

CONnected through roBOTS:

physically coupling humans to boost handwriting and music learning

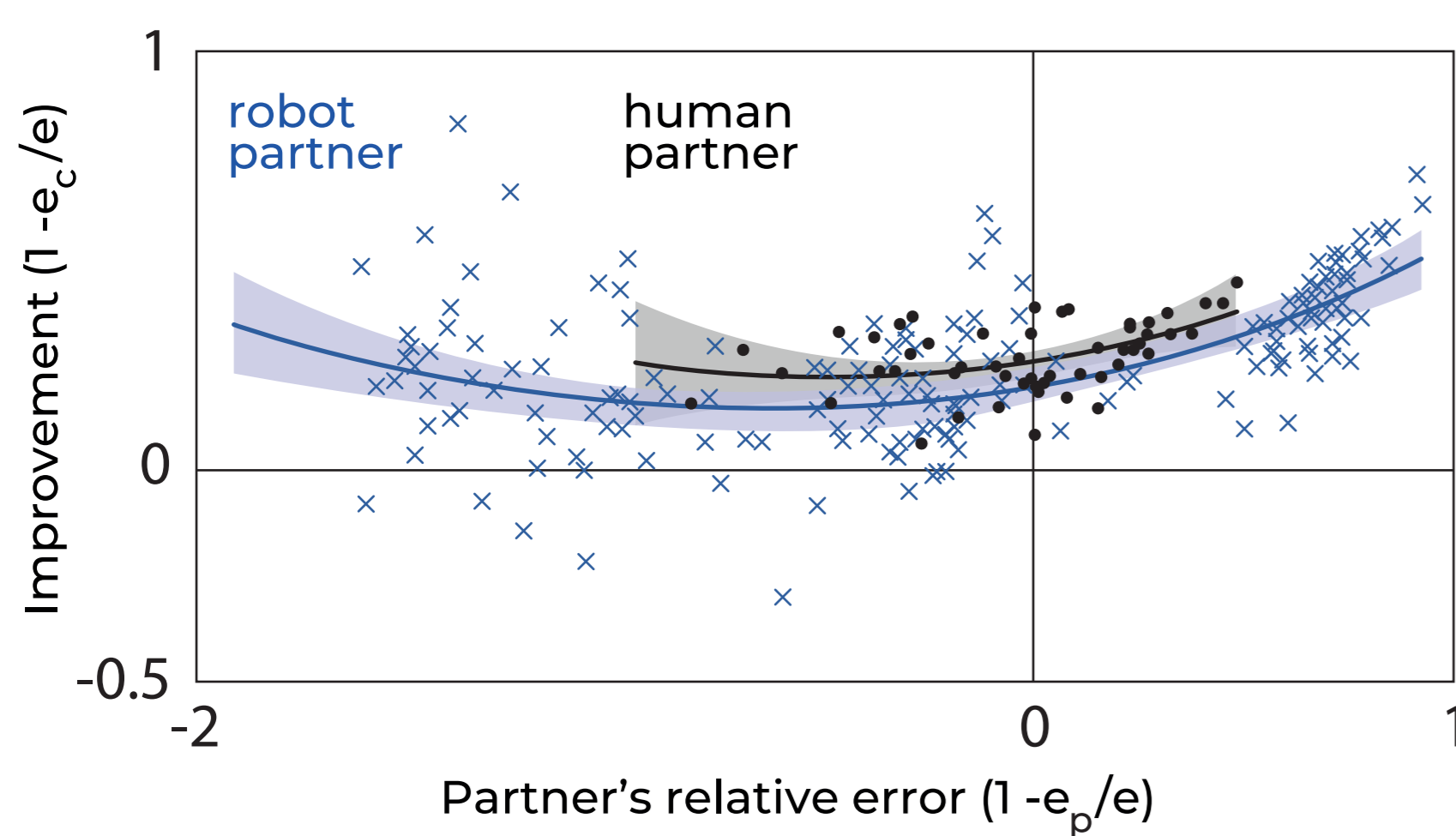
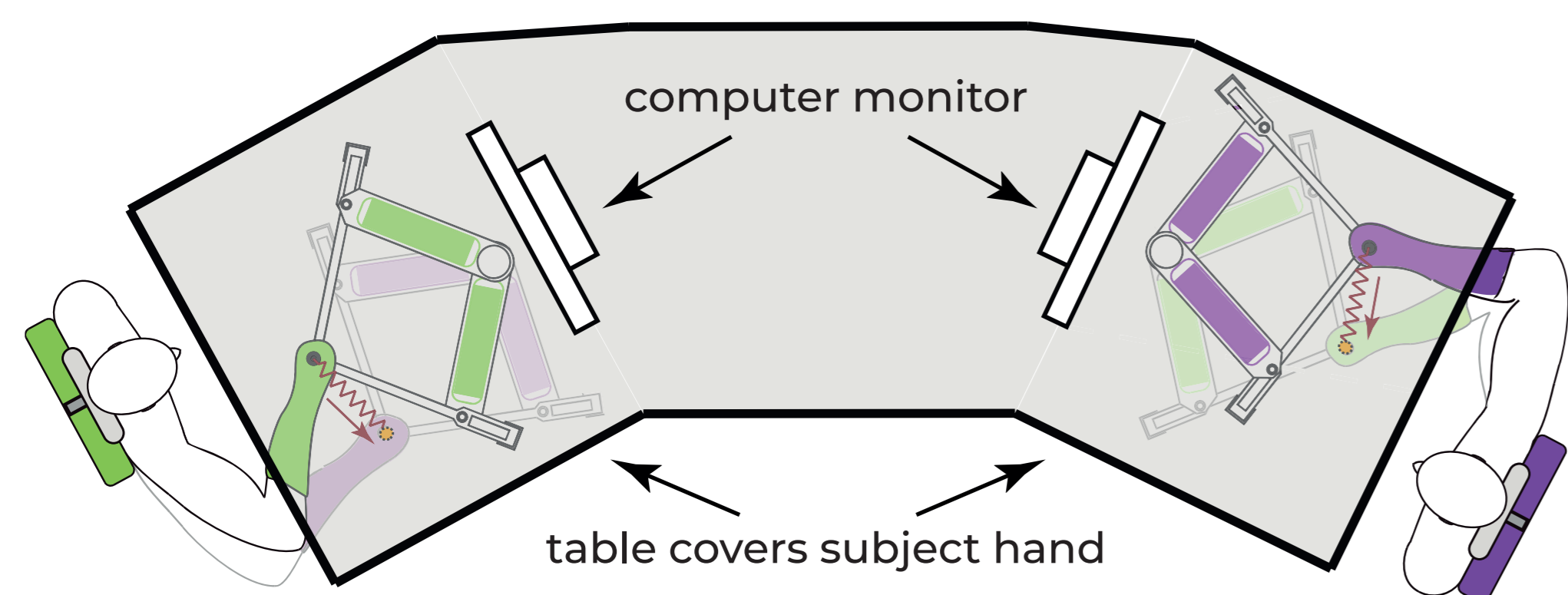
AIM

DESIGN AND TEST A NEW CLASS OF ROBOTS, THE CONBOTS, WHICH PHYSICALLY COUPLE PEOPLE TO FACILITATE LEARNING OF NEW MOTOR SKILLS.

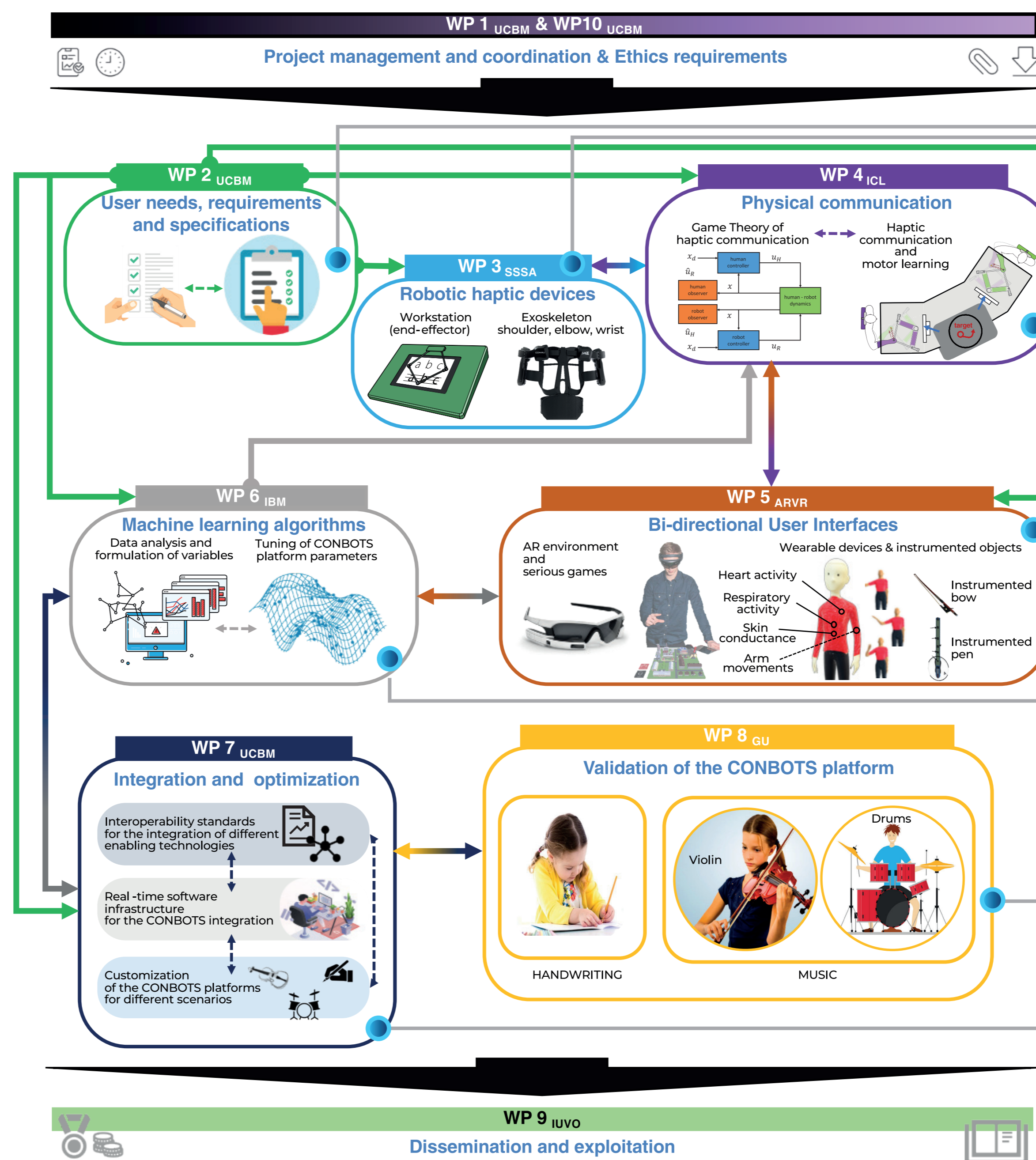
RATIONALE

Interaction between humans with robots

- Both partners have less tracking error than subjects training alone
- Human-human interaction improves performance even when the partner is less skilled
- Partners understand each other's motion plan



OBJECTIVES & WORKPLAN



- Objective A**
To define user needs & platform requirements, technical and non-technical issues
- Objective B**
To design physically interacting robotic haptic devices (planar & exos)
- Objective C**
To establish a Game Theory of physical communication for improving H-H and H-R interactions
- Objective D**
To design a bi-directional user interface with AR, wearable sensors and smart objects
- Objective E**
To develop MA algorithms for describing user status and tailoring platform behaviour
- Objective G**
To test the Conbots platform for training handwriting and music learning
- Objective F**
To integrate Conbots technologies and optimise them for different application scenarios

EXPECTED IMPACT

Strengthen robotics and technologies supporting robotics in primary education and music training

Develop and test innovative modular robotic platforms for novel human-human and human-robot interaction

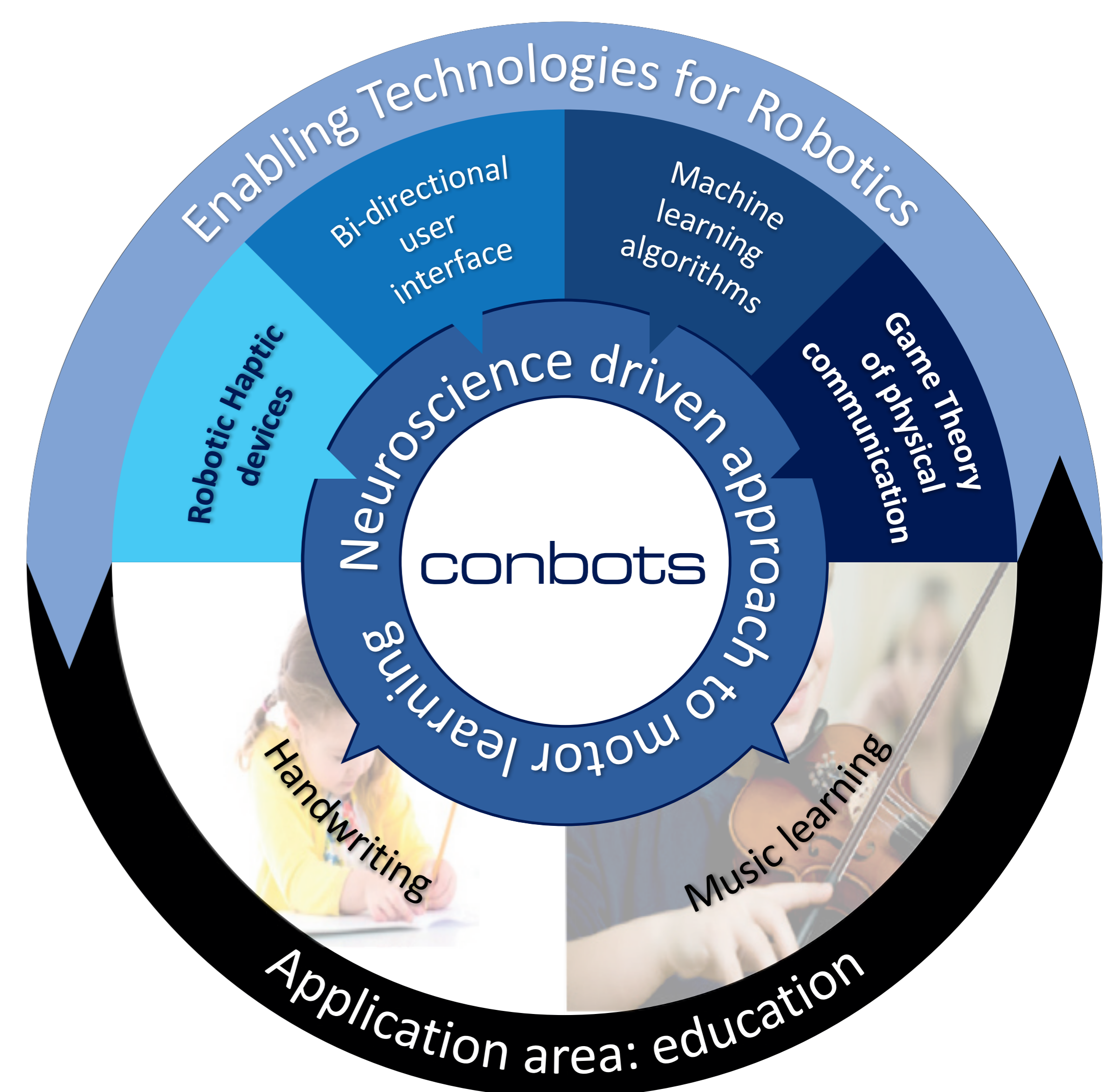
Introduce new businesses dedicated to robotic devices and related technologies applied to "Education 4.0"



Boost the deployment of the Conbots in everyday life tasks

METHODOLOGY

Four Enabling Technologies for Robotics in two application scenarios



CONSORTIUM

PARTECIPANT NUMBER	PARTECIPANT ORGANIZATION NAME	SHORT NAME	COUNTRY
1 (Coor.)	Università Campus Bio-Medico di Roma	UCBM	IT
2	Imperial College of Science, Technology and Medicine	ICL	UK
3	Scuola Superiore Sant'Anna	SSSA	IT
4	ARVRtech DOO Novi Sad	ARVR	RS
5	Ghent University	GU	BE
6	IUVO srl	IUVO	IT
7	IBM Israel Science and Technology Ltd.	IBM	IL

