



5G-encode

The 5G-ENCODE project
ENabling **CO**nnectivity for **D**igital **E**ngineering



5G-ENCODE Project Overview

- £9m Project funded partly by DCMS' "Industrial 5G Testbeds and Trial: Manufacturing and Logistics" Programme
- Aims to develop **clear business cases and value propositions for 5G application** in manufacturing industry
- Also to deliver a private 5G Testbed within the National Composites Centre (NCC)
 - New business models
 - New 5G technologies: Network slicing and splicing
- Three manufacturing use cases:
 - AR/VR to support design, manufacturing and training
 - Monitoring and tracking of time sensitive assets
 - Wireless real-time in-process monitoring and analytics
- Lead Partner: **Zeetta Networks**



Department for
Digital, Culture,
Media & Sport



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Project Partners



Role of Each Partner

Partner	Category	Role
Zeetta Networks	SME	Project leader and technology provider (NetOS® SDN Controller and Orchestrator, NetOS Rapide deployable network, Multi-domain Orchestrator (MDO))
Cytec+ Solvay	Large enterprise	Work closely with NCC of asset tracking and providing composite materials as a contribution to the project
Plataine	Small SME	Provision of IOT software licenses and consultancy (in-kind support). No funding requested
Telefonica	Telco	Assist with spectrum T&D licenses and join the neutral hosted solution when deployed by the project. Also assist in network design and evaluate technology vendors.
Toshiba	Large enterprise	Technology provider: Provide very-low latency private 4G/5G system using programmable hardware and COTS devices. The 4.5G system is available immediately, 5G NR early in 2020.
Mativision	Small SME	Bring proven real-time AR/VR technology from past 5G test bed programmes (Smart Tourism) to meet the needs of the industrial use cases
NCC	RTO	Demonstration factory facility, providing all data and infrastructure for the test bed. Leader of WP2 to coordinate the industrial use cases and install, setup and run any equipment required
University of Bristol	University	Advise and assist in the network design architecture and manage the testbed during the project. Also integration with Millennium Square 5G testbed and dissemination of results
Siemens	Large enterprise	Provision of PLM, IOT and Analytics software licenses and consultancy (in-kind support). No funding requested

Zeetta's Technology and Products

Zeetta leads the development of 5G programmable networks with **NetOS®**

NetOS is a patent-protected SDN controller and network orchestration platform that provides multi-vendor, multi-technology network visibility, optimisation and automation

Zeetta's **Visualise**, **Optimise** and **Automate** products are based on NetOS

 **Visualise**

 **Optimise**

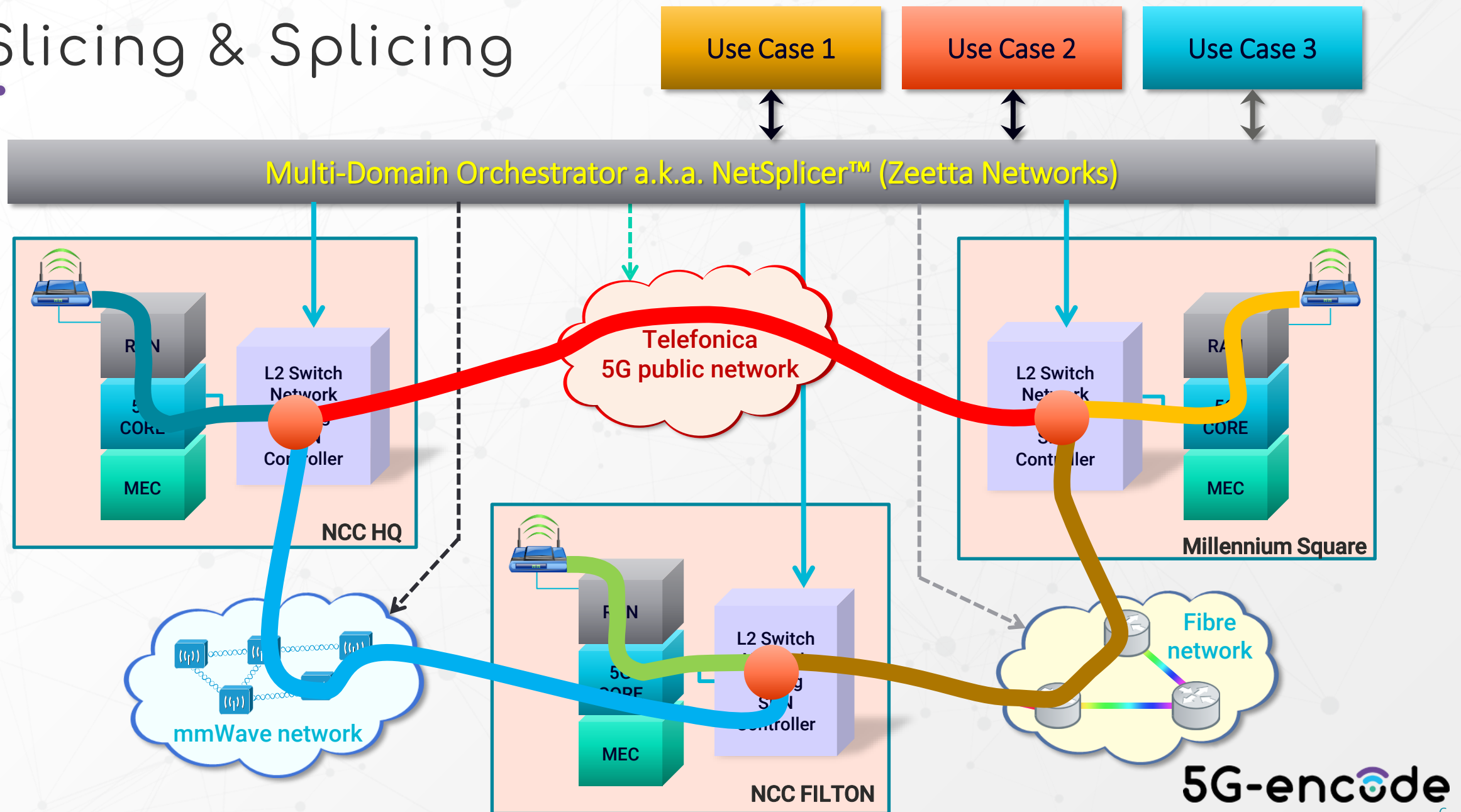
 **Automate**

Powered by **NetOS®**



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Slicing & Splicing

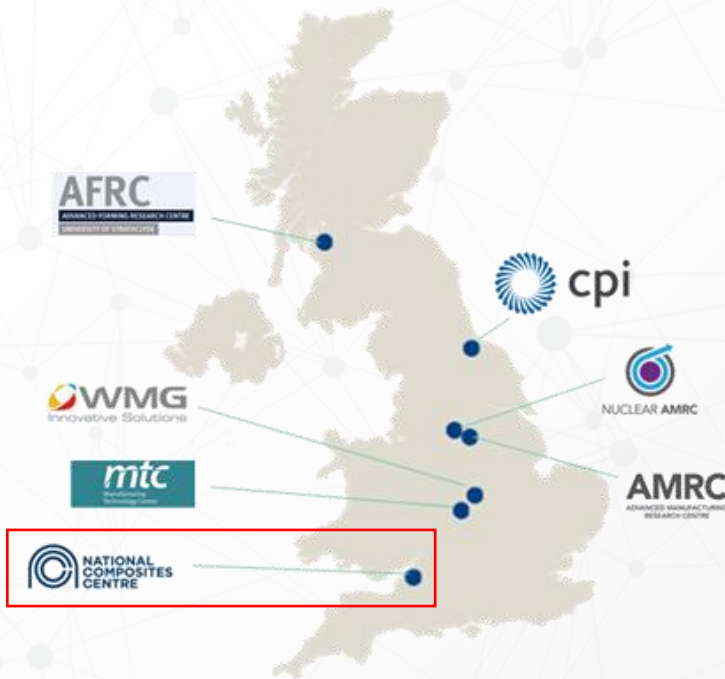


The National Composites Centre

CATAPULT
High Value Manufacturing



A Composite Manufacturing, Digital and Sustainability
National Innovation centre and Test Bed for Industry



7 centres, 27 technologies, £700m assets



2011
officially opened



£200m
invested in
capabilities



£36.7m
of the £200m
invested in 10
new capabilities



10
tailor-made,
world-leading
technologies



21,500m²
facility at NCC HQ



350
composites
engineers



150
engineers
at ACCIS



2
locations, NCC HQ
and NCC Filton



Over 40
members + **8**
major sectors
supported



60+
university
partners



725
organisations
engaged



46%
of those are
SMEs

5G-encode

5G-ENCODE Project – Use Cases

In-factory and in-transit asset tracking



Business Objective: Improve productivity and reduce costs by providing accurate and live location and condition information of tracked assets

TARGET: 5% productivity improvement (£0.9m/annum)

Virtual 360 video training



Business Objective: Improve efficiency and trainee satisfaction of in-house training using immersive and interactive VR 360° platform over a 5G mobile network

TARGET: 20% costs reduction (£1.0m/annum)

Closed loop manufacturing in Liquid Resin Infusion (LRI)



Business Objective: Improve efficiency and productivity in LRI composite manufacturing using 5G and digital technologies

TARGET: 40% better yield (£1.5m/annum)

5G

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Where are we now?

- 5G-ENCODE switches on the first phase of its network at the National Composites Centre.
- This will test existing technologies (Wi-Fi & 4G) and provide a baseline against which the 5G network capabilities will be compared
- Demo in Jan.2021 of Asset Tracking (in-factory) and VR training with the University of Bristol
- Opportunity to engage new partners to run their own applications on the LTE/5G testbed
 - £1 million budget available
 - Up to 60% contribution from DCMS



Contact Us

If you have any further queries regarding the 5G-ENCODE Project, please get in touch.



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