

Your response

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Section 2: The quality of mobile connectivity we want to see - What are your views on the use of the Map Your Mobile good performance metric and how should the measure evolve over time? What are your views on the usefulness of: - the 90% figure as a benchmark applicable across geographies and based on crowdsourced data?, and - Whether the 90% benchmark is realistic and sufficiently ambitious?	Confidential? – N References are to Ofcom’s discussion paper, <i>Connectivity you can count on</i> (3 June 2026). Sources are listed at the end of this section. Streetwave is an independent mobile-coverage and performance measurement company, and we declare that interest at the outset. This response is built on Ofcom’s own text, official statistics and peer-reviewed research. Key points - We applaud this paper. Moving from predicted coverage to measured, real-world performance is the right step, and the goal it implies is the right one: maps and statistics that match people’s real experience – everyone’s, everywhere. - We caution Ofcom on the exclusive use of crowdsourced data as it cannot deliver on the above goal on its own. Crowdsourced measurements only arise where people, phones and signal already are. Where there is no usable signal, nothing is recorded and nothing is counted (footnote 39). This is survivorship bias: a natural feature of how crowdsourced data is made, and nobody’s fault. - The consequence of this could be a national statistic that overstates how well served the country is. The worst-served places contribute the least data, so the headline normalises a picture better than people’s reality – repeating, in a new form, the failure that made predicted-coverage maps unaligned to people’s experience (para 2.6). - It also hides exactly what this programme exists to find. The places where the market alone won’t deliver (paras 3.13–3.16) are, by definition, places with weak service, suppressed usage and little or no data. A benchmark built on that data cannot locate market failure – and what is not measured cannot be managed.

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	• Today, without meaning to, the UK is disadvantaging parts of itself – economically, educationally, socially, and in health and public services – because the places least visible in the evidence are least visible in the decisions. A map that truly represents everyone’s experience is crucial to both understanding this and fixing it. • The nation needs a map, built on a transparent methodology applied equally to all mobile operators, that measures what consumers actually experience everywhere they live, work and travel – measurements taken equally from good and poor connectivity areas, no-signal moments counted as failures, and full transparency about where every measurement was taken (provenance), so that where testing has not happened is visible too. • This is practical today: keep crowdsourced data as the always-on indicative layer, and pair it with representative measurement – which now scales across entire road networks in months – for any judgment about places. Publish both openly, with sample counts and locations shown, so councils, consumers and industry can see and use the evidence for themselves. This could be delivered through a national survey of all public roads, achievable at low risk and with technology that exists in the market today. • On that evidence base, 90% is a worthy ambition. On today’s sampling methodology, it can be met while the worst-served places never improve. In detail 1. Five mechanisms make crowdsourced data’s bias systematic – most already acknowledged in Ofcom’s own footnotes. <i>(i) <u>Sample density</u>.</i> Around 85% of the population is urban (para 7.10) and measurement volume tracks people, so the national figure is an urban-weighted average – the benchmark, as Ofcom itself is careful to say, “is not a measure of geographic coverage... within any specific

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	area” (para 2.20). The arithmetic is unforgiving: if, for example, rural areas contribute 10% of samples, a network scoring 92% urban and 72% rural reports 90% – benchmark met, rural performance unchanged. (ii) <u>Survivorship</u>. Only occasions where a connection could be attempted are counted. Footnote 39: the data “does not capture locations where no coverage is available... meaning overall user experience may be worse than these figures alone suggest.” The places that fail most completely contribute nothing at all. (iii) <u>Self-selection and suppressed usage</u>. People in poorly served places lean on Wi-Fi, run fewer measurement apps, use their phones less, and may already have moved to whichever network works locally. Footnote 96 acknowledges that large parts of rural areas “will not be reflected in the figures” – a circularity in which poor coverage suppresses usage, and suppressed usage erases the evidence of poor coverage. (iv) <u>Small-sample substitution</u>. Under footnote 42, a district with fewer than 100 samples is silently shown the wider postcode area’s figure – and the rule is triggered by the sparsest operator, so one thin network decides what is shown for all four. Even at the 100-sample floor, a district measuring 85% cannot be statistically distinguished from one passing the 90% benchmark. (v) <u>Hidden within-area distribution</u>. A district can clear the sample threshold with measurements drawn almost entirely from one high street, leaving residential streets and the surrounding countryside unmeasured. Identical headline scores can hide entirely different measurement footprints. In plain terms: the worst-served places are excluded, self-erasing, substituted or statistically unreliable – an instability footnote 40 itself undertakes to keep under review, and one well documented in the peer-reviewed literature (ACM SIGMETRICS 2025; 14th ITG-Symposium 2020; Annals of GIS 2018). 2. The consequences fall on identifiable people, and on the market. No measurement method is neutral about who it counts. Those the paper identifies as most dependent on mobile – people for whom it is their “only

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	way to access the internet” (para 2.3), older and vulnerable users (para 2.4), rural businesses (footnote 94) – are precisely the least visible in the statistic, because where reliance is highest and service poorest, usage and sampling are most suppressed. What gets measured gets acted on; being invisible in the evidence means being last in line for investment. These effects are not abstract: they are economic, educational, social, and felt in health and public services. Sections 3(2)(b) and 3(4)(l) of the Communications Act 2003 require availability “throughout the United Kingdom”, with regard to rural as well as urban interests – duties an evidence base that cannot see rural failure cannot support. Consumers, meanwhile, see substituted figures at the point of purchase via Map Your Mobile’s syndication to GoCompare and Which? (para 3.12); when a measure becomes a target, it ceases to be a good measure. 3. The fix: measure everywhere, and show the workings. Representative measurement is no longer slow or exotic: modern drive-testing scales across entire road networks of a nation in months, with reach akin to crowdsourcing (minus in-building) – and it samples well served and poorly served places equally, recording not-spots as failures rather than skipping them. Keep crowdsourced data as the continuous, indicative layer; use representative measurement as the decision-grade layer for anything place-based. In regulatory terms: crowdsourced data screens; controlled measurement determines – and the paper should state which uses are which. Specifically: • Provenance first: publish where and when every measurement behind a figure was taken – which also shows, by definition, where nothing has been measured. No single change would do more to make the statistics trustworthy. • Sample poorly served and well served areas with equal evidential weight, and publish a view in which every place counts equally alongside the headline figure. • Retire the footnote-42 substitution rule: set minimum sample-count and confidence thresholds, and where they are not met, flag the gap or fill it with measurement – never with a wider average.

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	• Publish the underlying data openly, under an open licence, so councils, consumers, researchers and industry can build on it – meeting needs both known and not yet known. Ofcom has already shown how to do this well – the trains study and the Greater Manchester work are exactly this approach – and it is testable: we would welcome a joint calibration exercise, random selection of 3 rural areas measured both ways, the difference published. Re-weighting crowdsource data alone cannot achieve it (it cannot restore places never sampled), and we argue for the method, not a supplier: specify an auditable methodology and procure it competitively. Our answers to the three questions. <i>The metric and how it should evolve:</i> the thresholds (5 Mbit/s download, 1.5 Mbit/s upload, 50 ms latency) are a reasonable floor and should be reviewed as usage evolves; the urgent evolution is not the thresholds but the sampling beneath them. <i>The 90% figure across geographies, based on crowdsourced data:</i> not as the sole or primary instrument – valuable as a continuous, indicative signal, but not a sound basis for judging whether places are adequately served, because the sample under-represents, and at no signal entirely excludes, the very places in question (the international indices cited at paras 2.25–2.26 share the same construction, so they can motivate ambition but cannot evidence rural adequacy either). This is not an argument against measuring where people are; it is an argument for also measuring where people are fewer, because they count too. <i>Realistic and sufficiently ambitious:</i> on this evidence base, 90% is simultaneously too easy (it can be met without fixing the worst-served areas) and unmeasurable where it matters most; ambition should be defined so it cannot be met while whole communities are left behind. Define “latency” where it is used. One improvement that strengthens the metric immediately: say what “latency” means wherever it appears. The paper’s 50 ms threshold does not state whether latency means one-way delay or full round-trip time (RTT). One-way delay cannot be measured without synchronised clocks at both ends, so any “one-way” figure is round-trip time halved – an assumption of path symmetry that mobile networks

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	do not satisfy. Halving adds no information, but it halves the published number and doubles the effective threshold: 50 ms on a halved figure is a 100 ms bar in the terms used by Accenture, RootMetrics, Ookla, Streetwave. Define latency as full RTT, state the definition alongside every published figure, and confirm which definition the current metric applies. As with sampling, the definition must travel with the number, or the number cannot be compared. We offer this response in the same constructive spirit as the paper itself, and we are happy to help in any way that is useful. Sources Ofcom (2026), <i>Connectivity you can count on</i>, 3 June 2026 (all paragraph, footnote and figure references). Sharma, Schmitt, Bronzino, Feamster & Marwell (2024), “Beyond Data Points: Regionalizing Crowdsourced Latency Measurements”, <i>Proc. ACM Meas. Anal. Comput. Syst.</i> 8(3), ACM SIGMETRICS 2025, DOI 10.1145/3700416. Schwind, Wamser, Hoßfeld et al. (2020), “Crowdsourced Network Measurements in Germany”, <i>14th ITG-Symposium</i>, IEEE Xplore 9167332. Zhang & Zhu (2018), “The representativeness and spatial bias of volunteered geographic information: a review”, <i>Annals of GIS</i> 24(3), DOI 10.1080/19475683.2018.1501607. Ofcom (2025), <i>Connected Nations UK Report 2025</i>, 19 November 2025. Strathern (1997), “Improving ratings”, <i>European Review</i> 5(3) (Goodhart’s law).
Section 3: Market-led improvements in mobile network quality What information do customers need about network quality to choose the best network for their needs, and where are	Confidential? – N Customers need a trustworthy answer to one question: what will each network actually be like where I live, work and travel? Map Your Mobile is a welcome step – its million visits show the appetite Ofcom has tapped (para 3.12) – but its performance layer inherits the sampling bias described in our Section 2 response – and shows the

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the main gaps in current provision of that information? How well does Map Your Mobile currently meet customer and stakeholder needs, and what specific improvements would make it more useful?	results to consumers without caveats. Our recommendations: - Show the sample count and a confidence indicator on every result, and clearly flag substituted values (footnote 42) – a user in a poorly served village can currently be shown a number that actually describes the nearest town. - Show where within an area the measurements were taken (provenance). A district-level score can rest entirely on the high street or the station, and absence of problems and absence of data look the same. - Fill sparse areas with representative measurement rather than substituted averages. - Add travel routes (road and rail), and publish the methodology – including definitions, such as whether “latency” means round-trip time – on the tool itself, so re-publishers like GoCompare and Which? (para 3.12) carry its caveats. The test of success: Map Your Mobile should be as reliable for a rural village as for a city centre – today, by construction, it is not.
Section 4: Connectivity in busy areas - What do you think are the biggest barriers to achieving better mobile performance in town and city centres and why? - What do you think should be Ofcom’s main priorities for our future work in this area? - What information would stakeholders, especially local authorities / planning authorities find useful for Ofcom to provide further insights on and why?	Confidential? – N The barriers the paper identifies – planning variation, siting, capacity – are real. Beneath them sits an information barrier: decisions of real consequence are being made on all sides without a shared, trusted picture of where connectivity actually fails and whether interventions worked (Figures 4.2–4.3 show prior-approval refusal rates ranging from over 90% to close to zero). Local authorities want to help – footnote 69 lists councils already commissioning their own measurement – but they cannot target what they cannot see, and where little or no data exists for a place, the problem stays hidden. Ofcom’s own Greater Manchester and Bury study (para 4.7) is, we think, the right template for fixing this locally. The information that would help most: - Locally granular measured data with provenance – sample locations, counts and confidence shown – rather than substituted area averages. - Published as open data, machine-readable and GIS-ready (open formats, an API, an open licence), so it

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	drops straight into councils' own systems (GIS): finding gaps, prioritising council sites and street furniture, supporting planning decisions, barrier-busting where deployments stall, and verifying what a deployment delivered. • We would caution against the alternative: giving 300-plus authorities a precise-looking crowdsourced score, without provenance or confidence, that does not actually describe their area.
Section 5: Connectivity in indoor, shared public places • What do you think are the biggest barriers to achieving better mobile performance indoors and why? • What do you think should be Ofcom's main priorities for our future work in this area? • What information would you find useful for Ofcom to provide further insights on in relation to connectivity indoors and why?	Confidential? – N We agree with the paper's barriers – building physics and split incentives between venue owners and operators (paras 5.4, 5.9–5.10). Our recommendation: pair Ofcom's planned stakeholder work with a repeatable venue measurement approach – the direction Norway's regulator has taken (footnote 73) – and publish measured, per-operator results for major public buildings/venues of interest.
Section 6: Connectivity on trains • What do you think are the biggest barriers, technical and commercial, to achieving better mobile performance on trains? Which are most significant and why? • Do you agree with our proposal to work with government to support improvements in train connectivity? • What information would you find useful for Ofcom to provide further insights on in relation to connectivity on trains and why?	Confidential? – N We declare an interest: the train measurement study this section relies on (Figures 6.1 and 6.2; footnote 76) was conducted by Streetwave. • On the barriers: for direct-to-mobile service, the binding constraints are rural corridor coverage combined with carriage penetration loss (footnote 80). For on-board Wi-Fi they are commercial – speed throttling observed on many lines, legacy equipment and limited backhaul (para 6.7). Commercial outweighs technical, because where investment was made, it worked: South Western Railway's track-to-train section (para 6.8). • We support working with government. The train study also proves the central point of our response: Ofcom evidenced this section with controlled measurement because crowd samples on a moving train

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	cannot characterise a route – the same discipline the thinly sampled areas in our Section 2 response need. On reporting: make it ongoing, repeatable measurement to a published schedule to cover all lines in the UK, per segment and per operator – averages conceal the dead zones where journeys actually fail – and use the same measurement to verify LEO deployments as they roll out.
Section 7: Connectivity in rural areas - What do you think are the biggest barriers to achieving better mobile performance in rural locations and why? - What do you think should be Ofcom’s main priorities for our future work in rural locations and what outcomes should we aim to achieve? - What solutions (technical, commercial, policy or delivery) could improve rural mobile performance? - What information would you find useful for Ofcom to provide further insights on in relation to rural connectivity and why?	Confidential? – N - The commercial and technical barriers Ofcom lists are real. In front of them sits a prior, evidential barrier: rural failure is partly invisible in the data used to judge it (footnotes 39 and 96; para 7.7), and you cannot target, fund or verify what is not representatively measured. - Figure 7.1’s gentle gradient (83% in large cities to 70.5% in the most rural areas) substantially understates the real gap, we believe – an artefact of the sampling methodology, not a description of rural reality. Ofcom’s own coverage framework – modelled, and by the paper’s own account inclined to overstate usable service (para 2.6) – still shows around 4% of UK landmass with no 4G at all, only 81% with 4G from all four operators, all-operator coverage of A and B roads at around 70% (63% in Scotland, 62% in Wales, 56% in Northern Ireland), and indoor 4G from all four operators reaching 57% of rural English premises against 94% of urban ones (Connected Nations 2025). We cite these not as performance evidence but as a map of where the crowd cannot count. - Our asks: measure rural areas and road and rail corridors representatively, with not-spots counted and provenance published, and build the planned rural case studies (para 7.16) on that footing. Never read a high-performance score as evidence that an under-covered area is well served (footnote 39). And if full good performance is unrealistic in the remotest places (para 7.7), define an honest, transparent basic-service floor and measure it (Streetwave uses ‘Basic Performance’: =>1Mbps download speed, =>0.5Mbps uploads speed and =<200ms of latency (RTT)).

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	• Every solution the paper canvasses – spectrum sharing, neutral hosts, satellite – depends on knowing accurately and locally where the problems are, so the first-order fix is the evidence base, and it is achievable now: modern measurement covers entire road networks and rural areas for a whole country in months. The most useful information: per-location measured performance published openly in GIS-ready form, the location and density of the measurements behind every figure, and rural-only scores alongside any national number (the rurality classification in footnote 95 already enables this).

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