Tell us briefly about the AutoPlay project, starting with the problem tackled.

The idea for the AutoPlay project came from the desire to combine occupational therapy with the expertise of the Institute for Information Systems and Networking (ISIN - DTI), in order to put them to good use in the childhood sector. At present, by means of this collaboration, we are developing an early-infancy measuring tool, which consists of various intelligent toys equipped with special sensors that aim to provide an objective assessment of how 9-15 month-old babies approach play. This finding is clinically interesting because it should, in the future, make it possible to identify children who present atypical development, like autism for example.

The AutoPlay project therefore has a strong social impact because, if it can be used to identify autism (present in approximately 1 in every 100 children) at an early age, there would be an exponential increase in the possibility of reducing the negative consequences, as a result of enhanced intervention action.

What initial results have been obtained?

Following a one-year experience with five Ticino families, an initial project to assess the feasibility of the idea was concluded in 2016. Thanks to financing in the form of SUPSI internal funding, we managed, while the children played, to record and classify certain movements of the toys. We also understood the typology of sensors required in order to develop better-quality material. The children participating in the research project now play with three little elephants and a ball, which have been created specifically for this purpose; soon they will also be able to use a doll and a spoon, and a model car. Our ISIN colleagues, in turn, are beginning to work on the first algorithms that will make it possible to translate the signals recorded by the sensors into clinically significant movements.

What are the strong points of the project? And the problems?

The strong points derive from the interdisciplinary nature, where every area of expertise is valorized and put at the service of the expertise of other people. These synergies directed toward achieving a common goal, or, in other words, using technology in order to help children grow well or better, have enormous potential for innovation.

The critical areas derive from this very interdisciplinary nature, because we must know ourselves, take the time to listen to other people and understand them. This is not easy when the languages are very different, but the more we move forward together, the closer the different worlds come to one another, therefore reducing the critical areas and reinforcing the strong points.
Do you remember anything interesting, amusing or unusual that occurred during the project?
I can think of two things. The first is associated with our home experiences during the feasibility study: at that time, we didn’t have the great toys we have today, but thanks to the help provided by our colleague Raffaele Ponti (DTI), we managed to get some toys made by a 3D printer. Every time we came back from trying them out in the various houses, we had to send an email to Raffaele because the children always broke the ball; I don’t know how many we had to print, and after a while we stopped counting.
The second episode happened at the beginning of this process, when we took the train to Zurich in order to meet our designer, Pepe Hiller, in person. Once we were on the train, my colleague Francesca Faraci produced a six-socket adapter, so we could all use our computers and mobile phones. It was truly a modern-day scene about women at work.

Could other projects develop from this one?
The first project developed into the one we are conducting now, thanks to the BREF financing provided by Gebert Rüf Stiftung. We have also been contacted for a project that, if it receives European Commission financing, wants to use the AutoPlay tool. Then, together with Dr. Gian Paolo Ramelli from EOC, we are developing a programme to help in differential diagnosis, and, finally, we have had the wonderful opportunity of meeting Mr. Peter Handstein from the toy manufacturer HAPE to discuss AutoPlay and other potential projects. So, I would say that AutoPlay has been a springboard for our interdisciplinary team.

Apart from you, who else was on the project team?
The ISIN colleagues involved are: Francesca Faraci, Michela Papandrea, Sandra Bernaschina and Alessandro Puiatti. In addition to this internal know-how, we are also assisted by a Ticino team formed by pediatricians from the Centro Pediatrico del Mendrisiotto, the neuro-pediatrician Gian Paolo Ramelli (EOC) and by the staff of two nursery schools (SUPSInido and Culla Baby Star). We also benefit from collaboration with a number of Swiss experts: the children’s toy designer, Pepe Hiller from Zurich, and the Professor for Childhood Development and Problems, Evelyne Thommen, from HES-SO Lausanne.

Project type: National project
Financing body/ies: Gebert Rüf Stiftung, BREF “Social Innovation” fund
Project partners: Institute for Information Systems and Networking, Centro Pediatrico del Mendrisiotto, Culla Baby Star Nursery School (Breganzona), SUPSInido (Manno), Pepe Hiller (designer, Zurich) and Evelyne Thommen (HES-SO, Lausanne)