# NGA2 and G.FAST

Neil McRae

That's ingenious. BT

#### Ultrafast Broadband

- On 30th January 2015, Gavin
   Patterson announced our Ultrafast
   broadband vision
- G.fast is at the heart of that vision
- Ten-year vision of 500Mbps available across most of the UK
- Premium 1Gbps fibre broadband services for high-demand customers

DC15-035

30 January 2015

#### BT CEO sets out ultrafast broadband vision

"G.fast" to deliver speeds of up to 500Mbps to most homes
Premium fibre services of up to 1Gbps to be developed

BT CEO Gavin Patterson today set out the company's ambition to transform the UK broadband landscape from superfast to ultrafast.

He revealed that BT plans to deliver much faster broadband for homes and small businesses via a widespread deployment of "G.fast". This is an innovative technology that BT will test in two pilot locations starting this Summer.

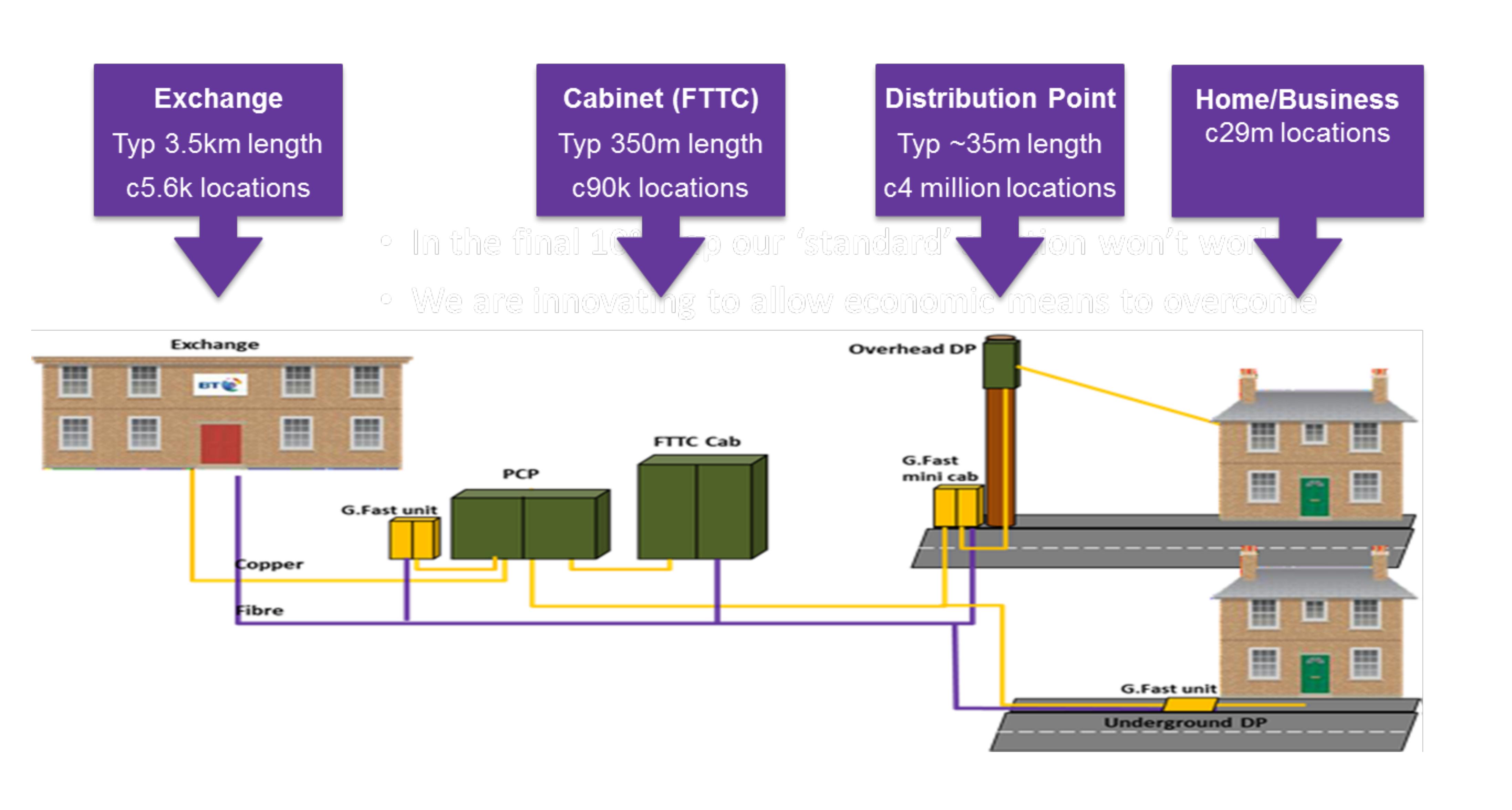
G.fast will help BT deliver ultrafast speeds of up to 500Mbps to most of the UK within a decade. Deployment will start in 2016/17, subject to the pilots being successful.

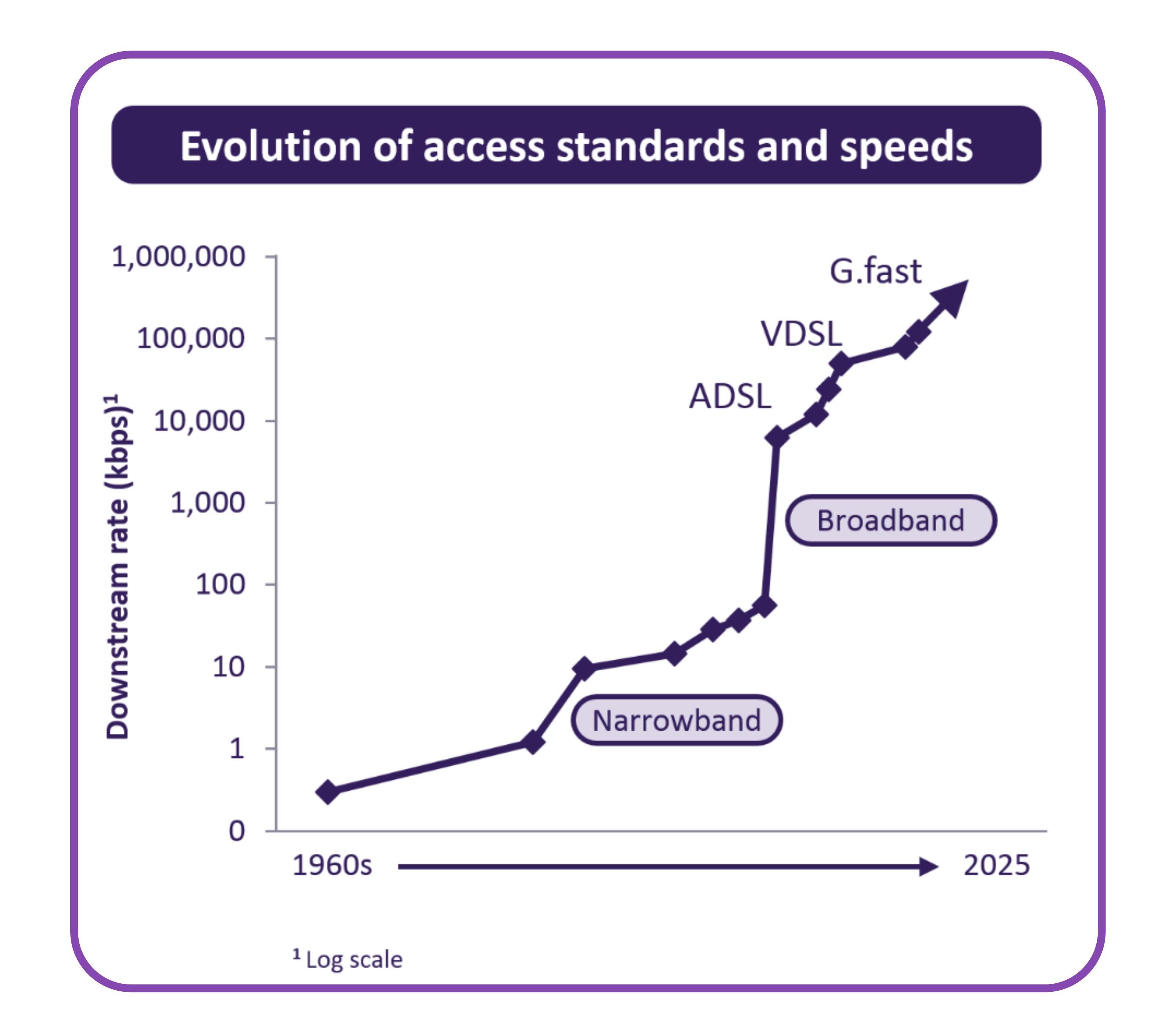
Early tests show G.fast is capable of delivering a range of speeds depending on how close the technology is to a customer's premises. BT expects to offer initial speeds of a few hundred megabits per second to millions of homes and businesses by 2020. Speeds will then increase to around 500Mbps as further industry standards are secured and new kit is developed.

"BT is a world leader when it comes to fibre innovation and we are excited about the next stage in our story," Patterson said today. "We believe G.fast is the key to unlocking ultrafast speeds and we are prepared to upgrade large parts of our network should the pilots prove successful. That upgrade will depend however on there continuing to be a stable regulatory environment that supports investment.



### Ultrafast fibre speeds





- Currently around three-quarters of UK premises have been passed with the first generation of our fibre technology, giving speeds of up to 80Mbps. BT is working with government to reach c95% of UK
- BT has been working to define international standards for a cutting-edge new technology G.fast for several years. Our lab trials have shown that it is capable of delivering ultrafast speeds of several hundred Mbps to end-users
- G.fast builds on our existing NGA investment, and can be deployed either from cabinets,
   Distribution points and points in-between depending on the network in a given area

# BT has built a purpose-built, ultrafast broadband lab at

#### Adastral Park

- We have developed a purpose-built
   G.fast lab at Adastral park to study a
   wide range of Openreach cables and
   how they perform at high frequency
- We also continue to study the full technical capabilities of G.Fast hardware designed by leading system vendors

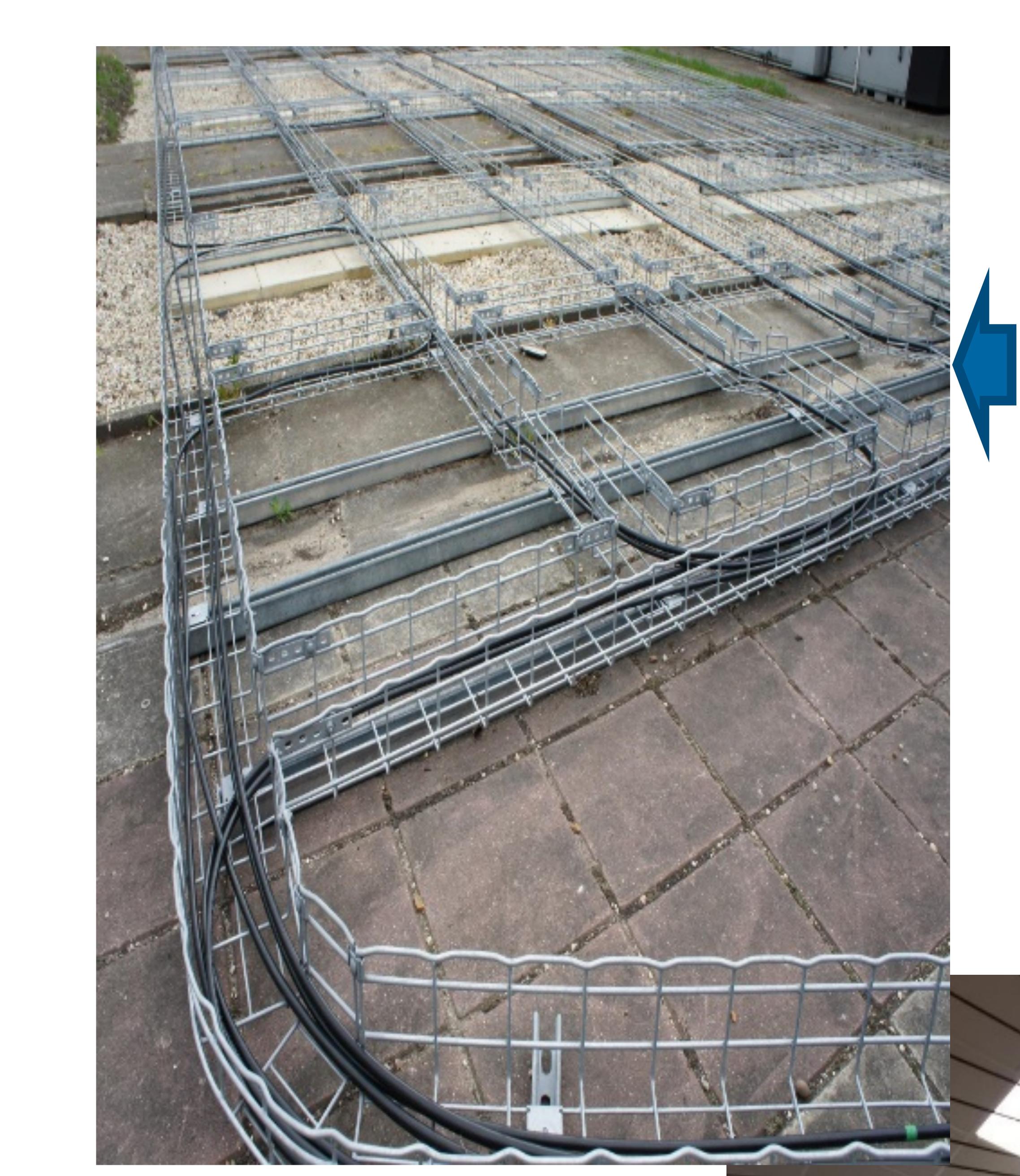












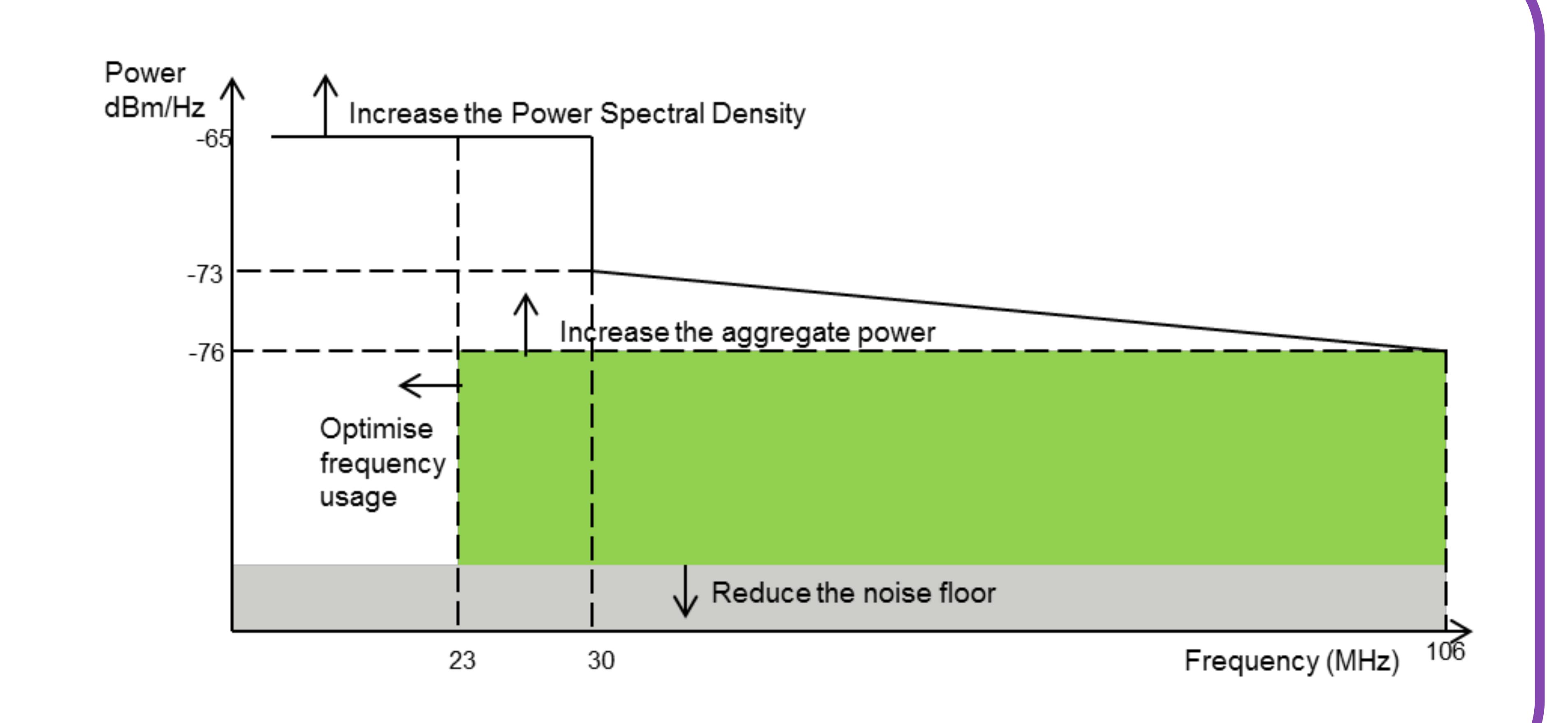
Emulation network enables replication of different realworld loop topologies

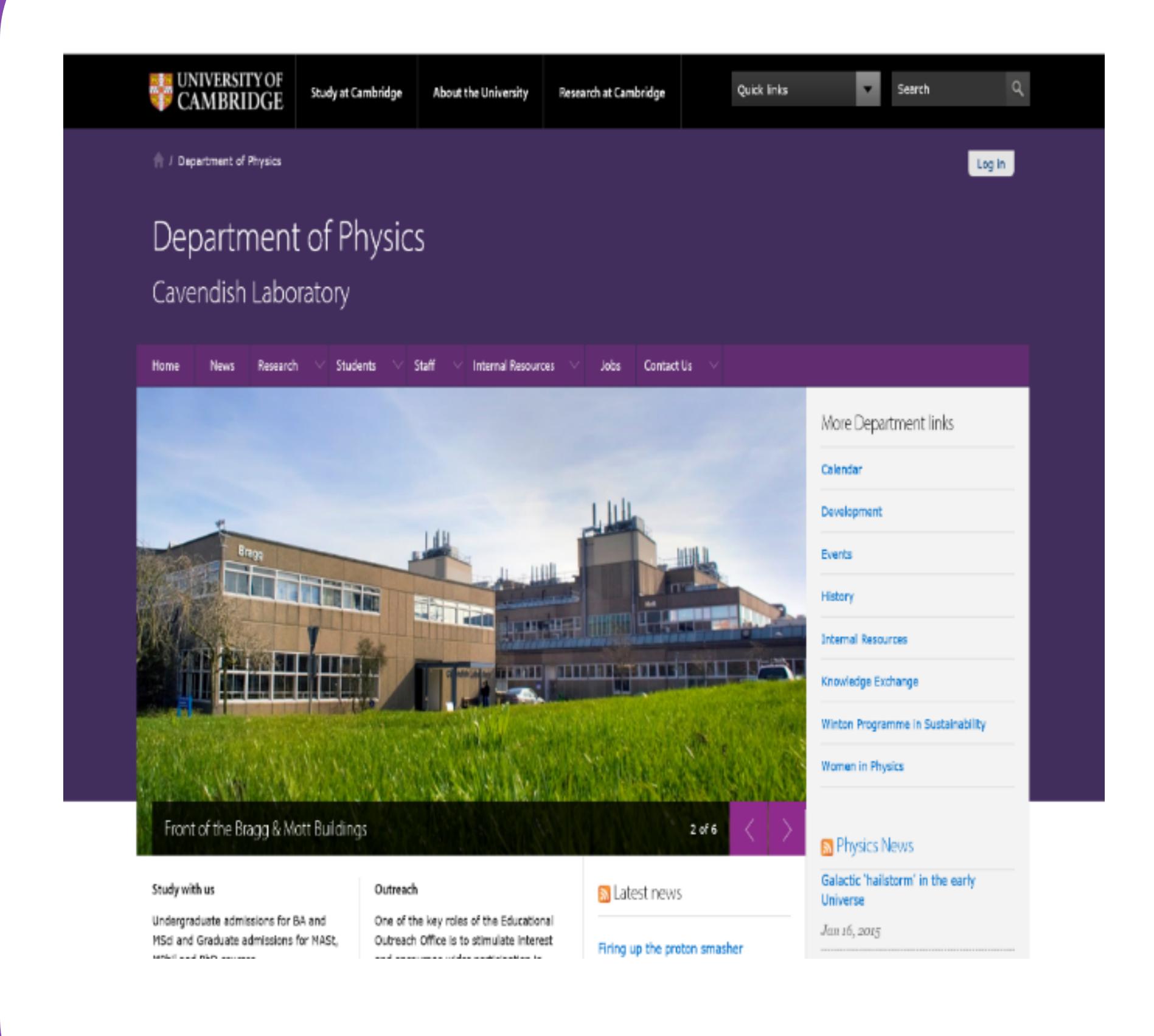
DP and CPE installations allow a full range of performance and operations tests



# Our research shows that even more capacity can come from copper

- We have identified 5 key developments required to deliver our ambition:
  - Enable higher bits per tone
  - Improve the receiver sensitivity (Noise floor)
  - Increase the transmit power
  - Optimise the frequency usage with VDSL
  - Increased vectoring group sizes







- We also continue to work with our academic and industry partners to further our understanding of copper transmission
- This includes EU collaborations, and BT is proud to be part of HFCC Gold

## G.fast pilots

- BT will run two large-scale pilots of G.fast technology, starting in the summer of 2015
- These pilots will be in Huntingdon, Cambridgeshire, and Gosforth, Newcastle-upon-Tyne
- Around 2000 premises will be covered in each pilot area
- These two pilot communities will benefit from being at the cutting edge of BT's next-generation ultrafast broadband roll-out, with trial participants gaining access to speeds of up to several hundred megabits per second
- Because the pilots will be run by Openreach, the new pilot infrastructure will be available to all Communications Providers on equal terms; end-user customers will be offered the chance to participate via their own service provider





#### Conclusion

- We have announced our vision for Ultrafast Broadband with G.fast at its heart
- This is enabled though a combination of enabling existing locations and the creation of new cabinet locations
- This will initially provide hundreds of megabits, rising up to 500Mbps within ten years
- We are aggressively pursuing further industry standards to improve the rate vs reach of G.fast and enable new kit to be developed