

Catapult Brings Hybrid Satellite Connectivity to 5G Network Trials in Rural Dorset

Enhanced connectivity for rural areas

Our everyday lives rely on being connected to the internet, whether to pay for something by card, video calling a friend or relative, or to keep on top of our emails. According to [Ofcom](#), 91% of the UK can get reliable 4G from at least one operator but according to an [ITV news article](#) last year 8 out of 10 areas still struggled with inconsistent connectivity to the detriment of residents and businesses. A UK government commitment to improve coverage to 95% by 2022 is being supported by the Department for Digital, Culture, Media and Sport (DCMS) with various initiatives in place to increase rollout and develop research into new network requirements.

The Satellite Applications Catapult, a technology and innovation company working with businesses to exploit space and satellite capabilities, is bringing expertise in developing 5G networks and experience in creating hybrid communications solutions to the 5G RuralDorset project, which is part-funded (£4.5m) by DCMS and led by Dorset Council. The project is demonstrating the requirement for enhanced connectivity in rural areas through 4 main research areas across various sites in the county, and the Catapult is working on demonstrating the opportunities enhanced connectivity can offer, such as improved coastal safety and increased farming productivity.



The Catapult's aim for services and applications relying on connectivity is that the user or device will not know, or even need to care, which network they are connected to. With experience in developing hybrid solutions allowing devices to connect to the best network at the time, taking into consideration factors such as signal strength and network capabilities, the Catapult is supporting terrestrial and non-terrestrial connectivity and exploring options of shared infrastructure between network providers for improved service.

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The Catapult's main focuses on the 5G RuralDorset project are on the network that will be used for the [coastal safety trials](#) and on long-term options for rolling out enhanced connectivity with consideration to costs and impact on the local area. The 5G core at the Catapult's connectivity research and development centre in Westcott, Buckinghamshire, is being used to build this network, collaborating with other partners on integrating their infrastructure before deployment. Testing and integration of these technologies are due to begin in Westcott shortly, with deployment planned for 2021.

The team is also researching the option of [neutral hosting](#) – the sharing of infrastructure between operators – and techniques for doing this. It is considering architecture, security and business analysis amongst other things and plans to demonstrate an example of neutral hosting, intending to suggest the best way forward for deployment of future networks. This could dramatically reduce the cost of connectivity, improve the level of service across providers, and reduce the physical impact on an area developing its connectivity.

5G for future of food

In addition to the above, members of the Catapult team are also working alongside the partners leading the various 5G RuralDorset trials: its agriculture team is bringing previous experience and connections within the AgriTech innovation community to support the [future of food trials](#), ensuring applications are designed and delivered based upon clear user need and business justification; and its ubiquitous connectivity team is supporting on the technology and security aspects of other trials, bringing expertise from similar previous activity.

Kieran Arnold, Director of Ubiquitous Connectivity at the Catapult, said: "Seamless, enhanced connectivity is becoming more important than ever in our everyday lives and can unlock a multitude of possibilities to individuals and businesses across the globe. We have previously proven that hybrid connectivity is important for delivering seamless communications and throughout this project, we will continue to demonstrate the possibilities that improved connectivity can offer, from real-time coastal safety warnings and off-shore emergency response to more efficient and productive farming."

Deputy Council leader Peter Wharf remarked: "The work we are doing with Satellite Applications Catapult is crucial to the success of the project as a whole and helps to tie together the efforts of the various research areas. Examining neutral host capability will also help make cost effective, enhanced connectivity a reality and in doing so, transform the lives of those that live and work in Dorset."