

Final Report Summary

Electronic Technologies for the Activity Games and Sports Equipment Market



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1 BACKGROUND

The project was a technical feasibility study to evaluate the application of electronic technologies to the activity games and sports equipment market. The project combined wireless communication technologies, embedded software and intelligent networking methods in a novel way to create a technology platform that will serve as core component in a number of products. The developed electronic modules use short range wireless communication to form ad hoc networks and transfer relatively low volumes of data over spatially limited areas. The modules interface to external components such as audio amplifiers, LC displays and high intensity light sources needed for the games.

The first use of this new technology platform is a novel interactive running game for children called Funky Cones. This cross sector concept is breaking new ground in bridging the gap between electronic technology and physical activity for children. The product uses children's fascination with technology in order to encourage physical activity, thereby improving their health and fitness and helping to counteract the growing problem of childhood obesity.

The game apparatus consists of a number of differently coloured bases and a handheld remote control. Each of these devices contains one of the electronic modules developed in the TTOM project. The bases are placed some distance apart on a playing field and an increasingly difficult sequence of lights and sounds is played. The players then have to run between the bases hitting them following this sequence. Sequence length and duration are programmable and runs are automatically timed. The game can be played as single player game, team relay or by two or more competing teams where accumulated times serve as a score. The game play is loosely based on one of the first electronic board games called "Simon" which came to market 25 years ago.

2 WORK PERFORMED

After comparing a number of options for partnerships in the technical development, ILSI became first choice because of its extensive in-house experience in wireless communication technologies and embedded software applications for low power systems. The Institute's focus on System on Chip solutions for wireless communication made them an ideal technology-transfer partner for this project. The transfer of ISLI's existing wireless communications expertise into this project provided the required technical solutions and accelerated the development of Funky Cones.

The project examined various alternative wireless technologies for the game. Several options have been identified with a phased development plan to reduce the product costs over time whilst allowing for rapid prototyping in the early stages. An appropriate embedded processor and associated development tools were also chosen, and peripheral components were selected. Embedded software, suitable for demonstrating the product, was also developed. A printed circuit board has also been designed and produced in low volumes.

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3 PROJECT OUTCOMES

As a direct result of this project, Funky Cones now exists as a working demonstrator suitable for conducting trials in schools. With a concrete design, this will also now permit more detailed costs to be produced for the business plan, aiding Funky Moves' efforts to find suitable funding.

The next step in the product development is the assembly of several game prototypes, ready to be piloted in a number of primary schools. The results of this pilot will then influence further product refinement on the way to a finished product. It is expected that considerable development work will be again needed at this point. Further funding for continuing the collaboration formed between Funky Moves Ltd. and ISLI is currently being sought, with the intention of developing further this already successful partnership.

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