

Your response

Question	Your response
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? [REDACTED] The quality framework is the right idea but measures the wrong place. The 90% benchmark relies on crowdsourced data that is structurally biased towards outdoor and already-served locations. By Ofcom's own admission in the report, it understates the poor indoor and no-service experience, even though the majority of usage is indoors. Indoor service quality must become a measured dimension in its own right. The JOTS NHIB specification enables neutral hosts to report accurately on the quality of service provided to the paying enterprise customers. An example proposal is attached in the covering email [reference attachment name] We support a single, transparent performance standard, and the choice of thresholds, at least 5 Mbit/s download, 1.5 Mbit/s upload and no more than 50ms latency, is a reasonable proxy for everyday app usability. We also support expressing ambition as reliability (how often the standard is met) rather than as a binary coverage figure; however, whilst for public use in-building the 90% benchmark understates what's possible, [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] Our substantive concern is with the measurement basis, not the thresholds. The proposed benchmark is assessed solely using crowdsourced Map Your Mobile data. Ofcom rightly notes this reflects where people actually use their devices but crowdsourced measurement only captures occasions where a connection attempt succeeds. Ofcom's own paper concedes this (footnote 39): the data does not capture no-coverage locations, "meaning overall user experience may be worse than these figures alone suggest." The effect is systematic, and therefore potentially flatters the places and moments where service

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	is worst, which are disproportionately deep indoors, on trains, and in congested mobile cells at busy times. This creates a framework that is internally inconsistent with Ofcom's own diagnosis. Ofcom acknowledges that the majority of mobile data use takes place indoors, yet the headline benchmark is validated with data that underweights precisely that experience. A national ambition of “nine times out of ten” that is measured mainly outdoors risks being met on paper while the indoor experience that dominates real usage continues to fall short. The disparity is not marginal. Where Ofcom does measure directly, for example its Greater Manchester study, indoor performance was “much weaker and less predictable than outdoors and significantly poorer during busy periods,” with some buildings blocking signal “almost completely.” A benchmark that cannot see this cannot drive investment to fix it. What we ask on measurement • Make indoor experience a first-class, separately measured and reported dimension of connectivity quality, not a figure inferred from outdoor coverage. This could combine targeted direct measurement in shared public buildings (as Ofcom did in Manchester) with in-building crowdsourced segmentation. Crowd source reporting combined with the reporting available from dedicated neutral host NHIB systems achieves this. • Report the metric by context indoors versus outdoors, busy versus quiet periods, and on transport, so that the 90% ambition is transparent. Weight the evolution of the metric towards real-world usage occasions, including the deep-indoor and reporting on no-service occasions, so that investment is directed where experience is genuinely poorest.
Section 3: Market-led improvements in mobile network quality • What information do customers need about network quality to	Confidential? – [REDACTED] We support Ofcom's central move from “is there a signal?” to “can people count on a usable service where they actually are?”. We agree that coverage is not enough, that increasingly quality of service i.e. capacity

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choose the best network for their needs, and where are 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?	will be an important factor, and importantly that dedicated indoor infrastructure and neutral host / shared models are often the right solution, as Ofcom itself concludes for busy buildings and increasingly for rail and rural. [REDACTED] Ofcom's treatment of neutral hosts in the report is relatively light, the UK is the leading global market on the definition of specifications covering DAS (JOTS), in-building small cells (NHIB), Neutral Host Outdoor small cells (NHOD), and railways (JOTS RAIL), all at https://mobileuk.org/jots. All these technical and operational specifications have been developed by the MNOs collaborating together. This is a powerful tool for the UK to leverage to address the unit costs of serving the specific problem areas Ofcom seek to address such as railways, in-building and dense urban areas. [REDACTED]

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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? – Y / N Ofcom's own analysis shows no MNO reached the 90% benchmark in any city centre studied, a clear signal that macro densification alone is not resolving urban capacity. In dense areas the binding constraint is increasingly capacity at busy times, not just the existence of a signal, and the economic answer is street-level densification through outdoor small cells that can be shared. MNOs clearly have differing strategies and on-the-ground needs in any given environment. By deploying outdoor small cells (including utilising the JOTs NHOD architecture), using Open Access agreements, neutral hosts can support both the MNOs and local councils with innovative commercial solutions, critically that allow other MNOs to join the same 'street furniture' at a later date. Outdoors First open access agreement Croydon pioneers the multi-operator approach for outdoor small cells - Freshwave Using alternative infrastructure UK's first 4G connected bus shelters - Freshwave The principal barriers we see are the cost and duplication of single-operator deployment, and the friction of planning and street works. Ofcom's finding of "large variations in refusal rates between local planning authorities" — with prior-approval refusal rates ranging from 0% to as high as 96% — is a material deterrent to investment and bears especially hard on the many small sites that densification requires. Local authority knowledge gaps: local authorities often lack understanding of open access agreements, innovative commercial models and the benefits of neutral host and outdoor small cell solutions, which impacts planning outcomes.

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	What we ask on busy areas • Recognise shared outdoor small cells explicitly as the efficient route to urban capacity, and reflect it in Ofcom's priorities alongside macro densification. • Support streamlined, consistent planning and street-works for small cells — including proportionate permitted development rights and clearer, more consistent tests across local authorities — and encourage local authorities to make street furniture and public buildings available on fair, standard terms. • Role of Ofcom in education: Ofcom should play a stronger role in educating local authorities, providing plain-language guidance, case studies, and examples on their website to support informed decision-making in the local authorities.
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? – [REDACTED] This is where most usage happens and where the gap between Ofcom's ambition and its measurement framework is widest. Ofcom is right that "the best way to deliver good mobile connectivity to consumers indoors could be through dedicated indoor infrastructure, rather than relying on outdoor networks to reach users inside," and right that landlords and developers "should not necessarily rely solely on MNOs." We agree, and this is precisely what Freshwave delivers. The majority of mobile data use is indoors [https://www.linkedin.com/posts/luke-kehoe_indoor-is-where-mobile-networks-are-used-activity-7482687367640969216-U4-c/], yet indoor signal from outdoor macro networks is weak and unpredictable, particularly in modern, well-insulated and energy-efficient buildings whose materials attenuate higher-frequency signals heavily. Outdoor densification cannot economically solve this: the physics and the economics both point to dedicated in-building systems. Ofcom's own Co-op Live case study is a ready-made proof point. This is the neutral host argument in miniature: shared indoor

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	infrastructure delivers where reliance on the outdoor network does not — and delivers for every operator at once. The barriers are not technical; they are commercial and structural: securing building access, aligning incentives between building owners and operators, wayleave and access terms, and the “hold-up” problem Ofcom identifies where multiple parties must cooperate. Service model terminology: the neutral host model is not 'leasing' to MNOs (footnote 72) but providing infrastructure as a managed service or infrastructure-as-a-service. Recognition of indoor small cells and DAS: the report lacks mention of indoor small cells and NHIB, these must be included as architecturally sound solutions for venues. CASE STUDIES Indoor Small cells Customers Connecting GSK's global HQ to every UK mobile network - Freshwave Providing more sustainable mobile connectivity at SIDARA with Omni Network - Freshwave NHIB development Joint first NH doing NHIB (with O2) Advancing indoor mobile connectivity - Freshwave And first to do NHIB as BAU (with Three) Three JOTS NHIB - Freshwave DAS Forward-thinking Midland Metropolitan University Hospital commits to seamless mobile connectivity f... Freshwave bring all-operator mobile connectivity to state-of-the-art Ulster University campus redev... The Princess Alexandra Hospital - Freshwave

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	In-building connectivity for 22 Bishopsgate - Freshwave Mobile connectivity for Welsh hospital - Freshwave One Nine Elms enjoys assured mobile connectivity from all operators with Freshwave - Freshwave Regulatory guidance and public buildings: Ofcom must set firm guidance for public buildings, similar to Norwegian regulations, and to clarify that repeaters do not provide the required resilience and service quality compared to neutral host solutions. Public sector organisations often cannot afford advanced connectivity solutions, we invite Ofcom to join the efforts to reduce costs through collaboration with MNOs. [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] From a regulatory perspective the expectations in the Telecommunications Security Act for network resilience discount repeaters as a viable solution for critical public buildings and public access buildings. Freshwave can provide lessons learnt from supporting customers remove repeater systems which manifestly failed. Finally, lessons learned from critical incidents at public venues such as the Kerslake Report following the Manchester bombings and the provisions in Martyn's law illustrate the importance of reliable mobile coverage for buildings whose main purpose is publicly accessibility, including emergency services communications. This supporting the argument for robust, non-differentiated public sector connectivity. What we ask on indoor • Adopt indoor experience as a measured, reported dimension of connectivity quality (as in Section 3), so

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	investment can be targeted where experience is worst. • Support in-building connectivity standards for new and materially refurbished buildings — a “digital-connectivity-ready” standard so that large, busy buildings are designed for mobile connectivity from the outset, drawing on the Norwegian regulator Nkom's guidance model that Ofcom itself cites. This education must incorporate lessons learnt from the Kerslake Report and provisions of Martyn’s law. • Recognition of neutral host models: Ofcom to explicitly recognise neutral host and shared infrastructure as primary solutions for indoor connectivity through education and guidance initiatives. The stakeholder work Ofcom proposes should have neutral host delivery at its centre. • Repeaters: Ofcom to recognise that ‘repeaters’ do not satisfy any of these objectives and furthermore do not meet Telecommunications Security Regulations to provide macro network resilience. [REDACTED]
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	Confidential? – [REDACTED] [REDACTED]

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What information would you find useful for Ofcom to provide further insights on in relation to rural connectivity and why?	

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