

Background to the Broadband Infrastructure Industry

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- Dominated by Openreach & Virgin Media (in cities)
- Traditionally copper - Hybrid Copper / Fibre (FTTC) 2011-18
- FTTC - BT Openreach extending commercial lifespan of Copper
- Never going to be the long term solution for UK connectivity
- Recent rise of 'alt-net' competitors mostly building Full Fibre to the Premise
- Openreach response has been to pivot to Full Fibre & **decommission copper by 2025/26**
- Government now targeting **85% Full Fibre** by 2025 to strengthen the economy and play catch up with other nations' connectivity

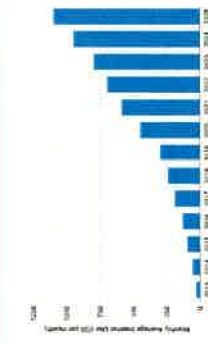
But we have fibre already!

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- FTTC mis-sold as Fibre for many years
- In reality its a hybrid solution with some fibre in it but reliant on copper to the home
- Maximum FTTC speeds **up to 80Mbps** Download & 20Mbps Upload
- BUT
- Speed is highly sensitive to the amount of copper in your connection
- Most connections experience variability in performance and drop outs
- The Download / Upload imbalance can be an issue for some activities
- Mis-selling has created confusion with consumers which is difficult to overcome
- Headline speeds are OK for many for now but the world is not standing still
- The copper network will become **less & less fit for purpose** before it becomes obsolete in the mid-late 20's

Why we need real Fibre

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- **Copper has come to the end of its useful life**
- Pandemic increased pressure on the network & gave a taste of future consumption levels
- During 2020 the copper network experienced 5,000 outages
- Performance was 30% poorer than the previous year

But isn't 5G the future?

- 5G provides very high speeds & 50% UK may have access by 2023 (mainly in urban areas)
- However
- The spectrum is limited
- The shared nature of the medium can make contention and security a problem
- It is not an alternative to or substitute for full fibre but it will compliment it in the future
- 5G will also require fibre everywhere to link small cell sites – it is not a case of either or

Why we really need Full Fibre

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- **Demand for higher speeds is relentless**
- Video the biggest driver
- More people consuming high resolution & on-demand content or video calls
- Emerging applications, 8k TV, Online Gaming, the Tactile Internet (telehealth) & Immersive Media (Virtual & Augmented Reality)
- These require far greater bandwidth to support real time human – computer interactions within the parameters of human reaction times
- More connected devices (IoT) in every home & increasing time spent on line are intensifying the demands on the same connection
- **40% of homes will need 1Gbps/600Mbps & 42% more will need 300/300Mbps by 2025 (WIK consulting)**
- Even occasional users will need to go faster with improvements to basic software
- Even if you cant imagine using bleeding edge technology, others will be
- In doing so they will add pressure to the copper network
- So what is a decent connection today will not remain so



Why we really need Full Fibre

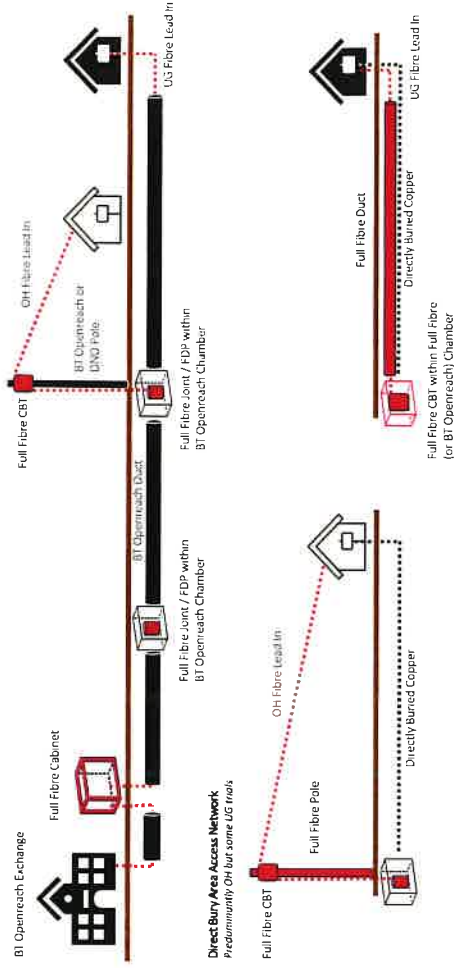
Access Network Elements

Full Fibre is Future Proofed

- Fibre can carry multiple terabytes of data per second
- Not just headline speed - Symmetry / constancy / latency / contention / reliability and the upgrade path are all critical
- Latency levels required for the tactile internet and immersive media can only be provided by full fibre
- Symmetrical connections are increasingly important - Video Calling, Gaming and Cloud Computing require 2 way traffic as do people working from home but accessing their work placed network through a VPN and can only be provided flawlessly by full fibre
- There is virtually no contention with full fibre so busy hour issues will be a thing of the past
- Full Fibre is 5x more reliable than Hybrid Copper broadband

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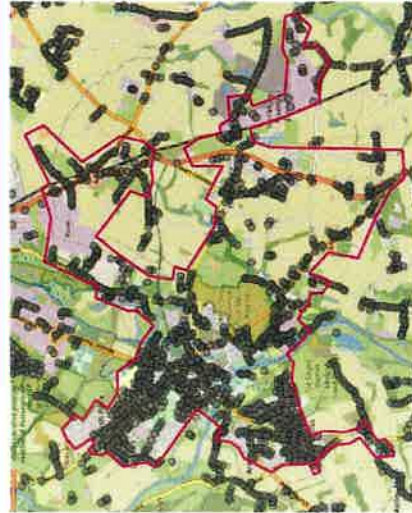
Standard PIA Access Network



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New Poles

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Grey Dots = Existing Openreach Poles (1,392)

- Full Fibre Poles required in areas of directly buried copper c. 10% of most areas
- Typically 1970's / 1980's estates
- Installation of cabinets & poles (Incl in Conservation Areas & AONBs) excluded from formal planning controls by the Electronic Communications Code
- We do work with residents to find the least contentious locations

Progress to date

- You can't build a fibre network overnight. We have started early to satisfy the mid-term demand



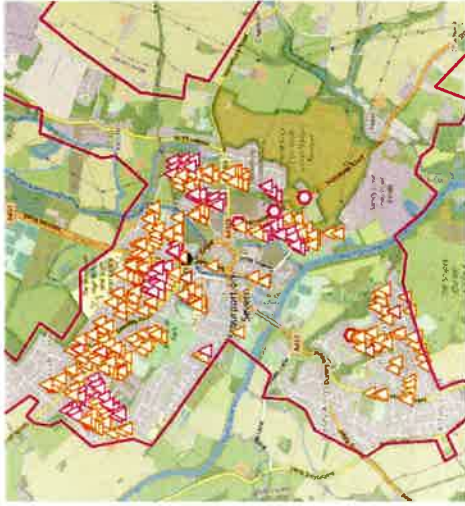
- Selection ✓
- Funding Allocation ✓
- HLD ✓
- Surveying ✓
- LLD ✓
- Wayleave Negotiation ✓
- Local Authority Noticing ✓
- Assign Contractor ✓
- SID ✓
- Review DB area solutions ✓
- New Pole Designs ✓
- New Pole Consultation ✓

- Blockage Clearance ✓
- Cabinet Installation ✓
- Spine Build – Sub Ducting and FDPs ✓
- CBI Installation on existing Poles ✓
- Pole Replacements & New Pole Installation ✓
- CBI Installation on New Poles ✓
- MDU Installations ✓

- Cabinet Switch On
- Audit & Testing
- RFS
- Installations

- Our presence may accelerate Openreach or other alt-nets to respond
- This is our risk but if it happens, it can only be good for consumer choice

Progress to date



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How to order a service

- www.fibreheroes.co.uk
- Check if you are ready for service
- Pre-register & we'll contact you if not
- Select your preferred ISP
- When you order we guarantee a installation within 10 days

iDNET



Fibrehop

triangle.

air simply smarter broadband

redline

SWVS BROADBAND

Merula



BeFibre

amatis

HFL

BRIDGE FIBRE

Loop Scaprio



Glendower

IT Computer Services

Worcester IT Services

Codence

Networks

ANLX

SWVS BROADBAND

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Thanks for listening

Any further questions?

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