Interactive Music Science Collaborative Activities
Team Teaching for STEAM Education

Deliverable 5.14
Final Pen-enabled canvas for music and audio co-creation and interaction

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Executive Summary

This deliverable reports on the new features integrated into the final implementation of the pen-enabled canvas for music and audio co-creation and interaction (DrAwME).

New features includes:
- Connection to the workbench metronome
- Possibility to create longer drawings
- Improved zoom capabilities
- Internationalization improvement
- Export to MIDI

This final version of DrAwME is available at the following URL:
https://unifri.imuscica.eu/drawme/canvas.html

This final version of the pen-enabled canvas for music co-creation can also be accessed on the workbench at http://workbench.imuscica.eu under the left icon of the Music section.
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### LIST OF ABBREVIATIONS

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<td>DrAwME</td>
<td>Drawing cAnvas for Music crEation</td>
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1. Introduction

In this deliverable we will describe the updates performed in the tool since D5.9 (Intermediate Pen-enabled canvas for music and audio co-creation and interaction). This final version of DrAwME is available at the following URL: https://unifri.imuscica.eu/drawme/canvas.html

2. Installation and technical requirements

UniFri DrAwME is based on JavaScript and runs on any modern browser (Chrome, Firefox, Edge) and operating system (Windows, GNU/Linux, macOS). This tool is intended to be included in the iMuSciCA workbench as an iframe using the following code:

```html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>UniFri DrAwME</title>
  </head>
  <body style="margin:0px;padding:0px;overflow:hidden">
    <!-- DrAwME iframe -->
    <iframe id="drawme-iframe" src="https://unifri.imuscica.eu/drawme/canvas.html" frameborder="0" height="100%" width="100%"></iframe>
  </body>
</html>
```

The tool adapts itself to the size of the container iframe, although a minimum iframe size of 650x400 is required.

3. Description of new features

Changes in this version:

- Connection to the workbench metronome: DrAwME now adapts to changes of the time signature and resolution. It is also sync on the metronome pulse to start as the same time as any other running tool.
- Possibility to create longer drawings: the drawing canvas has been extended and its length can be configured in the settings.
- Improved zoom capabilities: the zoom function has been redesigned to allow the user to change the frequency scale as well as the number of time bars displayed.
- Internationalization improvement: the internationalization has been reimplemented and new languages have been added (spanish, etc.).
- Export to MIDI: drawn music can now be exported and downloaded as a MIDI file.