MAX-R Demo: Digital Location

Jonas Trottnow
https://animationsinstitut.de/en/studies/lecturers/jonas-trottnow
Simon Spielmann
https://animationsinstitut.de/en/simon-spielmann
Volker Helzle
https://animationsinstitut.de/en/studies/lecturers/prof-volker-helzle
Alexandru-Sebastian Tufis-Schwartz
https://www.linkedin.com/in/alexandru-sebastian-tufis-schwartz-019457131/

Research & Development department at
Animationsinstitut of Filmakademie Baden-Württemberg

Digital Locations are representations of potential film locations existing in reality. They are digital twins created through 3D scanning or similar approaches. Currently most potential film locations are offered to location scouts as images and textual descriptions. This often makes it difficult to decide for a location and plan a production at the location. Usually travelling to the location is needed to define places for equipment (e.g. trucks & generators), plan shots (e.g. perspectives, lighting etc.) making the process of location scouting tedious, time consuming and in some cases CO2 emissive. With digital locations this can be simplified as many of the decisions and plans can be laid out utilising the digital twin of the location, given that software tools offer intuitive and feature rich possibilities to work with it. The technology developed within Max-R offers great potential to enhance this. In addition this approach offers improved sustainability supporting the Green Deal by minimising the need for travel.

Within the Max-R project TRACER has been extended to meet the requirements of a Digital Location pipeline. TRACER is a software agnostic communication infrastructure and toolset for plugging open-source tools into a production pipeline, establishing interoperability between open source and proprietary tools, targeting real-time collaboration and XR productions, with an operational layer for exchanging data objects and updates, synchronization of scene updates of different client applications (Blender, UE, Unity, VPET ...). VPET, an exemplary implementation of an XR tool using TRACER foundation as base, has been advanced for Digital Locations. VPET is a tablet-based, collaborative tool that allow real-time on-set light, asset and animation editing via an intuitive interface. It provides functionality to edit assets and synchronize changes between different VPET or TRACER clients. The requirements and possibilities for Digital Locations have been developed together with the Film Commission Stuttgart, a local authority maintaining locations in Baden-Württemberg (Germany) and the film company Third Picture.

Figure 1: Digital Location demo website with embedded wgpuEngine viewer and QR code for VPET

Within the Digital Location demo a 3D digital location can be displayed

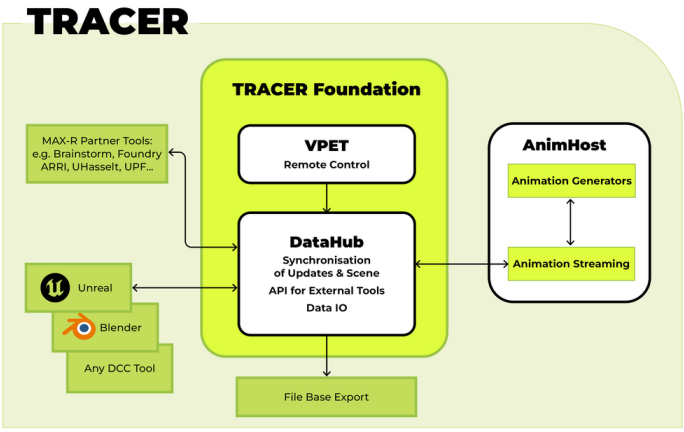

Figure 2: Overview of TRACER

interactively in a browser using wgpuEngine developed by UPF within Max-R. Camera perspectives can be changed and the location can be virtually inspected directly on a website. The scene can then be loaded directly from the website into VPET by scanning a QR code. The scene can then be explored and edited in AR on a tablet. DataHub, being part of TRACER, synchronises VPET clients working on the same Digital Location simultaneously. Editable assets can be additional set elements, props and production equipment or moveable objects on location. This makes it possible for location scouts, producers, the set dressing department, production designers, grip, ... to plan scenes, set builds and logistics remotely with the intuitive tablet based interface VPET offers, without the requirement of knowing how to operate 3D software. Lighting department and directors of photography (DoP) can plan lighting setups as well as camera placements and movements digitally with the actual location.

All components can be obtained from our GitHub repositories[1]. TRACER

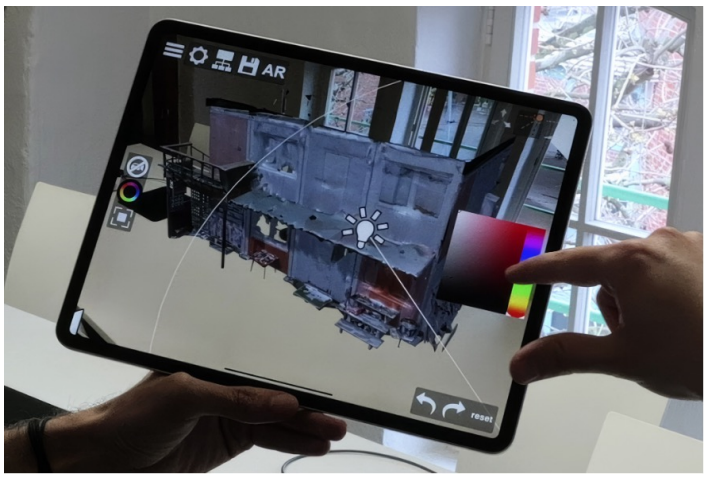

Figure 3: VPET with digital location in AR

is developed within the Max-R project which received funding from the European Union's Horizon Europe Research and Innovation Programme under Grant Agreement No 101070072.

[1] https://github.com/FilmakademieRnd