



Usability of Music for Social Inclusion of Children

# UMSIC<sup>2008-2011</sup>

## Music enhancing social coherence

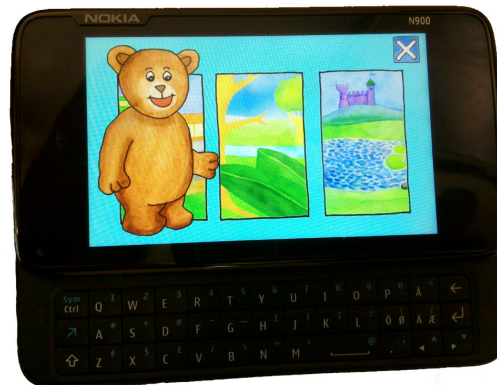
Music is one of the most popular recreational activities in people's everyday life. It connects people and cultures. We know that young people use music for regulating their emotions and moods, and that musical creativity is a channel for mental work and emotional coping. Informal learning of music is happening all the time. More and more young people join informal online communities to compose music and discuss it. However, children with moderate learning difficulties and migrated children who would benefit of these communities, do not have access to them because their digital literacy and technological skills are poorly developed.

## UMSIC is an intelligent and accessible way to support children's social inclusion by music

The multidisciplinary and transnational S&T UMSIC project develops a system – the JamMo (jamming mobile) - that uses familiar modern technologies to create an interactive environment for children to communicate musically by. With a special focus on child-centered usability, intelligent musical engineering and carefully developed pedagogical design, JamMo allows children to use the product in both stand-alone and networked mode with easy start up and large extensibility.

Children will benefit from the targeted musical material by being able to independently learn the usage of musical software required to enter musical online communities. Whilst intended for all children, UMSIC aims to particularly support, through music, those children who are at increased risk of being marginalized.

Figure 1. Start views on N900 for 3-6 composition and singing game stand alone mode.



### Who we are

The UMSIC project is run by an interdisciplinary and multinational group of experts. The fields of expertise are developmental psychology, music education, music technology, music therapy, software engineering, and Human Computer Interaction for Children. Moreover, an Ethical Advisory Board which has been established especially for the project UMSIC, constantly monitors ethical issues such as privacy and informed consent.

 [www.umsic.org](http://www.umsic.org)

## UMSIC Project rationale at the European level

One of the major challenges in European pre-schools and schools today is the inclusion of different learners. Among the most common types of learning disabilities are attention deficit disorders (ADHD) which are frequently accompanied by mental or behavioural disorders. Another challenge for inclusive education is the increasing migration and multicultural environment. Children with bi- or multicultural backgrounds may find themselves isolated from peers, both by language and culture.

In order to offer children better chances to integrate into the multicultural European society, the UMSIC project assumes that language and music are essential for building a cultural identity and for actively participating in various cultural environments. In addition, language and music are both powerful means to integrate into social groups.

## UMSIC objectives

The UMSIC project is developing JamMo, a mobile time- and place-independent system that provides an interactive environment for children whilst also enabling them to communicate musically with other people such as peers and teachers. JamMo combines modern technology and effective educational principles to foster social inclusion and prevent marginalisation of children. In particular, UMSIC's objectives concern targeted groups of end-users, preschool (aged 3-6) and school-aged (7-12) children with an emphasis on those with moderate learning difficulties, those who are immigrant, or studying in unsupported integrated school classes.



Figure 2.  
Stand-alone  
JamMo

Figure 3.  
Ad.Hoc  
JamMo

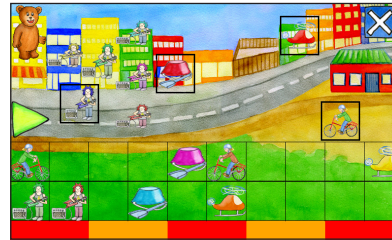


Figure 4.  
Networked  
JamMo

## JamMo application

JamMo has been focused on three lines of operation, i.e. composition, improvisation and karaoke. In the composition line, a child creates his/her own song by selecting loops, using virtual instruments etc. In improvisation, e.g. a child starts with a song and can use virtual instruments or edit the current ones to create a new version of the song. In karaoke, a child can listen to a song and then sing along, save the result and share it with the teacher, a friend or a relative.

The JamMo application is designed to use previously mentioned operations in four different scenarios; stand-alone, network, ad hoc and public. Public basically means that the user actions are shown on larger screen to a larger audience.

JamMo application utilises UMSIC middleware, which will support the core functionalities of music creation and communication while hiding the heterogeneity of technology. The software architecture is modular and scalable and JamMo services can easily be built on top of it. JamMo has already services; e.g. generic JamMo service, which will detect fellow devices that are having the JamMo application. A group management service, which is used to manage the pairs and groups. A communication service, which is required in sending data and in other networking tasks. Most core services are required for musical engineering functionalities of JamMo.

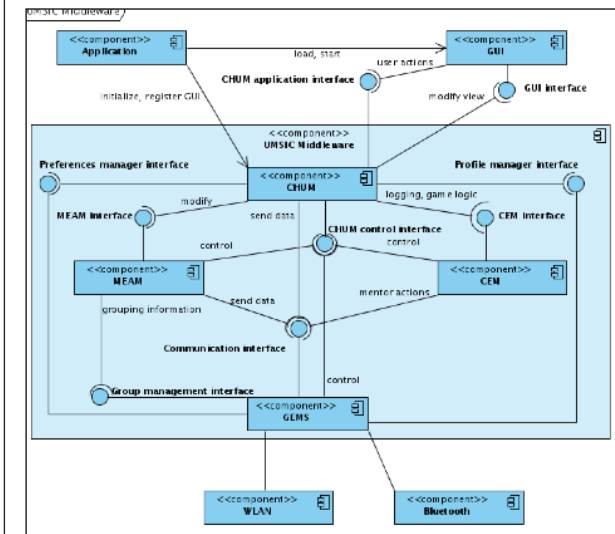


Figure 5. JamMo Software Architecture

## Project status Autumn 2010

The UMSIC project will turn to its third and final year for project impact analysis and exploitation.

JamMo v1.0 stand-alone for 3-6 aged and networked for 7-12 aged will be validated by target users in three countries starting September 2010.