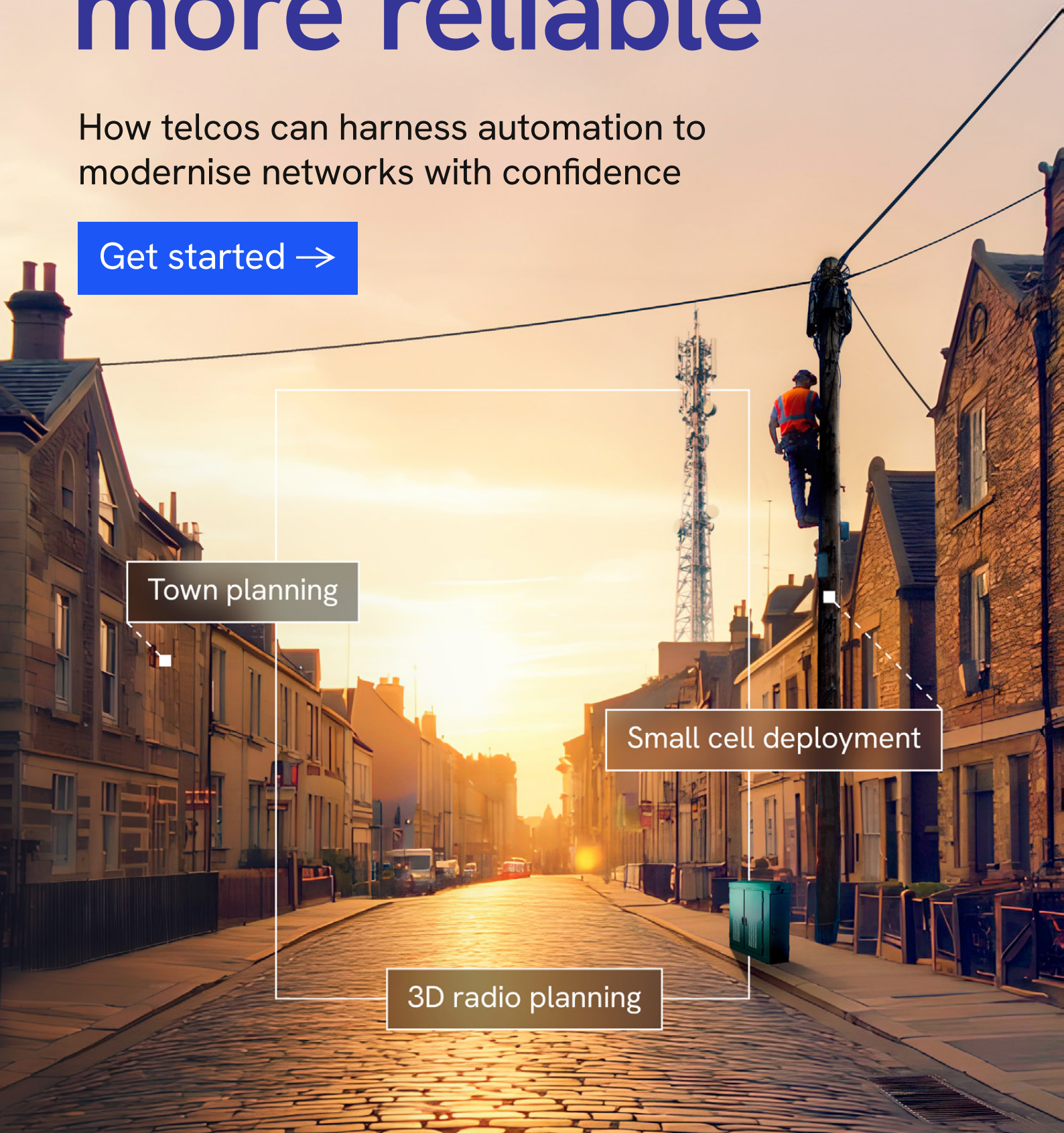
Ordnance Survey

Faster, smarter, more reliable

How telcos can harness automation to modernise networks with confidence

Get started →



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Automation needs trusted data

The digital demands of the UK – from both politicians and populace – are growing fast. Telecommunications is identified as a key part of the national growth agenda, while grand goals have been set to turn the UK into a global powerhouse in networking and technology. For telecoms businesses, this means constant and increasing pressure to ensure that connectivity infrastructure can match this demand and be a reliable foundation for the digital economy.

> "The government's ambition is to become a science superpower by 2030, with future telecoms identified as one of its five critical priority technologies."[1]

Operators are embracing automation as a critical piece of the puzzle. Automation has the potential to unlock optimised networks, lower costs, faster operations, and improved resilience.

Yet the reality of delivering the value of automation remains complex, as any automated tool or system is only as effective as the data that underpins it. If information is incomplete, inaccurate or without context, automated processes will only replicate those weaknesses at speed and scale. Instead of efficiency, the result is costly rework, duplication of effort or outright failure.

Site acquisition

Environmental risk assessment

Digital twin

This is where OS Data can help. By providing accurate, contextual, and nationwide location intelligence, OS Data is a foundation for more effective automation that delivers on its promise of efficiency and improved decision-making. Reliable data enables telcos to plan, build, and maintain infrastructure more efficiently, supporting the growth of modern, digitally-enabled networks.

This eBook explores the advantages telcos can create when they integrate OS Data into automation initiatives, to reach new levels of performance, resilience and customer experience.

02

The automation opportunity for telcos

AI-driven automation is already transforming network operations. Whether it's using real-time data to plan new fibre routes or predict and prevent faults, automation is quickly becoming a key operational enabler.

Integrating advanced location data into these tools will help to upgrade the quality and depth of data that they can draw on, to add context, improve accuracy and unlock new automation use cases, across almost every function of telco operations:

→ **Network plan and build:** Automatically modelling and planning routes using building, transport, and land use data to avoid obstacles and reduce deployment delays.

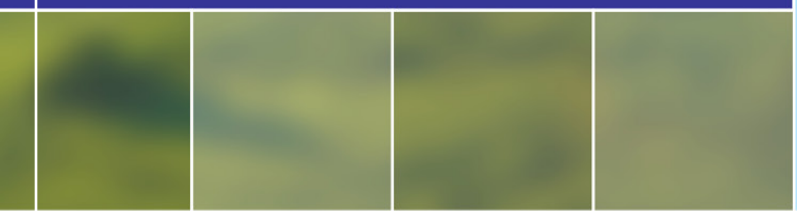
→ **Predictive maintenance:** Combining asset location data with environmental risk datasets to automatically anticipate outages and other issues.

→ **Incident resolution:** Automating ticketing, routing, and network monitoring to accelerate fault fixes.

→ **Workforce optimisation**: Assigning crews to jobs based on proximity, access, and risk to avoid wasted time, spend and effort.

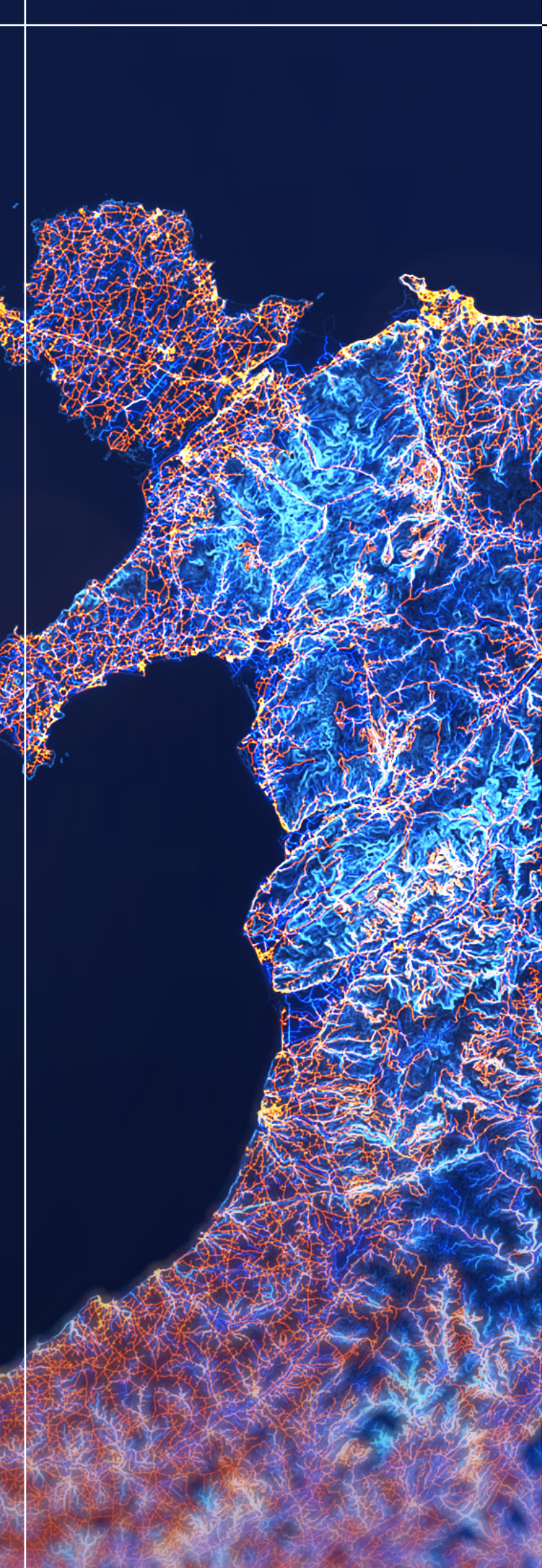
$849 million

Expected value added by automation of network and service operations, for a telecoms operator with $15 billion in yearly revenue.[2]



48%

Of telcos believe they will reach a high level of operational automation within the next three years.[3]



The potential value is huge.

Telcos can automate site selection, RF modelling, and feasibility checks. They can optimise route planning and traffic management. All of which can cut delays and free teams from manual tasks.

But getting this value requires high-quality, real-world data that can feed automation with reliable insight. Without that foundation, processes risk breaking down and producing unreliable results that undermine trust in automation itself.

The challenge is to close these gaps with authoritative datasets that capture the real-world environment in detail. With the right location intelligence, telcos can improve decision-making, reduce risk exposure, and avoid unnecessary expenditure. They can also capture commercial opportunities faster and deliver better customer experiences.

Five hurdles to successful telco automation

1. Bottlenecks from poor-quality data

Automated processes depend on inputs they can trust. If building, land use, or infrastructure data is inaccurate or out of date, the result is flawed modelling. That leads to costly errors in site selection, network planning or workforce allocation.

OS Data helps with:

→ Nationally authoritative, daily-updated datasets covering 40 million buildings with over 36 unique data points.

→ Consistent, trusted intelligence that integrates directly into OSS to support route planning, resource allocation and risk assessment.

2. Inefficient network build and route planning

Imprecise mapping of roads, terrain, or land boundaries means automated fibre or network routing may still miss obstacles, leading to access issues, rework and delays.

OS Data helps with:

→ Road networks, land boundaries, building heights, and 3D visualisation datasets.

→ Accurate, autonomous route modelling that reduces deployment delays, minimises disruption, and improves cost control.

3. Difficulty factoring environmental and climate risks

Environmental risk is often missing from early-stage automation. Automated models that do not account for floods, unstable terrain, or biodiversity zones can greenlight unviable projects, creating delays and avoidable costs.

OS Data helps with:

→ Environmental datasets that cover terrain, climate, and biodiversity.

→ Predictive intelligence that identifies risks in advance, protecting assets and reducing disruption.

4. Integration and interoperability

Automation initiatives can stall if datasets are incompatible with OpenRAN programmes or can't be integrated into OSS platforms.

OS Data helps with:

→ Software-agnostic data solutions available via APIs.

→ Seamless interoperability with automation tools and OpenRAN, making it easier to model network interconnectivity and accelerate rollout.

5. Delayed incident response and maintenance

Even after automation is implemented, incomplete location data can slow down fault resolution. Lacking precise information, maintenance teams may be misrouted, delays extended and service quality declines.

OS Data helps with:

→ Automatic pull-through of location data into incident ticketing and network monitoring systems.

→ Faster, more accurate routing and repair work that reduces downtime, improves service reliability and optimises workforce deployment.

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The advantage of OS Data

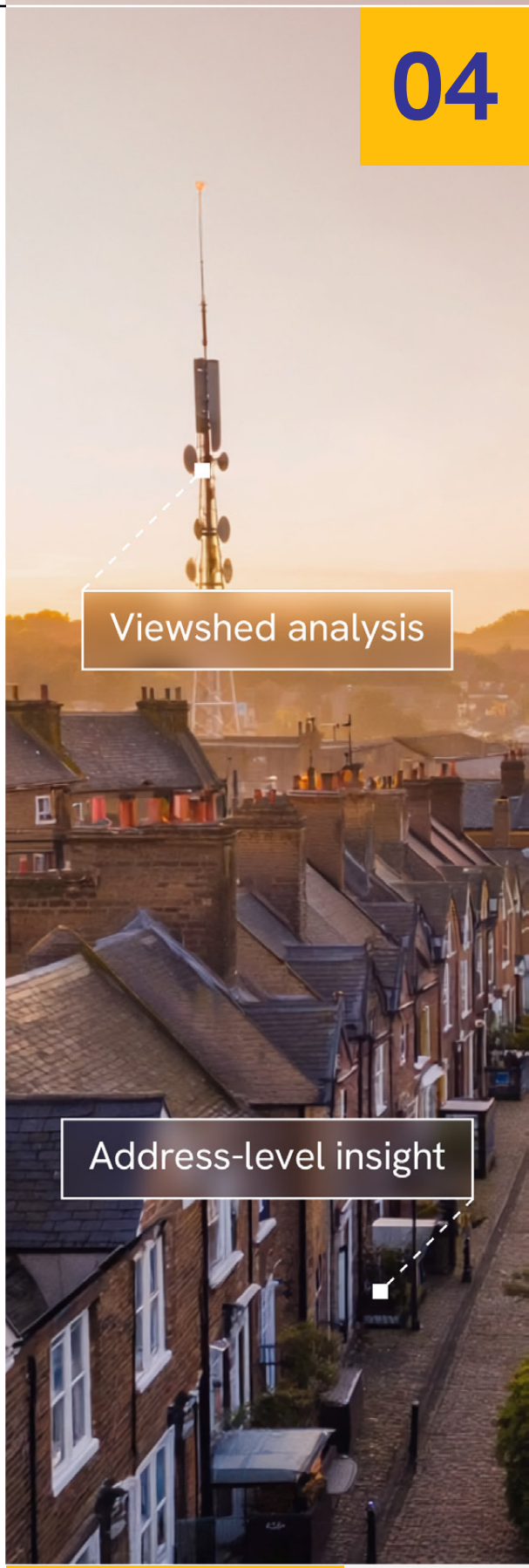
OS Data provides telcos with trusted, detailed location intelligence that makes automated processes more effective. The advantages extend across the full lifecycle of network operations, helping to make sure that automation delivers consistent results.

Plan with confidence

Interoperable, OpenRAN-ready datasets across 40 million addresses provide automated models with the context they need to work. Environmental datasets add intelligence on flood zones, gradients, and biodiversity risks, allowing automation tools to identify viable routes and sites accurately.

Build with efficiency

OS datasets on road networks, land boundaries and building attribution provide the detail to optimise site selection, design and build, enhancing the offer to clients and maximising ROI. Automated analysis of streetworks and greenfield sites, plus detailed insight into the total addressable market in candidate locations, allows for streamlined operations with highly advantageous results.

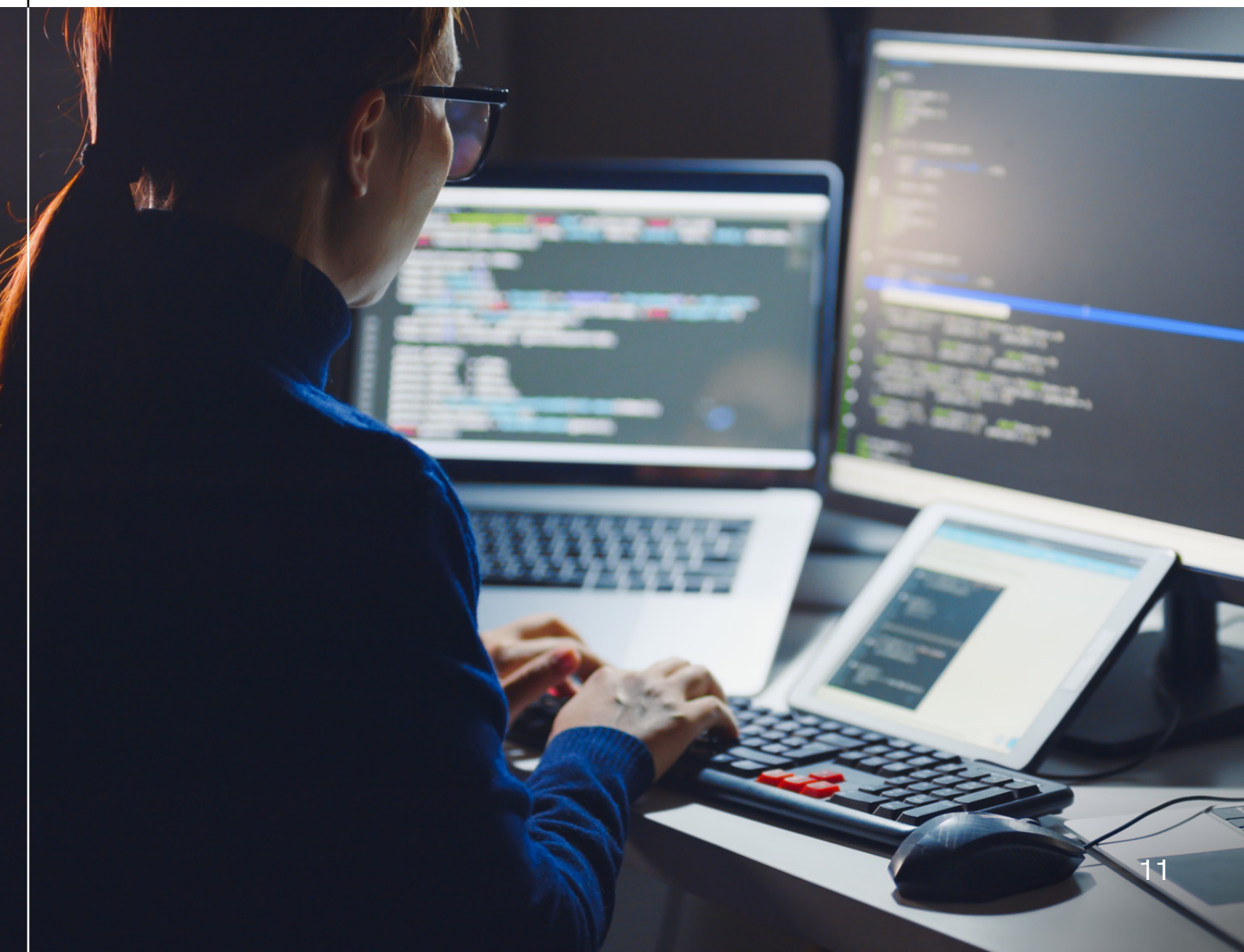


Operate with precision

Automation supports daily operations by accurately tracking assets and teams. Linking physical infrastructure to precise locations enables automation of maintenance schedules, monitoring, and performance optimisation. Workforce allocation tools also benefit from accurate proximity, access and risk data, to help make sure crews are deployed efficiently.

Recover with speed

When incidents do occur, detailed situational data can help to accelerate recovery. OS Data mapping supports automated route planning for repair teams and can help to assess potential damage quickly. Health and safety insights feed into automation systems to anticipate risks before crews are dispatched, avoiding abandoned jobs and unnecessary costs.



05

Why telcos trust us

Private and public networks are critical national infrastructure. Mistakes are expensive, both financially and reputationally. To deliver the reliability that automation demands, telcos need data they can trust.

OS Data offers:

→ 36 discrete data points for more than 40 million buildings.

→ National coverage, updated daily for close-to-real-time accuracy.

→ 3D mapping capabilities for visualisation and modelling.

→ Unified datasets spanning buildings, land use, addresses, and transport.

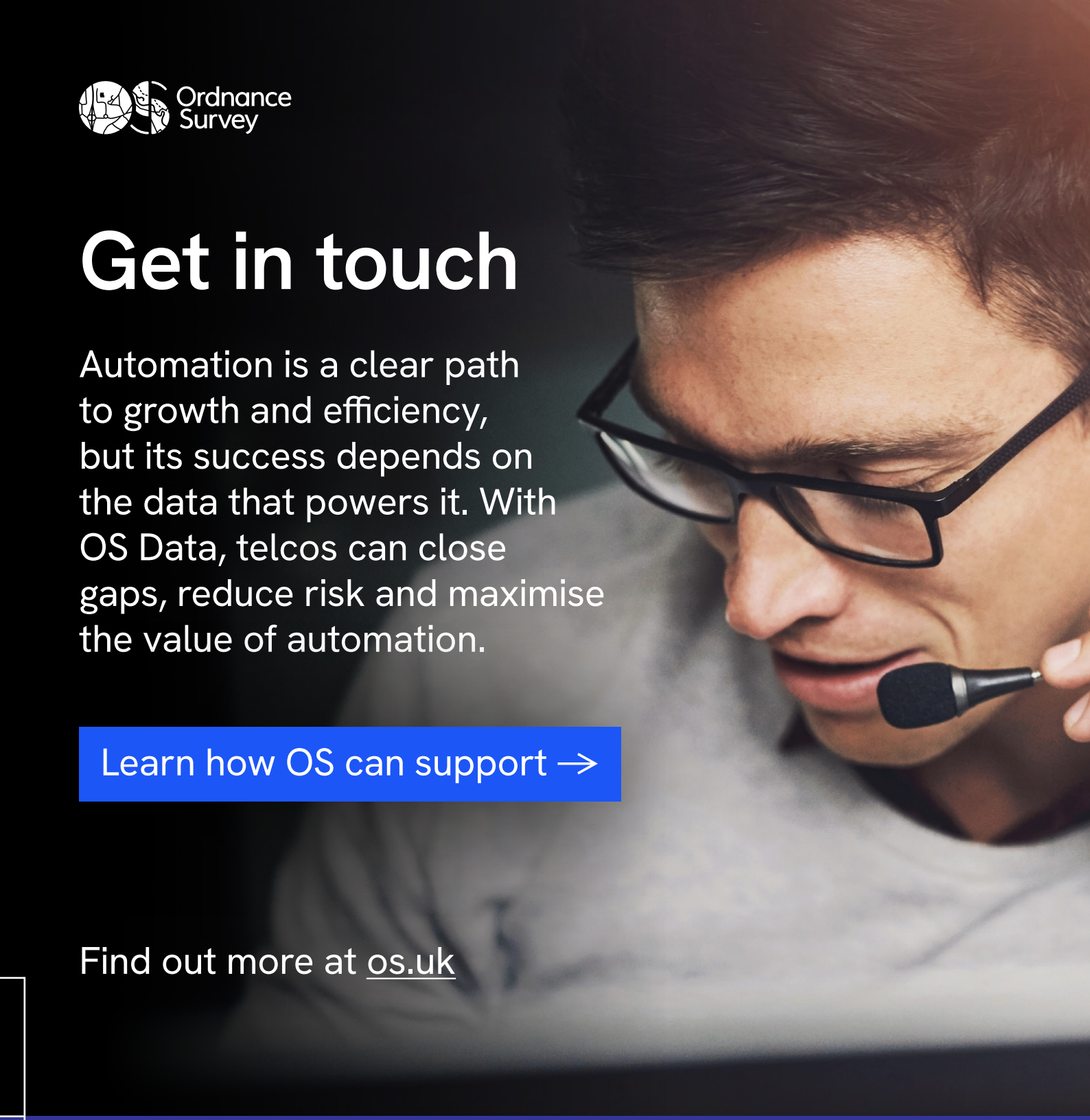
This combination of accuracy, authority, and detail can help automation projects to deliver the efficiency and value that they promise.

06

Location data and the future of automated connectivity

Automation is the future of telco operations – a way to create a genuine step-change in the efficiency, speed and responsiveness of operations to support the rapid growth and performance of networks across the UK. As we evolve towards nationwide 5G, expanded fibre and preparation for 6G, automation will become even more critical.

Location data should be the core to this ongoing transformation. By enabling smarter planning, more efficient deployment and faster recovery, it is the foundation for networks that are both future-ready and commercially sustainable.



Get in touch

Automation is a clear path to growth and efficiency, but its success depends on the data that powers it. With OS Data, telcos can close gaps, reduce risk and maximise the value of automation.

Learn how OS can support →

Find out more at os.uk

Additional resources

Learn more about how OS Data supports telecoms providers →

Explore our location data products and services →

Try OS sample data for yourself →

1 https://www.ukri.org/publications/telecom-network-2030-innovation-landscape-and-opportunities/

2 https://stlpartners.com/articles/network-innovation/automation-in-the-telecoms-industry/

3 https://omdia.tech.informa.com/om124432/telco-network-automation-survey-report--2024