

A Toolkit for Creating Audio Games: Balancing Ease of Use and Power of Features

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Audio Games

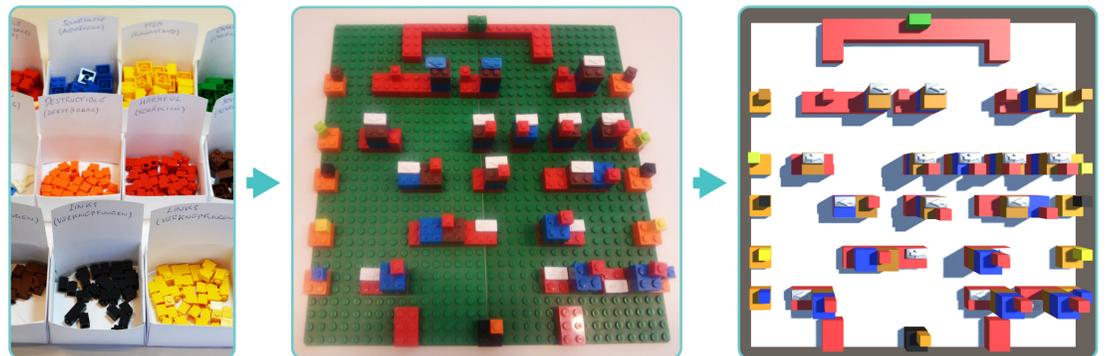
Audio games are computer games without visual output, which can be played purely by auditive feedback. There is a strong audio games community in which audio gamers not only discuss and rate audio games, but also exchange audio game design ideas. Since the mainstream gaming market does not show interest in creating audio games, the community members themselves have to create their own audio games. However, there are only few members inside the community that have the necessary know-how or tools available to create these kind of games. Some of them lack audio game design experience, others do not have the necessary coding knowledge or no access to tools that enable them to build their own games.

On those grounds, we want to support the (often visually impaired) designers and developers with a toolkit that empowers them to create their own and better audio games. This toolkit is currently in development (audicom.at), and we will release it at a later point in 2019 under an open-source license.



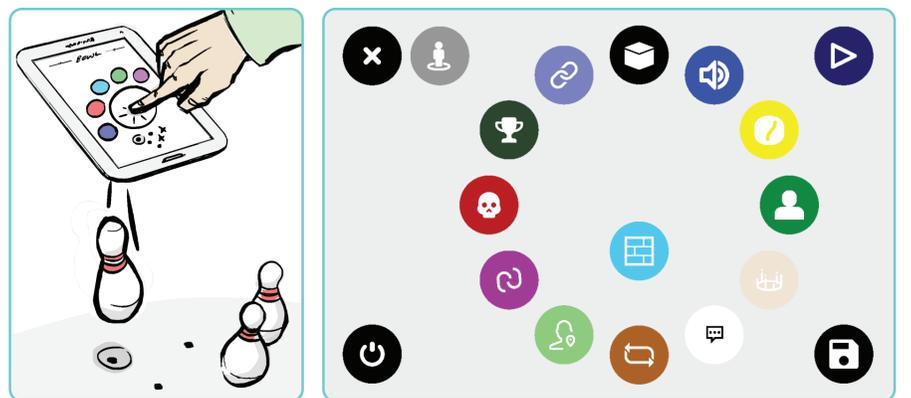
From TAGDK to OAGE

To the workshop, we will bring the experiences we made along the way while developing the toolkit. In more detail, we conducted 14 in-depth interviews with key members of the biggest online audio game community (audiogames.net) and constructed a grounded theory based on how they described their community and gaming experiences. Moreover, we created an initial toolkit prototype, the Tangible Audio Game Development Kit (TAGDK), which we presented at the TEI'17 conference [1].

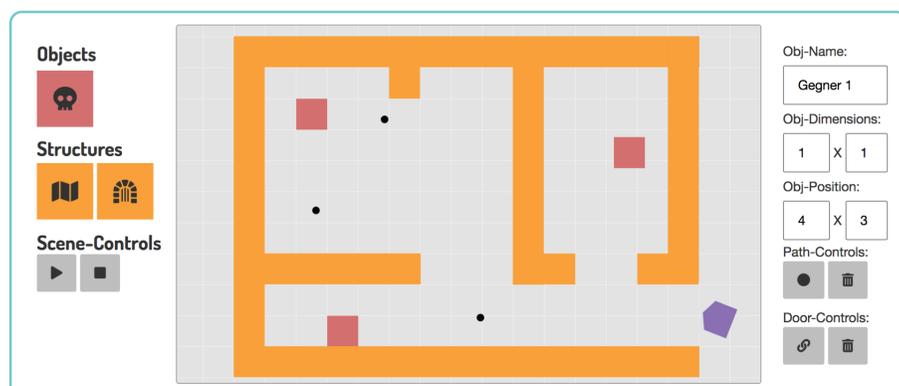


TAGDK-Workflow

TAGDK was a first step in exploring the design space of creating audio games and supported our understanding of the challenges in designing audio games. The underlying idea of TAGDK was to use LEGO or similar construction blocks to represent the basic elements found in audio games (e.g., sound sources, obstacles, ...). These elements could then be used to assemble audio games in an intuitive fashion. This first version of the toolkit was designed as device to trigger fruitful discussions among audio gamers and designers. Hence, during the workshop, we would like to share the resulting insights and also the second toolkit concept (Online Audio Game Editor - OAGE) that we conceived [2]. Most importantly, we strengthened the role of the community in this new concept.



The 2nd iteration of the toolkit



AudiCom

It soon became clear that we needed further funding to develop this version of the toolkit and so we applied for a research grant, which we received at the end of 2018. We are currently working on this toolkit or online audio game editor: audicom.at

Beyond providing a toolkit for creating audio games, we also seek to build a community around this editor, allowing us to study how people design audio games.

Throughout our research process, one of the most important question has always centered around the right balance between the number of supported features and the ease of use:

"How can we make a toolkit that is simple enough to be given to people with little experience in design, but at the same time offer experienced designers pro-features for advanced audio game development?"

We would be glad to share the experiences we made while attempting to answer this question, including the strengths and weaknesses of our research/design process and of the toolkit itself. Furthermore, we are looking forward to see and discuss other toolkits and the stories of fellow researchers.

[1] Michael Urbanek and Florian Güldenpfennig. 2017. Tangible Audio Game Development Kit: Prototyping Audio Games with a Tangible Editor. In *Proceedings of the Eleventh International Conference on Tangible, Embedded, and Embodied Interaction (TEI '17)*. ACM, New York, NY, USA, 473–479.

[2] Michael Urbanek, Florian Güldenpfennig, and Manuel T. Schrempf. 2018. Building a Community of Audio Game Designers - Towards an Online Audio Game Editor. In *Proceedings of the 2018 ACM Conference Companion Publication on Designing Interactive Systems (DIS '18 Companion)*. ACM, New York, NY, USA, 171–175.