

MobileSoM



The Map

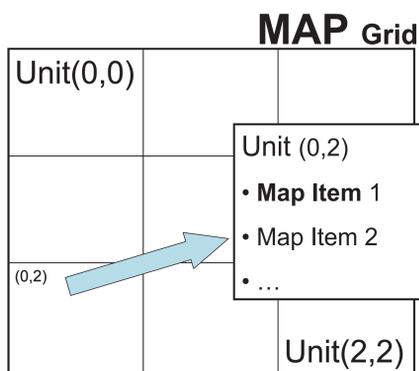
The Editor

MobileSoM (Mobile Selection of Music) is a prototype entirely programmed in Java Micro Edition (**J2ME**). It allows users to browse through their music collection that is displayed as a two-dimensional map on their mobile device. Pieces of music are played locally or are streamed from a web server. Moreover, the prototype can be used as a remote control (**XPlayer**). Instead of playing a piece of music on the mobile device, the software triggers another device to play the song.

XPlayer



The Grid-Unit Concept

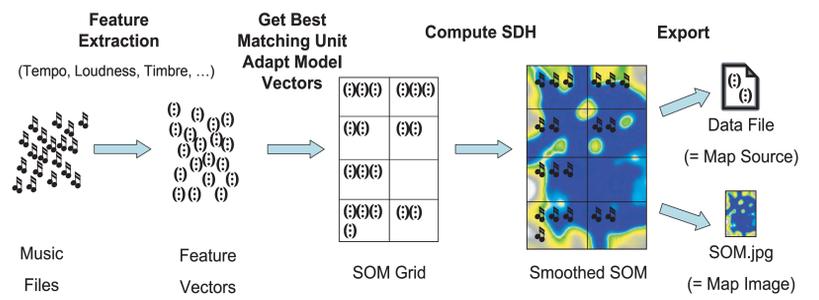


MobileSoM offers a framework for using different visualization styles of music collections based on the **Grid-Unit Concept**. A Grid is divided into Units which group pieces of music (Map Items) with similar properties together.

Visualizations

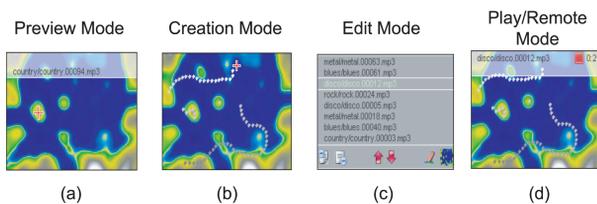


Preprocessing



MobileSoM is the first J2ME application available that implements the paradigm of generating playlists using a Self-Organizing Map. In order to run MobileSoM, the prototype needs a **Map Image**, which visualizes the music collection and a **Data File**, which contains the path to the music files and the location of them on the map, as input parameters.

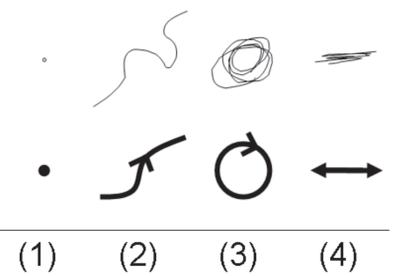
Playlist Generation



Song titles are displayed on the screen by pointing on a specific location on the map **Preview Mode** - Figure (a). By drawing a path or pointing on a single position on the map, one or more songs are selected and added to the playlist in **Creation Mode** - Figure (b). Accordingly the list can be altered by removing or changing the position of music titles in **Edit Mode** - Figure (c). The items from the final playlist are played back from the device, streamed from a server or sent to a server in **Play/Remote Mode** - Figure (d).

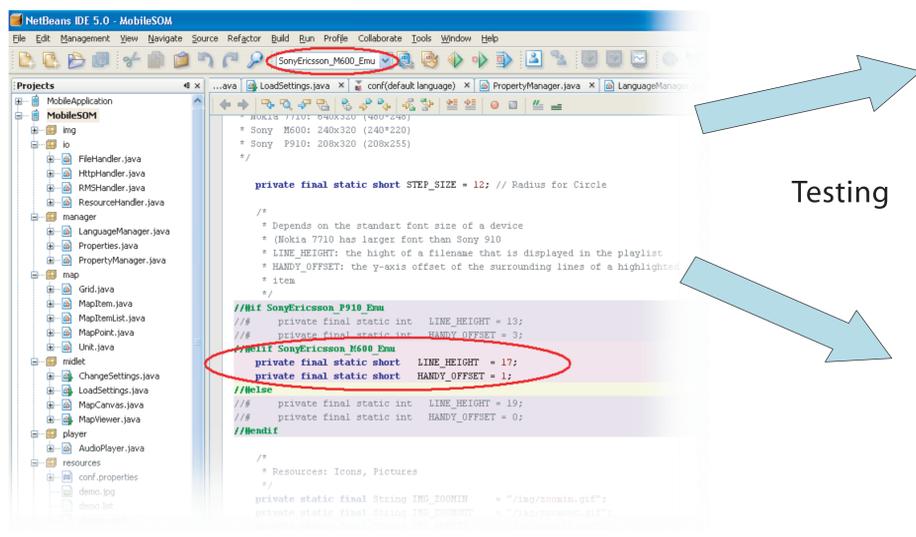
Any click with the stylus on a specific location on the screen produces a small circle on that place which fades out within a half second - Figure(1). With a click on the device either a menu icon is pressed or a piece of music is selected. For selecting multiple music items the stylus is placed on the Map Image and a path is drawn over the screen as long the stylus is not taken off - Figure (2). Another way of using the stylus is to mop or circulate the stylus over a specific menu icon - Figure (3,4). This simulates multiple clicks on that icon without the need of removing the stylus from the display.

Using the Stylus



Multiple Device Deployment

The prototype was developed in Netbeans IDE. A MIDlet is tested on an Emulator first. Netbeans supports direct integration of emulators by various manufacturers (e.g. Sony Ericsson, Nokia). Moreover the IDE supports developing applications for multiple devices by adding and executing device-specific code as configurations within a single MIDlet, called **Device Fragmentation**.



Testing

Emulators



Sony Ericsson M600 Emulator



Nokia 7710 Emulator

Deployment

Real World Devices



Sony Ericsson M600



Nokia 7710