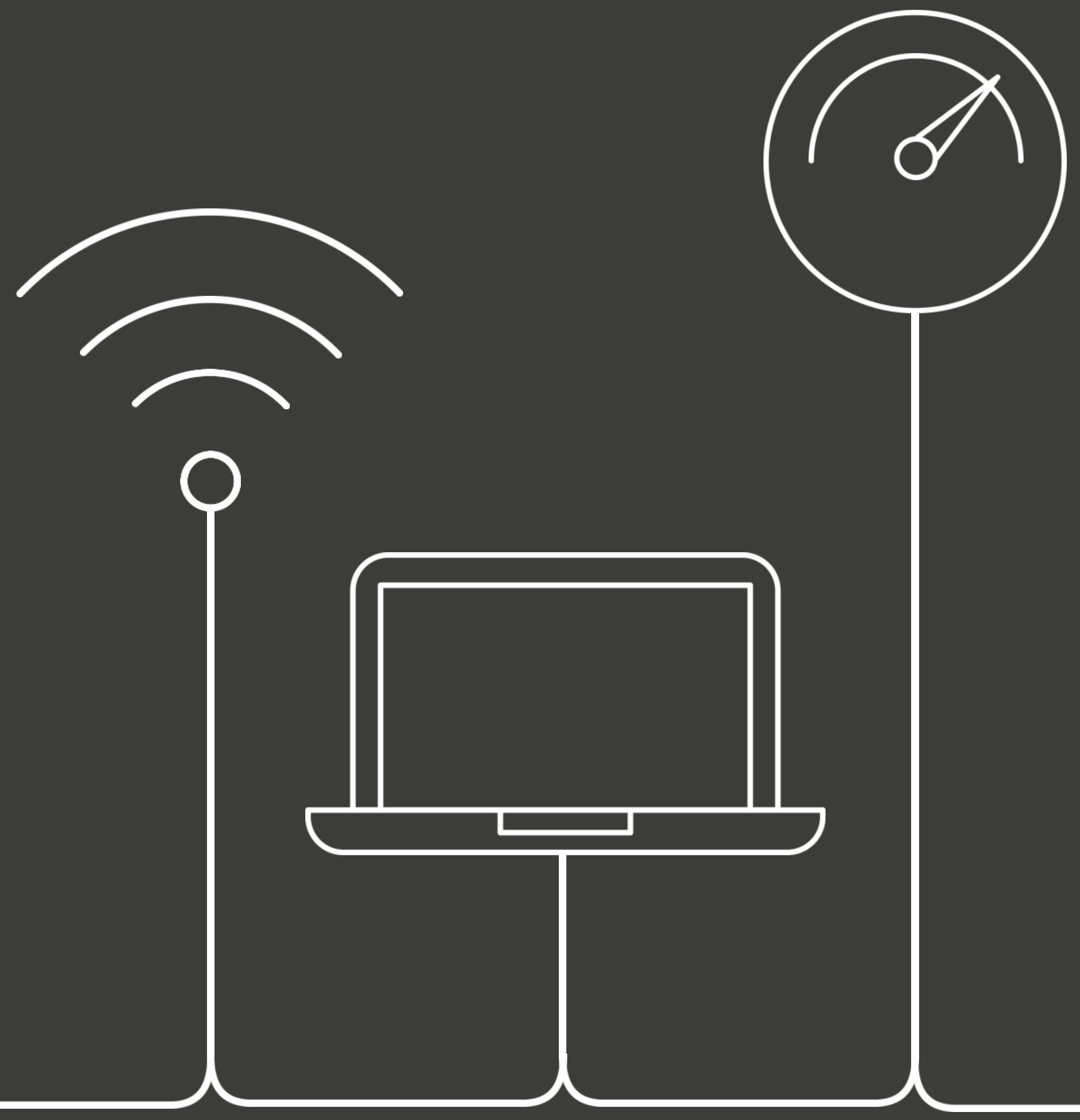
Gigaclear®

FTTx – The path from copper to fibre

Birth of a new industry



FIA
The Fibreoptic Industry Association

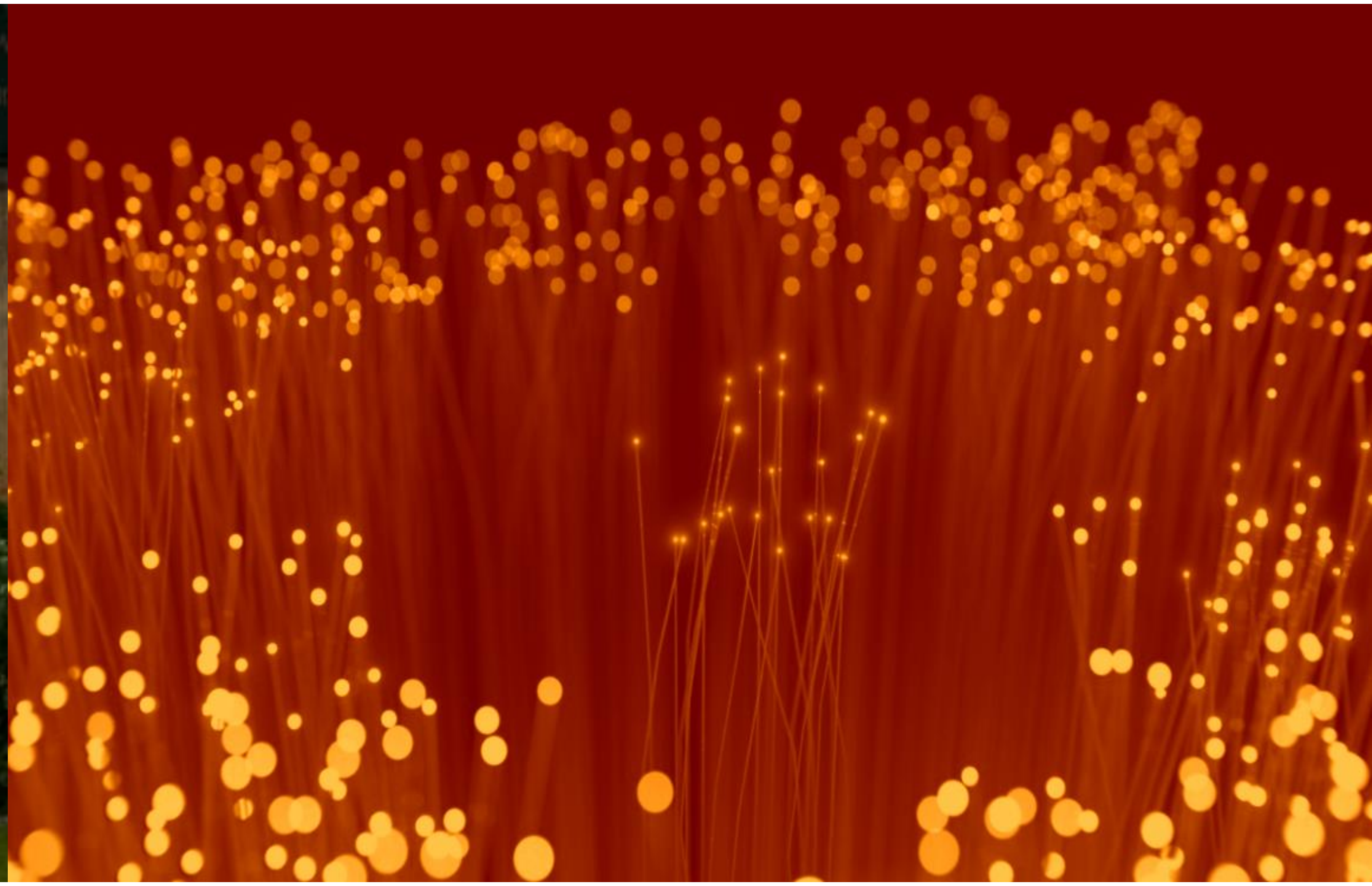
The view from a rural operator

The policy environment

FTTx – The path from copper to fibre

THE RURAL FIBRE SPECIALIST

Gigaclear®



In 2010, Matthew Hare founded rural operator Gigaclear to deliver purely full fibre solutions

Infracapital bought Gigaclear in 2018

Gareth Williams took over the CEO’s reins in 2019 embarking on the next chapter…

THE RURAL FIBRE SPECIALIST

Gigaclear®

100,000 with	500,000 in	20,000km
properties past	planned & scheduled	of rural trenches

On the way to many more!

20,000KM OF TRENCH

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Or Abingdon to Buenos Aires

AND back

THE RURAL FIBRE SPECIALIST

Gigaclear®

Scaling through innovation

AI-based automated design

Faster, greener build techniques

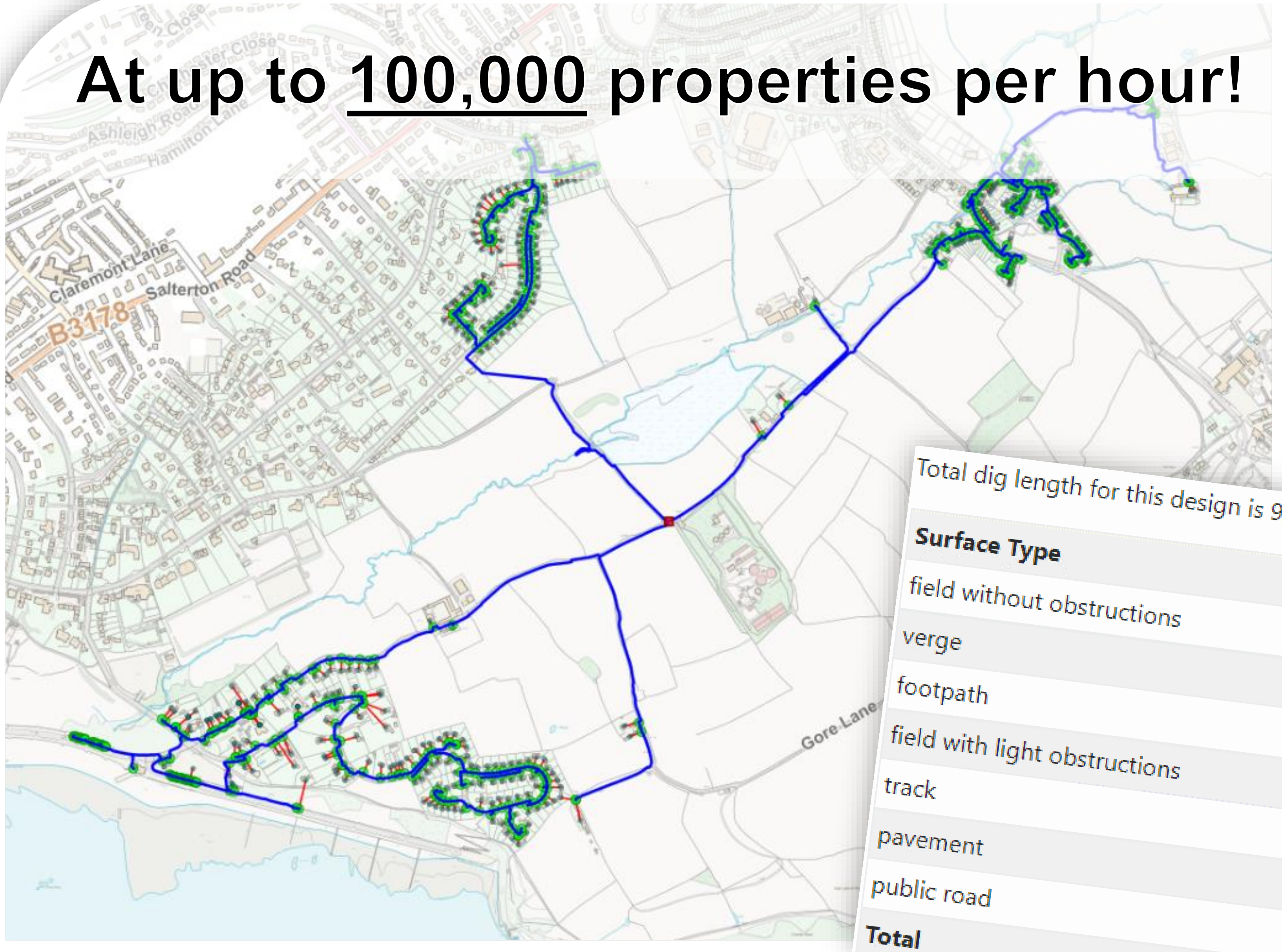
3D LiDAR surveying

THE RURAL FIBRE SPECIALIST

Gigaclear®

AI-based automated design

At up to <u>100,000</u> properties per hour!



Total dig length for this design is 9,906 metres.

Surface Type	Distance
field without obstructions	1,310 m
verge	2,648 m
footpath	117 m
field with light obstructions	114 m
track	102 m
pavement	4,773 m
public road	842 m
Total	

- Unique in-house developed toolset
- Uses smart maths, machine learning and artificial intelligence
- And in the cloud for scale
  - Up to 2500 CPUs and 20Tb of RAM

amazon web services

SURVEYING RURAL ENGLAND REQUIRES…

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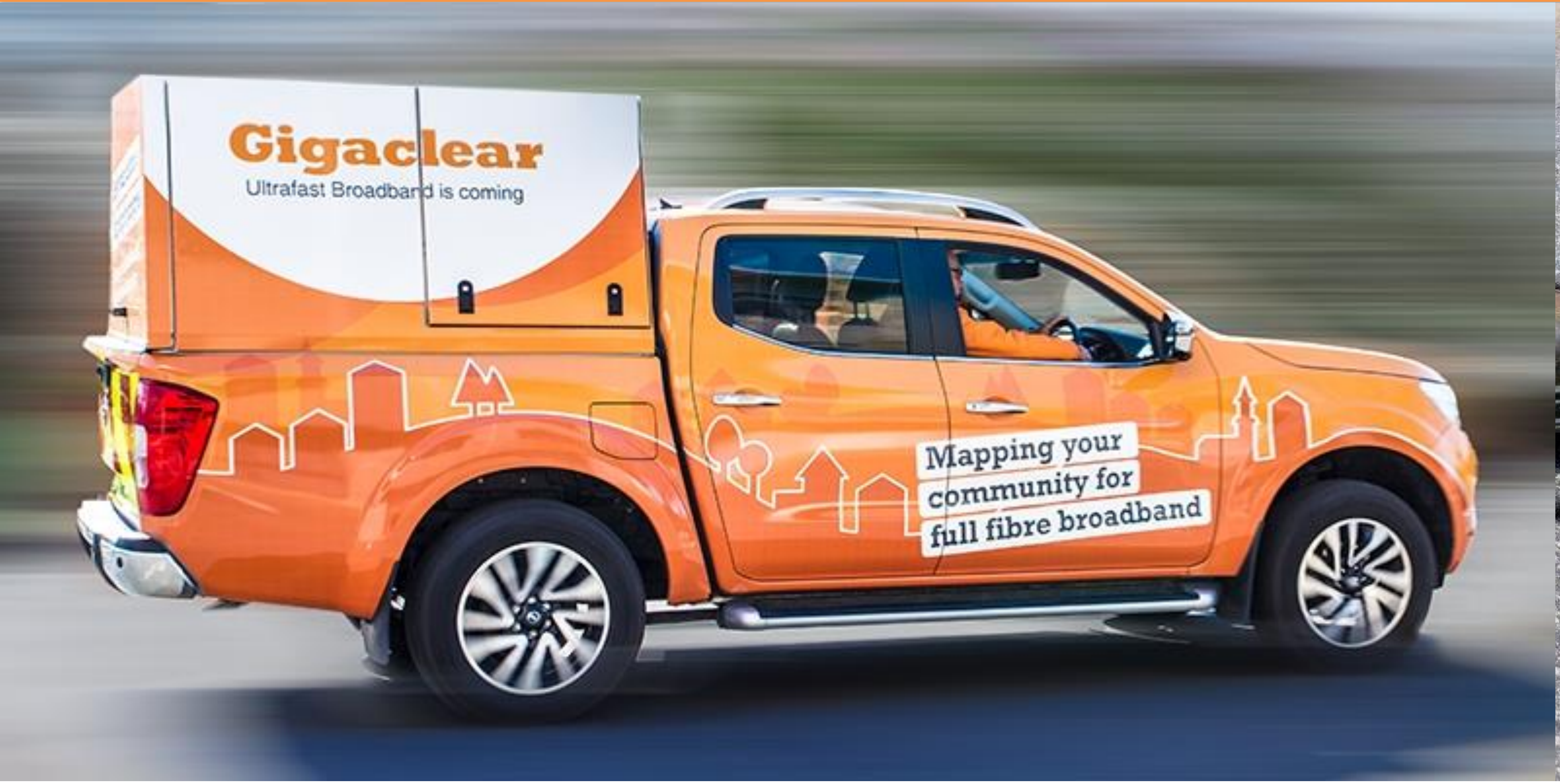
1 of these | lots of these



LiDAR SURVEYING RURAL ENGLAND

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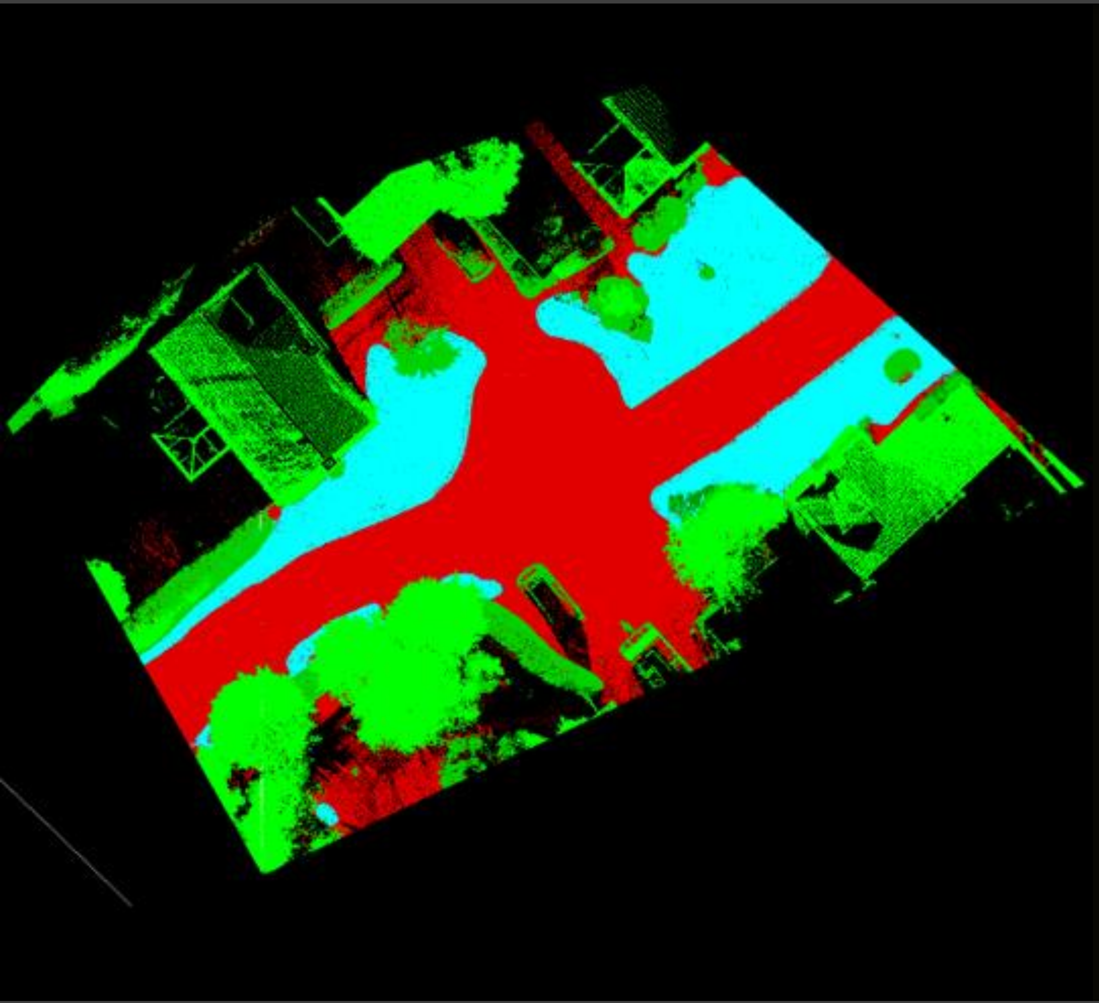
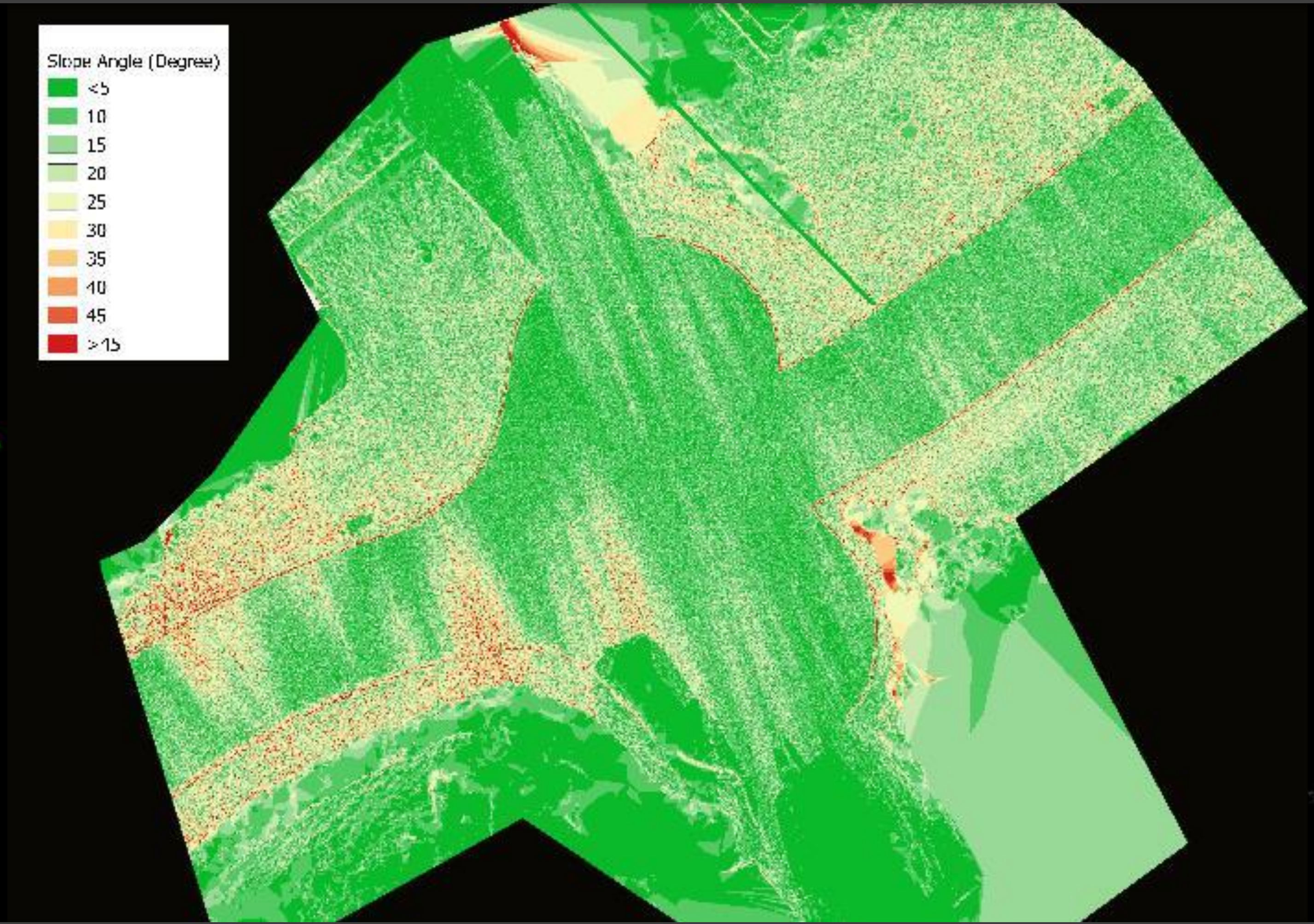
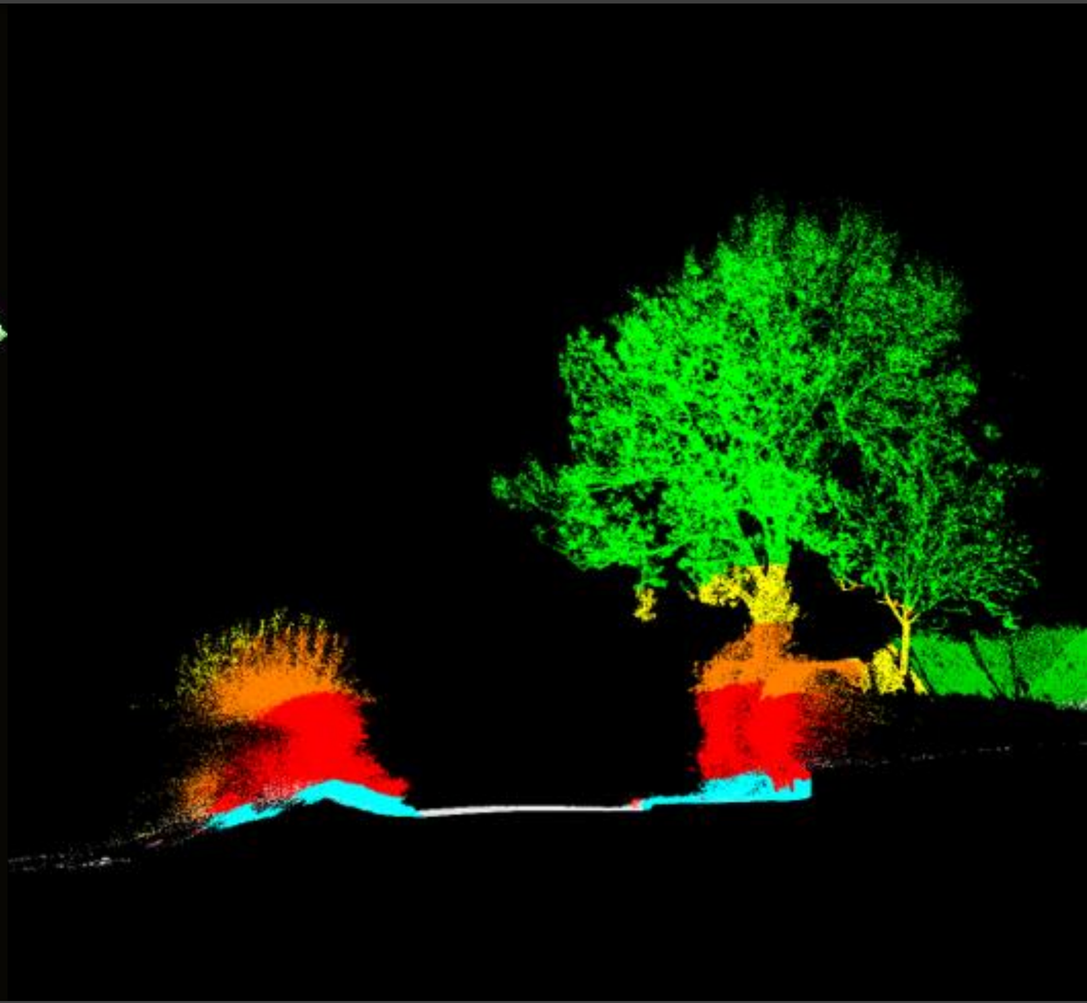
Automated surface-type validation	Banks & ditches automatically extracted	Verge infringement detected







And the development continues

SMART BUILD - NARROW TRENCHING

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Traditional excavation
60-80m per day

Narrow trench
≈300-500m per day

Narrow trenching:
- Up to 5 times faster
- Rapid reinstatement can lead to roads being reopened each night

Traditional excavation
>400mm wide

Narrow trench
≈ 100mm wide

Narrow trenching:
- Produces at least 75% less excavated material with fewer trucks
- Lower environmental impact

BUT not all local Highways Authorities are supportive of innovation

SOME HEADACHES REMAIN

But many fewer

- Local interpretation of engineering guidelines
- Inconsistent decisions
- Innovation patchy & often discouraged
- Multitude of permitting schemes

“Can” becomes “Will”


PART 2
Birth of an industry
A supportive policy environment?
Department for
Digital, Culture
Media & Sport
Ofcom
making communications work
for everyone

IN THE BEGINNING

- Seeds of investment started to appear
  - The pioneers were often by necessity challenging characters
  - Operators were often disorganised, small scale and tactical
  - Some challenging early failures

- All public investment went to the safe option for largely incremental upgrades
- Few institutional investments

THE CHALLENGERS

The rise of the big 3

- Cityfibre
- Hyperoptic
- Gigaclear

The principle that FTTH was possible and could be done by someone other than BT became indisputable

MORE THAN A VISION

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- Vision – “I agree: fibre is the future”*

- Strategy – “Future Telecoms Infrastructure Review”
  - An opportunity to redefine the market for fibre & 5G
  - Reconsider structural difficulties delivering full fibre
  - “Outside-in” £3-5bn funding for full-fibre only
  - **“Statement of Strategic Priorities”**
- Tactical
  - Cross-government working
  - Barrier Busting
    - Wayleaves
    - Highways & noticing
  - Broadband Universal Service Obligation
  - PSTN switch-off, All-IP & Battery Back-up
  - European Electronic Communications Code
  - New Build planning proposals

Matt Hancock
Jeremy Wright

* Rt Hon Matt Hancock, Broadband World Forum, 2017

ULTRAFAST BROADBAND MARKET

Gigaclear®

Community Fibre

hyperoptic

toob

CityFibre

KCOM

G.NETWORK

Virgin media

Urban

FIBRE NATION
Full fibre for everyone

zzoomm

openreach

Suburban & Market Town

Gigaclear
Ultrafast Fibre Broadband

wightfibre
because we care

TRUESPEED
COMMUNICATIONS LTD

Call Flow

County Broadband

B4RN
broadband for the rural north

airband
high speed internet

Rural

Niche

Glide
Business

its
Technology Group
CONNECTING YOU TO MORE

BRIDGE FIBRE

FibreNest™

fnl
Open Fibre Networks

A STAMPEDE?

- The UK is now investing in fibre!
  - The copper switch-off is on the table so churn is now fairly certain
- Risk?
  - Small number of established companies
  - Some operators being offered more investment than they ask for
    - With funds sometimes structured badly
  - Suppliers need to properly understand the dynamics

BUT now is a great time to be in UK fibre

Path to a copper sunset…

Efficiency Conundrum!!

There is just too much to do for everyone to spend scarce time, money & resources overbuilding each other!

BUT

We want a competitive environment without collusion & excessive market controls

THREE MARKETS?

Rural

Support for no more than 1 fibre operator even with subsidy

Regulated review on overbuild with a path to copper switch-off

Urban

More than 1 commercial fibre operator may be viable but is not tested

Regulated review process

Deep Urban

Support for at least 2 fibre operators

No competitive controls?

DEEP URBAN THOUGHTS

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- Urban specialists have advantages over Openreach
  - Lower costs
  - Vertical integration
- Ofcom strongly hints this could lead to much less regulation

RURAL THOUGHTS

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- Market rather than national wholesale prices may have an impact on rural areas
- Local monopoly status is likely to push for less vertical integration
  - And redefine what “significant market power” means

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The Yellow Brick Road to a Copper Sunset

Will start in localities* where

- ***Full fibre is widespread***
- ***A USP is established***
- ***Service competition is BaU***

  And its safe to switch-off the PSTN

And Government will want this to start in & emphasise rural areas

* Probably BT exchange districts


Questions