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Dear Mr Moore,

This is the response of Level 3 Communications Limited ("Level 3" or the "Company") to Ofcom's consultation and interim guidance on new voice services issued on 6th September 2004.

Level 3 has in the past responded to the Ofcom's Phase 1 Strategic review and consultations on voice over broadband (now new voice services). The Company recognises that Ofcom has made significant progress in addressing the issues facing providers of new voice services and that the interim guidelines are a significant first step.

Level 3 believes that an important evolution is taking place in the telecoms markets, in particular with regard to the development of IP networks and IP enabled services. The Company has launched a number of new voice services in the United States and sees that, with the increased penetration of broadband, there is considerable demand from consumers for new applications and services, as well as voice. It is important for national regulators in Europe, including Ofcom, to realise that new voice services are a small part in a technological revolution and that the regulatory framework needs to be flexible enough to accommodate new developments.

One of the core tenets of recent legislation, both at EU and national level, has been that any regulation should be technologically neutral but, with the advent of commercially available new voice services such as voice over broadband, it has become apparent that the new legislation has been established within a PSTN oriented framework. For example the definition of PATS can be seen to be based on old PSTN functionality which has now been superseded by new means of delivering information and voice services and new technologies.

In addition, it is obvious from the different interpretations put on the meaning of PATS and the associated obligations by the NRAs of member states that these are themselves an uncertain benchmark. Consequently, Level 3 believes that the issue of the regulation of "new" and "old" voice needs to be looked at without "legacy" definitions based on the old PSTN technology.

One area that is fundamental to the development of fully competitive new voice services is number portability. The interim guidance makes it clear that number portability is only available for PATS compliant services. This is not consistent with the intent to facilitate a competitive landscape and prevents the consumer from making a choice between different voice services. The consumer should be able to use his or her geographic number for any voice service they choose,

provided that they are fully informed of the limitations of the service they are purchasing, whether those of old or new voice services. Level 3 believes it is inconsistent with Ofcom's light touch regulatory approach to use the requirement that voice services must be PATS compliant to obtain number portability. This is a form of back door regulation. A position which is compounded by the uncertainty as to what the obligations on PATS providers should be in the new IP enabled world. Ofcom should provide clarity as to what are the obligations on PATS services prior to declaring that only PATS compliant services are allowed access to geographic number portability. In addition it will be necessary to consider the practical problems of how such a regime is to be controlled on a day to day basis. Will it be the responsibility of the service provider requesting the porting of a geographic number to prove that its service is compliant? Or will the porting provider be required to verify the new service is PATS compliant?

Responses to Ofcom Questions.

Question 1
What types of new voice services do you envisage becoming available in the future and what characteristics will they have that distinguish them from traditional voice services?

IP related communications are set to transform the way in which companies transact business and consumers make and control their communications and it is difficult to anticipate what services may become available.

Over the past few years, both IP and optical fibre networking technologies have undergone rapid innovation as a result, in large part, of market-based development of the underlying technology. The most notable of these improvements lies in the ability of IP networks to carry voice calls. Level 3 is at the forefront of VoIP technology having introduced the world's first carrier-grade VoIP termination service in 1999. VoIP offers quality and reliability indistinguishable from the PSTN, along with new features and costs savings. Level 3 is far from alone in its belief that VoIP is set to have a major impact on telecoms markets around the world.

IP networks create a decentralised environment for developing and implementing new applications. For the circuit-switched network, new capabilities must be centrally planned and developed by a handful of circuit-switch manufacturers and then implemented by a relatively small number of network operators. History has shown that in many cases, those network operators have been slow to deploy new technologies for fear of upsetting existing revenue streams. DSL is such an example.

IP networks break this mould by separating call processing and applications from the operation of the underlying network. With an IP network, intelligence can be stored anywhere, including in servers operated by an end-user at their premises. Applications can be created for particular end users and loaded onto the hardware serving those users without embedding those same applications throughout the network as a whole. Voice, for example, when carried over IP networks is treated as an application like any other.

It is this ability to "de-link" transmission from applications, along with radical savings in transmission costs, that makes IP such an attractive and sophisticated alternative to traditional fixed telephony service and makes the eventual conversion of consumers to IP-based services inevitable.

Today, new voice services come in many forms, and some may resemble traditional phone services from the point of view of the end user. Level 3, for instance, offers a wholesale, business-class voice service called (3)Tone Business that enables enterprises to dispense with expensive PBX phone systems and obtain switching features for multiple offices, all through an IP connection from a single vendor. Among numerous other benefits, (3)Tone Business allows five-digit dialling between offices in different locations, management of incoming calls through a web based portal (including outlook), advanced unified messaging and on-demand conferencing, find me/follow me services. Level 3 is in the process of introducing these services in the United Kingdom.

New voice services are the tip of the IP voice iceberg and are much broader and include services and applications far different from what one might call traditional telephony. For example, consumers can buy pocket-sized personal digital assistants that allow voice communications over a WiFi connection to the Internet. Inexpensive webcams broadcast real time video and audio signals across the Internet. The Yahoo! Messenger service allows friends to exchange not only text messages but audio messages. Mobile phone companies in the United States offer a variety of "push-to-talk" services via IP. And leading online games consoles like Microsoft X-Box and Sony Playstation come equipped today with headphones that allow real-time voice communication by players in different locations through broadband Internet connections to the home.

Each of these services and applications embeds IP voice into the offering and therefore may be labelled a "new voice service" but none resembles a traditional phone service.

New voice services today make up a small percentage of communications revenue. But the technology is growing rapidly. *Telephony Magazine* recently published figures stating that more than a third of all business phones shipped during the second quarter of 2003 were IP-enabled. Last year, Cisco announced it had sold its 2 millionth IP handset. Gartner, the industry analyst firm, estimates that retail revenues from VoIP in the US will grow at more than 40 per cent a year through 2007.

It is impossible to enumerate all the advantages of VoIP, in large part because the technology is so new, and because many of its features have yet to be developed. But a sampling of the benefits is set out below:

- **Lower costs:** VoIP leverages the inherent economic advantages of IP and allows voice services to be delivered at lower cost to end-users. Level 3's (3)Tone service enables enterprises to forgo investment in expensive premise-based switching equipment. It also eliminates long-distance charges between branch offices and cuts costs associated with Information Technology (IT) and Information Services (IS)

administration. Level 3 estimates that, with (3)Tone, businesses installing new phone systems can save as much as 40 per cent on communications costs compared with traditional PBX systems, taking both capital and operational costs into account.

- **Convergence:** VoIP allows the seamless fusing of voice and data applications into a single platform. This converged network offers businesses numerous advantages over the old, two-network voice and data system, including lower costs, simpler network management and the ability to deploy new applications that heighten productivity and customer service.

- **Innovative tele-working:** with VoIP, employees are less tied to bricks-and-mortar offices. For instance, a stay-at-home parent who works in technical support could use VoIP to direct incoming calls to his home office between the hours of 8:00am and 3:00pm, while his children were at school. During that "on" period, he would use his broadband connection to receive tech support calls at home, with full access to customer and product data stored on a remote company server. In but just one example, such flexibility allows telecommunications-intensive companies to use part-time employees spread out in areas across the country.

- **Multimedia conferencing:** VoIP enables multiple users to communicate with one another via voice and video while drawing on data sources like spreadsheets and financial statements. For example, it would allow members of an engineering team located in different parts of the world to work together on the design of a building. They could collaborate via voice and share data and documents in real time to revise design specifications for the project.

- **High-power call centres:** VoIP communications will enable call-centre operators to provide more focused assistance to customers. IP technology allows the operator to receive calls and relevant customer data simultaneously. The operator can access case histories, account and credit information, inventory and shipping data – at the exact moment the customer makes contact.

- **Unified messaging:** VoIP allows a user to have a single message platform for all types of communications. Rather than receive e-mail on a computer, voicemail on the phone, faxes on fax machines and pages on a pager, Voice over IP can route all to a single unified mailbox. A voicemail can be converted into text using voice recognition software and an e-mail can be converted into a voice message. Users can organise, store, forward, duplicate and prioritise these messages in the manner that suits them best.

- **Location scheduling:** VoIP users can create a location schedule (and update it any time from anywhere) indicating where communications should be forwarded. In other words, a user could direct communications (of any form) to a mobile device during her commute, to her office during the day, to her brother's house during the holidays and to a unified messaging centre when she is at dinner.

- **Simplified relocation:** VoIP makes moves, adds and changes much less painful and less expensive. In a circuit-switched system, a company moving an employee to a different office has to map extensions, re-program special call-handling features, activate new phone sets and re-customise the employee's phone configurations. VoIP simplifies this process. Employees moving to an office in another country take their customised features with them automatically because configuration data is tied to the user rather than a physical extension.

It is worth noting that, with a traditional phone service, the set of features available to businesses and consumers today – call waiting, caller ID, etc. – represent the pinnacle of technological achievement for the PSTN. With IP voice communications, by contrast, sophisticated features of the kind listed above are first-generation building blocks from which untold future applications will evolve and grow.

Question 2
What are the main policy challenges raised by the introduction of new voice services for consumer protection and regulation?

Level 3 believes that the policy challenge is to ensure the regulatory framework becomes as light-touch as possible and focuses on consumer choice and protection. Consumers should be able to select the service they wish based on open and complete information about the different services and different.

In addition, as mentioned above, it should be Ofcom's policy to ensure that the underlying regulation is actually technologically neutral and that Ofcom removes any implicit bias in such regulation. As always, there needs to be an open, competitive market place with a level playing field. This means that looking at the market for IP services as a whole across the telecommunications arena: fixed line, mobile and mobile data and cable. If left free from over regulation, new voice services will stimulate broadband deployment and IP enabled services will allow providers and consumers to combine voice, data, video and other applications more seamlessly than is possible on the PSTN.

Wherever possible regulation should be used to stimulate innovation and the development of new services and ensure that underlying facilities (the last mile and geographic numbers in particular) are open to all equally.

As a practical matter, as new entrants in a competitive market new service providers are already driven by market forces to provide high quality and customer friendly service. It would be wrong to impose costly and burdensome regulations which may impede competition and, ultimately, not be in the best interests of consumers. They are seeking higher value and functionality and lower prices: new voice services provide both.

Question 3
Do you agree with the initial top level aims identified by Ofcom?

We agree that a balance needs to be struck between creating the right conditions in which new voice services and new providers can enter the market and ensuring that consumers understand the choices available to them and are properly protected, whilst ensuring that regulation does not distort the market.

Question 4

Are there other aims and criteria that Ofcom should consider?

Ofcom should ensure that new voice services are not considered in isolation. It is of fundamental importance that providers have access to the underlying network through local loop unbundling or to transmission capabilities (such as stand-alone DSL) without having to subsidise traditional PSTN voice services.

By stand-alone DSL, Level 3 means the ability of end users to obtain on a cost basis a DSL line (whether from BT or a competing DSL provider) without having to pay for or subsidise a conventional telephony service. As Level 3 understands it, the position currently in the UK is that a customer purchasing a DSL line which is provided by BT (whether directly or via one of BT's intermediate or wholesale DSL products) is also required to have an active BT telephone line.

The advent of VoIP services will fundamentally change how consumers receive their voice applications. One development is the area of "over the top" services where the voice application rides on a transmission path provided by another party. In that case, a consumer will purchase a SIP-phone or other required customer premises equipment that they will plug into their cable or DSL connection. The consumer will then establish a billing relationship with the company providing the customer premises equipment and pay that entity for the voice applications it uses. These charges will be separate from the charge for the underlying transmission facility.

Level 3 believes that the end user should have the ability to purchase a stand alone broadband line without having to pay for traditional telephony services as well. Level 3 believes that if end users are required to pay for telephony services in order to purchase a broadband connection, end users will be less likely to purchase an "over the top" voice service even though that service may provide lower rates and greater features and functionalities. By compelling this "subsidy" of the incumbent it inhibits the end-user from choosing new services.

In this regard it is important to distinguish between provision of the line itself and provision of PSTN dialtone. The end user of a VoIP service might reasonably be expected to bear BT's LRIC of providing and maintaining a copper path between the end user's premises and the DSLAM at the local exchange. This might be by way of a direct charge to the end user or the wholesale provision of that service to the end user's DSL provider. Level 3's concern, however, relates to the provision of PSTN dialtone, for which further network elements will be required behind the DSLAM. Where a customer wishes to use the DSL portion of the line for carrying voice calls, PSTN dialtone is not a service that the customer should be required to pay for.

Level 3 does not believe that the regulatory treatment of this situation in the UK is well-developed at present and would welcome discussion of Ofcom's views on the matter. In particular:

(a) Where BT provides the underlying DSL line, what is Ofcom's view on BT's requirement that the end user maintain a functioning telephone line?

(b) Does the position differ in the case of local loop unbundling? The recent consultation on LLU suggests that where a customer decides to cease their voice telephony subscription with BT in order to receive both voice and data services on the higher frequency portion of the loop, the loop will be considered fully unbundled in respect of rental charges. The costs that are common to the higher and lower frequency portions of the line will be allocated to the LLU provider. Since the provision of PSTN dialtone does not appear to be a cost that is common to both higher and lower frequencies, does this place the customer of an LLU provider who wishes to abandon his PSTN connection in a better position than a similar customer of BT's wholesale DSL service? What would be the position if an LLU operator also insisted that the customer maintain a connection to the PSTN? Level 3 would welcome Ofcom's views.

(c) Since the underlying issue is one of cost allocation, Level 3 would welcome clarification from Ofcom of the proportion of BT's line rental charges that is attributable to the provision and maintenance of the line and the proportion attributable to the provision of dialtone behind the DSLAM.

Furthermore, whilst Ofcom has made considerable progress in making geographic numbers available for new voice services there is still a barrier to entry by limiting number portability only to PATS compliant services. This means that the combination of the PSTN bias in the drafting of the regulations and the uncertainty of what should be considered PATS make it very difficult for service providers to launch new voice services which can compete on a level playing field with PSTN voice calls. This effectively relegates new voices services to "secondary" offerings and does not allow consumers to keep their phone number if they wish to "upgrade" their new voice service by switching providers. For example a customer may subsequently wish to have full access to emergency services. This does not stimulate innovation and the provision of new, competitive services to consumer.

Level 3 believes that number portability is of fundamental importance to the development and up take of new voice services. Not just the ability to port numbers but the process of portability in the UK with its "onward routing" structure. This method of routing ported numbers, rather than a central database, may add prohibitive costs to the termination of calls on the PSTN

Question 5

Are there other key policy questions that Ofcom should be considering?

Although not part of this consultation Ofcom should consider whether the policy decision to stimulate infrastructure competition is now outdated and should be replaced. Technological developments mean that, provided the underlying network is available to all at any stage on true cost based and transparent pricing, competition, and therefore the consumer, is better served by stimulation of innovative service offerings rather than the building of infrastructure.

Question 6

Do you agree with Ofcom's initial view that it is not necessary for all voice services to provide the same standard features as traditional telephone services, and that we should instead focus on enabling consumers to make informed decisions?

Level 3 agrees with Ofcom that consumer choice and protection of the end-user through the provision of proper information is of paramount importance. It is likely that new voice services will extend into enhanced offerings providing consumers with services and functionality not available from old voice services.

Question 7

Do you agree with Ofcom's initial view that it is not desirable to draw a distinction between the regulation of services that look like traditional services and those that do not?

With the rapid technological advances that are taking place and the convergence of methods of transmission, whether fixed to mobile, wifi and fixed or traditional voice and new voice services, the distinction between traditional voice and new voice services is ceasing to be relevant. Therefore, Level 3 agrees with Ofcom's initial view. All voice services should be regulated in the same way and have the same access to resources to provide true consumer choice.

Question 8

Do you agree with Ofcom's initial view that a distinction should not be drawn between the regulation of 'second line' services and 'primary' services?

Again the deciding issue should be consumer choice and not by creating different regulations for what is effectively indistinguishable voice services but with different features. Level 3 agrees that as the market develops and consumer habits change (as can be seen by the growth in the number of people which have switched their "primary" line from fixed to mobile) it would not be helpful for providers or consumers to create an artificial regulatory distinction. Level 3 also agrees that it will not be practicable to track those end-users who upgrade their secondary line to a primary line for whatever reason

Question 9

Do you think that a threshold should be set at which new voice services should be required to offer the same features as traditional voice services? If so, how should the threshold be set?

Level 3 does not agree that a threshold should be set. As the boundaries blur between new and traditional voice services the choice should be left to the properly informed consumer. This will stimulate competition between providers and the creation of innovative services.

Question 10

Do you agree that most providers would want to offer at least a basic form of access to 999?

Level 3 agrees that most providers will want to offer a basic form of access to 999. Level 3 believes that this will be driven by competitive pressures in the market place. As can be seen from the evolution of the wireless market where the access to emergency services has become a normal service expected by the consumer, Level 3 believes that the same evolution will take place in the new voice market as providers compete against old voice and wireless services.

Question 11
Do you agree with Ofcom's initial view that consumers sufficiently value having access to 999 in order for them to wish to retain at least one means of 'high quality' (very reliable) access to 999 at home?

Yes, as set out below.

Question 12
Do you agree with Ofcom's initial view that not all voice services should be required to offer access to 999 but that decisions about subscribing to and using such services must be properly informed?

Question 13
Do you agree with Ofcom's initial view that given some new services may not able to offer the same degree of reliability for emergency calls as traditional voice services, it is better that these services are able to provide less reliable access to 999 rather than preventing them from offering any access at all?

Level 3 supports the use of targeted and proportionate regulation to meet social policy goals such as access to emergency services. The Company does not believe that the development of IP-enabled services should pose any threat to those social policy goals. On the contrary, Level 3 recommends that Ofcom set rules that take advantage, where possible, of the innovative and competitive forces that are inherent in the IP industry, particularly with respect to emergency services.

Universal access to emergency services by end users is an important public policy goal. While regulators should not interfere unnecessarily with the operation of the market or the introduction of new technologies, the overriding social benefit of ubiquitous access to emergency services across differing platforms justifies, in Level 3's view, regulatory rules mandating access to those services. Even the most vital public policy objectives should be secured through the lightest possible regulation, however. Thus, IP-enabled service providers should have an obligation to address social policy concerns such as access to 999 or 112 emergency services but regulation should not mandate particular technological solutions. Ofcom should not require 999/112 capabilities to be deployed indiscriminately for all IP-enabled services. Ofcom should, however, mandate emergency service access for communications services that:

(a) offer real-time, two way voice service that is interconnected with the PSTN

(b) compete with traditional mobile or fixed telephony services

(c) are services for which the customer has a reasonable expectation of access to emergency services and

(d) can support 999/112 services

Communications providers offering these types of services should be required to adapt their services to provide 999/112. In Level 3's experience, it is technically possible for IP service providers to do this today.

IP technologies, moreover, have the potential to bring service enhancements and cost reductions to emergency services once emergency services themselves have become IP-enabled. For example, an IP-enabled emergency service system would enable a caller to send a picture of a vehicle involved in a hit-and-run accident along with a voice message or for plans of a building to be provided to fire or ambulance services prior to arrival at an incident.

While users expect a high level of reliability at home this expectation is likely to change over time as consumers switch to new services. For example with the increasing penetration of mobile phones as a replacement for fixed lines, those consumers' who have moved to mobile alone will not expect the equivalent 999 service.

Level 3 believes that access to emergency services is of paramount importance and that, provided that consumers are fully informed of the strengths and weaknesses of the service they are using, it is better to ensure some access to 999/112 than to prevent service providers from providing access to emergency services at all.

Question 14
Do you agree with Ofcom's assessment of the costs and incentives for providers offering PATS?

While Level 3 agrees with the definition of PATS as set out in the Universal Services Directive and in the General Conditions the Company believes that the obligations which flow from those definitions are unclear between national and EU regulation and also technologically biased since they are based on a PSTN centric world. However, in general Level 3 believes that incentives should be given to providers to make PATS available but that this should be driven by consumer choice and not by regulation. As the consultation document indicates there are issues in relation to network integrity and nomadic services and 999/112 that need to be resolved. These PSTN legacy issues should not be used as a barrier to new voice service providers.

Level 3 does not believe that number portability should be an incentive for the provision of PATS services particularly if network integrity and nomadic issues remain unresolved. Rather, portability should be permissible between competing voice services provided the consumer has been fully informed of the choices he or she is making. It may be that a consumer prefers the nomadic benefits of a new voice service and is prepared to trade this against a different type of 999/112 service. In such circumstances the consumer should be able to port his or her number between these two options.

Question 15

Do you agree with Ofcom's understanding of the implications of the definition of PATS contained in the Directives?

We believe that it is possible to interpret the definition of PATS in the Directive as suggested by Ofcom. It is Level 3's position that there needs to be more clarity and detail at the EU level to ensure there is a consistent application within the member states.

Question 16

Do you agree with Ofcom's understanding of the implications of this alternative approach?

While it is better to allow providers to choose whether they are PATS providers or not, it is important that this is properly thought through and does not create too many regulatory hoops for providers to jump through. Also, it is difficult to see how it would be managed in practical terms if the benefit of number portability is limited to PATS providers. For example this could create the possible situation where providers would declare themselves providers of PATS services to obtain numbers but, in reality, the provider was not fulfilling its obligations under PATS. Such a situation is likely to be confusing for consumers.

Level 3 is of the view that the distinction between PATS and non PATS compliant services is a good one but that the associated obligations on PATS (in particular on line powering and emergency services in a nomadic situation) need to be recast to account for the new IP network paradigm.

Question 17

Are there policy initiatives in other areas related to new voice services that Ofcom should be considering?

The provision of new voice services and other IP based services must also be looked at in conjunction with access methods. Although progress on local loop unbundling, IP bitstream and DataStream access has been made in recent months there is still an explicit and implicit subsidy of PSTN services. This is why Level 3 is of the opinion that a stand-alone DSL product should be made generally available by BT as more fully set out above.

Question 18

Although Ofcom is not consulting on its interim position, it would welcome your views on its interim policy to forbear from enforcing PATS obligations against new voice services which offer access to 999.

Level 3 welcomes Ofcom's forbearance from enforcing PATS obligations from new voice services. However, the Company believes that the issue of limiting number portability to PATS compliant new voice services is misplaced and limits the growth of IP based applications. It should be for the informed consumer to decide what type of voice application or service he or she wishes and to use his or her geographic number accordingly. In reality, with the uptake of mobile - fixed convergence, call forwarding and number translation services over the next few years the relevance of numbers being "geographic" will decline dramatically. Consumers are likely to have personal numbers, mobile or otherwise, which they transfer between services. If Ofcom continues to forebear from enforcing PATS obligations rather than changing the obligations themselves then it should also forebear from the PATS requirement for geographic number portability.

Question 19
Is it reasonable to have different network integrity requirements for nomadic services compared to services at a fixed location, and how should consumers be made aware of this difference?

The key issue is that the consumer should be able to choose the service or application. It should not be for network requirements underpinning those services to be subject to regulatory obligations. These should be part of the commercial connection arrangements (for example SLAs) between communication providers and providers of electronic communications services such as new voice applications. Should the service be unsatisfactory the consumer should be able to move to another provider. It is likely that there will be a patchwork of different network providers and service providers contributing to a bundled service to the end-user who is buying from one provider. Attempting to regulate this complex commercial web is likely to cause more problems that it would solve and slow down the development and roll-out of new services.

Question 20
Do you think that it is better for Ofcom to: 1. Retain the Essential Requirements Guidelines in their current form; 2. Re-issue the Essential Requirements Guidelines, incorporating additional guidance in relation to Voice over Broadband and Next Generation Networks; or 3. Withdraw the Essential Requirements Guidelines, and apply the 'reasonably practical' test set out in General Condition 3.

Level 3 believes that, in line with the arguments above, that it would be best to withdraw the Essential Requirements Guidelines and apply the reasonably practical test set out in General Condition 3. This would effectively make it a market driven process. If this option is not preferred then option 2 would be the next best option

Question 21
Do you think that there are reasonably practical measures that providers at a fixed location can take even if they do not directly control the underlying network?

Providers of electronic communications services will need to ensure that services they are utilizing to provide those services, such as network, are subject to stringent contractual

obligations under SLAs. In addition they will need to ensure that their own systems used to provide or deliver those services are robust and fit for purpose. Finally, as part of this process the consumer should be informed of the type and quality of service that he or she is purchasing.

Question 22
What in practice should the roles of the network provider versus the service provider be for network integrity when the network provider has no control over the services offered over their network?

The example presented in the question may be too simplistic in reality. It is also possible that the network provider is also obtaining capacity from another network provider and that the service provider is also bundling other services with its own services and so the inter-relationships can become extremely complicated. It will also depend on who is providing the service to the consumer but in practical terms the network provider should be obliged to provide a high level of network availability (99.99% uptime) to the service provider, together with appropriate service response times. In the same way the service provider must also guarantee service availability to the consumer at the same level.

For example, Level 3 does not sell its (3)Tone Business direct to end users. It provides varying levels of the service to third party intermediaries ranging from DSL providers seeking a fully supported VoIP service provided to the DSL provider's end-user to an IP termination service for other network providers. In such situations Level 3 will provide service level agreements to its contractual customer for those parts of the service Level 3 provides. It would be wrong to use regulation to impose other requirements on service providers in this area unless they were deemed to have significant market power.

These types of inter-working relationships and commercial arrangements are already common place in the IP world.

Question 23
Do you agree that it is likely to be reasonably practical for analogue telephone and ISDN2 services to provide line powering but not other services?

While it is reasonably practical for analogue telephone and ISDN Services to provide line powering but not other services the question misses the point. Level 3 believes that there are now a number of different transmission sources and networks and these are likely to increase in the future and how these are powered is not an issue for the consumer. Once again it is a matter more for consumer knowledge and choice than regulation.

Question 24
What are your views on the technical feasibility of providing location information for nomadic services, both now and in the future?

In the near term providing location information for nomadic services will require end users to manually register with a location server. There are a range of solutions that have been proposed such as GPS and triangulation. In the case of GPS, the concern is that the vast majority of

terminal adaptors will be located inside buildings, therefore not in the direct line of sight of satellites. In the case of triangulation, relative signal strength within buildings also remains a concern. Additionally, some hardware vendors have proposed mapping MAC addresses with Ethernet jack ports to establish location. Although this may work within a building or campus environment, serious scalability issues remain. Over the longer term, there are some new approaches that Level 3 is currently investigating, however, the technology is nascent and will require the cooperation of both carriers and CPE hardware manufacturers.

Question 25
What approach for emergency location would take account of current technical limitations, whilst ensuring that technical advances bring benefits to emergency organisations in the long run?

In the near term, location servers can be established for end customer use. A two step methodology is envisioned. First an end user would establish a set of predefined locations (i.e. home and office addresses). The service provider would correctly format and store this information. When an end user changed locations, they would select from this predefined list and register this change with the service provider through a portal, IVR, etc.

In the long term it may be possible to augment emergency services information with items like detailed plans of building, video and voice links to medical teams in hospitals.

Question 26
Do you agree that consumer information is required where services look and feel like a traditional telephone service but not where services are clearly different (e.g. PC based services)?

Level 3 believes that consumer information is required for all types of new voice services. As the different services converge it will become increasingly important for the end-user to know exactly what services are being purchased and their limitations.

Question 27
Do you agree with a two stage approach to consumer information, first to ensure the purchaser is aware of the nature of the service at the point of purchase, and second to ensure all potential users are aware the service does not provide access to 999 at the point of use?

There is a danger of over regulation in areas such as this. It should be incumbent on the company providing the service to the end user to inform that consumer or purchaser of the advantages and disadvantages of the service. However, while Level 3 agrees, as a principle, that potential users should be informed of any limitations on access to emergency services, any such requirement should take into account the technical feasibility and cost of such notification

Question 28
If consumer information is required to ensure that consumer interests are protected, which of the above frameworks regulatory framework, if any, is appropriate to ensure it is successful?

Level 3 believes that the co-regulatory approach is the most suitable in the initial stages. Level 3 would be willing to participate in any co-regulatory set-up group.

Further information

If Ofcom has any questions about any matter raised in this submission or would like to discuss anything further, please contact:

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