Explanation of a pipe organ with AR

Description
For its upcoming permanent exhibition of musical instruments the Deutsches Museum will display a see-through model of a pipe organ to show the functionality of such an instrument.

This project looks into ways of enhancing the visitor experience by using AR for explaining how the organ works inside. The challenge will be not to just overlay the real object with digital images and animations but to also let the physical model occlude the AR assets, so that they appear to be within the structure. A stable positional tracking of the AR-device and a good knowledge of the physical object’s geometry is needed to keep that impression. A CAD-model of the pipe organ can be provided.

The output of this project will be a functional prototype to serve as a proof of concept for this specific scenario and as a showcase for other potential AR-projects within the museum. This project will not have to deal with the actual implementation into an overlaying AR-distribution-concept but the outlook to such a task can be given in the research part of the thesis.

Tasks
• Research best practice examples
• Work out concept in cooperation with the curator team
• Create AR-application in an iterative process
• Evaluate outcome in view of future implementations in a museums exhibition

Requirements
• Good Experience with Unity
• Interest in AR
• Creative problem solving
• Interest in working in a museum environment