



BT kicks off trials of revolutionary new optical fibre

June 1, 2021

BT announced today that it has kicked off trials of a new type of optical fibre - hollow core fibre - at the BT Labs in Adastral Park, Ipswich, in a collaborative project with Lumenicity, a Southampton University spin out company, and Open Radio Access Network (O-RAN) mobile vendor Mavenir.

BT researchers are conducting the trials at BT's research and engineering campus, using a 10-kilometre-long hollow core fibre cable provided by Lumenicity; this new type of network cable has a hollow, air filled centre that runs the entire length of the cable. It will be used to test a variety of use cases, including potential benefits for 5G networks and ultra-secure communications, like Quantum Key Distribution (QKD).

Networks across the world currently run on single-mode optical fibre, pioneered at Adastral Park, which consists of solid strands of glass. The glass in these cables quickly carries information over long distances by channelling light from laser transmitters through the glass strands. However, the nature of glass means that this light travels marginally slower inside the fibre than it would in air.

Research into hollow core fibre presents an opportunity to explore how the capabilities of optical fibre can be enhanced in future, with the potential to reduce the latency, or signal delay, caused by the light travelling through glass, by up to 50%. This new fibre has an air-filled central core, with an outer ring of glass, to guide the laser beam whilst maintaining the signal speed at very close to the ultimate speed of light.

The reduction in the delay of the light provided by hollow core fibre would enable a variety of benefits, from high-frequency trading to lowering mobile network costs. Working with Mavenir, BT has shown that using hollow core fibre can increase the distance between street antennas and the back-end processing in exchanges. Due to the low latencies, use of hollow core in the Radio Access Network (RAN) could potentially reduce mobile network costs by allowing more 5G antennas to be served from one exchange or cabinet.

Professor Andrew Lord, BT's Head of Optical Network Research, said: "We're excited to begin trialling hollow core fibre and to discover the potential opportunities and benefits of deploying this technology in certain scenarios. This new type of fibre cable could play an important role in the future of the world's communications infrastructure, heralding a step-change in capability and speed, to keep up with the demands for high-speed, low latency communications driven by 5G networks, streaming, and more."



Mike Fake, Lumenicity's Director responsible for Product Management, said: "Lumenicity is delighted to be the supplier of field deployable CoreSmart® hollowcore cable for these trials with BT. This is further evidence of the impact our unique low loss, high performing cables can have on the networks operated by our carrier partners."

John Baker, Mavenir's Senior Vice President Business Development, said: "The ability to extend the reach of fibre connected radios only further demonstrates the power of Open RAN and its Eco System. This improvement will significantly increase the number of use cases that can be served from containerised cloud based Open RAN solution."

Contacts

Mike Witts, Head of Technology Communications, BT

+44 (0)7795986120

mike.witts@bt.com

About BT

BT Group is the UK's leading telecommunications and network provider and a leading provider of global communications services and solutions, serving customers in 180 countries. Its principal activities in the UK include the provision of fixed voice, mobile, broadband and TV (including Sport) and a range of products and services over converged fixed and mobile networks to consumer, business and public sector customers. For its global customers, BT provides managed services, security and network and IT infrastructure services to support their operations all over the world. BT consists of four customer-facing units: Consumer, Enterprise, Global and its wholly-owned subsidiary, Openreach, which provides access network services to over 650 communications provider customers who sell phone, broadband and Ethernet services to homes and businesses across the UK.

For the year ended 31 March 2021, BT Group's reported revenue was £21,331m with reported profit before taxation of £1,804m.

British Telecommunications plc is a wholly-owned subsidiary of BT Group plc and encompasses virtually all businesses and assets of the BT Group. BT Group plc is listed on the London Stock Exchange.

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About Lumenicity® Limited

Lumenicity® Limited was formed in early 2017 as a spin out from the University of Southampton to commercialise breakthroughs in the development of hollowcore optical fibre. The company has built a team of industry leaders and experts to realise their goal to



be the world's premier high-performance hollowcore fibre optic cable solutions provider offering their customers reliable, deployable, low latency and high bandwidth connections that unlock new capabilities in communication networks. Lumenicity®, NANF® and Coresmart® are registered trademarks of Lumenicity Limited.

Visit their website at: www.lumenicity.com

Lumenicity® contact: hollowcore@lumenicity.com

About Mavenir

Mavenir is building the future of networks and pioneering advanced technology, focusing on the vision of a single, software-based automated network that runs on any cloud. As the industry's only end-to-end, cloud-native network software provider, Mavenir is focused on transforming the way the world connects, accelerating software network transformation for 250+ Communications Service Providers in over 120 countries, which serve more than 50% of the world's subscribers. For more information, visit www.mavenir.com