

Resilience guidance consultation and Call for Input on mobile RAN power back up

Independent Networks Cooperative Association

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1 Introduction

- 1 The Independent Networks Cooperative Association (INCA) is the leading UK trade association representing organisations deploying independent digital infrastructure. Founded in 2010, INCA aims to foster a new approach to digital infrastructure, focusing on full fibre (FTTP) and high-quality wireless broadband whilst campaigning for the policy and regulatory support needed to maintain a healthy, competitive market. INCA has over 200 members and represents most of the full fibre infrastructure builders commonly referred to as Altnets. Members include network owners, operators, suppliers, and managers as well as access networks, middle mile networks, network hubs and exchanges, and organisations (including public sector and local authorities) that are developing or promoting independent networks.
- 2 INCA welcomes the opportunity to respond to Ofcom's consultation on the resilience guidance but notes that some of the proposals raised are already in scope for TSA compliance.

2 Executive summary

- 3 INCA supports endeavours to make fixed telecoms networks more resilient but believes that proposals within this consultation are neither proportionate nor practical. Whilst telecoms is essential for many personal and business interactions, there is a trade-off between availability and affordability of very high quality connectivity. An attempt to improve the resilience of that connectivity may slow down its availability and make it unaffordable to large groups of consumers and businesses.
- 4 In the current cost-of-living crisis, where Ofcom and Government are putting pressure on CPs to provide social tariffs and generally support the communities they serve, it is incongruent to propose the level of incremental costs on CPs that would result from the introduction of the proposals in this consultation.

- 5 INCA considers the terminology in this consultation to be confusing and lacking in definition. It appears to be based wholly on BT's network and the transposition onto other networks would require an improved definition of terms as to how they relate to modern network design. As such, the comments in the response document should be read with the caveat that the full impact of Ofcom's proposals cannot be properly assessed until clarity on terminology has been provided. INCA calls for this consultation to be withdrawn and reissued in the future using clearly defined language and terminology.
- 6 Ofcom should instigate an industry-wide discussion of what is required for different network topologies as a one-size-fits-all approach to network resilience is counterproductive.
- 7 Ofcom should explore holding industry-wide workshops, for both fixed and mobile networks, to develop an effective resilience strategy encompassing both sectors.
- 8 The costs of implementing the proposals within this consultation could make some existing and planned deployments unviable, thus reducing competition and limiting consumer choice, contrary to the Statement of Strategic Priorities (SSP).¹
- 9 INCA believes that Ofcom should consider the overall resilience of the total UK telecoms infrastructure, where fixed and mobile networks are complementary and provide back-up for each other. Additionally, resiliency in power supply should be addressed through increased resiliency in power networks alongside telecoms network design. INCA further notes that telecoms networks do not qualify for priority fuel supply for back-up generators, which would provide genuine resilience against failure in power supply.
- 10 Ofcom must provide assurance that it is not planning to implement two parallel monitoring and enforcement programmes given that some of the aspects within this consultation are already in scope to TSA compliance.

¹ Para 19, SSP

3 A consultation lacking in clarity

11 Ofcom’s terminology within this consultation, in terms of network design and elements, appears to be based on BT’s network and potentially does not reflect modern fibre networks. Depending on network design, some aspects may not fully relate to current or future FTTP deployments.

12 For example, Figure 3 within the draft guidance appears to illustrate an Openreach network, which differs to those of the Altnets.

13 INCA believes that Ofcom needs to clarify its proposals in a manner which allows Altnets to interpret and apply the proposals to their own respective networks. This may involve withdrawing this consultation and reissuing it in the future using clearly defined language and terminology.

14 The comments provided in this document should be read with the proviso that Ofcom’s proposals are not sufficiently clear for Altnets to understand and interpret their impact on their existing and future network designs and construction.

4 Assurance of physical infrastructure

15 Whilst INCA’s members have highlighted a wide range of concerns with Ofcom’s proposals, they mostly fall into the following categories:

- a. Battery back-up requirements for cabinets, and
- b. Mesh-based network and power resiliency requirements at network aggregation points²

² It should be noted that, due to the lack of clarity in Ofcom’s terminology, it is not clear which types of network nodes, POPs, etc. are covered by these proposed requirements.

4.1 Battery back-up for cabinets

- 16 The proposed guidance sets an expectation of a minimum of four hours of power back-up, including at cabinet level. Additionally, the guidance outlines an expectation for this period of power back-up to be increased as the number of customers served by a site increases.
- 17 For a number of Altnets, mandating four hours of back-up is considered excessive and would result in not just the installation of larger batteries but wholesale change of cabinets as many are not large enough to accommodate batteries of that size. Individual INCA members have quoted costs between several £100ks and several £1ms.
- 18 This level of incremental cost, being imposed after networks have been built and investment cases signed off based on a different level of battery back-up in cabinets, is not feasible for a number of Altnets and is potentially fatal to their ongoing viability. This would have the adverse effect of slowing down full-fibre deployment and reducing competition and consumer choice.
- 19 In addition to the initial expenditure, the costs of ongoing maintenance of such infrastructure must be taken into account, including the replacement of battery packs. A battery pack would typically last for a few years, but batteries start to degrade towards the end of their lifespan. Monitoring of remaining battery capacity would become a reoccurring expense which is again not in the network operator budgets.
- 20 Furthermore, battery performance varies substantially due to temperature fluctuations; batteries typically have a poorer performance during the colder, winter months, when the highest level of power interruptions typically occur. So, in actuality, mandating for a minimum of four hours power back-up at all times regardless of environmental factors, would likely mean that a significantly longer minimum battery cover period would need to be applied.
- 21 Vandalism of existing infrastructure is a big concern to the sector, with isolated sites regularly targeted. Theft of batteries is a big concern for the sector. Increasing the

number of batteries within the existing infrastructure attracts further crime, undermining the resilience of the network overall and could be counter-productive.

4.2 Mesh-based network design

- 22 Many INCA members have expressed deep concern at the level of physical redundancy requirements proposed for both network connectivity and power supply. Altnets design highly resilient networks, often based on ring-configurations, rather than the historic 'tree and branch' network architecture seen in the BT network. Perhaps some of Ofcom's concerns stem from the inherent weaknesses in that historical network architecture and Ofcom may not have fully understood whether its proposals are required for modern ring-based network designs.
- 23 The costs of ring-based designs are considerable and have already been incorporated into many Altnet business plans. When Ofcom defined the network design to be reflected in its fibre costing model, which Ofcom uses to support its regulated wholesale price charge controls, Altnets argued that the model should reflect ring-based network architecture, but Ofcom disagreed, and the current model reflects the lower cost (and significantly less resilient) tree and branch network architecture. Now, however, it seems that Ofcom wants to impose additional costs on providers which are also not included in Ofcom's costing model and this is despite Altnet networks already being significantly more resilient than that of BT.
- 24 Given the lack of clarity in the terminology used by Ofcom, it is not clear which network points are covered by this mesh-based resiliency requirements, but there can be no doubt that the impact on costs per premises passed would be considerable.
- 25 The practicability of Ofcom's proposals are also causing INCA's members to raise concerns. Existing sites have not been specified and selected to accommodate dual connectivity and power supply. Implementation of the proposals could therefore, in a significant number of sites, result in operators having to find new sites, close down existing sites and completely redesign the surrounding network.

- 26 The repercussions of the proposals are material and INCA therefore urges Ofcom to take a step back and work with industry to gain a better understanding of the types of network designs in use today before then re-issuing this consultation with proposals that are proportionate for which the cost/benefit equation delivers net benefits to consumers.
- 27 With regards to resilience of power supply, INCA believes that a balanced approach needs to be adopted, which distributes the responsibility reasonably between telecoms operators and power companies. As explained above, full physical redundancy in power supply to sites (again we are not certain which types of sites are covered by this requirement) would be extremely costly and may not be physically feasible for a large number of sites. Additionally, if the power supply is disrupted, then there will be no incremental benefits from the redundant supply design. The only time that would be of real benefit would be if a power cable is physically damaged at the point of entry to the telecoms network site.
- 28 INCA considers that more benefits would derive from ensuring priority supply of fuel for back-up generators and that Ofcom should allow flexibility for operators as to what type of power back-up they consider most appropriate for individual sites.
- 29 It should also be noted that, in the case of wider power supply interruptions, customers are unlikely to be able to make use of telecoms services which, in themselves, typically require mains power.
- 30 INCA would like Ofcom to undertake a more proactive role with Government, Ofgem and others who contribute to Critical National Infrastructure to protect the power use of CPs. Telecoms is rightly considered as a priority, the services provided by telecoms are often safety-critical; INCA believes that a sensible approach to prioritising and restoring CP sites in the event of power outages would be in the public interest. INCA believes Ofcom should champion this cause.
- 31 The UK has very stable and reliable grid power, with the amount of lost power each year per consumer being incredibly low. Therefore, any intervention from Ofcom to make networks more resilient must be proportionate to the risk, which the proposals in this consultation are not. It will fall on consumers to fund what would be very

expensive intervention measures which will yield little tangible benefit compared to the risk.

5 Co-dependencies between fixed and mobile networks

32 INCA notes that Ofcom is proposing significant and separate resiliency obligations on both fixed and mobile network operators. In many cases, one network can provide (at least partial) back-up for each other. INCA would welcome industry-wide workshops to explore the best and most cost-effective overall resiliency strategy and approach for the UK.

33 As Ofcom's proposals stand, they appear to be excessive. This will ultimately mean that consumers pay more for little or no benefit.

6 Hard-to-reach locations

34 Many Altnets have focussed on providing fibre broadband connectivity to hard-to-reach areas, serving communities which are smaller, where premises are further apart and, therefore, the costs-per-premises passed are significantly higher than in densely populated areas.

35 Implementing the proposals within this consultation would raise the cost of installations per premises passed, rendering the provision of full-fibre services unviable in some locations. This will reduce competition and limit consumer choice, contrary to Government policy and the SSP.

36 Ofcom's proposals will have the effect of decelerating the speed in which fast, reliable, full-fibre broadband is being delivered and would put the Government

target of nationwide coverage for gigabit broadband by 2030³ at risk. Ofcom's proposals are a classic example of letting a goal of perceived 'perfection' getting in the way of what is already high-quality network design.

37 Furthermore, it is not reasonable for CPs to implement dual power supply at all sites. This would raise the cost of installations per customer considerably and provide very limited value. This would result in the supply of full-fibre services to poorly-served locations untenable and force suppliers to terminate their provision in that area.

38 Ofcom need to consider the necessity of ensuring total resilience across both the mobile and fixed telecoms networks, particularly in a world of increasing convergence.

39 In some locations, it may be far more cost-effective to back-up the mobile networks and the fixed networks linking into the mobile network, rather than making it uneconomical to deliver fixed broadband services to hard-to-reach locations.

³ House of Commons Library - Gigabit broadband in the UK: Government targets, policy, and funding (July 2023)