CONSULTATION BY OFCOM ON BATTERY BACK-UP FOR SUPERFAST BROADBAND SERVICES WHICH USE FIBRE OPTIC TECHNOLOGY (THE "CONSULTATION")

RESPONSE BY HYPEROPTIC LTD

About Hyperoptic

Hyperoptic Ltd is the new high-speed broadband internet service provider (ISP) targeting the UK consumer and business markets. For the consumer market it will focus on multi-dwelling units in high density areas, and will offer leased line replacement services for businesses in those same areas. Hyperoptic will deploy its own network in the UK, utilising managed Ethernet services and dark fibre to connect its local points of presence (POPs) to its Data Centre and sites served. It will then install its own in-building network that will be independent of the BT copper and existing last mile network.

- Hyperoptic will provide: Differentiated products, with extremely high access speeds (1 Gig, 100 Meg, and 20 Meg) and value added services
- End-to-end control of the network, allowing for provision of high level SLAs
- Very competitive offerings due to an efficient cost structure and well chosen sites

The company has the benefit of building a completely new network based on the latest fibre technology, allowing it to provide much higher quality product than is currently available. Specifically, it will offer

- speeds of up to 1 Gig symmetric using point to point ethernet, at a
- competitive price, due to leveraged resources, and provide a
- much better service with the use of a highly customisable and reliable network infrastructure and dedicated service agents.

At launch, Hyperoptic intends to offer a VoIP based telephony service, and may consider TV and other add on services in the future.

The outcome of this Consultation will have a direct impact on Hyperoptic's business and on its customers. Hyperoptic therefore welcomes an opportunity to comment on Ofcom's proposals. It will be happy to discuss its comments in more detail if this would be of assistance.

Question 1: Do you agree that Ofcom's guidance on battery back-up needs to be reviewed at this time?

Hyperoptic believes that it is important that the nature and scope of obligations relating to battery back-up are clear to encourage investment in the market for superfast broadband services and to ensure effective competition. It welcomes clarity on this issue.

Question 2: Do you agree with the scope of this Consultation as set out in Section 4?

No. Hyperoptic believes that the scope of the Consultation is too narrow and requires further consideration. In particular:

1. Overlay Solutions

The Consultation appears to operate from the premise that battery back-up is at present generally mandated for fibre broadband providers. This is not correct. The existing guidance on battery back-up (set out in Ofcom's statement *Next Generation New Build*, *2008* the "New Build Statement") relates only to new build developments and does not extend to overlay solutions. The Consultation therefore proposes to impose obligations where they did not previously exist.

Ofcom's regulatory principles require that, prior to proposing intervention, Ofcom considers and consults on the question of whether the introduction of regulation is required and whether the relevant risks can be addressed by less intrusive means. Hyperoptic does not believe Ofcom has observed this principle in the present case. There are key differences between the considerations that apply in relation to new build developments and those relating to overlay solutions: On an overlay solution, the consumer makes a positive choice to adopt new infrastructure. Hyperoptic believes that situations where consumers can exercise choice to avoid the risks in question are most appropriately addressed through the provision of information. Consumers are then able to make informed choices which take account of service limitations without bearing the costs of intervention and without impact on competition within the market.

Removing the requirement for battery back-up for fibre access (to the extent that this already exists) is one of the options included in the Consultation (paras 5.52 and 5.53), but is rejected by Ofcom on the basis that Ofcom ".. *consider(s) that the absence of a battery back-up facility, while offering a simple FTTP deployment solution, would not meet the obligations under GC3. The aim pursued by GC3 is to take all necessary measures to maintain, to the greatest extent possible, uninterrupted access to emergency organisations as part of any PATS offered. Thus, it is against that aim that proportionality needs to be assessed*."

The implication here is that it is not possible for a fibre broadband provider to comply with GC3 without providing some form of battery back-up. Hyperoptic does not accept this interpretation and submits that, in relation to overlay solutions in particular, Ofcom should have proposed and considered a range of available solutions including less intrusive options.

2. Competing Broadband Technologies

Hyperoptic understands that the issues raised by the provision of non line-powered broadband are the same irrespective of the technology employed. Hyperoptic believes that the Consultation should extend to broadband provision over technologies such as licensed wireless, UMA, satellite, wimax, LTE and a DOCSIS only solution. These services are functionally equivalent to broadband provided over fibre and should therefore be considered on the same basis.

3. Fibre Broadband Solutions

Hyperoptic notes Ofcom's statement that the scope of the Consultation is limited to FTTP services and its suggestion that in some cases it would not apply to FTTC services (Consultation, para 4.7). However, it believes that greater consideration needs to be given to the issues raised by mandating battery back-up for different technical solutions.

As noted by Ofcom in the New Build Statement, fibre broadband may be implemented through a number of different methods: Incumbents who enjoy the benefit of extensive local exchange facilities are likely to adopt a GPON solution (as we see proposed by BT), while new entrants are likely to install multiplexed networks - or hybrid solutions, such as FTTC and FTTB. These options raise the same issues for consumers, but the costs of

and difficulties involved in complying with a battery back-up obligation vary greatly according to the solution adopted.

The proposals set out by Ofcom in the Consultation assume a GPON solution. They fail to take account of the costs of and difficulty entailed in complying with a battery back-up obligation by providers offering hybrid solutions. As Ofcom notes in the New Build Statement, participation by new entrants to the market might be expected to bring new ideas and innovations (New Build Statement, para 2.9). Investment in fibre broadband solutions and participation by new entrants is therefore key to establishing healthy competition and promoting consumer choice. If Ofcom fails to take account of the difficulties its proposals present to the providers of hybrid solutions it risks creating a competitive advantage in favour of one solution, discouraging new entrants and stifling competition (see, further, Hyperoptic's response to question 3, below).

4. PCNs/PATS Providers

One further and fundamental difficulty perceived by Hyperoptic concerning the scope of the Consultation relates to its focus on fibre broadband providers, that is, on the providers of Public Communications Networks (PCNs).

Delivery of VoIP services to consumers may involve Communications Providers (CPs) operating at different levels of the market; a broadband provider with control of the underlying network and a VoIP service provider. Hyperoptic considers that the question of where responsibility for compliance with GC3.1(c) lies is of fundamental importance.

In the New Build Consultation, Ofcom proposed imposing obligations on PATS providers. It did not consult on the question of whether obligations could or should be imposed on network operators. The position adopted by it in the New Build Statement – which imposes obligations on the providers of PCNs - is fundamentally different from that proposed in the related consultation. Respondents were not given an opportunity to comment on this during the consultation process.

Hyperoptic believes that Ofcom's assertion that GC3.1(c) applies to communications providers (CPs) that provide a Publically Available Telephone Service (PATS) *and/or* operate a PCN is flawed.

Considering the issues raised by seeking to impose GC3.1(c) obligations on CPs operating at different levels of the market:

(i) <u>Communications Providers who operate PCNs but do not offer PATS</u>

Hyperoptic considers that there are legal difficulties in seeking to impose GC3.1(c) obligations on providers of PCNs.

GC3.1(c) provides that CPs should take all necessary measure to maintain, to the greatest extent possible "...*(c) uninterrupted access to Emergency Organisations as part of any Publicly Available Telephone Services offered."* In the past it has been generally considered (including by Ofcom, see Ofcom's 2007 Statement on the Regulation of VoIP Services, para A5.58) that GC3.1(c) applies only to providers of PATS.

However, in both the New Build Statement and the current Consultation, Ofcom references GC3.3, which provides that that for the purposes of GC3.1 a Communication Provider is "*a person who provides a Publicly Available Telephone Service and/or provides a Public Communications Network over which a Publicly Available Telephone Service is offered.*"

The interpretation that has generally been placed on GC3.3 is that it is intended to narrow the application of GC3.1 by ensuring that it applies only to those persons who are responsible for the *provision* of the PATS or PCN in question (i.e., that referenced in GC3.1(a), (b) or (c)) and does not extend, for example, to marketing agents. GC3.3 should therefore be read as if the words ", as applicable" had been included at the end of the sentence.

Instead, Ofcom relies on this definition in support of its suggestion that GC3.1(c) may be applied interchangeably to the providers of PATS or PCNs, that is, it assumes that the intention of GC3.3 was to broaden the application of GC3.1.

Hyperoptic considers this to be a purposive interpretation of GC3 and finds it is difficult to maintain for the following reasons:

- The intended scope of GC3.1(a) and (b) is clear from the drafting of those provisions. Para (a) (obligation to maintain proper and effective functioning of the PCN) applies only to PCN providers and para (b) (obligation to maintain PCN and/or PATS in event of catastrophic network breakdown) is applied *expressly* to providers of both PCNs and PATS. If it had been intended that para (c) should also apply to providers of both PCNs and PATS it seems likely that this would have been made clear within the text of that paragraph – that is, that the wording of para (c) would mirror that of para (b).

- The obligation set out in GC3.1(c) originates in Article 23 of the Universal Service Directive, which provides in the relevant part "*Member States shall ensure that undertakings providing publically available telephone services … take all reasonable steps to ensure uninterrupted access to emergency services*". There is no suggestion that this obligation is to be applied to the providers of PCNs (unless they also offer PATS).

If Ofcom intends to rely on GC3.1(c) to impose obligations on providers of PCNs it will need to propose modifications to that condition and to consult on those proposals.

Leaving aside the legal difficulties highlighted above, Hyperoptic believes there are a number of practical difficulties involved in imposing an obligation which is triggered by provision of a service (access to the emergency services) on a third party CP that does not provide that service. The most obvious of these relates to overlay solutions. Where a CP is implementing a fibre solution in premises where copper lines are already installed, the CP may not be aware that customers are accessing VoIP services over its network.

It may be that this is the point that Ofcom intends to address in para 4.7 of the Consultation where it states "*This consultation is not concerned with fibre to the cabinet-based solutions in which power for telephony services is provided along the copper wire and therefore no customer installed battery backup to maintain telephony services is necessary*."

Hyperoptic finds the reference in para 4.7 to FTTC solutions misleading as this issue arises irrespective of where the fibre provision terminates (be it FTTC, FTTB, FTTP or FTTH). However, Ofcom's proposal appears to be that where a CP is providing a fibre overlay solution and has confirmation from a customer that the customer has an operational copper line, the requirement to conduct a risk assessment will have been fulfilled. Hyperoptic believes greater clarity is required on this point but is broadly in support of this proposal.

(ii) Communications Providers who offer PATS but do not operate PCNs (VoIP service providers)

As stated above, it is clear from Article 23 of the Universal Service Directive that the obligation set out in GC3.1(c) was intended to be imposed on those offering PATS, in this case, VoIP service providers.

Ofcom set out its views on the application of GC3.1(c) to VoIP service providers in its statement on the regulation of VoIP services (*Regulation of VoIP*, *2007* the "VoIP Statement"). It concluded that, wherever possible, VoIP service providers should negotiate SLAs with relevant PCNs concerning quality of service but that battery back-up for CPE should be a matter for each individual VoIP service provider in its discretion.

Hyperoptic believes that in the great majority of cases, VoIP providers have little visibility of the infrastructure over which their services are accessed and have no contractual relationship with (or bargaining power with) the underlying network provider. It believes there are difficulties with the suggestion that VoIP providers negotiate SLAs but agrees that VoIP providers should not be obliged to provide battery back-up for CPE.

(iii) Communications Providers who operate PCNs and offer PATS

In the VoIP Statement, Ofcom suggested that the action required to be taken by VoIP service providers to comply with GC3.1(c) would depend on the degree of control that each individual VoIP provider exercised over service delivery (VoIP Statement, para 4.32). However, if, as is argued above, GC3.1(c) is not capable of imposing an obligation on the providers of PCNs and imposes little in the way of practical obligations on VoIP service providers, it cannot follow that greater obligations be imposed on a fibre broadband provider which offers VoIP service solely on the basis that network and service provision are controlled by the same CP.

If this were the case, it would give rise to the anomaly that a customer using the VoIP service offered by its fibre broadband provider would benefit from battery back-up whereas a customer using fibre broadband to access a third party VoIP service would not.

In such a scenario, VoIP service providers who operated the underlying fibre networks would find themselves at a competitive disadvantage and there would be a strong disincentive for broadband providers to offer VoIP. This would reduce competition and impact consumer choice. Such a result cannot be correct.

Question 3: Do you agree that a battery back-up facility should always be provided?

No. Hyperoptic does not believe that requiring CPs to provide battery back-up is proportionate to address the risks identified by Ofcom nor does it believe that such a solution will achieve Ofcom's policy objectives.

1. Benefit to Consumers

In attempting to calculate the likely benefit to consumers of mandating the provision of battery back-up, Ofcom assesses the risk which it perceives to be presented by the provision of VoIP services over unpowered fibre broadband. It concludes "*the probability that the emergency call is made on the same day as the power failure is of the order of one in two million... the probability of the emergency call occurring at the same time of day as a power failure would be significantly less than this figure*" (para 5.20). The risk to consumers is therefore, in Ofcom's assessment, minimal. However, in many cases, battery back-up will not alleviate this risk and the solution proposed by Ofcom secures an even lower level of benefit.

Hyperoptic understands that, on a GPON solution, back-up power supplied to the ONT may power the relevant CPE. However, on a hybrid solution, any back-up power would be installed at the end of the fibre and located remotely from the customer's premises: It would not power CPE. Ofcom's position on the powering of CPE is

very clear – it may be provided to consumers as part of a service offering, however, its provision is not mandatory (see VoIP Statement and Consultation para 3.15). The powering of CPE would therefore be a matter for consumers and is unlikely to be addressed by the majority of users - as is currently the case in relation to DECT phones, where customers do not purchase any form of back-up but instead rely on mobile access in the event of power outages. In cases where the CPE does not have the benefit of back-up power, there is little benefit in providing battery back-up for the fibre line – particularly when one takes into account the costs associated with such provision (see below).

Even in relation to GPON solutions, in Hyperoptic's view, Ofcom has failed to satisfy the requirement that it seek and take account of relevant inputs. Two significant factors which Ofcom addresses briefly but seemingly fails to take into account are as follows:

- Mobile access: The figures quoted by Ofcom show that over 61% of all UK emergency calls are made from mobiles (section 5, table 3). Coverage and hand-set take-up in the UK are very high at 95% and 90% respectively. (para 5.21). The availability of mobile phones is clearly relevant to Ofcom's cost-benefit analysis: If consumers choose to use mobiles (particularly if they have been educated as to and understand the limitations of the fibre service), the risk presented by power outages is greatly reduced. Ofcom expresses doubts as to the availability of the relevant mobile network to support calls in the event of a power outage (which Hyperoptic understands to have the benefit of back-up power) but has not sought verification on this point from mobile operators.

- DECT phones: Given the high levels of DECT take-up in the UK, a large proportion of households in the UK may rely exclusively on DECT technology. Consumers using DECT handsets are already exposed to the risk of power outages and will derive no benefit from battery back-up to the ONT. As Ofcom itself acknowledges, providing and presenting to customers a battery back-up 'solution' which fails to provide back-up when called upon arguably presents a greater risk to consumers than failing to provide any back-up at all.

Finally, it should of course be noted that even a consumer using a device powered by the ONT back-up will not obtain benefit from the provision of a battery back-up unit unless that consumer takes action by monitoring battery-life and replacing batteries. Experience gained from the installation of smoke alarms indicates that a reasonable proportion of consumers will fail to maintain batteries as required.

2. Costs

Ofcom suggests that the deployment and installation costs of providing battery back-up comprise the costs of the charging unit and the batteries themselves and further suggests that these costs may comprise several percent of the overall installation costs. However, this conclusion assumes deployment of a GPON solution. The costs of and difficulties entailed in providing battery back-up for a hybrid solution are far greater.

Hyperoptic estimates that the incremental costs entailed in the initial provision of a one-hour battery back-up (without reference to the additional 'enhanced provision' that might be required to serve vulnerable consumers) will amount to 50% percent of its overall equipment costs. However, this will not represent the totality of its costs: On a hybrid solution, the equipment benefitting from the back-up is shared and installed in a roadside cabinet or in the basement of a multi-tenanted building. If CPs providing a hybrid solution are required to provide battery back-up then, of necessity, responsibility for maintenance of the battery will fall on the CP. Undertaking battery maintenance would represent a significant and onerous obligation: The CP would

need to make frequent visits to check alarms on the charging unit – and there is a chance that batteries might fail between visits. This could have significant implications in terms of liability.

There are also practical difficulties associated with the provision of batteries on hybrid solutions: Ofcom suggests that FTTC operators will not be subject to the battery back-up obligation *where telephony services are provided over a copper line*. However, FTTC operators already offer 'broadband only' solutions. If customers of these solutions indicate an intention to abandon the copper line in favour of third party VoIP services provided over the fibre broadband, the FTTC operator will, on Ofcom's current proposals, presumably have an obligation to provide back-up. This back-up would need to be installed in roadside cabinets and be large enough to serve a number of homes. This raises significant challenges in terms of space.

If the practical issues facing hybrid fibre broadband providers could be overcome, the costs of compliance with the battery back-up obligation would be passed on to consumers. These costs could be significant and one possible outcome, therefore, would be that hybrid solutions would be priced out of the market.

3. Conclusions

Examining all the factors that Hyperoptic submits are relevant to Ofcom's cost-benefit analysis – particularly as they relate to CPs that provide hybrid solutions - Hyperoptic concludes as follows:

- There is no benefit to consumers of CPs that offer hybrid solutions providing battery back-up for fibre broadband unless the CPE also benefits from back-up.

- CPE can be customer-provided. Neither the fibre broadband operator nor VoIP service provider has visibility or control of the CPE used by customers and neither is therefore able to provide back-up.

- If CPE back-up is not provided, Hyperoptic believes that the majority of customers will not take the initiative to purchase it.

- As CPE would remain unpowered, requiring CPs offering hybrid solutions to provide fibre back-up not address the minimal one in two million risk identified by Ofcom. The benefit secured for consumers would be far lower than this.

- The costs of and difficulties entailed by providing battery back-up for hybrid solutions are significant and onerous: Existing cabinets may not be large enough to accommodate shared batteries and CPs would need to assume responsibility for battery maintenance.

- Given the above, Hyperoptic does not accept that the benefits that might accrue to consumers from Ofcom's proposals will outweigh the costs.

- Hyperoptic does not agree that the present proposals are in line with Ofcom's policy objectives. If Ofcom applies these proposals to hybrid fibre broadband solutions there is a significant risk that it will deter new market entrants – the players that Ofcom acknowledges are likely to bring innovation. This will distort competition and significantly limit consumer choice.

- Ofcom's proposals could also be argued to limit consumer choice by failing to allow consumers to determine whether they wish to purchase and pay for battery back-up. Many consumers –

particularly those who make use of DECT handsets - may prefer to rely on mobile access to the emergency services and thus avoid the costs associated with supply of the back-up unit.

- Hyperoptic submits that the concerns expressed by Ofcom objectives would be better met – and the risks identified by Ofcom addressed in a more proportionate manner – by requiring fibre broadband providers to provide information to consumers and by allowing consumers to choose between competing offerings. This would also better achieve Ofcom's policy objectives.

- The same issues and difficulties – as highlighted above - arise in relation to both overlay and new build developments.

Question 4: Do you agree that the proposed minimum battery longevity of 1 hour is appropriate?

See response to Question 3.

Question 5: Do you agree with our proposed approach to address the needs of individual customers requiring additional protection?

Hyperoptic understands the concerns expressed by Ofcom concerning vulnerable consumers but, again, believes that there are difficulties with the approach proposed.

Working on the assumption that a battery back-up obligation can be imposed on broadband providers and that such an obligations would be proportionate to the risks involved (neither of which Hyperoptic accepts), the suggestion that CPs might be required to cater for those who might require additional protection raises some further issues and presents additional challenges.

In relation to a hybrid solution, batteries would need to be substantial even to provide a 1 hour back-up solution. Implementing even the minimal level of back-up would therefore raise issues in terms of space, cost and maintenance which CPs may not easily be able to meet. Catering for additional needs in addition to this may not be feasible.

If Ofcom is minded to introduce such a requirement, Hyperoptic believes it will need to consider and provide additional guidance on the questions of how such customers would be identified and their needs assessed and whether CPs would be entitled to levy increased charges for the enhanced service.

Hyperoptic Ltd
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