University of BRISTOL

Showcasing the use of the 5G technology for transforming Visitor Economy in the West of England

Creating 5G regional testbed connecting Bristol and Bath

Showcasing significant research on 5G from the University of Bristol Smart Internet Lab

5G Smart Tourism Project
5GUK Testbeds and Trials Programme Phase 1

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About

The Tourism Industry in the West of England is worth £1.75 billion to the region's annual economy. The 5G Smart Tourism project is funded by the UK Government's Department for Digital, Culture, Media and Sport (DCMS) will connect leading West of England tourist destinations such as The Roman Baths, M-Shed and We The Curious to new 5G technology via the University of Bristol's 5GUK Test Networks, a UK national asset. This project focuses on the intersection between infrastructure, mobile services, tourism and digital applications. To expedite the roll-out of 5G services in the UK, this project will enhance the value chain through 5G enabled tourism applications and diversify the revenue stream for popular tourist destinations. Through this unique and representative multi-technology 5G platform, the project will promote the creative digital industries in the UK and thus will generate benefits across the entire visitor economy value chain.

The project consortium

Lead by the West of England Combined Authority (WECA) (our geographical regional governing body), this £8 million project brings together a total of 25 partners. These are: West of England Combined Authority, University of Bristol Smart Internet Lab, CCS Ltd, BT, Grand Appeal, Mo-Sys, Mativision, Smartify, BBC, Zeeta Networks, Destination Bristol, Digital Catapult,

VR Lab, Interdigital, Bristol is Open, Bristol Futures Global, Roman Baths, 3Sixty, Landmark, IBI, Mshed, Bristol City Council, Aardman, Bath & North East Somerset Council and Business West.

Our project contribution

The University of Bristol Smart Internet Lab contributes extensive knowledge and expertise in 5G network design. The 5G Smart Tourism project will utilise the University of Bristol's 5GUK Test Networks, which includes 3GPP 4G, 5G New Radio, non-3GPP mmWave and Wi-Fi radio access technologies, as well as, key 5G core network elements such as Mobile Edge Computing, Network Function Virtualisation and Network Slicing. This important UK National asset provides access to radio spectrum at 2.6GHz, 3.5GHz, 26GHz and 60GHz.

Use-cases

The project delivers five unique use-cases showcasing two primary 5G KPIs; Enhanced Mobile Broadband (eMBB) and Ultra-Reliable Low Latency Communication (URLLC) through innovative augmented, virtual and mixed reality applications.

For example; to showcase the capabilities of 5G technology, the 5G Smart Tourism project has partnered with the BBC and the historic Roman Baths to enhance visitor experience via a next generation augmented reality application. This unique demonstration will test eMBB and URLLC 5G metrics through high bandwidth and low latency network requirements inside a national heritage location.

This use-case will be delivered in two parts: (1) Location dependent pre-rendered 360-degree video will be streamed to 20 handsets simultaneously from a local compute platform. (2) Video will be remotely rendered in the local MEC platform from a 3D animated model using orientation/interaction data from the user.

Smart Internet Lab

The Smart Internet Lab at the University of Bristol has been recognised as the top Higher Education Institution within the UK as a concentrated 5G hub of estabilised collaborative relationships between national and international institutions, authorities and industry.

5GUK Test Networks

5GUK Test Networks is an exciting new 5G Hub partnership linking three leading UK universities' test beds which collectively delivered the world's first end-to-end 5G systems trials. This initiative was funded by the UK Government's Department of Digital, Culture, Media and Sport (DCMS) '5GUK Testbeds and Trials Programme' in an effort to create a world-class 5G technology Test Network that places Britain at the forefront of the next wave of mobile technology, adding up to £173 billion to the economy by 2030.

Leverage key regional expertise on communications and networks research and Bristol's digital creativity

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