Plan Overview

A Data Management Plan created using DMPonline

Title: The Digital Performance Score: Hardware interfaces for elastic timelines

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Funder: Science Europe

Template: Science Europe Template

Project abstract:

Designing Human-Machine interactions for live performance can require representation and control of events through time.
Several theoretical models have been developed to that effect over the years: some are implemented in software of various
complexity. When it comes to hardware however, time is mostly understood as linear, unique and regular. This is notably the
case for systems using one of the most prevalent physical interface to edit and play sequences, the button grid, with its rich
history, from early drum machines to the ubiquitous Digital Audio Workstation controllers of today. This research, drawing
from both fields of interactive media notation and New Interfaces for Musical Expression, will explore non-linear temporal models and propose an implementation of common physical interfaces and interactions better suited to these models. A prime candidate for this exploration are the interactive scores as implemented in the software ossia score, where branching
timelines can be drawn to execute media sequences and their processing interactively, in parallel scenarios of variable speed
and duration. The open-ended scheduling ossia score enables necessitates the elaboration of a divergent approach to translate to a hardware interface for musical expression. Which computing challenges would such a translation entail? This
inquiry would first have to establish the minimal essential requirement in score’s graphical user interface, and in its temporal
model.

ID: 213960

Start date: 01-09-2024

End date: 01-09-2028

Last modified: 02-11-2026

Grant number / URL: EPSPG/2024/1176

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The Digital Performance Score: Hardware interfaces for elastic timelines

Data description and collection or re-use of existing data

How will new data be collected or produced and/or how will existing data be re-used?

This research will produce documentation and source code.
It my also collect user feedback in the form of interviews or survey answers.

What data (for example the kinds, formats, and volumes) will be collected or produced?

- Code
- Configuration files
- Code documentation
- User documentation
- User feedback

Documentation and data quality

What metadata and documentation (for example the methodology of data collection and way of organising data) will accompany data?

User experience metrics will be detailed and publicly available.

What data quality control measures will be used?

We will rely on user experience metrics devised by Raphael Marczack, witch enables us to record interactions of the user with the system. Quality control would apply to this interaction recording software, witch will be thoroughly tested.

Storage and backup during the research process

How will data and metadata be stored and backed up during the research process?

Code and documentation will be stored on git platforms (codeberg.org and self hosted git server).
User feedback may be collected thrrough Nextcloud forms (through the non profit aquilenet.fr and a self hosted server)

How will data security and protection of sensitive data be taken care of during the research?

User feedback will be fully anonymised.

Legal and ethical requirements, codes of conduct

If personal data are processed, how will compliance with legislation on personal data and on data security be ensured?

We will be relying on the security features of Nextcloud's Form feature.
The ethics board will be consulted to ensure that these measures are sufficient.

How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?

All code is published under open source licences (GPL and LGPL).

How will possible ethical issues be taken into account, and codes of conduct followed?

All public facing interactions with our entreprise partner (ossia.io) falls under the Berlin code of conduct.
This research will follow the same code of conduct.
We will seek Ethics clearance and refer to the Helsinky declaration for guidance.

Data sharing and long-term preservation

How and when will data be shared? Are there possible restrictions to data sharing or embargo reasons?

No restrictions or embargo can be foreseen.

How will data for preservation be selected, and where will data be preserved long-term (for example a data repository or archive)?

Both Git and Nextcloud plateforms are intended for long term preservation.

What methods or software tools will be needed to access and use the data?

- Documentation will be available both in markdown format and online
- Code will be available online
- Survey results will also be available online

How will the application of a unique and persistent identifier (such as a Digital Object Identifier (DOI)) to each data set be ensured?

Through the zenodo platform, both documentation, code and survey results will be made available.

Data management responsibilities and resources

Who (for example role, position, and institution) will be responsible for data management (i.e. the data steward)?

Thibaud Keller

What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

We will dedicated a portion of the research time to ensure the data is FAIR.

This time will most likely be allocated after the main objective of the research have been reached

Planned Research Outputs

Software - "BuGUI code repository"

Git platform containing all code, documentation and drafts for this research.

https://codeberg.org/bugui

Conference paper - "BuGUI: A Widget System for Button Grid Controllers"

BuGUI is a library intended to facilitate user interface design on creative hardware, especially button grid controllers. Our approach is to consider these devices as very low resolution touch screens, with some additional controls potentially (buttons, encoders, actual screens). To that effect, the library is structured as a simplistic yet general-purpose UI system.

This effort to keep our implementation generic makes it easily extensible and eventually capable of covering a wider range of both hardware interfaces and software use cases.

This paper details our current, early-stage development, on which we base a plugin for the ossia score software sequencer. As we aim to provide a full-featured hardware interface for score, this plugin also offers BuGUI an extensive case study.

Planned research output details

Title	DOI	Type	Release date	Access level	Repository(ies)	File size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
BuGUI code repository		Software	2024-11-01	Open	None specified		None specified	None specified	No	No
BuGUI: A Widget System for Button Grid Controllers		Conference paper	2025-06-03	Open	None specified		Creative Commons Attribution 4.0 International	None specified	No	No