



**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.

Version Log			
Date	Version No.	Author	Change
02-05-2019	0.1	Max (ATHENA)	Initial content (skeleton)
07-05-2019	0.2	Marcus Liwicki (UNIFRI)	First completion of content
09-05-2019	0.3	Manuel Bouillon (UNIFRI)	Final content
21-06-2019	1.0	Vassilis Katsouros (ATHENA)	Submit to EU

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## LIST OF ABBREVIATIONS

Abbreviation	Description
DrAwME	Drawing cAnvas for Music crEation
ATHENA	ATHENA RESEARCH AND INNOVATION CENTER IN INFORMATION COMMUNICATION & KNOWLEDGE TECHNOLOGIES
UCLL	UC LIMBURG
EA	ELLINOGERMANIKI AGOGI SCHOLI PANAGEA SAVVA AE
IRCAM	INSTITUT DE RECHERCHE ET DE COORDINATION ACOUSTIQUE MUSIQUE
LEOPOLY	3D FOR ALL SZAMITASTECHNIKAI FEJLESZTO KFT
CABRI	Cabrilog SAS
WIRIS	MATHS FOR MORE SL
UNIFRI	UNIVERSITE DE FRIBOURG

# 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:

```
<!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 at 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.