

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: Promoting higher speed broadband in new build housing developments

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Representing (self or organisation/s): Connect – the union for professionals in communications and the Communication Workers Union

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Name Adrian Askew (sent by e-mail)

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Promoting higher speed broadband in new build housing developments

Introduction and general remarks

1. This response has been jointly drafted by Connect – the union for professionals in communications and the Communication Workers Union who, between them, represent more than 90,000 members working at all levels across the UK telecommunications industry in more than thirty separate companies.
2. Building on long-standing experience in both unions with regulatory initiatives, we both made responses to the Ofcom consultation on *Future broadband – Policy approach to next generation access* which took place last autumn. In the meantime, Connect has produced its own booklet on fast broadband access *Connecting Britain's Future: The Slow Arrival of Fast Broadband*. Earlier, the CWU's own campaign *Demand Broadband* was instrumental in encouraging the roll-out of current generation broadband networks. Consequently, we are both extremely familiar with the issues at stake and are pleased to respond to this consultation on behalf of all our members.
3. We do not want to repeat here too many of the policy points we made in response to the earlier consultation, but it is important to re-state some of the most essential. In general terms, we welcome the consultation on new build developments as we believe that fibre deployment in the access network will become increasingly important to the UK in both social and economic terms, with the potential to drive social inclusion and economic growth. Investment which brings that closer has to be encouraged. Clearly, new build developments have the capacity to offer something of a test-bed from which to learn the lessons of what works and what does not from the perspective of fibre's socio-economic benefits. However, we should also recognise that demand for fibre may well grow at such a pace that it places us beyond the scope of the need for test beds – not least given the timeframe for the Ebbsfleet project, where completion is not due much before 2020 and where even critical mass for the project (from an initial basis of 600 homes) may not be attained by the time that serious social and political pressure – via, for example, the Caio Review and the activities, albeit currently on the fringe, of H₂O Networks – has arisen for fibre deployment. We should also recognise, as Ofcom does, that new build developments of the scale sufficient to be attractive to the deployment of fibre, from which such lessons can be learned, are likely to be very much in the minority. Therefore, Openreach's suggestion that it may deploy fibre in new build developments of not less than one thousand homes would restrict fibre to a small proportion of households and would not deliver the development of fibre on a wider scale.

4. At the same time, fibre has the capacity to increase social division and to encourage a differentiated, partial approach to economic growth where deployment does not take place on a planned, systematic basis. The location of the three large housing developments being suggested as likely to see the first installations of fibre in the UK are illustrative: Ebbsfleet, in the south-east of England; and Wembley City and Titanic Docks, both in London. In this respect, we feel that it is important not to over-state the potential of competitive solutions to fibre deployment: an approach to deployment which relies solely on competition as a driver will see a widening of the digital divide. There is also the potential for waste as providers bid to outdo each other in supplying over-provided customers in large urban areas while others in less busy and significantly rural areas are served not at all. We are aware of Ofcom's recent publication of statistics that show that rural areas are better served by broadband than urban ones although we would like to see the definitions involved, as it remains the case that Scotland and, particularly, Wales, for example, are poorer served than the average. Here, the divide illustrated in Ofcom's statistics between urban and rural areas covered by cable broadband perhaps provides a more illustrative example of what happens when 'the market' is left to its own devices concerning where investment can most profitably be made. We feel that Ofcom's Communications Act obligations to promote services 'throughout the UK' should be much evidently further up its list of priorities in terms of how it approaches this fundamental question of 21st century communications networks that will have a direct and major impact on consumers.

5. Furthermore, given the important role which Ofcom attaches to competition in the roll-out of current generation broadband as a lesson for how fibre in the access network will grow, we would caution that it is difficult to pinpoint the precise reason(s) for the growth of broadband roll-out. Competition has certainly played a role, but we would point out that the scale of growth of broadband deployment is at least as likely to have been driven by broadband becoming a central part of BT's strategic development after 2001, coincident with extensive political and social pressures which saw broadband as desirable for the UK.

6. It is clear that, as far as political and social pressures are concerned, there is now a similar situation with a head of steam building pressure for the deployment of fibre, and from a variety of perspectives, but – in contrast – there is now a much smaller potential to apply pressure on service providers to roll out on the same basis (and as quickly) as before. The key difference here is the sheer cost of fibre. ADSL was comparatively easy (and cheap) to roll out but, on top of providers' existing network investment plans, we consider that there will be very practical resistance to fibre from operators on cost grounds. In the case of BT, the largest provider and the only one with sufficient scale to respond to such an investment scenario on a national basis, current shareholder pressure to reduce capital expenditure

plans so as to increase short-term returns is likely to add its own investment pressures. We feel that a greater sense of realism about this needs to pervade Ofcom's thinking than has hitherto been demonstrated.

7. Depending on the extent of fibre in the access network – to the cabinet or to the home, and whether or not deployment is made on a cohesive, nationwide basis – estimates as regards the cost of fibre vary up to £15bn. It needs to be recognised that investment on this scale – even with regulatory certainty – is going to be prohibitive in the context of a policy approach to deployment which depends on competition alone. An interesting lesson here can be drawn with regard to the announced plans of Virgin Media to upgrade its cable network to supply speeds of 50Mbps by the end of 2008. We should recognise that cable only covers 50% of UK homes and is unlikely to cover a significantly higher percentage in the near-future – and that cable is therefore unencumbered by notions of universal service. However, its upgrade plans have not been met with a rush by service providers to match its advertised speeds, which fibre would deliver on a basis that could be described as future-proof but which ADSL2+, even at its maximum, cannot. This may be a reflection of a view amongst fixed-line providers that ADSL2+ will offer sufficient speed to meet the needs of most users for the immediate future, but we should recognise that, even in an environment where network competition is possible, it seems to have a very limited capacity to persuade telecoms network providers to stump up investment cash where there are competing pressures for that finance and where they are not already and assuredly convinced of the investment case. At least, this seems to be the case thus far, away from the activities of the more niche providers such as H₂O Networks. Of course, it is also true that such a view may turn out, with hindsight, to have been a strategic mistake – but by then it may well be too late.

8. In our view, we need to recognise that if, as a nation (and for whatever reason – socio-economic benefit, or in the light of international comparisons), we believe that fibre in the access network is desirable within the next few years, this is likely to be ahead of the ability or desire of fixed-line providers to deliver it within such a timescale. We also believe that we need to plan for it so as to deal with the important issues of the digital divide and that, once we have accepted the case for fibre from the perspective of the national interest, the natural corollary is that we must accept the case for a nationwide approach to its deployment. We would much prefer to see network roll-out at the same speed to consumers in rural areas as in urban ones – which would almost certainly be impossible to achieve if we were to rely on competition as our only model of delivery.

9. Consequently, we would rather see this consultation on new build developments located more firmly within the concept of a national strategy and plan for fibre roll-out. Of course, we are aware that Ofcom is to continue its own workstream on the issue, while there is the Caio Review also taking place, and there is the possibility for such a plan to take shape during these events. It will not have escaped Ofcom's attention that one of the New Zealand political parties, preparing for a general election later this year, has declared such a national plan for fibre deployment as central to its desire for a 'step change' for New Zealand society (http://www.national.org.nz/files/0_0_Better_Broadband_speech.pdf). In the meantime, in the UK, there are certainly issues which need to be explored surrounding new build developments. So, within the context of this caveat, we are nevertheless pleased to respond to the scope of the issues surrounding fibre in new builds.

Issues from the consultation

Question 1: What can Ofcom do to encourage timely standards development for new build NGA wholesale access products and interfaces? Which industry body is best placed to undertake the standardisation of these products and interfaces? What action should Ofcom take if these standards fail to materialise?

10. Ofcom recognises, to which we have also made reference above, that most new build developments are 'small and localised' and that, as a result, there may be a 'patchwork' of different technologies in operation as different network providers choose different approaches in different developments. A natural response here might be to argue that, if such technical chaos is an issue, then it ought to be prevented from arising in the first case via, for example, fitting fibre deployment into the context of a national strategy and plan. We would certainly agree that such chaos may arise in principle and that it is important to safeguard against it where it does. Nevertheless, we do wonder how much of an issue it is likely to be in practice given the unattractive nature of fibre investment and the lack of service providers with sufficient scale to mount investment of the sort of size where such differences in technology choices becomes a problem. However, it is more important to ensure that such chaos does not arise, so we would agree that it is an issue which needs to be addressed.

11. One sensible policy prescription here is to seek to develop a body of standards for products and interfaces. It is clear that network equipment needs to be based on a common set of standards – as has been true for past telecoms infrastructure developments (GSM and 3G, for instance, as well as with PON itself) – and we would agree that this needs to take place such that vendors and buyers have clarity about the capacities of the equipment being

deployed. We would agree that Ofcom needs to adopt a 'hands-off' approach so as not to become compromised in technology choices, but we would point out that it has a key role to play in getting vendors and purchasers together in the first place, promoting discussions between them and then promulgating the standards that arise. We would point out that the key issue facing such a body is, in the context of the diverse technology choices available, inter-operability and that this should feature high up on its discussions. In terms of its own level of understanding, Ofcom needs to be involved in such meetings – probably from the position of the Chair – but, apart from that and the view that such industry bodies need to be as widely constituted as makes for a sensible discussion between the various players, we have no particular comments to make on the membership of such a body.

12. It is impossible to say at this stage what should happen if agreement proves not to be possible – not least because tackling any such lack of agreement needs to start from the principle of taking firm account of the reasons why the talks broke down. If agreement proves not to be possible for whatever reason, then Ofcom would no doubt need to get further involved but we are reasonably confident, based on the history of standards development right across the telecoms sector, that agreement would be forthcoming, at least in general. Nevertheless, we should be wary that inter-operability, as important as it is, has the potential to provide a sticking point, hence the requirement for Ofcom's own – independent – involvement.

13. As regards dealing with the slightly separate issue of the 'small and localised' nature of many new build developments, and their consequent unattractiveness as discrete markets to potential fibre network providers, a better approach would be to aggregate developments where possible, working on the basis that only scale is likely to be an effective solution in practice. Ofcom recognises some aspects of this argument and it is an attractive one: with the capacity of fibre to deliver consistent bandwidth over a distance of up to 20km, there is an obvious attraction in network planning terms in grouping developments which can be 'fibred up' at the same time, and using the same fixed links. Apart from the application of such an approach being 'a good thing' in principle, however, the actual benefits of doing so are, to us at this stage, almost totally invisible as we have no information as to whether it is realistic to do so in practice – i.e. whether small developments can be aggregated in this way. Of course, responses would also vary depending on where such developments are located and whether any co-location would be possible. Actually, the reference in the consultation document to many of them being 'small and localised' tends to suggest that aggregation may not provide much in the way of a solution, but it is clear to us that there is anyway a strong role here for local authorities in terms of the planning process and the decision to approve particular developments. There is also a strong role for network

operators and development site owners to liaise closely with local authorities when considering the possibilities of aggregation in decisions to deploy fibre. If sufficient new developments cannot be aggregated to make this a feasible policy approach, then it could well be questioned whether there should be any reason why new developments could not be aggregated with existing ones so as to make a more persuasive case for fibre investment there too.

14. We would also argue that the logical conclusion to such aggregation and the need for a systematic, planned approach to prevail would be to recognise that the most apposite solution is to build a publicly-owned fibre network. This would mean that the inherent lack of commercial attractiveness of smaller, 'island' developments by themselves would not lead to residents taking homes in them being cut off from fibre deployments as a result of being seen as a poor investment risk.

Question 2: Do you agree with Ofcom's approach to promoting competition and consumer choice in new build fibre access deployments?

15. As regards Ofcom's principle that fibre provision should be contestable, we need to think carefully about just how many network competitors there are likely to be in practice. We do see the attractions in theory of competing access networks in terms of innovation and price, but we also view there being few opportunities for such theories in practice. We have commented already on the expense of fibre and the lack of network operators with sufficient scale to allow them to build a commercial case for fibre roll-out, especially given the size of most new build developments. Even though we may see a degree of competition in large urban areas, we are likely to see little in smaller urban areas and almost none in largely rural ones. This is an important point that we cannot reiterate too many times. We think that there are evident and very real dangers for national cohesiveness and for the digital divide in relying on competitive models to deliver Ofcom's Competition Act obligations.

16. As regards the consumer, we would certainly see competition in services as being desirable and would see this as being achieved via the network operator offering wholesale products on a commercial, open access basis to service providers for retail sale and innovation. So, we would agree with Ofcom's preference for regulatory measures to be applied at the passive level. Our proposal for a publicly-owned access network would be geared to competition at this level; when viewed from the perspective of the nation as a whole, the alternative is duplicate and wasteful provision.

17. Concerning the specifics of new build developments, then we would agree that duct access on all new build sites – not just those of sufficient scale to be immediately attractive

to the deployment of fibre – needs to be designed and built so as to allow sufficient space for multiple access to operators wanting to offer alternative networks. This should be feasible in principle and there is no reason why it would add significantly to developers' build costs. It would provide the opportunity to accommodate other operators who want to offer network competition and thus guarantee some 'future proofing' of the development, as well as meeting Ofcom's objectives of minimising the barriers to entry for service provision. Building duct access to developments which can accommodate multiple network operators needs to be built into the design specification for each new build site. We would expect Ofcom to get involved here, perhaps via the drafting of a code of practice as regards the communications infrastructure aspects of site development. We would argue further that this needs to be made mandatory as regards the planning approvals process for all new build developments.

18. Ofcom believes that investment in fibre may offer additional risk but that this needs to be considered in the context of the greater revenues resulting from new services that cannot be delivered over copper. There are all kinds of assumptions here about the business models behind future services and we would encourage greater caution from Ofcom in this regard. Current broadband models are heavily dependent on price marketing and on 'all you can eat'-type offers, some offering the capability of unlimited downloads. Both of these appear to be inimical to a model which asks customers to pay additionally for new services, as Ofcom seems to be suggesting will be the case in the future. This may have to be the way forward for services delivered over fibre-based broadband but – at this stage – this would be an assumption: we simply don't know enough about service providers' likely pricing models under fibre access as to allow such a quick dismissal of concerns over the risks of fibre investment. Additionally, Ofcom seems to be forgetting that there is – and will continue to be – a strong differentiation between network operators and service delivery and therefore we cannot consequently assume that greater service revenues will accrue to network operators.

19. We have some reservations about Ofcom's intention to ensure that consumers have access to existing regulated services at existing prices. The definition of what is 'an existing service' is key here – but we can see that, in this context, this does offer a clear steer that services need to be charged separately from the fees that consumers pay for network provision. There is also clearly some attraction of principle in ensuring that consumers on new build sites do not pay any more for basic services than their neighbours on older developments. We are glad to note Ofcom's intention to consult separately on the issue of pricing, but we should note here that consumer perceptions offer some challenges in this specific area, given current pricing models for broadband access. Consumers used to accessing services over a particular type of technology and to a certain level of demand may

well not be prepared to pay those same organisations for advances in service quality or for what are described as new services (but which may not be perceived such) which, ultimately, would offer network operators a sufficient return. Consumer expectations may briefly, but accurately, be summarised as looking for service improvements at increasingly lower charges. In the first place, this may well be the look-out of service providers as opposed to network operators, but it would be foolish in a private sector context to presume that we can minimise the knock-on effects of such a circumstance on network operators.

Question 3:

20. This is a series of inter-linked questions connected with the wholesale telecoms products that follow from a finding of an operator having SMP. With the exception of 3(g), concerning access to emergency services, these are essentially specific variants of the first, generic question (i.e. 3(a)) and we have consequently addressed our response under this heading to the generic question rather than the individual ones separately.

(a) Do you believe that the existing obligations must be met by replicating the existing copper products, or that an alternative approach could be satisfactory? What are the implications of replicating existing products on fibre?

(b) Do you agree that SMP holders rolling out fibre do not need to roll out a copper network in parallel solely to meet their LLU obligation?

(c) Do you agree with Ofcom's approach in relation to WBA and new build areas?

(d) Do you believe that the WLR obligation must be met by replicating the existing copper product, or that an alternative approach based on ALA-type product would be satisfactory?

(e) Do you believe that the CPS obligation must be met by replicating the existing copper product or that an alternative approach based on an ALA-type product would be satisfactory?

(f) Do you believe that the IA obligation must be met by replicating the existing copper product or that an alternative approach based on an ALA-type product would be satisfactory?

21. We begin here by reiterating that our preferred approach would see a publicly-built and publicly-owned fibre access network in which the provision of wholesale products on a non-discriminatory, equivalence of inputs basis is an essential element behind the subsequent delivery of services and in establishing competition between communications services

providers. Thus it is axiomatic that competition in service delivery will take place – at this level – and that a range of appropriate wholesale products needs to be developed and offered.

22. There is clearly evidence that the current package of wholesale products delivered over copper has generated a substantial element of service competition and we would wish to see this continue where the provision instead takes place via fibre. There is no evidence that such products cannot be delivered over fibre access networks and that there is, instead, thus a need to develop alternative ones specifically for fibre. We would also agree that the essential questions over fibre investment and deployment should not be over-complicated by such considerations.

23. The issue of the pricing of products is complex and key. This is the case whether fibre provision is made over a publicly-built and -owned network or one(s) built privately. We recognise that there is a clear consumer protection issue in ensuring that basic telecoms services are not more expensive to consumers just because they live in new build developments. At the same time, however, there is a balance that must be struck between this principle and the desirability of service users making a contribution towards investment in the networks over which the new and improved services that they are utilising can be delivered. It is evident that, unless network providers can be guaranteed a return, that investment will not be made; and it is also clear that the investment costs in building a fibre network are both riskier and heavier than the cost of maintaining a copper network which is otherwise regarded as a 'sunk cost'. However, rather than assuming that such services can be appropriately bundled together with providers' network access costs (in which we see the potential for economic inefficiencies to arise), we would like to see both clarity and transparency established between the cost of services delivered over networks and the cost of the provision of those networks themselves.

24. We would like to reiterate here – although the principle seems to be a non-controversial one – that fibre access network providers need to be compensated for their investment risk so as to endure a reasonable rate of return on their assets. From a regulatory point of view, this inevitably means that service providers accessing those networks must be charged a fair price in relation to both these elements. We understand – as we said above – the superficial attraction of ensuring that consumers are not charged more for the same service (and certainly regulatory intervention should seek to ensure that customers are not over-charged and that the obligation of universal service at an affordable price is being met). Nevertheless, as far as we are concerned, the inevitable corollary of charging a fair price in relation to investment risk and return is that telecoms products delivered over fibre networks cannot be

similarly priced to those delivered over fibre or copper. There must be some sort of price differential, or premium, which repays the heavier investment utilisation of fibre networks compared to the 'sunk cost' of copper. Inevitably here we are talking about wholesale prices: what retail prices are charged in a competitive market is one for the providers to judge based on what the market can bear and their own market strategies. However, it would seem that this could be accomplished within the context of the universal service obligation by the extension of Ofcom's principle of geographic markets to new build developments in which fibre, rather than copper, access networks have been deployed, thus removing the requirement for a universal price.

25. The question of local loop unbundling within our preferred scenario of course does not apply as there would be no competition-based requirement for such a bottleneck to be overcome. Nevertheless, we have noted the problems likely to be caused to LLU by a choice of GPON technology as a fibre access network architecture, and by a definition which hinges on 'metallic path facilities'.

26. We would agree, however, that fibre network providers need to have the assurance that they will not be required to roll-out parallel copper networks on new build sites: this would be wasteful and, ultimately, almost completely pointless, and we agree that it would also heavily increase the investment costs associated with fibre to the point where these became 'significant'. However, this should proceed in direct association with proposals on the provision of appropriate fall-back facilities (e.g. a battery – see 3(g)) to enable consumers to make calls at times of a failure of power. We understand that NTT in Japan has been compelled from the point of view of universal service to install a PSTN where there is demand for it, even in cases where the company is building out fibre access networks, and that this 'double investment' has had an impact on NTT's own targets for the number of customers migrated to fibre. We would be very reluctant to see such problems replicated in the UK by a similar requirement to build out copper access networks on new build sites alongside fibre-based ones, from whatever perspective.

27. A further question that might be posed here is whether there should be any obligation on operators with SMP to roll out a copper network to new build developments to which they have elected to provide a fibre access network, or else where they have not been selected to do so by the site developer. We feel that imposing a requirement on SMP operators to build a copper network in these circumstances, with little prospects of return or even of building an initially critical mass of consumers, would be too onerous. At the same time, we are mindful that our suggestion that consumers on new build sites should expect to bear some of the cost of fibre investment in terms of the comparative prices they would pay for telephony

services delivered over copper has a knock-on effect here too: if such an argument was to prevail, then there would be absolutely no economic interest to operators in rolling out a copper network the return from which, in respect of the same basic services, would be lower.

28. Problems may arise if housing developers become investors in new build access networks (and Ofcom indicates that there is interest in doing so) or in conjunction with a third party. Thus, they would gain the capacity to block BT or Virgin Media from gaining access. In some housing developments, we can see that there is already a tendency to lock BT out of the development until they declare it open. If the 'first mover' also ties up provision of service offering 'super fast broadband', what would be the expectations as regards BT or Virgin Media? Under the Universal Service Obligation, BT has to provide a copper access network, but why would it want to go with the costs of fibre and the associated electronics if it knew that it would not sign up many customers? This is a point to explore with regards to open access and level playing fields.

29. If BT is not required to replicate a copper network where it provides fibre, we ought to question BT having to provide a copper network as part of the USO where it has been locked out of a development. To replicate means sunk costs without an expectation of any reasonable return on assets, nor is there any expectation of gaining access to revenue by providing products and services in the retail sector. The cost of the obligations under the USO increases – and so does the argument for a USO Fund.

30. It makes no sense to hold a WBA market review for each new build development as it comes on stream and thus we agree that Ofcom's proposal to define the need for regulation in such cases from first principles is a sound one.

31. However, we can see no potential in a situation based on competing networks for having differentiated approaches to the pricing of fibre products between operators depending on whether or not they are currently ascribed as having SMP.

(g) Do you agree with our proposal to interpret GC 3.1(c) as being met through the provision and use of a battery back-up facility to maintain uninterrupted access to emergency services in new build developments?

32. Yes, we do agree, but with one essential caveat to which we refer in the next paragraph. Having a battery back-up facility is an important consideration from a number of different perspectives and a vital one in respect of some. Firstly, and most importantly, it will help deliver customer safety, especially amongst the more vulnerable sections of the community, not least among those who are less technically literate or connected; secondly, it

will increase customer confidence in the reliability and integrity of the wider communications network to which they are connected; thirdly, it will save operators from the need for duplicate investment in a parallel copper network, thus increasing the appeal of investment in fibre provision in new build developments; and, fourthly, on a practical basis, it will guarantee continuity of service in the fibre network at all times, therefore underpinning the commercial reliability of the local access network and society's confidence in it.

33. Provided that such a battery back-up facility can indeed accomplish its aim to provide emergency power to all consumer equipment so as to provide consumers with a traditional telephone service, and subject to this back-up being subjected to rigorous, regular testing and maintenance, this is a reasonable request of the providers of fibre access networks. However, the Impact Assessment in Appendix 6 refers to Ofcom having made no specific proposals in respect of the operation and maintenance of battery back-up facilities as a means of reducing the potential burden on relevant operators. We cannot emphasize how much of a short-sighted error this is: of course there have to be regulatory standards in this respect in order for there to be consumer confidence in the back-up facility. The back-up is intended to supply reserve power for communications services in an emergency context and it only has to fail once, in the circumstances in which it is likely to be called upon, for there to be a national scandal. We would urge Ofcom, as a matter of urgent priority in this area, to think again and to provide proposals for the conditions under which battery back-ups must be operated and maintained. Not to do so, in addition to the practical disaster which failure would represent and in a context of 'reducing the burdens', sends entirely the wrong signals to network operators about the importance of the facility and the care with which they need to approach it.

34. Subject to the above, we have no observations on Ofcom's proposed wording for GC3 in Appendix A5.73 and A5.73(a) on the application of PATS obligations to VoIP service providers.

Question 4: Do you think access to the duct network, including non telecoms duct, is a potentially feasible means of promoting competition in new build? If so, what types of commercial and operational models could successfully support such access arrangements in the UK?

35. We have already indicated that we believe that provision for access to duct networks on a multiple, shared basis needs to be built into the planning regime for new build developments. Existing duct access was not designed for a multiplicity of network operators and thus provides fewer opportunities in this regard. With regard to the spatial limitations of much of the ducting in the existing access network, there are also issues concerning the

integrity of the network of the existing network supplier, as well as potential health and safety at work issues, with which Ofcom ought rightly to be concerned.

36. It is important to ensure that contractors working on these ducts are strictly compliant with safety procedures. This is closely connected with the general question of ensuring proper training for the workforce, particularly in relation to health and safety procedures. However, it also relates to the general question of the regulation of duct access which needs to be undertaken in a careful and equitable manner, drawing from best international practice as mentioned in Annex 8.

37. In general, there is no great problem to design duct access on new build sites on a different basis specifically so as to accommodate a number of different operators, and thereafter to install it with spare capacity with an eye to future competition. This is the only way to 'future proof' new developments from the perspective of any fibre access network which alternative operators might want to roll out on the basis of what we might term a traditional type of telephony provision (as opposed, for example, to delivering an access network through the sewers). At the same time, it also offers, as Ofcom recognises, the potential for competing technological choices, and thus innovation in the network, to be facilitated. Access to the duct network on a multiple basis is thus the only realistic means by which Ofcom's aim of accomplishing contestability between networks can be achieved without having later to overcome the similar problems as already apply of the spatial, physical limitations of ducting.

38. Despite our preference for a publicly-owned fibre network which would provide existing telephone services as well as a new platform for entertainment services, including television, we recognise that there is one further practical reason in which duct access needs to be provided on a multiple basis. There is a clear and well-established market for the provision of communications and entertainment services via cable; cable consumers purchasing new build homes should have the choice of remaining with this form of access which will be based on a different technology. Thus, there is a clear argument for ensuring that the design of duct networks on new build sites takes sufficient space into account so as to accommodate telecoms access via both fibre and its cable equivalent.

39. As regards the most appropriate operational model for duct access on new build sites, this is clearly dependent on the level of competition between network providers in new build developments and this is clearly impossible to predict, at least at this stage. For example, it may be that there is only one network provider interested in providing fibre to the development, in which case a model based on unrestricted access may be appropriate. In more competitive scenarios, where there is a multiplicity of access network providers, such a

model would potentially be a disaster: a recipe for potential chaos and, in an extreme but perfectly coherent scenario, for network sabotage. In the context of new build developments, the model we see as being most feasible, assuming network competition during the building programme, would be managed access on behalf of all other communications providers interested in providing a fibre access network to the site (and by the site developer). This would enable each network owner access to ducts to install their own fibre and equipment, but in a controlled way which keeps site ownership/development intact during the build phase. Provided that duct access on a multiple provider basis is built into the site plans, and is thus a feature of the appropriate planning approvals regime for the site, we do not see any mileage in ownership models which allow or facilitate ownership of ducts to be controlled by third parties. Once site development is complete, we would envisage responsibility for duct access being taken over by interested communications providers (i.e. all those providing a fibre access network to the site, including later arrivals) on the basis of lease arrangements. In contrast to this, purchase arrangements are fraught with potential problem areas should there be any difficulties with the commercial viability, independence or other takeover of the network providers concerned.

40. We have noted the plans of H₂O Networks to produce 'fibre cities', of which the first (of the three towns and cities initially chosen), is to be Bournemouth, followed more recently by Dundee. We welcome the innovation and, in particular, the non-typical locus of the towns and cities selected, and will follow H₂O's development and expansion plans with interest. However, for now, and pending a greater demonstration of the technology being used and of its applicability in towns and cities right across the UK, it is perhaps best to see alternative means of access to residences, i.e. via non-telecoms duct infrastructure, as something of a niche market. Consequently, we believe that the notion of duct sharing on new build sites should proceed on the basis of typical, dedicated telecoms infrastructure.

41. We cannot see that dark fibre presents a possible solution to any competition failures, although we appreciate that Ofcom is thinking on these lines also in the part of its consultation that deals with duct access. In our view, installation of fibre will – presumably – be followed by it being 'lit', on the grounds that not to do so is likely to defeat the communications plan of the network provider. We also think it unlikely that construction or other companies will see dark fibre installation as an opportunity given their lack of experience in the industry, in addition to which the models, regulatory among them, for making profits out of fibre are particularly uncertain. At the same time, we would, as a matter of principle, rather see fibre installation first planned and then provided by those that have an intention thereafter to use it, as well as the expertise and nous to do so: use, rather than installation, is the key to the delivery of fast broadband in the 21st century. Neither do we

want to see any trading market instigated for dark fibre on the grounds that this will simply encourage over-provision in densely populated areas, to the likely detriment of households in less well-populated ones. This makes no sense as a vision and strategy for fast broadband and it is also extremely unlikely, as we said in the Introduction and in our response to Consultation question 2, to aid the delivery of Ofcom's Communications Act obligations.

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