



**IM-TWIN: from Intrinsic Motivations  
to Transitional Wearable INTelligent  
companions for autism spectrum disorder**  
*a European funded project*

***Open day for families 2***  
**Deliverable 6.11**



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Consortium: Consiglio Nazionale delle Ricerche (ITA), Universiteit Utrecht (NLD), Centre de Recherches Interdisciplinaires (FRA), Università degli Studi di Roma La Sapienza (ITA), Plux-Wireless Biosignals S.A. (PRT).

## Deliverable data

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## Acronyms of partners

CNR-ISTC	Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie della Cognizione (Italy)
UU	Universiteit Utrecht (The Netherlands)
CRI	Centre de Recherches Interdisciplinaires (France)
LA SAPIENZA	Università degli Studi di Roma La Sapienza (Italy)
PLUX	Plux - Wireless Biosignals S.A. (Portugal)

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# 1. Overview of the deliverable

This deliverable reports details about the open day organised to present to families of ASD children involved in the experimental trials, some technological tools developed and tested within the project. Specifically, the event was held on 2 April 2023, within the general dissemination activities planned during the [World Autism Awareness Day](https://www.un.org/en/observances/autism-day)<sup>1</sup>, at the Department of Human Neurosciences, Section of Child and Adolescent Neuropsychiatry (University of Rome *La Sapienza*). The date of 2 April was chosen to broaden, as far as possible, the audience of the open day.

# 2. Open day organisation



**Figure 1, left:** the opening slide of the open day held on 2 April, during the “World Autism Awareness Day”; **right:** an overview of the Aula Magna (at the Department of Human Neuroscience, Section of Child and Adolescent Neuropsychiatry, University of Rome *La Sapienza*), where the event was held.

The open day was organised by the University of Rome *La Sapienza*, in collaboration with the non-profit organisation “[LE ALI DEI PESCI](https://www.lealideipesci.org/)” ONLUS (figure 1). This Association was set up to promote and support the study and scientific research of neuropsychiatric developmental pathologies, particularly regarding autism spectrum disorders, and aims to promote inclusion, integration and social solidarity. The founders and members of the Association are doctors and practitioners, parents of children with disabilities and professionals from civil society, and all united to promote initiatives that accompany people with developmental neuropsychiatric disorders throughout their growth. The Association will also urge innovative regulatory interventions in the social and health care system to protect child neurodevelopmental disorders, establishing a fruitful dialogue with local and national legislative bodies.

<sup>1</sup> <https://www.un.org/en/observances/autism-day>

The event was held at the facilities of the Department, from 10:30 to 15:30, and was structured as follows:



**Figure 2, left:** the poster reporting the speakers of the conference “Beyond 2 april: a year-round journey on the part of children, young people and families”; **right:** snapshots of the open day activities.

- 10.30 - 13:00: “World Autism Awareness Day” event opening. A conference entitled “Beyond 2 april: a year-round journey on the part of children, young people and families” was held at the Aula Magna of the Department; the meeting saw the participation and intervention of specialists in the field, political personalities, and representatives from the world of entertainment and literature who care about the topic (figure 2); the debate was important to discuss important issues such as inclusion and social awareness about autism.
- 13:00 - 15:00: the Sapienza and ISTC-CNR researchers involved in the project gave a presentation where the EU projects IM-TWIN and PlusMe<sup>2</sup> were presented (see next

<sup>2</sup> [www.plusme-h2020.eu/](http://www.plusme-h2020.eu/)

section 2.1). At the end of the presentation, the audience could see a live demo of the *Transitional Wearable Companion* interactive toys, *Panda PlusMe* and *Octopus X-8*; parents of children involved in the clinical trials provided interesting feedback and could ask for more detailed information about the experimental activities.

- 11.30 - 15:30: in the courtyard of the Department, the entertainment event “*There is room for everyone*” provided fun and recreational activities for children and their families such as: painting workshops where children painted on fabrics; T-shirts and bags that they could wear and take home; play activities; music (figure 2).
- 15:30: the open day activities for families closed with a musical performance by 'La Murga del Quadraro'.

## 2.1. Project presentation and live demo of TWC toys

At the end of the main conference, the partners SAPIENZA and ISTC-CNR prepared a short presentation about the research activities carried out in the two related projects IM-TWIN and PlusMe (figure 3). After a general overview of the projects goals, involved international partners, and scientific results, the audience was introduced to the 3 technological tools, currently in experimental phase at the Department (figure 4):

- the interactive toys *Panda PlusMe* and *Octopus X-8*, for the stimulation of social competences in children;
- the sensorised t-shirt, for the detection of the child’s physiological parameters;
- the *camera glasses*, for the detection of the eye-contact between child and therapist.



**Figure 3:** Prof. V. Guidetti, team leader of SAPIENZA, introduces the audience to the two European projects IM-TWIN and PlusMe.





**Figure 4:** Sapienza and ISTC-CNR researchers gave an overview of the technological tools developed in the projects IM-TWIn and PlusMe; clockwise from above: the interactive toys Transitional Wearable Companions; the camera glasses; the sensorised t-shirt.

After the presentation, the researchers organised a live demo of the *Panda PlusMe* and *Octopus X-8*. Interested audience (in particular the parents of children involved in the experimental phase, but also other attendees such as neurodevelopmental therapists and trainees) could test the toys and provided interesting feedback about the perceived devices usability, accessibility and utility (figures 5 and 6).



**Figure 5:** snapshots during the live demo session. Especially parents of children involved in the experimental activities were interested in the use of the interactive toys.



**Figure 6:** snapshots during the live demo session.

About the feedback, it was interesting to note how the parents of children who played with the the TWC toys (see deliverable [D4.2 “Empirical validation: IM-TWIN”](#)<sup>3</sup>) reported how their kids (high functioning verbal ASD), once played with the TWC, told with much amusement their experience at home. The parents were then very curious about these toys, and asked the researchers for more in-depth explanations about the devices features and the technology behind them. Interestingly, some parents suggested how this type of toy could probably be used also at home, in play activities between child and parent. Parents were particularly interested in the activities that could be implemented with the TWC toys, making suggestions on sounds or particular functions that might be of interest to their children. Indeed, considering the great heterogeneity of children with ASD, with regard to narrow interests and sensory and tactile hypersensitivity, the possibility of having an object that is as customisable as possible is of great interest and effectiveness for families and professionals working with children with ASD.

### 3. Future Developments

In the next deliverable D6.10 “*Open-day for families 1*” another event like this will be organised in France by CRI researchers.

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## History of changes

No.	Description
1	Version updated from 1 to 2 (February 2024)
2	<p>At the end of section 2.1. “Project presentation and live demo of TWC toys”, page 8, a new paragraph reporting the feedback from parents was added:</p> <p><i>“About the feedback, it was interesting to note how the parents of children who played with the the TWC toys (see deliverable <a href="#">D4.2 “Empirical validation: IM-TWIN”<sup>4</sup></a>) reported how their kids (high functioning verbal ASD), once played with the TWC, told with much amusement their experience at home. The parents were then very curious about these toys, and asked the researchers for more in-depth explanations about the devices features and the technology behind them. Interestingly, some parents suggested how this type of toy could probably be used also at home, in play activities between child and parent. Parents were particularly interested in the activities that could be implemented with the TWC toys, making suggestions on sounds or particular functions that might be of interest to their children. Indeed, considering the great heterogeneity of children with ASD, with regard to narrow interests and sensory and tactile hypersensitivity, the possibility of having an object that is as customisable as possible is of great interest and effectiveness for families and professionals working with children with ASD”.</i></p>

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