

UKNOF
September 2015



Ultrafast Broadband - recap

- On 30th January 2015, Gavin Patterson announced our **Ultrafast broadband vision**
- A **Ten year vision of 500Mbps** available across most of the UK
- Supplemented by **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.

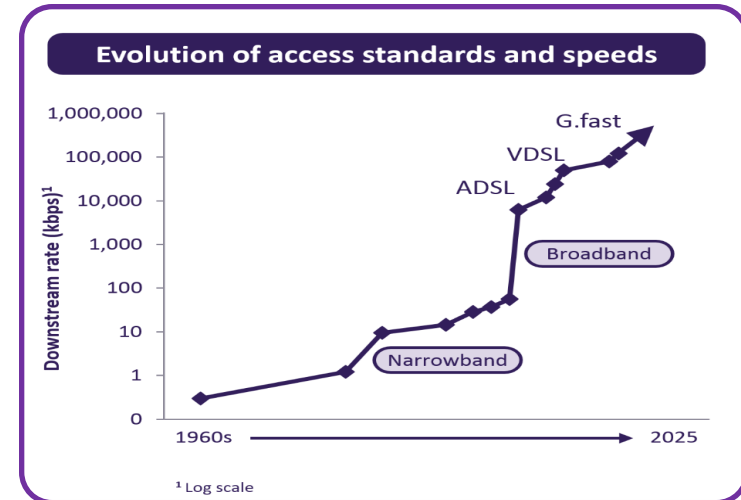
G.fast will help BT deliver ultrafast speeds of up to 500Mbps to most of the UK within a decade. Deployment will start in 2016/17, subject to the pilots being successful.

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.

G.Fast – New technology delivering Ultrafast speeds

- BT has been working to define international standards for a cutting-edge new technology - **G.fast** – for several years.
- Our lab trials at Aadastral Park in Suffolk have shown that G.fast is capable of delivering ultrafast speeds of **several hundred megabits per second**.
- G.fast is therefore at the heart of BT's ambitious plans to **increase the speed** of our access network.



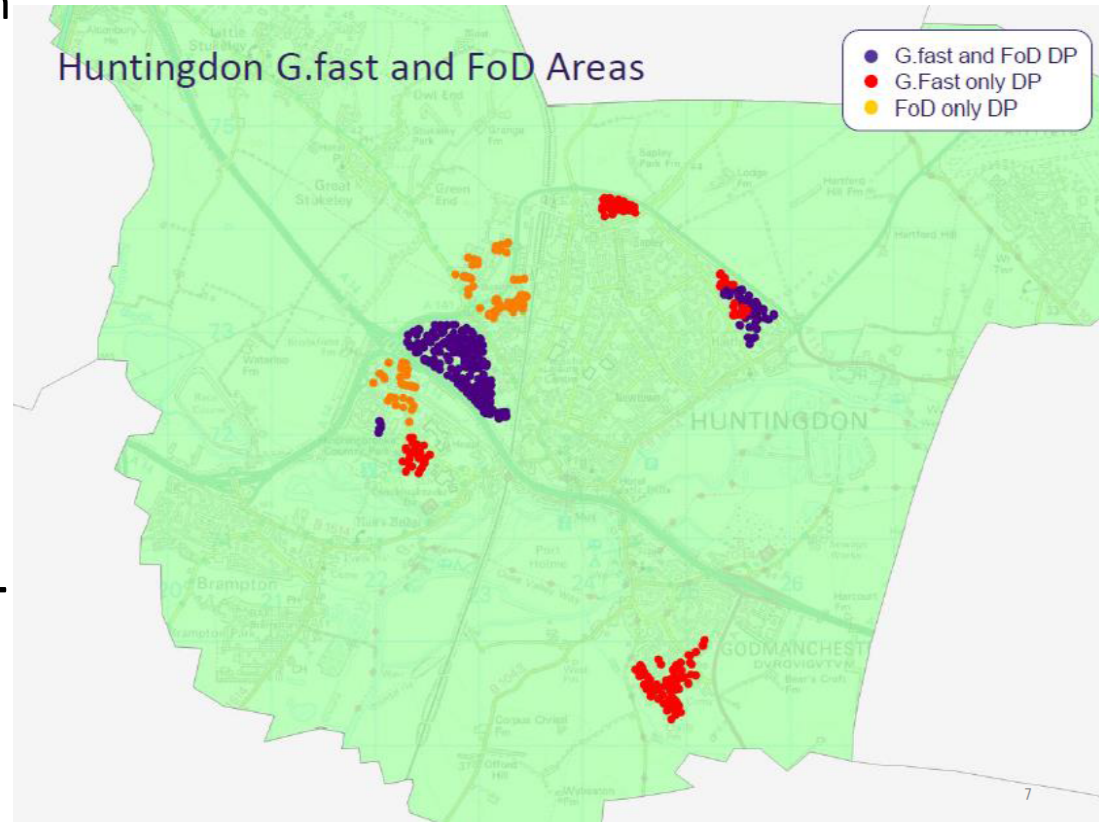
NGA2 Trials – proposal and update

- Openreach have just started the trials of G.fast technology and NGA2 Fibre on Demand from August 2015
- The trials are in Huntingdon, Cambridgeshire and Gosforth, Newcastle-upon-Tyne
- Around 2000 premises will be covered in each trial area
- Both services are being provided over dedicated paths to the customer premises, with an engineer install required for both NGA2 G.fast and NGA2 FOD.
- The services will terminate on an Openreach supplied CPE, with CPs providing their own routers.
- The service is delivered over dedicated infrastructure, with dedicated head ends, and cablelinks in the local exchange.
- There is no impact on the customers existing services



Trialling Ultrafast Broadband – a close up on Huntingdon's role

- Huntingdon has been chosen as the location for the **first large-scale customer trial of Ultrafast Broadband** technologies.
- Openreach, BT's local access network business, will pass **2000 homes and businesses with G.fast & NGA2 Fibre-to-the-Premises on Demand (FoD)**.
- Because Openreach serves all communications providers equally, customers will have a **choice of service provider**.



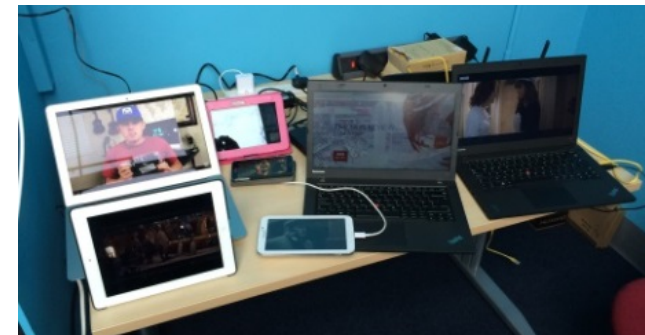
The 2 NGA2 Technology types being trialled

(1) NGA2 G.Fast

- Up to 330 Mbit/s downstream
- Up to 30 to 50 Mbit/s upstream
- Downstream prioritised rate 80Mbit/s
- Multicast enabled

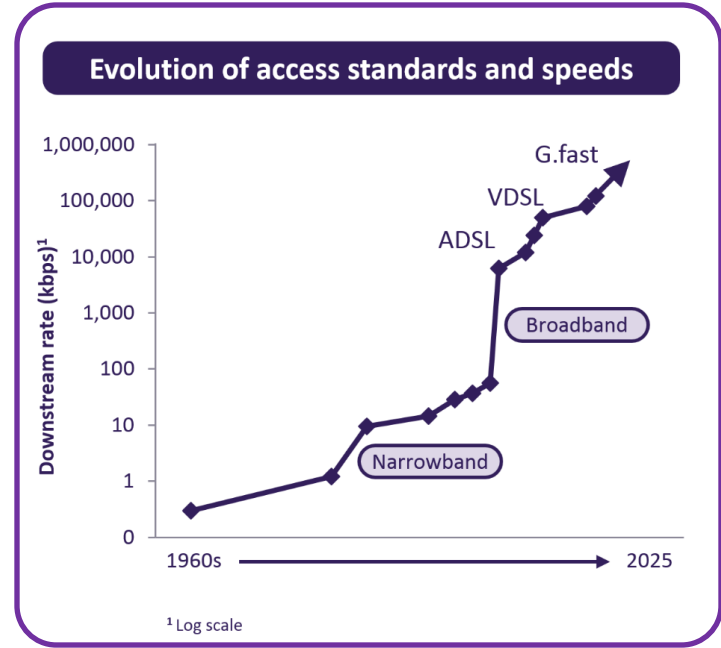
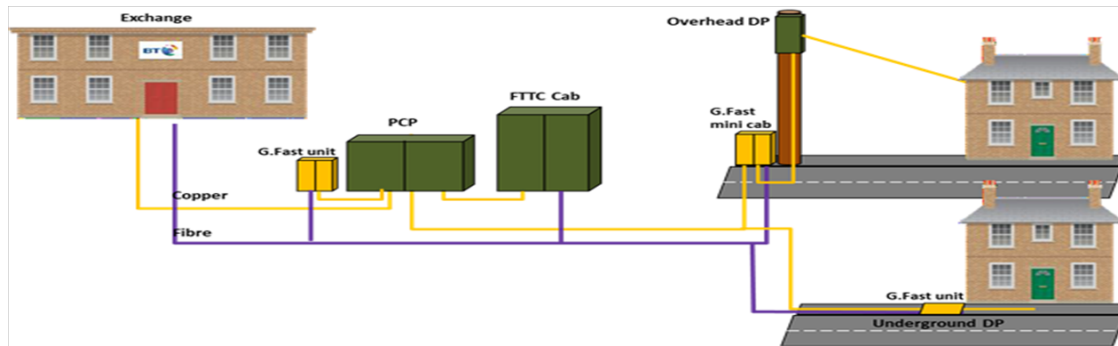
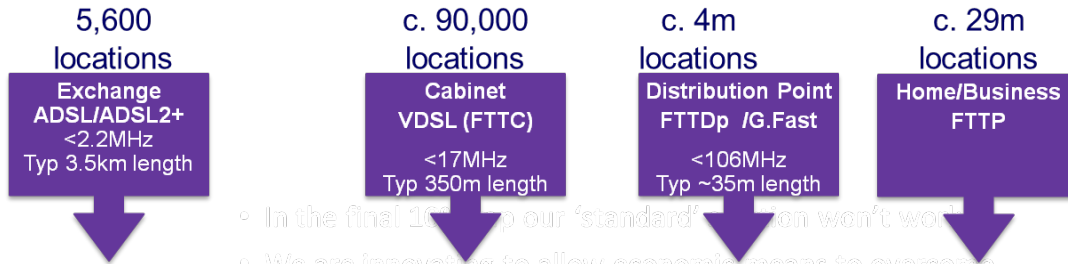
(2) NGA2 Fibre on Demand (FOD)

- Up to 1Gbit/s downstream
- Up to 100 Mbits/s upstream
- Downstream prioritised rate 100Mbit/s
- Multicast enabled



New technology delivering ultrafast fibre speeds

Access network



- Openreach are seeking to verify the results of the G.fast laboratory tests from the Gosforth and Huntingdon trials, and understand the interplay between G.fast and NGA2 FoD in terms of G.fast unit locations.
- G.fast can be deployed in a variety of locations depending on the network in a given area
- Our NGA2 FoD trials will also further explore the use of different types of fibre deployment.

One of our early objectives was to engage with industry on the trial

- Openreach have been keen to encourage CPs to partake in the trial, and we are pleased that Talk Talk group and BTW have been really engaged with us, upfront and early in the trial
- Both Talk Talk group and BTW have drawn on their experience with customers to help us refine the trial, and offer early suggestions, including the use of spare pairs within our existing customer lead ins to help us better understand how G.fast works across our network.
- Both CPs have helped us improve our interaction with them, understand their requirements from the technology, and work with us to improve our order journeys and fault identification.
- BTW have also encouraged take up of their trial with their own customers, further increasing the potential take up and learning.

Progress to date and initial results from the trial

- **First customers connected** on the 25th August.
- Initial results **very promising**, and completely in line with our lab modelling.
- Almost all customers connected so far are receiving **300Mbps +**, and are capable of receiving higher speeds.
- This is more than enough to watch **multiple streams of 4k UHD TV**, browse the internet and play games online, all at the same time.
- Most customers connected so far are fairly close to the distribution point. We'll be **trailing G.fast over longer distances** and from different points in the network as the trials progress.
- We'll also start to trial **NGA2 FoD later in the year**.
- These results **give us confidence** that G.fast is an **excellent technical solution** to deliver ultrafast speeds to most homes.
- Ultrafast website launched:
<http://www.ultrafast-openreach.co.uk/>



Ultra
fast fibre