

Bringing Mobile Map Based Access to Digital Audio to the End User

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Motivation

- Digital audio collections are growing constantly
- Thousands of songs on portals and mobile devices
- Getting an overview of collections is difficult
- We miss more adequate ways of accessing music than merely scrolling through directories or hierarchical structures

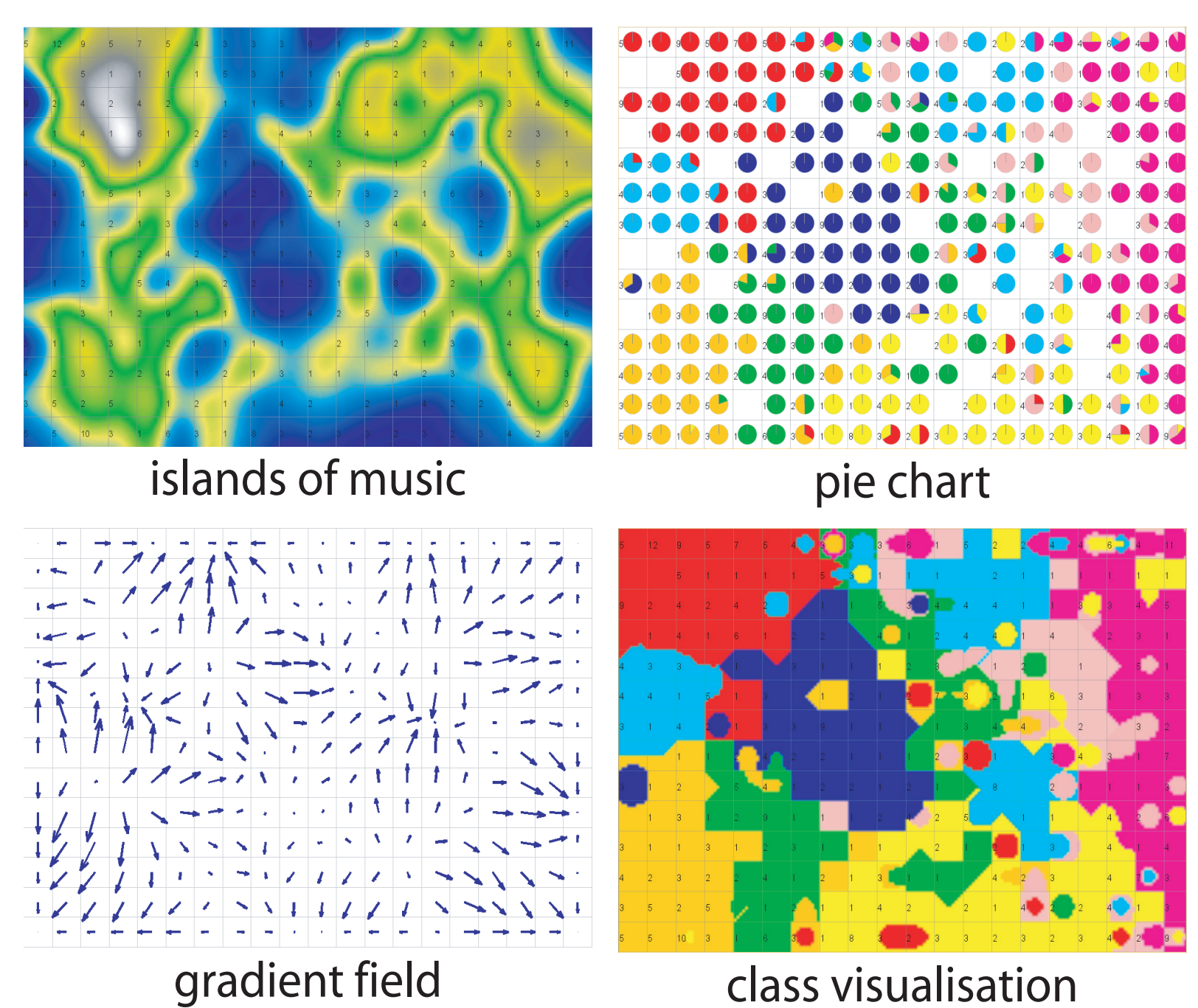
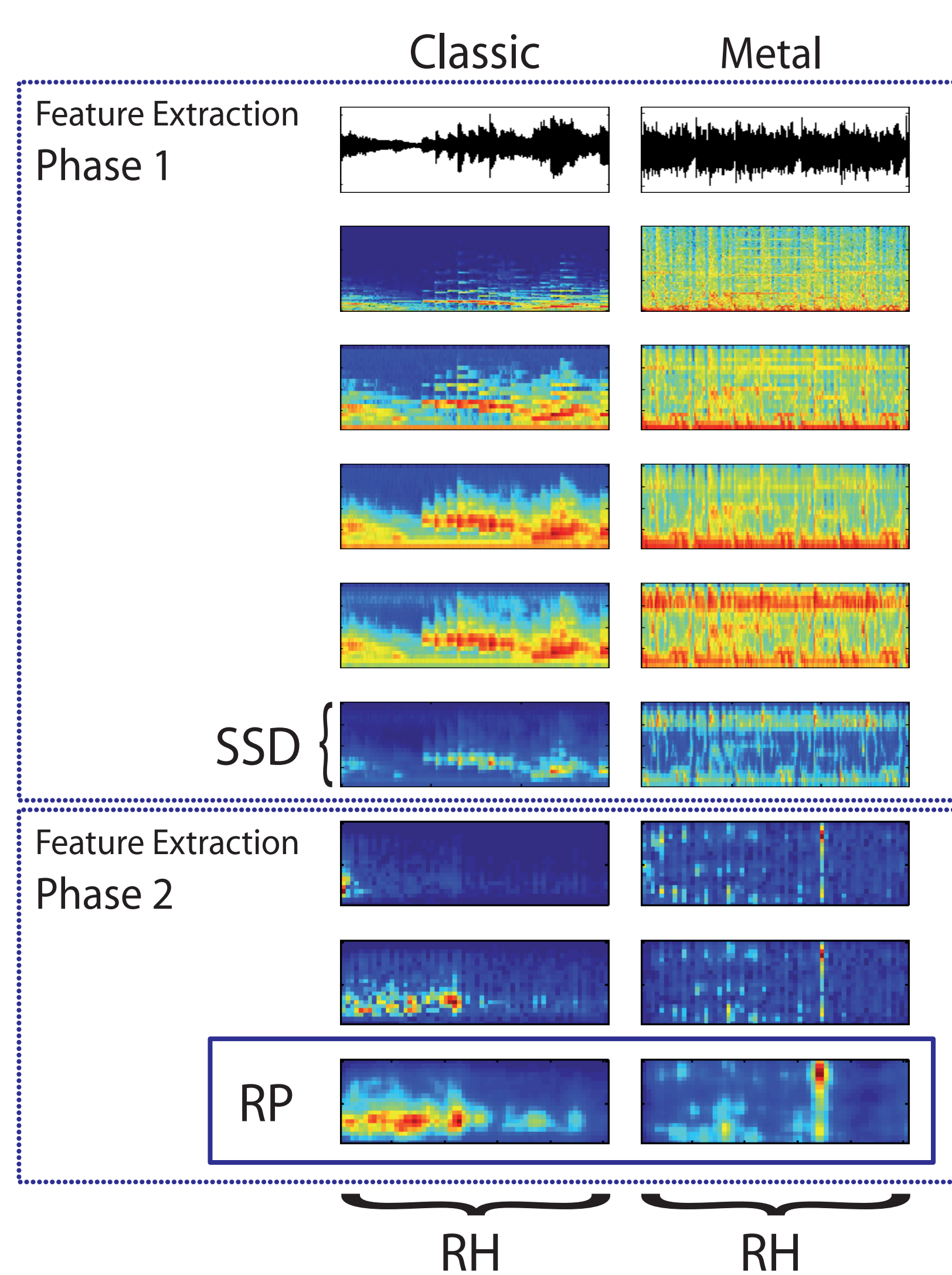


(Mobile) Map Based Access

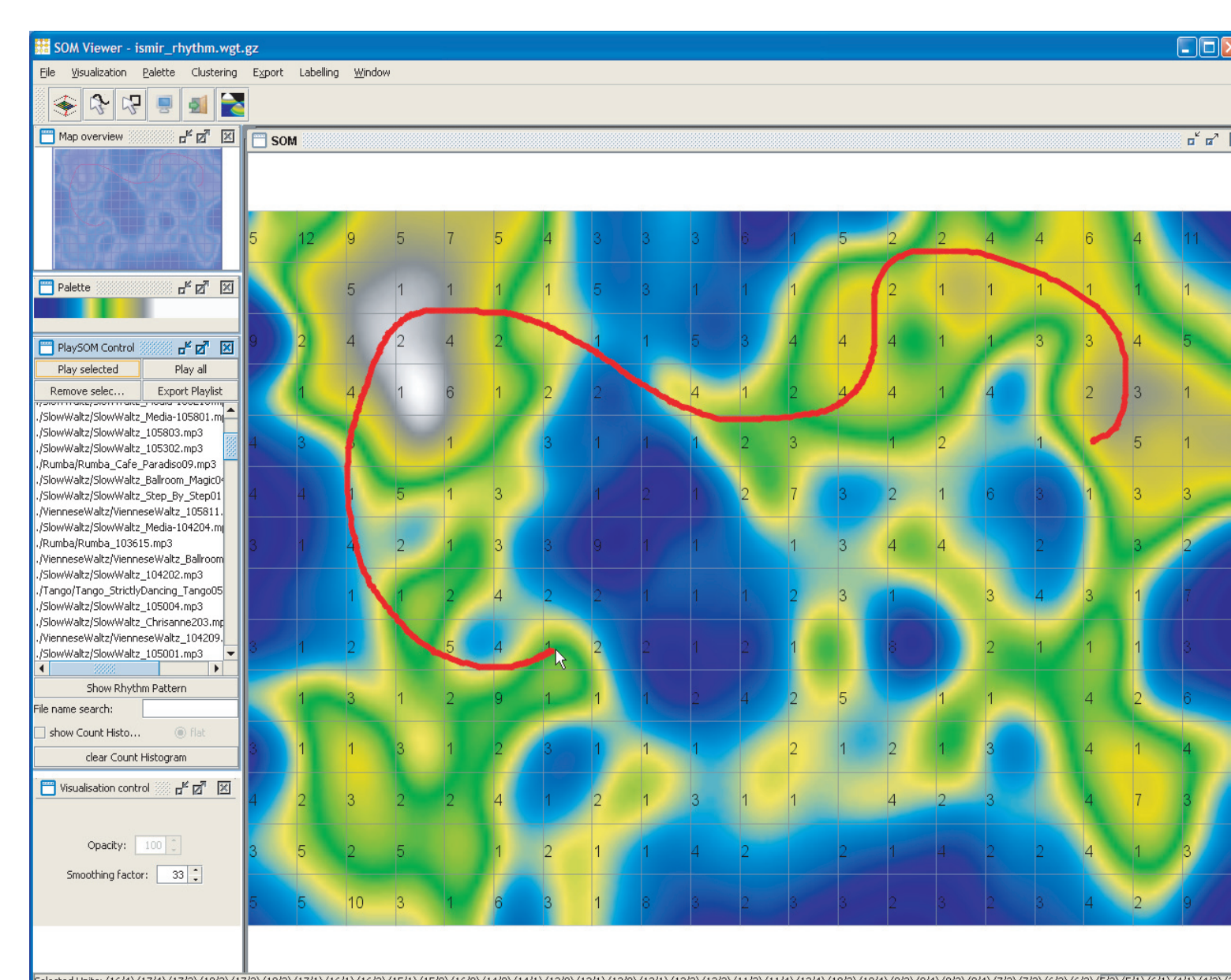
- Music analysis using **audio features**
- **Map based access** for different platforms, similar music is clustered, forming islands
- Providing **new interaction methods** with the music collection using a touch-screen
- Enabling **access to large music collections** on devices with limited means of interaction and storage capacities

Audio Features

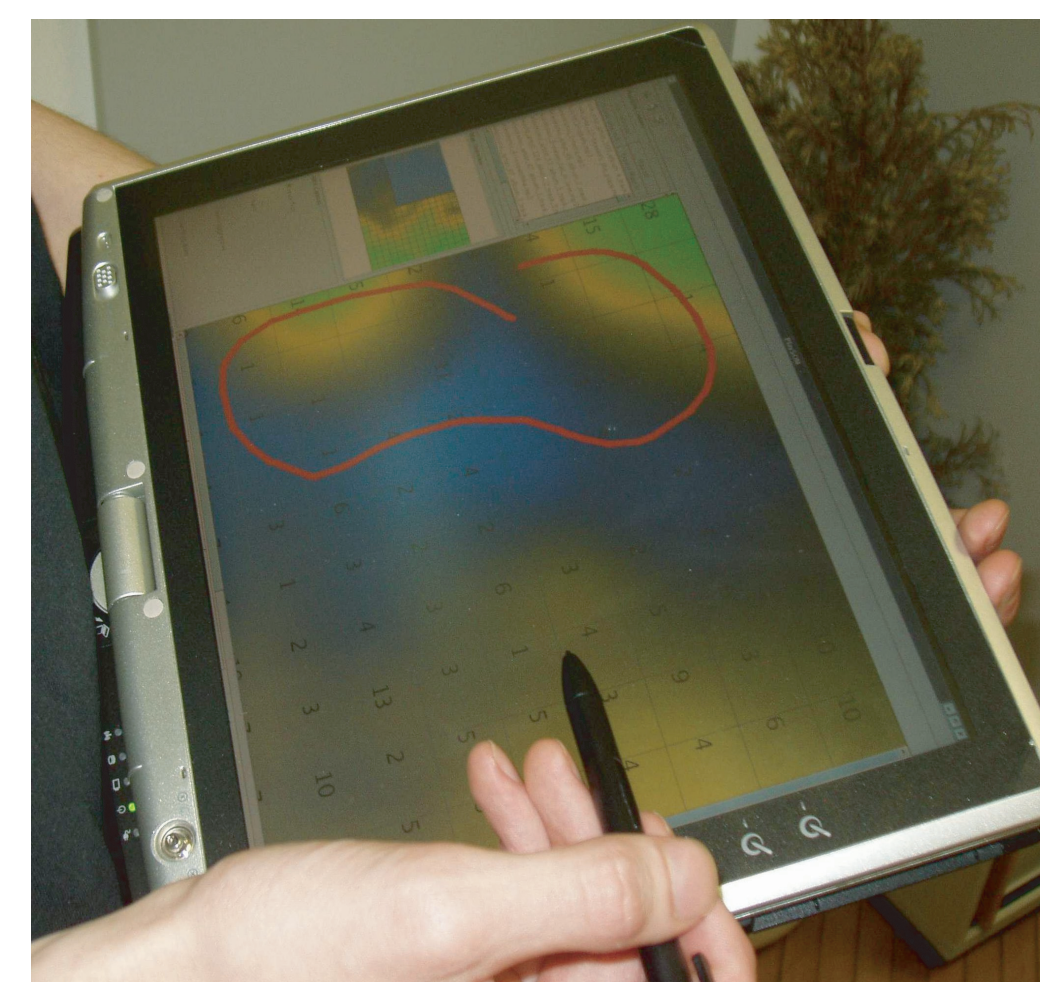
- Features computed directly from audio files, e.g. mp3, wav or CD
- Using psycho-acoustic models
- Statistical Spectrum Descriptor (SSD)
- Rhythm Histogram (RH)
- Rhythm Patterns (RP)
- Range of different visualisations



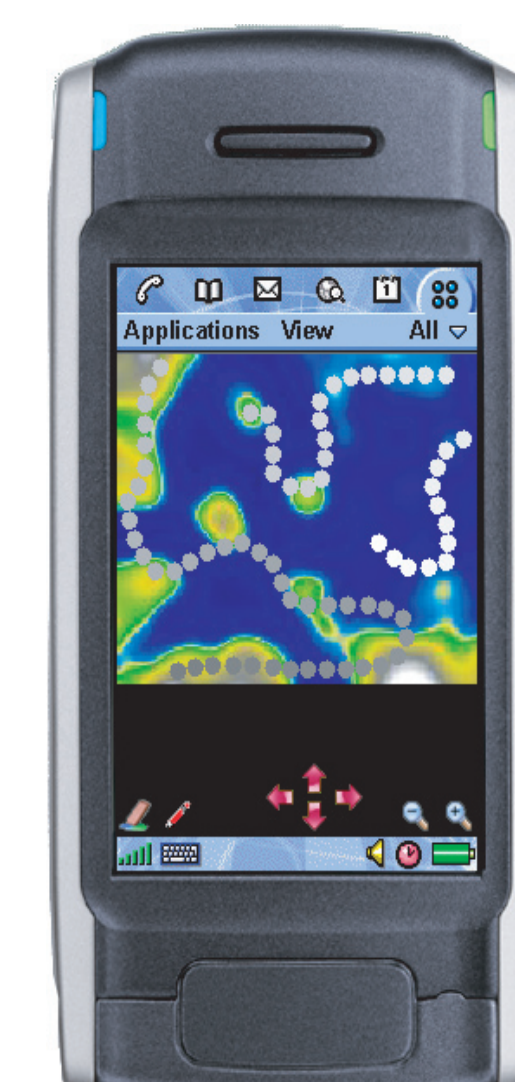
Music Maps on Different Platforms



The PlaySOM application showing a music map with a trajectory



PlaySOM on a TabletPC

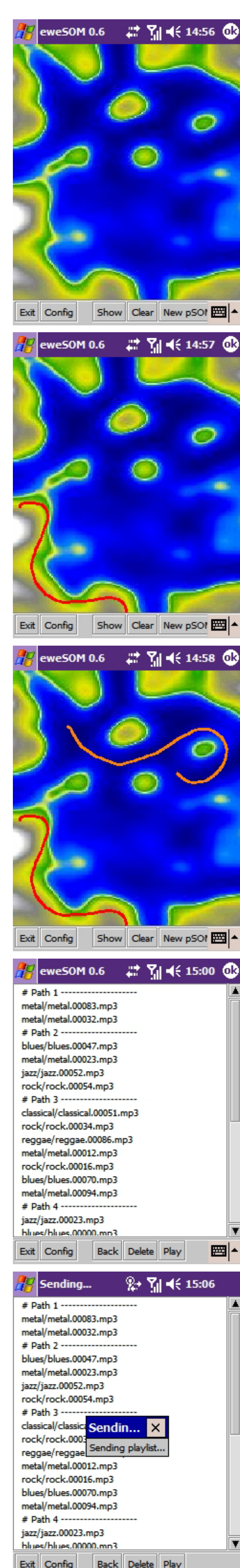


PocketSOM on Sony Ericsson



PocketSOM on iPAQ

Interaction Methods



After startup, the music map is shown...

... where a path can be drawn using the touch-screen.

Selecting songs along the path, PocketSOM creates a playlist ...

... which can be edited manually and ...

... finally played locally or sent to a remote audio player.

Accessing Large Collections



PocketSOM on BenQ P50



PocketSOM on Nokia 7710

sending the playlist 

loading map data 

streaming music

Selected Features

Remote Control allows to send the created playlist with PocketSOM directly to a player located on a remote device.

Streaming is a simple way to bypass local storage limitations by streaming music from a remote server. The map data can be loaded from a remote server.

Zooming helps to get a more detailed view on the music map on small displays, and a more precise selection of music is possible

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