



**PlusMe: Transitional Wearable Companions  
for the therapy with children with  
Autism Spectrum Disorders**  
*a European funded project*

**Deliverable 3.4**  
***Dissemination of research activities, stage two***

Work Package 3 *Dissemination*  
due at month 19 (31<sup>st</sup> Mar 2022).

Lead beneficiary: CNR  
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# 1. Overview of the deliverable

This deliverable describes the dissemination activities carried out within the project, between July 2021<sup>2</sup> and March 2022, in particular:

- a virtual workshop on *PlusMe* device, addressed to Italian developmental therapists and researchers (sec. 2);
- a short paper describing preliminary results about the use of *PlusMe* as a therapeutic tool, to appear in the proceedings of the International conference *Human-Computer Interaction, CHI 2022* (sec. 3);
- participation in the conference *CHI 2022* and in the Italian seminar *Immaginare il cambiamento: le nuove tecnologie e il loro uso consapevole* (sec. 4).

## 2. The workshop on PlusMe

On March 28, CNR-ISTC organised a workshop (Fig.2) with a focus on:

- the panda *PlusMe*, its technical features and the potential use with children with neurodevelopmental disorders;
- the experimental activities involving children with Autism Spectrum Disorders and the preliminary results;
- a new prototype of interactive toy – the octopus *X-8* – specifically designed to support turn-taking games.

Due to COVID-19 restrictions, the workshop was held virtually. Researchers from the following Italian groups attended the event:

- Association *LiberaMENTE*<sup>3</sup>: this is a non profit organisation which, through neurodevelopmental therapists, provides support to families with children with neurodevelopmental disorders;
- Rehabilitation Centre *NeapoliSanit srl*<sup>4</sup>: this is a centre which provides support in the field of rehabilitation of subjects with physical, psychic, sensory deficits and related disabilities, including Autism Spectrum Disorders;
- IRCCS<sup>5</sup> Foundation *Stella Maris*<sup>6</sup>: this is scientific institute dealing with research and health care, specialised in the treatment of neurodevelopmental disorders;

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<sup>2</sup> Dissemination activities prior to July 2021 are described in the deliverable D3.3 “Dissemination of research activities, stage one”.

<sup>3</sup> [www.facebook.com/associazioneliberamente2017](https://www.facebook.com/associazioneliberamente2017)

<sup>4</sup> <https://neapolisanit.com/>

<sup>5</sup> IRCCS is an Italian acronym which stands for *Istituti di Ricovero e Cura a Carattere Scientifico*. They are Scientific institutes for Research, Hospitalisation and Health Care, recognised by the Italian government.

<sup>6</sup> <https://www.fsm.unipi.it/>

- Laboratory *Body Action Language Lab, BALLAB*<sup>7</sup>: this is a research group of the *Department of Dynamic and Clinical Psychology*<sup>8</sup>, University of Rome *La Sapienza*, which conducts research also in the field of Developmental Psychology.



**Figure 2.** The flyer used to promote the virtual workshop on *PlusMe*, organised by CNR-ISTC.

The audience was composed of 8 people, including neurodevelopmental therapists, psychologists, and researchers; these people were selected as they previously showed an interest in trying the *PlusMe* toy at their institutes. In this regard, the CNR-ISTC is preparing formal agreements with the related institutes, to deliver some samples of *PlusMe* devices to the researchers; such activity will provide very important feedback to CNR-ISTC, about the toy usability and usefulness. At the end of the workshop, the audience was also introduced to IM-TWIN<sup>9</sup>, a related European funded project, which plans to continue several experimental activities which include *PlusMe* and similar technological devices.

<sup>7</sup> <https://sites.google.com/view/annaborghilab>

<sup>8</sup> Dipartimento di Psicologia Dinamica, Clinica e Salute <https://web.uniroma1.it/dip42/en>

<sup>9</sup> IM-TWIN: from Intrinsic Motivation to Transitional Wearable INtelligent companions for ASD, [www.im-twin.eu](http://www.im-twin.eu)

Additional material about the workshop is available at the project dedicated page: [www.plusme-h2020.eu/workshops-presentations/](http://www.plusme-h2020.eu/workshops-presentations/)

### 3. Publications

The preliminary results about the experimental use in therapy of *PlusMe* toy are described in the short (8 pages) paper: *Leveraging curiosity to encourage social interactions in children with Autism Spectrum Disorder: preliminary results using the interactive toy PlusMe* (F. Giocondo, N. Faedda, G. Cavalli, V. Sperati, B. Ozcan, F. Giovannone, C. Sogos, V. Guidetti, G. Baldassarre). The paper will be published as a “Late-Breaking Work” in the proceedings of International conference of Human-Computer Interaction, CHI 2022 (New Orleans, LA, April 30, May 5 2022), DOI: 10.1145/3491101.3519716. The proceedings will be available in the ACM Digital Library <https://dl.acm.org/conference/chi>.

### 4. Participation in conferences and seminars

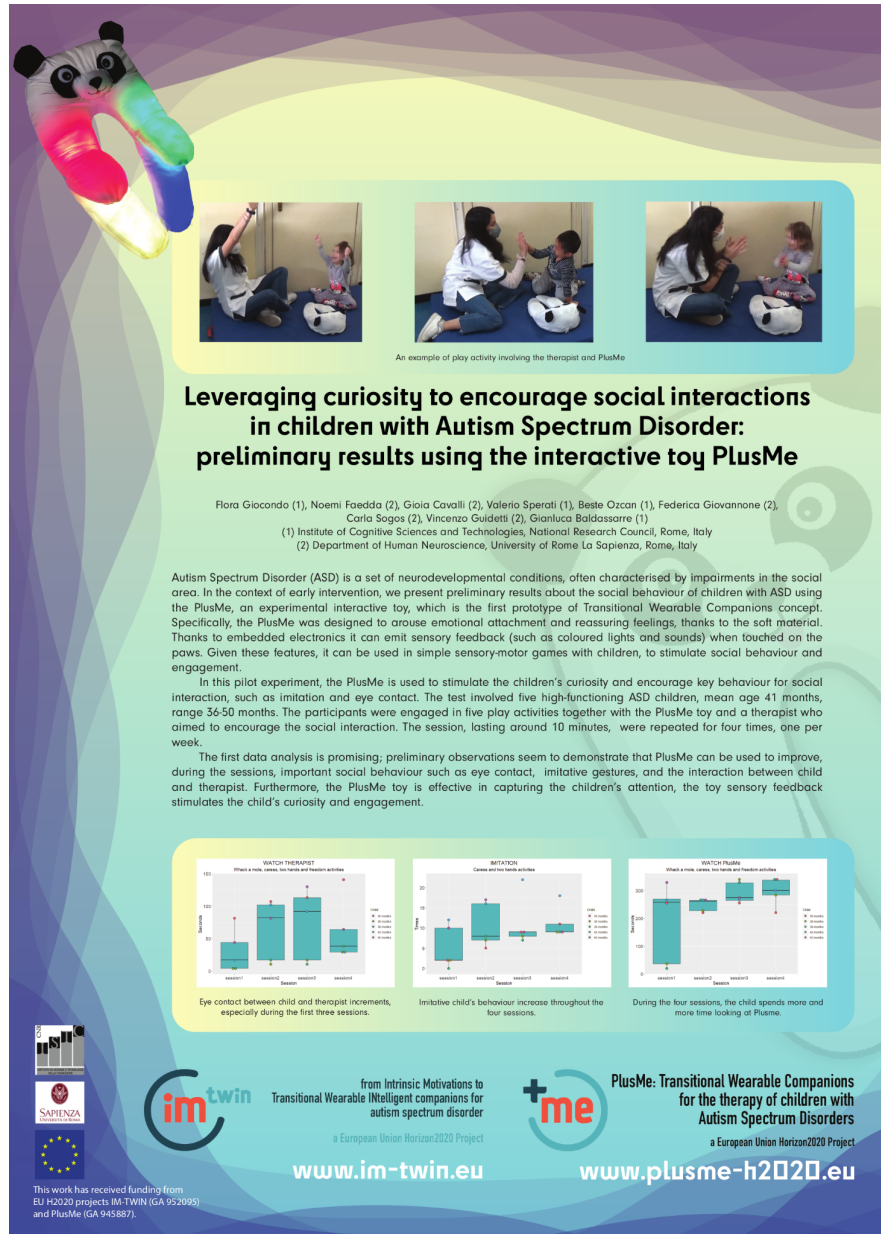
Researchers from CNR-ISTC will participate in the ACM International conference of Human-Computer Interaction, CHI '22 (Fig. 3). The conference, held annually since 1982, will take place at New Orleans, Louisiana (USA) between April 30 and May 5, 2022 (<https://chi2022.acm.org/>).



**Figure 3.** CHI '22 conference “(...) brings together researchers who have as an overarching goal to make the world a better place with interactive digital technologies” (quote from the conference website).

The researchers will present a poster (Fig. 4) reporting the results described in the paper *Leveraging curiosity to encourage social interactions in children with Autism Spectrum Disorder: preliminary results using the interactive toy PlusMe*. The program of the conference and the pre-recorded presentation are available at the following links:

- <https://programs.sigchi.org/chi/2022/program/content/73289>
- [www.youtube.com/watch?v=-vpWTAI1Rxc&t=2s](https://www.youtube.com/watch?v=-vpWTAI1Rxc&t=2s)



**Figure 4.** The poster for CHI '22 conference<sup>10</sup>.

On March 15, researchers from the Department of Human Neuroscience, University of Rome *Sapienza* – a partner supporting the clinical activities with *PlusMe*<sup>11</sup> – gave a speech in the Italian seminar *Immaginare il cambiamento: le nuove tecnologie e il loro uso consapevole*<sup>12</sup> (Fig. 5). In this speech, Dr. Noemi Faedda and Dr. Gioia Cavalli have discussed the use of technology in education, with a particular reference to the use of *PlusMe* device as a virtuous example.

<sup>10</sup> <https://files.sigchi.org/conference/attachment/10072/content/73289/poster/e43affc2-1bc0-3f8a-3950-8a4f18f813ec.pdf>

<sup>11</sup> Sapienza is also an official partner in the related European project IM-TWIN, [www.im-twin.eu](http://www.im-twin.eu).

<sup>12</sup> *Imagining the change: new technologies and their conscious use.*



**Figure 5.** The poster for the seminar *Immaginare il cambiamento: le nuove tecnologie e il loro uso consapevole*.

## 5. Conclusions

The dissemination activity about *PlusMe* will be carried on even after the end of the project, in May 2022. This will be partially supported by the related European project IM-TWIN, which includes tasks concerning the further improvement and test of *PlusMe* device.