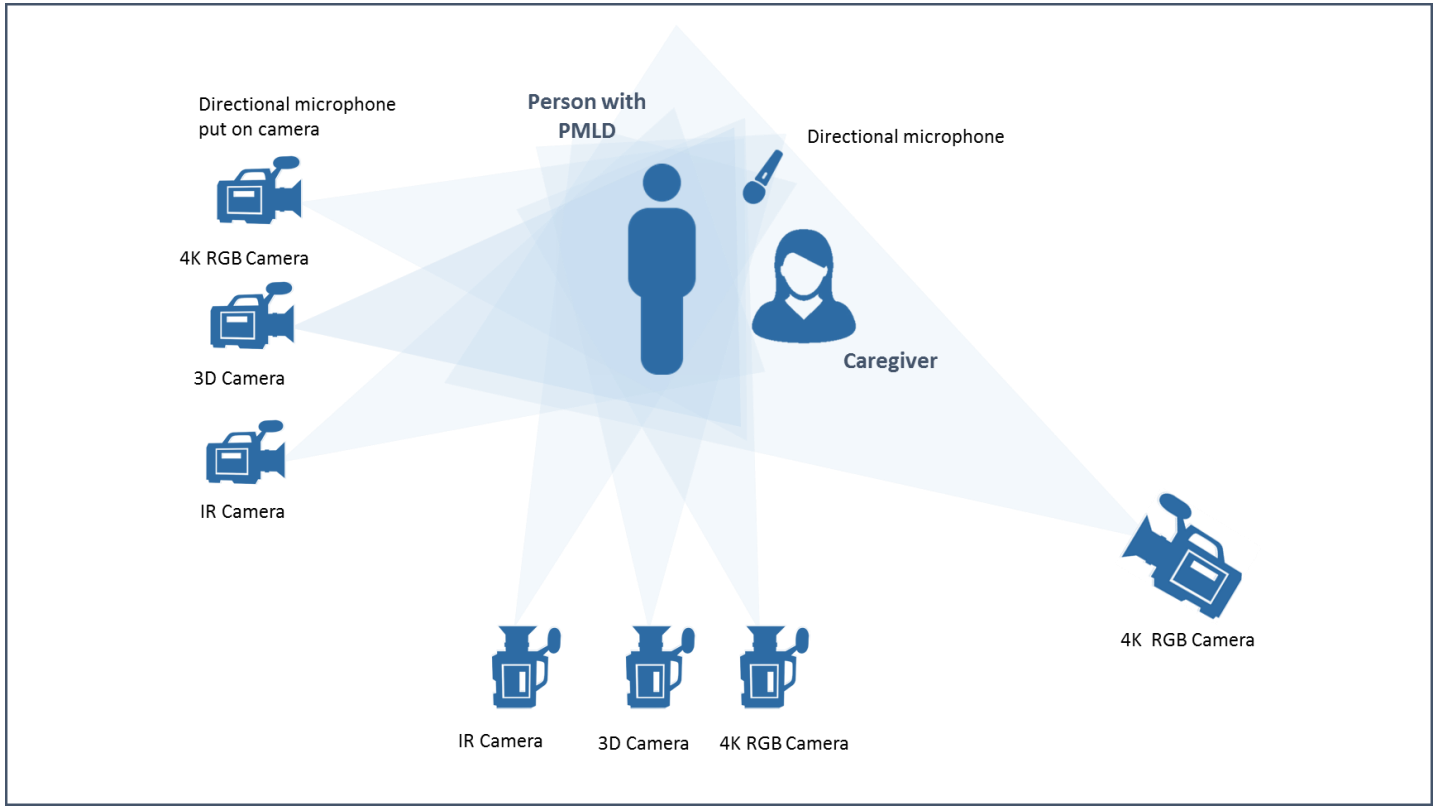
Project roadmap



The project: where are we?

- Get familiar with the user needs
- Verify if it is possible to recognize relevant behavioral signals (and the context)

The user requirements study setup



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Thank you for your attention!

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