CHARITY
Cloud for Holography and Augmented Reality

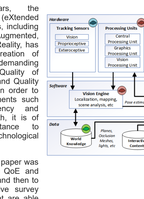
Next-generation immersive services including advanced AR, VR and Holography-based applications have been referred to as killer applications for Beyond-5G and 6G networks. They represent one of the most demanding class of services with very high requirements not only for the network itself but also from an architectural perspective and regarding quality of experience (QoE). Considering different immersive service categories, including Real-time Holographic Applications, Immersive Virtual Training and Mixed Reality Interactive Applications, the huge technological challenge is apparent. In order to tackle this challenge, Horizon 2020 project CHARITY focuses on understanding how an intelligent and autonomous framework spanning across the edge/cloud continuum of the network can facilitate the deployment and orchestration needs of such services.

NEW PAPERS RELEASED

Strong efforts have been made by CHARITY project partners on publishing research papers through open access platforms. The CHARITY website has a section where papers produced by project partners are available for download. Below we highlight some of the most recent ones.

Cloud-based XR Services

The latest joint publication by CHARITY partners is entitled "Cloud-based XR Services: A Survey on Relevant Challenges and Enabling Technologies", published in the Journal of Networking and Networking Applications (J-NaNA). Below, we provide a brief summary of the publication; more details are available in the Papers & Conferences section of our project website.



Extract of Paper: Fig. 12. ETSI Augmented Reality Framework (ARF), adapted from [62].

Link: Cloud-based XR Services: A Survey on Relevant Challenges and Enabling Technologies.

Deterministic Latency

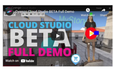
Recently, Tarik Taleb, from ICT-FI, also published in IEEE Transactions on Network and Service Management (IEEE TNSM) journal a publication entitled "Deterministic Latency/Jitter-aware Service Function Chaining over Beyond 5G Edge Fabric". As a summery, in this paper, the authors studied the deterministic SFC lifetime management problem in beyond 5G edge fabric with the objective of maximizing the overall profits and ensuring the deterministic latency and jitter of SFC requests. First, the authors formulated this problem as a mathematical model with the maximal profits for ISP. Then, the novel Deterministic SFC Deployment algorithm (Det-SFCD) and SFC Adjustment algorithm (Det-SFCA) due to traffic load variation were proposed to efficiently solve the SFC lifetime management problem. Extensive simulation results show that the algorithms proposed by the authors can achieve better performance in terms of SFC request acceptance rates, overall profits and latency variation compared with the benchmark algorithm.

Link: Deterministic Latency/Jitter-aware Service Function Chaining over Beyond 5G Edge Fabric.

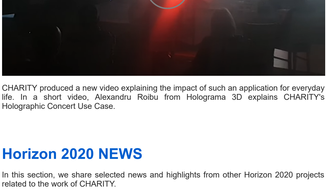
WEBSITE - DIVING DEEPER INTO EACH USE CASE

An enhanced use case page overview was designed to provide additional visibility over the different use cases that are part of CHARITY. For each one, an additional page explains their concepts, the role within the CHARITY project, and links to related relevant news improving the awareness of the distinct use cases tackled in CHARITY.

Here an appetizer: VR Tour creator Use Case



NEW PROJECT VIDEO



CHARITY produced a new video explaining the impact of such an application for everyday life. In a short video, Alexandru Roibu from Holograma 3D explains CHARITY's Holographic Concert Use Case.

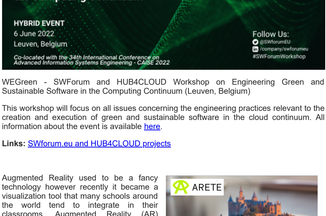
Horizon 2020 NEWS

In this section, we share selected news and highlights from other Horizon 2020 projects related to the work of CHARITY.

Upcoming release of the second version of the ACCORDION project.

ACCORDION has started his 3rd year this January. Currently, most of the work is focusing on the preparation for the release of the result of the 2nd cycle of development regarding the three main technical layers: (i) the **Management Framework**, that contains those methodologies and procedures to assist application developers; (ii) the **Hybrid Edge/Cloud Orchestrator** where the decision about global application placement and orchestration takes place; (iii) **Edge Minicloud** that manages the pool of available edge resources via a series of dedicated services.

Link: ACCORDION Project.

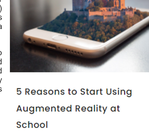


WEGreen - SWForum and HUB4CLOUD Workshop on Engineering Green and Sustainable Software in the Computing Continuum (Leuven, Belgium)

This workshop will focus on all issues concerning the engineering practices relevant to the creation and execution of green and sustainable software in the cloud continuum. All information about the event is available here.

Links: SWforum.eu and HUB4CLOUD projects

Augmented Reality used to be a fancy technology however recently it became a visualization tool that many schools around the world tend to integrate in their classrooms. Augmented Reality (AR) Training adds interactive, digital elements to a live, real-world environment through a tablet, phone, or headset.



The technology makes it possible to visualize abstract learning concepts and bring new ideas in the teaching and learning experiences. There are many reasons why Augmented Reality gains its popularity.

Read here the full text.

Link: ARETE Project

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