Wholesale Voice Market Review 2021-2026.

Non-Confidential Response of Gamma Telecom Holdings Limited

About Gamma and this Consultation Response

1. Gamma Telecom Holdings Limited ("**Gamma**") is a Public Electronic Communications Network ("**PECN**") that provides wholesale fixed and mobile telephony and data services, to some 1,200 channel partners. Two of these channel partners are wholly owned subsidiaries and represent themselves over 20% of our business. In all cases, our partners and subsidiaries sell almost exclusively to all sizes of businesses and not-for-profit entities throughout the UK and increasingly to various European Union member states. Gamma has a turnover c£285m per annum and is ultimately owned by Gamma Communications plc, a company listed on the Alternative Investment Market with a market capitalisation of over one billion pounds.

2. This Consultation response relates to Gamma and its UK subsidiaries. Any conflict between the implied position of Gamma in any UK Competitive Telecommunications Association (UKCTA), Internet Telephony Services Providers Association (ITSPA) or Federation of Communication Services (FCS) responses or that of any other association in which Gamma is involved, or implies Gamma is involved, is accidental and we consider that our views in this response should prevail.

3. Gamma trusts that this response addresses the questions posed by the Office of Communications ("**Ofcom**") and would welcome the opportunity to elaborate on any points in more detail if required. Please don't hesitate to contact [redacted] address as per letter head), for further detail in the first instance.

Executive Summary

4. The proposals regarding how to achieve the migration and their scope (save for the issue of resilience and security) in this Consultation are relatively light touch. [redacted]

5. [redacted].

6. With respect to security and resilience, we consider that the Consultation's approach of effectively delegating this to the industry is flawed. While some operators' customer bases, such as [redacted]

[redacted], act to ensure that the highest standards are met by definition, the rest of the market cannot be trusted to do the harder and more expensive thing, even if it is the right thing. In saying this, we note;

6.1. A number of operators, that purport to be "enterprise grade" or say they take security seriously, embraced Huawei, even though the risk of it being compromised by the Chinese regime was a factor long before the Government intervened.

6.2. British Telecommunications plc ("**BT**") has not undertaken the same level of due diligence with IP Exchange as it has with all the other products in its portfolio.

6.3. Consumer perception of telecommunications suggests they consider it to be more commoditised than it is and that consumers would be genuinely surprised to learn what can be classified as a PECN.

7. We make a number of suggestions on how to address this serious risk to the integrity of the UK's telecommunications infrastructure, from the role of standards bodies through to leveraging wholesale and retail market forces.

The Migration to IP

8. Gamma continues to execute well in the UK and are one of the market leaders in both of our core products of SIP and Cloud PBX. In SIP [redacted].

9. It is entirely possible for an operator to change the signalling protocol in use between it and BT without the need for substantial regulatory intervention. If Gamma can successfully achieve this, independent of regulation or any regulatory intervention, then we would question why much larger providers with significantly more market power cannot achieve the same outcome. There is, and should be, a charge control which should be sufficient for any operator to successfully conclude contractual, technical and commercial agreement with BT.

[1] [redacted]

10. To that end, we welcome Ofcom's light-touch approach to the migration of BT's geographic termination services to IP in the Consultation. Anything more than the proposed transparent timescale, "drop dead date" and dealing with the strange omission of the physical interconnection (referred to, slightly erroneously in our opinion as "port charges"[2] in the Consultation) would have to be demonstrated to be proportionate in light of the fact that Gamma achieved this some time ago.

11. There is a significant moral hazard in doing more; it would signal to the industry that it should always defer investment, innovation, or progress, until such time as the regulator publishes a document. This is an important point, because the prior market review for geographic termination was entirely compatible (save for a charge control on the physical cable link, although other regulation[3] clearly applied to limit BT's opportunity to game) with an all-IP regime. The Significant Market Power ("**SMP**") condition on BT was not TDM specific; indeed, the entire set of remedies, other than the interconnection circuits, was technology neutral.

12. Against that backdrop, other Communications Providers ("**CPs**") have argued that the environment had insufficient certainty and, as such, was a disincentive to invest. Given that we achieved this migration several years ago, that is just demonstrably not true.

13. There are consequential issues that need addressing by Ofcom; the body of "case law", be that from the Courts, or dispute resolutions, Statements or Guidance we rely on is often based on a backdrop of BT's TDM network. It is a valid ask, as we believe some stakeholders will be making, for Ofcom to opine on how it will interpret its previous policy positions in the context of BT's network upgrade. The absence of that does not mean it is impossible to migrate to IP, it would merely assist some in doing so more willingly.

14. We would also question whether the proposed timescales are realistic. Ofcom will be aware of our (and indeed those of others) concerns about the vulnerable in society and Voice Band Data [redacted]. However, it is a reasonable question to ask whether the proposed timescales

[2] Figure 7.8 and para 8.55 of the Consultation
[3] 2017 SMP obligation for fair and reasonable terms.

(with an April 2025 'drop dead' date are achievable given the sheer number of parties and interconnections involved.

15. An unrealistic timescale that has BT carrying the risk (in terms of only being able to recover the LRIC of IP call termination at a certain date) risks a situation where BT will recover the cost from other parts of its portfolio products acquired by Gamma. It would be unfortunate if, through such a waterbed effect, Gamma (or, indeed, others) were to be penalised [redacted].

16. Not only that, an overly aggressive timescale also risks a rushed migration, which could lead to problems for the integrity of networks, access to emergency services and matters such as security which we go into in more detail below. There is a learning curve associated with IP interconnection. It is not as steep today as it was in the past for the likes of Gamma and others at the vanguard of this technology. However, there will be interworking issues for many to be solved in testing, along with the agreement of a reference offer, all of which compresses the time available to actually get to the end result.

17. It will ultimately be for BT to decide whether April 2025 is realistic, however, if they were to suggest it was a stretch, it is our considered opinion they are likely to be correct.

Security

18. Gamma is relatively unique in that it only serves UK businesses. Almost all other CPs in the UK market serve residential users here or abroad. This pedigree has meant that we have on our network users for which security considerations are at the forefront of their choice of provider. [redacted]

19. TDM has several qualities regarding security, standards, and resilience inherent by its design. For example, it being based on private physical interconnections between networks affords it a significant advantage over other technologies with respect to security.

20. IP reduces the cost of entry into the market, which has been a positive for innovation and competition. However, it has also given parity to lean start-ups and those diversifying into the voice market with major, specialist, carriers.

21. The Consultation makes numerous references to 'telecoms providers'. Viewed through the lens of regulating the migration of existing providers from their existing TDM infrastructure to IP, this nomenclature makes sense. However, in setting out a path to IP for these existing providers, Ofcom is opening the market to new entrants who may be incentivised to interconnect with BT without due consideration or attention to security, resilience and other important factors.

22. [redacted][4] [redacted]

23. We understand that the outage in Telehouse North in 2016 exposed how reliant this part of the industry is on access to BT (or other providers) by either public internet, or a cross-link in a single carrier neutral location.

24. The presence of Huawei in so many major networks, including those that purport to be "enterprise grade" exposes the moral hazard faced by many CPs. [redacted].

25. The Consultation is very light on technical standards and security issues. We appreciate that the Government has signalled that it will pass primary legislation to give force to the National Cyber Security Centre's Telecommunications Security Requirements ("**TSRs**"), however, there is no guarantee this will be passed.

26. Relying on either the prospect of future legislation or CPs to overcome a significant moral hazard, is not likely to lead to the right outcome. We are heading to a place where the consequence of the Consultation, as it stands, is a regulator that considers that 205bn minutes [5]of UK voice traffic can traverse the public internet (which could mean it is tromboned around the world), unencrypted, is a satisfactory position. Nor can matters of such importance wait for *ex-post* intervention after a major incident or dispute.

[4] [redacted]

[5] Ofcom Communications Market Report 2019

27. While Ofcom may consider that a regime in which barriers to entry are reduced further, for example by the ease of gaining commercial parity with major operators that have invested, simply by interconnecting with BT via the public internet, is pro-competitive, there is a very important counterpoint to be made with respect to the charge control.

28. The very basis of a Long Run Incremental Cost ("**LRIC**") charge control assumes that terminators can recover their foregone common costs from other parts of their portfolio. At a wholesale level, this is often from the margin made on the very origination services which lowering the barrier to entry risks eroding. To that end, if, on the forward looking basis of this market review, [redacted] then the basis of the charge control is incorrect there should be a return to Fully Allocated Cost ("**FAC**").

29. A departure from LRIC to FAC would lead to significant price inflation for consumers, or, if the increased cost is to be absorbed by major residential operators, a reduction in those operators' scope to invest and innovate.

30. Neither a return to FAC nor the substantial risk to the security and resilience of UK networks can be correct. Nor do we believe that it is Ofcom's genuine intent for that to be the result. To that end, we consider that there has to be more intervention with respect to technical standards to overcome the problem, for which we have a number of potential solutions (which are not necessarily mutually exclusive) which we expand upon in the following sections;

    30.1. Give the NICC Standards Limited ("**NICC**") the same standing as various other standards bodies in GC A2.

    30.2. Make it clear that an entity following relevant NICC standards[6] will likely be considered to have discharged its obligations under Section 105A of the Communications Act 2003 (the "**Act**").

    30.3. Modify the relevant SMP conditions (or, perhaps more precisely, the product market definition) to enforce the Fixed Termination Rate only where there is a physical interconnect, physical peering or a "voice VLAN" in an internet exchange and where the traffic is encrypted,

[6] Noting that some of these standards need to be refined to be suitable for the purposes in question prior to being enforced in this regard.

thus creating an environment where market forces will push operators to the appropriate position.

30.4. Expose the issues to end customers so that demand-side market forces can drive the industry to a better position.

31. If the TSRs are enacted prior to this market review coming into effect, then some of these suggestions may overlap, at least in part (we would still suggest Ofcom give serious consideration to the future role of the NICC in any event). If there is any doubt as to that, then we consider that Ofcom must assume for the period in question that there will be no TSRs; as we say above, this is not a topic that can be grappled with after a serious incident.

32. Indeed, should the revised TSRs be applied to all operators, and the benefits of interconnection be enjoyed by all operators, then it is reasonable to expect Ofcom to apply the same proportionate approach to monitoring and enforcement action across all operators.

The Role of the NICC

33. At present, GC A2 gives precedence to various standards bodies in the European Union, even over those from the International Telecommunications Union ("**ITU**").

34. Absent any change to the current trajectory of the UK's exit from the European Union, there will be no international legal obligation to maintain a link to the work of these bodies and we consider there will be growing pressure to sever the ties given the potential to be bound by standards which UK operators cannot influence.

35. The ITU is a global standards body; we do not negate the value of the work it does, however, it is ill-equipped to deal with localisation issues. We therefore have a significant gap where for localisation, Ofcom must enact something into regulation through its statutory consultation process (as it did for CLI[7], or the UK is bound by standards it cannot readily influence.

36. The European Electronic Communications Code[8] has language softer than GC A2. The former uses the term "encourage" whereas GCA2 says "full account". Additionally, it is our understanding that

[7] "*Statement on changes to the General Conditions of Entitlement Changes to General Condition C6, other minor drafting changes and changes to the guidance on the Calling Line Identification facilities*" published by Ofcom on 30th July 2018.

[8] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code ("**EECC**")

under the provisions of the Withdrawal Act 2018, that any proclamation in the Office Journal of the European Union after December 31[s] 2020 is not binding on the UK. Aside from the current construction of GC A2 referring to the Framework Directive which ceases to apply before that date, it should be clear this leaves a gap.

37. We do not consider that there is any reason why Ofcom could not give the NICC parity with the bodies in GC A2.3(b). As to whether the language is "full account" or "utmost account" or "procure full compliance with", that is a topic for a much longer, future debate. Regardless of its precise status, there would be a substantial body of UK specific work, representing a consensus of highly qualified engineers representing the interests of a diverse group of networks represented in regulation. We also note that the NICC drives UK operators towards harmonisation with various international standards and works on how to implement such standards in the UK this is unsurprising given the market forces at play with respect to equipment costs.

38. The issues at stake cannot be left to the major operators alone. [redacted][9] [redacted]

39. [redacted].

40. Good corporate citizens of the UK telecommunications industry are already looking to the NICC guidance and adherence to such e.g. ND1035 Network to Network Interface Signalling, ND1443 Guidelines for the Security of All IP Telephony Service in the UK Telecommunications Network.

41. Elevating the NICC to have status alongside other bodies in UK regulation is a cost-effective approach to securing the desired outcome. Membership is affordable and open to all, and Ofcom and DCMS already have representation on the NICC board. Smaller operators engage with the material via their trade association (for example, the Internet Telephony Service Providers Association is an active associate member).

[9] [redacted]

42. In addition, unlike the Office of the Telecommunications Adjudicator, the NICC requires no re-skilling. There is, for example, already a NICC security task group.

Section 105A of the Act and the NICC

43. We mention above that the TSRs are by no means certain. There is a real risk that the main political driver, being the presence of Huawei and the risk of equipment being compromised by China, having been handled, that they cease to receive the Parliamentary time to progress.

44. There is already a broad and wide-ranging obligation on providers to procure the right outcomes with respect to resilience and security in Section 105A of the Act; which then continues to give Ofcom various rights to enforce.

45. In the alternative to giving the NICC a similar status to European standards bodies or the ITU in GC A2, then Ofcom making a definitive policy position or guidance that it considers compliance with various NICC standards to be likely [0] to discharge various obligations with respect to Section 105A would be a step in the right direction. It gives a clear signal to the industry of the conduct expected of participants in relation to security and resilience.

The Construction of the SMP Condition (wholesale market forces)

46. If the product market were to be defined as "termination of a geographic all at a nominated Point of Interconnect which meets the Relevant Standards", then the market may address this situation itself.

47. The economic forces would act in two ways; Originating Communications Providers ("**OCPs**") that take security seriously would have the legal right to demand an interconnect be fit for purpose. Terminating Communications Providers ("**TCPs**") that are concerned about this issue would be able to recover their common costs (and more) from OCPs that are otherwise happy to not use the "relevant standards".

48. We do not consider this to be an onerous obligation; indeed, we do not see it as a material issue if implemented for any operator that already takes its security obligations seriously. Operators for which it is onerous are potentially precisely the reason it is needed.

[10] We would not expect Ofcom to absolutely fetter its future discretion in this regard, merely issue a very strong signal as to its intent.

49. The end result will be an environment where OCPs have no choice but to enact the appropriate approach to security in order to maintain their ability to compete on cost, and TCPs will be obligated to implement them on request. While there is a risk that some OCPs and TCPs would work bilaterally on a basis where they reciprocally charge a low termination rate and do not enact various standards, we consider that the potential cost arising from maintaining two sets of interconnection procedures, processes and protocols across their estate would provide a suitable economic incentive to standardise on one the version that TCPs have the legal right to demand.

50. Once the parameters we suggest are set, we also envisage the market moving forward based on its own efficiencies. Large networks operating at scale, which must absorb the overhead to interconnect with each other and to service their enterprise and public sector estates, will find ways to productise the requirements into managed services for smaller networks. Indeed, this is what happens today with number range hosting; smaller operators outsource the complexities and costs of the PSTN interface, emergency services calling, number portability and more to those most capable of handling it and both parties enjoy the economic benefit of it.

51. We do not consider that the construction of the currently proposed SMP conditions, with respect to "*fair and reasonable terms*" and "*associated facilities that are reasonably necessary*", provides operators that take these concerns seriously enough latitude to act unilaterally. The counterparties, seduced by their bottom line more than doing the right thing, absent any guidance or signal from the regulator (or better yet, explicit mention in the relevant regulation) are unlikely to make exceptions. This would lead to Ofcom being asked to resolve the matter by way of its dispute resolution powers on a matter that by its very definition is not one that should be subject to *ex-post* intervention.

Consumer Information (retail market forces)

52. Finally, in relation to security, it is our experience that the public considers that the market for telecommunications is far more commoditised than it really is. The reality is much different. Not all Public Electronic Communications Networks ("**PECN**") are equal.

53. The definition of PECN encompasses the likes of Gamma, BT and Vodafone. However, it also, in the same breath, includes an instance of Freeswitch running on a Raspberry Pi, connected to the internet via a WiFi hotspot as a PECN. In a TDM-centric era, the inherent characteristics of that technology means that PECNs were large, well resourced operators precisely the sort of CP we imagine the average layperson with no prior knowledge would imagine when asked to define one.

54. [redacted].

55. Furthermore, a focus on security is a long-running, forward looking endeavour, with requirements to refine, react, re-engineer based on current and future potential threats. It cannot therefore be a hurdle to jump on receipt of a BT reference offer, and equally, nor should BT be expected to be the gatekeeper of the standards of its interconnect partners. In the event that BT elects to duly discriminate against the residential bedroom dwelling Raspberry Pi gaining interconnection, perhaps by forbidding such equipment in its reference offer, how is it able to enforce ongoing compliance when operators switch out elements of their infrastructure?

56. A good analogy for our retail-side approach is comparing the approach to food standards between England and Wales. In England, there is no requirement to display a food hygiene rating, yet in in Wales there is. The logic in Wales was that consumers' assumption that the market was commoditised was flawed and the underlying issue was exposed to them, allowing market forces the chance to address the issue.

57. Years of regulatory policy focussing on price and fostering price competition through ensuring there is a frictionless market for switching, have all contributed to this. We do not say this is a bad thing in one respect; the UK is renowned and respected globally for the diversity and competition in its market. However, it has given rise to what we consider to be an ill-founded perception that all telecommunications services are the same.

58. Gamma is by no means perfect with respect to security; no operator will ever be. But Gamma does take its legal (and moral) obligations extremely seriously. As a minimum, a regime where a consumer or business's telecommunications traffic can be easily exposed to mass interception by malicious actors because it is conveyed unencrypted over the public internet, should be exposed to the consumer at the point of sale, allowing them to make an informed choice. Just like the patron at a takeaway in Wales.

59. Indeed, Ofcom is already aligned to this way of thinking. The planned Contract Information requirements being brought in as part of the transposition of the EECC are a key element to

[11] §4.7-4.86 of "*Fair treatment and easier switching for broadband and mobile customers. Proposals to implement the new European Electronic Communications Code*" published by Ofcom on 17th December 2019 (the "**EECC Consultation**").

exposing major issues to the consumer at the point of sale, including "*the main characteristics of the service"*[12]. Furthermore, we note that "*the type of action that might be taken by the provider in reaction to security incidents or threats or vulnerabilities*." [3] Is not quite sufficient to cover the problem. This is a backward looking requirement and impacts not just security but also wider consumer confidence in the industry.

60. Above, we discussed that security is an on-going process, not something taken as a snapshot in a given moment. This is why we consider it important that actual security measures (and by which we mean specifics, not nice sounding but otherwise meaningless text from the marketing department) form part of the Contract Information being presented to the customer at the point of sale.

61. GC C1.7 is proposed to state when the EECC is transposed;

> "*The Contract Information and Contract Summary shall become an integral part of the contract between the Regulated Provider and the Relevant Customer. The Contract Information and Contract Summary shall not be changed unless the parties to the contract expressly agree otherwise*". [4]

62. It therefore follows that a change to the security levels or more likely, a decline in the security score resulting from an inability to maintain a set of security standards would constitute a change in the service and trigger a penalty free exit for the customer. Returning to our food standards analogy, should the patron be required to continue eating their set menu if it transpired that the hygiene standards on which they based their selection declined since they were measured?

63. Ofcom states [5] that they "*agree with respondents that a prescriptive approach such as requiring telecoms providers to use the NICC IP interconnection standards would be undesirable as it could cause telecoms providers to reconfigure/replace pre-standardisation IP interconnects which are working reliably.*" While we accept that revising and harmonising existing interconnects may result in a cost to the parties involved, such changes would be necessary should the security impact be too great. Conversely, a prescriptive approach ought to ensure that any new entrants to IP

[12] §4.9(a) of the EECC Consultation,
[13] §4.9(e) of the EECC Consultation.
[14] Annex 16 of the EECC Consultation.
[15] §9.20 of the Consultation

interconnection both those migrating from TDM and those new to market meet the required standards in a way repeatable and cost effective way.

64. We note that we have had to deal with issues around older equipment on a daily basis. For example, header manipulation on Session Border Controllers is used to handle interworking problems causing withheld numbers or network numbers being presented in addition to various codec incompatibilities. Most major manufacturers have interworking routines to correct such issues, but, most importantly, one of the material benefits of IP infrastructure is that many changes are a software change. The limitation is the hardware's ability to process the new software and maintain the same throughput.

65. In any event, the requirement can be made for new equipment with a set retirement date for legacy equipment, a method no different to how the Government is mandating the removal of Huawei from networks.

Personal Numbering (070)

66. We agree with Ofcom's proposed market definition and SMP assessment.

67. While the excessive retail prices of 070 calls have indeed fallen, if Ofcom's intention is for the 070 number range to be treated like that of a mobile then the range ought to be considered as 'in bundle' for operators' tariffs which provide inclusive minutes to the other destinations priced at MTR. In other words, Ofcom should use its retail price setting powers [6] to secure the desired outcome.

68. We do not believe there will be sufficient economic incentive for operators to do this because:

    a) The amount of traffic to these ranges, as Ofcom has highlighted given the large reduction in volumes, is relatively small, so one ought to expect limited consumer demand insisting upon such bundling, and,

    b) The MNOs will have no reason to provide in-bundle parity until such time as they are required to provide 070 numbers to their new mobile customers.

[16] Article 17 of the Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (as amended) (Universal Service Directive)

69. The reality is that existing MNOs will never likely 'run out' of existing mobile stocks. [redacted][7] [redacted][8] [redacted]. In the event that an existing MNO ever to be on course for fully deplete its number stocks, one ought to expect that it would take measures to deploy 070 numbers to its data only devices (or indeed, address the oddity that MSISDNs are allocated to such devices entirely).

70. Until such time as 070 numbers are provided in-bundle, consumers with inclusive mobile minute bundles will still suffer bill shock each time they dial 070. This bill shock is unlikely to be enough to trigger the impacted consumer to act, but it is reasonable for them to think twice before either dialling, or indeed ever be provided on their mobile device, an 070 number in future.

[17] [redacted]

[18] [redacted]