

Question 1: Given recent developments, do you agree that Ofcom's focus should be on the following three objectives in developing our policy for VoIP services, namely (in so far as is possible) (i) enabling innovation in a technological neutral way, (ii) ensuring consumers are well informed, and (iii) ensuring maximum availability of 999 services? : Agreed - provided conversational quality is assured during 999 calls

Question 2: Do respondents agree with this approach for the interaction between network providers and PATS providers? : yes; the nature of the SLAs will need regulatory input as most current industry SLAs are about minimal availability not short term service provision and resilience. Without suitable oversight a SLA framework could be constructed that would satisfy the companies commercial goals yet not provide the necessary network integrity

Question 3: Do you agree that the limitation of GC 3 obligation to providers of service at a fixed location is not sustainable in the long term? What views do you have on how this may be addressed? : There is a risk that 999 effectiveness will be watered down substantially by operations hiding behind "nomadic" services. There is no technical reason why service access points (which have fixed locations) participate in the call setup providing (suitably authenticated) location information and (their responsibilities in) conversational quality assurance

Question 4: In light of the other measures proposed in this document, are there particular issues in relation to VOIP services that should be addressed in this review? : assurance of VoIP conversational quality during 999 calls

Question 5: Are there particular issues in relation to VoIP services that should be addressed in this review? : Conversational VoIP quality during 999 calls;

Question 6: Do you have any comments on Ofcom's proposed modification to the PATS definition in GC 18? : Strongly support the binding of number portability and lifeline provision

Question 7: Do you agree with the proposed application of the code? : yes - though it will need review in the light of consumer experience

Question 8: Do you agree with the proposed approach for informing consumers that services may cease to function if the broadband connection fails or there is a power cut or failure? : Yes - can not see a better approach, however there will need to be education/awareness program - this is a fundamental change in the experience of telephony in the UK

Question 9: Do you agree with the proposed approach for informing customers where access to emergency calls is not available? : yes - it is essential that notification of the non-availability of 999/112 access be notified. Consideration must also be given to non-english speaking users, including visitors to the UK - so several languages may need to be included in the message.

Question 10: Do you agree with the proposed approach for informing consumers that access to emergency calls may cease to function if the Data Network fails or there is a power cut/failure?: yes - but failure must be clear cut. It would not be acceptable to get through to the 999/112 operator and be unable to communicate effectively. Network integrity design should be such that connected 999 calls can not be rendered ineffective due to variations in the network traffic

Question 11: Should the code be extended to point of signature acknowledgement in respect of reliability of access to emergency calls?: Yes - realize that this is a cost - but the fundamental change in the robustness of the 999 access needs to be acknowledged by the end consumer. Where the system is installed in, for example, in hotel there needs to be adequate notification to the customers

Question 12: Do you agree with the proposed approach to location information providers where the service does provide access to emergency calls? In particular, do you believe that subscribers should be required to register their main location prior to activation of the service?: yes - there will also need to be awareness raised why this information is necessary - perhaps emergency services could provide statistics of how many emergency service call outs were based on the location information; i.e. some quantification of the dependency on this information

Question 13: Do you agree with the proposed approach to informing consumers where services do not provide emergency location information?: it is a worrying trend that fixed location provision should be allowed to opt-out of the supply of emergency location information. If permitted at all then signatures should be required

Question 14: Do you agree with the proposed approach to informing customers where services do not provide number portability? : yes

Question 15: Do you agree with the proposed approach to informing consumers about the types of facilities that might not be available, but which they have come to expect from a telephone service ?: yes

Question 16: Do you agree with Ofcom's view that all aspects of the code of practice should be mandatory?: yes - definitely

Question 17: Do you consider that the overall programme of activities is appropriate?: does not appear to address the identification of "rogue" VoIP operators - there will need to be a technical monitoring and enforcement activity. The market advantage of engaging in number portability will be high, the costs of 999 provision will be non trivial so there will be pressure to cut corners - no indication of how such "rogue" operators will be detected - a pre cursor to enforcement. Waiting for a coroners court to point out the failing should not be considered a viable option

Question 18: In light of Ofcom's Consumer Policy Review, are there other consumer education measures that Ofcom should consider?: There may need to be "good

practice" for consumers within their households. The interaction of several IP streams within a single dwelling need to be communicated to the consumer (that is their potential role in extracting the most benefit from the technological change)

Question 19:Do you have comments on this proposed enforcement approach?: Given the need to assure 999/112 provision and the market pressure there is a need for consumer groups to understand the risks and keep the process "honest"

Question 20:Are their other areas of research activity that Ofcom should consider to ensure it understands market developments ?: no comment

Question 21:In relation to ensuring high availability of 999 access, are their other measures that Ofcom could consider?: There should be minimum access and conversational quality standards - there needs to be assessment (both proactive and reactive) assessment of the effectiveness of the 999 service as delivered. There is a public trust placed in Ofcom over this essential service that must clearly seen to be discharged.

Question 22:Do you agree with Ofcom?s approach to naked DSL?: no comment

Question 23:Do you agree a cross industry meeting would be a useful approach to move this issue forward? What other steps could be taken to provide support for 056 numbers?: no comment

Question 24:How can a VoIP call be traced for detection and prevention of malicious and nuisance calls? How could a suitable call screening service work in a VoIP network?: no comment

Question 25:Do you agree that SPIT could be a potential problem and what techniques can be used to minimise the impact of SPIT on consumers of VoIP services?: yes - authentication approaches are possible; they could exploit techniques similar to the ones proposed for E-mail. This is a technical approach that could be deployed in the future when the privacy issues and effectiveness of authentication for electronic mail are better understood.

Question 26:Have there been any instances of a VoIP service being compromised or used to deliver malware or a DoS attack?: no comment

Question 27:Are there any other considerations that need to be taken into account when a provider does not have a UK entity?: no comment

Question 28:Is it reasonable to ask VoIP service providers to participate in schemes designed for e-commerce ?: This question is strangely phrased - it is not e-commerce that is important here but the issues of privacy and authentication. Yes it is reasonable for VoIP service providers to participate in such schemes. It is also important that the regulator is involved as such schemes could be used by VoIP providers to inappropriately tie consumers to their product offering

Question 29:Do you have any other comments on the proposed approach to investigating the application of the GCs applicable to providers of PATS in the context of VoIP?: none

Question 30:Do you have any comments on Ofcom's views on the meaning of abovementioned terms and legal concepts?: none

Question 31:Are there any other steps that a VoIP service provider could consider in respect of the IP network layer and service application layers to ensure network integrity?: the need for adequate in-call quality. The commentary in A6.68 is not technology independent - there is a need to describe the requirements in terms of outcomes (supported by a proactive design process and monitored to react to unforeseen issues) - not in terms of particular mechanisms. The vital property of the end-to-end path is the composition of the implemented approaches delivers the required end-user experience - this is what should be defined and used as the metric of regulation. The regulation CAN NOT be done in terms of the use of appropriate markings, mechanisms or protocols - they may be part of the solution, but they can not be the definition. Whether the mechanisms chosen meet the operational need, especially for 999 calls, will be a proof obligation that will need to be discharged in the safety case made by the individual companies as well as the industry as a whole

Question 32:Are there any other steps that a VoIP service provider could consider in respect of parts of the underlying network that they do not control?: The process described in A6.69 is fundamentally inadequate to assuring that conversational quality for 999 calls is assured and needs to be amended to meet that requirement. The SLAs referred to in A6.71 will need to address "instantaneous" quality requirements (i.e. properties that hold over tenths of seconds) not large time scale properties. If this is not done then providers will be able to "deliver on" SLAs even though the 999 calls carried will be deemed to be have failed. The authors seems to be confused in A6.72 between "the aspiration to" quality (as expressed by classification, mechanism choice and SLAs) and "the delivery of" quality. Any regulation must be couched in terms of "the delivery of" quality - the assurance that the "delivery" will meet the "aspiration" is part the safety case that needs to be made by the industry

Question 33:What additional steps could a VoIP service provider take to support nomadic users with regard to maintaining network integrity?: As with the existing telephony service there will be a need to defined the limits on providing 999 access so as to assure that at least some 999 calls are completed under overload.

Question 34:Do respondents consider whether other options to ensure continuity in the case of a power outage are appropriate?: Battery backup (either via UPS or incorporated battery) should be encouraged - a measure of "time to fail without power" in any comparison table should be sufficient to have an effect on the consumer.

Question 35:What other steps could be taken to provide reliable location to assist the emergency services in their work ?: There is no technical reason why the CPE

should not include a suitable media gateway/proxy that can insert the location information in outgoing emergency calls - the CPE equipment (even when supporting nomadic users) would be a fixed location.

Question 36:What other steps could be taken to provide reliable location to assist the emergency services in their work in the case of nomadic users?: There is no technical reason why the CPE should not include a suitable media gateway/proxy that can insert the location information in outgoing emergency calls - the CPE equipment (even when supporting nomadic users) would be a fixed location.

Question 37:In addition to participating in the NICC working group on providing location in IP networks and the 112 expert group, what other steps should Ofcom take?: Assessment of the end-to-end quality needs from the network to support 999 calls so that quantitative end-to-end loss, delay and jitter budgets for 999 calls can be established. This would permit the participants in the end-to-end call chain to have quantifiable goals for their inter-working discussions, and provide the basis of constructing inter-working SLAs around the delivery of "instantaneous" quality necessary to assure adequate 999 call conversational quality

Additional Comments: please see covering letter