

# VoIP Consultation from OfCom<sup>1</sup>

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Response from

Deaf Studies Trust

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<sup>1</sup> <http://www.ofcom.org.uk/consult/condocs/voipregulation/>

## ***Who are we?***

Deaf Studies Trust is a registered charity founded in 1984 whose remit is to carry out research which will enhance the lives of Deaf people.

In the last ten years, we have worked closely with major telecoms companies – BT, Vodafone, Ericsson and videophone hardware suppliers in the UK and abroad. Our specific concern has been to ensure that Deaf people participate in the developments in telecommunications and are not left behind and ignored as was the case when the original telephony services evolved.

We have developed systems for text messaging, provided a network of mobile communicator users to allow Deaf people access to fax and sms.

We participated in an international collaborative project which developed a prototype 3G videophone and which developed the Sign Language Daily News and Information Service – [www.deafstation.org](http://www.deafstation.org)

We have experimented with and supplied Deaf users of ISDN videophones in different parts of the UK. We have set up the largest user trial of videophones in Europe, in the Bristol area and have supplied and tested – interpreter relay services and deaf relay services, as well as monitoring the impact of the provision of video telephony to the mental health and social wellbeing of elderly users.

We also carried out the world's first experimental emergency service through videophones in conjunction with the Avon and Somerset police command and control centre. *This was not a relay service* but rather a direct service with trained Deaf operators receiving the incoming calls from Deaf people.

We have created a significant user group in the Bristol area of internet videophones and are currently carrying out rigorous trials on the transmission of data, quality of service in the area of video telephony.

## ***Why is this relevant to the OfCom consultation?***

VoIP is a telephony service – indeed, under the advanced plans of BT, it becomes a replacement for the current voice telephony service. Such provision is covered by both the Universal Service Obligation in regard to provision for disabled users and also by the Disability Discrimination Act. In this respect, disabled users are entitled to the same level of access to service as other users. In the current context, it would not be reasonable to develop a system of remote communication which is exclusive of one section of society. Deaf people require to connect through the same SIP servers on the Internet but in their case, this connection and subsequent interaction must be in video format.

In the definition of PATS<sup>2</sup> – publicly available telephone service – it should be clear that Deaf users of videophones are users of such a service and that all guidance relating to PATS must apply to Deaf users of video telephony.

Ofcom's most recent research on the needs for Deaf telecommunication is embarrassingly weak having involved only 9 self-selected signing Deaf people out of a target user population of 25-30,000 people in the UK. Instead of dealing primarily with the text telephony relay service, they would have been better served by trying to understand why Deaf community users rarely use Typetalk anymore<sup>3</sup> (see Kyle et al, 2005, Access to Public Services in Scotland through BSL, Scottish Executive) and by exploring more accurately real services currently in existence in sign language relay. References to video streaming in the report were inaccurate and misleading.

The submission by TAG<sup>4</sup> in December 2005, specifically concurs with the view that videophone users should have the same level of access to emergency services as voice and text users.

While OfCom's review of the Universal Service Obligation<sup>5</sup> examines the concept of video relay and encourages the use of Internet Protocol, it fails to examine the need for point to point video telecommunications for Deaf sign language users. In doing so it has missed an initial opportunity to examine quality of service to sign language users of video telecommunications and runs the risk of creating a VoIP platform which will be unable to support the necessary point to point video telephony.

At the present time, and in the context of the proposals set out by OfCom, a service involving video over the Internet, is not regulated (hardly even discussed, even though it is technically feasible). The basic premises of VoIP will not apply to Deaf users. We believe that video communication for Deaf people over the Internet is possible, reasonable and should be included in the regulation of VoIP.

These fundamental issues need to be addressed in the current developments of video and voice communication on the Internet.

### ***Quality of Service Issues***

We consider that the consultation does not adequately address the core quality of service issue in that it does not set out any guidelines for evaluating the point to point provision, whether in voice or in video. In our view, both are currently compromised and there is no guarantee that a voice call will be possible over IP without break-up and loss of packet data. In the case of video calls, the problems are much more severe. Since these can be

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<sup>2</sup> See Annex 6 paragraph A6.19

<sup>3</sup> Also available on the Internet at <http://www.scotland.gov.uk/Resource/Doc/930/0012107.pdf>

<sup>4</sup> <http://www.ofcom.org.uk/consult/condocs/snen/responses/tag.pdf>

<sup>5</sup> <http://www.ofcom.org.uk/consult/condocs/uso/statement/statement.pdf>

traced to the loss of packets within the network, then there are even greater concerns for the use of the network when there will be IP television services and other video data streams in operation. Since these are considered sources of revenue to telecommunications providers and since they compete with interactive games and other services delivered through broadband, then this situation will become much worse unless point to point telephony standards are required by OfCom.

### ***Matters of importance in the OfCom consultation on VoIP***

We consider that the principles of video communication are exactly the same as those for voice communication as it has been applied to hearing people. Information has to be digitised and delivered through the Internet to a user with a similar device so that they can have an interaction. It is a fundamental human right that people should be able to be in contact with one another and even in the outlying areas of Developing countries, hearing people are offered mobile, wireless and satellite communication. At present, this level of service is not even available to Deaf users in the centre for London.

Despite the importance of the debate on the reduction in 999 emergency services access, it is important to point out that one group of the community has never had any direct access to such services – ie the Deaf sign language community. It is unreasonable to allow this situation to continue when there technological solutions in video telephony.

Nor is it acceptable to consider that a relay service is an alternative – it seems very unlikely that hearing people would accept that they should not be able to call direct. In any case, a key feature of the 999 service is the ability of the operator to “talk the person down” with reassurance and first aid help. So far, Deaf people are unaware even that this is a function of the 999 service operators – they have never experienced it.

Not surprisingly, we consider it appalling that OfCom should even be discussing policies of forbearance which might allow operators to avoid offering access to emergency services or to even consider that VoIP calls might have a level of failure. It is absolutely vital that telephony services move forwards and not backwards.

In order to achieve the simple goal of reliable point to point video telephony, the design of the BT 21<sup>st</sup> Century Network has to take this into account – not at some point in the future when someone realises that there is no provision for a marginalised community, but now when the quality of service mechanisms can be situated throughout the network. In this way, by the creation of an intelligent network, Deaf sign language users engaged in video calls, can be recognised and their calls treated in a way which ensures the integrity of the call. This *does not require greater bandwidth* but rather the intelligent management of the call within current bandwidth provision.

It is not true that the problem is solved by better video telephony hardware, as we have already tested the most advanced videophones, with H264 codecs and find that they cannot deliver point to point video telephony of a standard which would be considered acceptable for even the most basic interchanges, if they were translated to a voice service. We can provide extensive data on the performance of the network in video calls.

The priority is to ensure that the 21<sup>st</sup> century network is sufficiently intelligent that it can support the identification of users and guarantee the delivery of point to point video over the internet. Since this BT network will be the backbone of almost all telecommunications in this century and since video telephony will become a mainstream provision anyway, it is short-sighted not to incorporate and address the needs of the minority group who have no alternatives to video interaction.

We consider this is not a matter to be left to commercial self-interest but that it raises issues which strike at the heart of human rights, the Government's stated policy of e-Government and all that drives our society in terms of equality and integration. The need to address these issues is enshrined in the Universal Service Obligation (of the telecommunications companies) and the Disability Discrimination Act.

### ***In summary***

We welcome the opportunity to comment on the Ofcom consultation and believe that it is a valuable starting point in the development of telephony services on the Internet.

We believe that VoIP refers to telephony services over the Internet and as a result the guidelines should cover videophones as well as voice phones. The technological considerations are similar and the rights of Deaf sign language users to telephony services to an equal extent ought to be included. The implications for service providers are significant but not insurmountable and it is appropriate that they should be set out in OfCom guidance.

Having researched this area and as a provider of video telephony services and support using current Broadband provision, Deaf Studies Trust have data on the issues surrounding quality of service, video relay and the performance of the Internet in regard to point to point video telephony on the Internet. We will be happy to share these in more depth in a way which can support the OfCom initiatives

### ***Appendix: Specific Issues arising from the consultation document***

These points need to read in conjunction with the circulated document from OfCom

- Paragraph 2.2: the principles of video communication are exactly the same as those for voice. Information has to be digitised and delivered through the Internet to a user with a similar device so that they can have an interaction.
- 2.4: it is these lower levels of consumer protection which concerns us as the current levels are already unacceptable.
- 2.6: there is currently ***no direct access to 999 services for Deaf sign language users***. In our research in conjunction with Avon & Somerset Police Command and Control Centre we have already demonstrated the feasibility of such access through video. This experiment was mentioned in Parliament in 2004.
- 3.2: the issue of video telephony is explicitly included in the context of the provision of VoIP services.
- 3.5: the provision of 999 services through video is of paramount importance as there has been no reasonable alternative to Deaf sign language users. Such a service is possible through the Internet and ought to be mandated by OfCom.
- 3.5-3.8: We concur with the view that 999 services service should be universally available to all users of telecommunications services and that this must include telephony services provided over the Internet. We consider that this is a viable and reasonable objective for Deaf users.  
*This would not be a relay service but rather a direct service with Deaf operators receiving and managing the calls with Deaf users – all in sign language.*
- 3.19: We are extremely concerned about the forbearance policy which would allow operators to avoid their 999 access responsibilities. Given the technology available and we can demonstrate its use, it should not be an impossible financial burden to guarantee access to 999 services. This should be a shared responsibility of all telephony service operators.
- 3.22: This highlights exactly the problem faced by Deaf sign language users where the only realistic telephony service is through video – there is no reasonable alternative through PSTN (which will be withdrawn anyway) nor through mobile or other text telephony – which is considered inappropriate by Deaf people in regard to serious crises ie when reporting an emergency.
- 3.23: the requirement to find a solution to the provision of 999 services is not “some way off in the future” – the network infrastructure has to be influenced now in order to be able to deal with the needs to provide the 999 service. If OfCom waits until there is a sufficient demand, that demand will be throttled early by lack of service and by the time its need is recognised the network construction will mitigate against its provision. The foresight of a 999 service through the Internet is required now.

- 3.24: the provision of information services to Deaf people in sign language is both feasible and available now – see [www.deafstation.org](http://www.deafstation.org)
- 3.37: it is critically important that BT's 21<sup>st</sup> Generation Network is implemented with the appropriate Quality of Service Measures which will support the provision of video point to point telephony and access to the 999 services. This has to be implemented under the USO. Without this provision, at this stage, it could later become impossible to ensure the integrity of VoIP services whether for voice or for video.
- 4.6: It is reasonable for all PATS to comply with the requirements to provide adequate point to point video telephony and also to provide 999 access.

Reference to Annex 6 at this point - the guidelines for regulation

A6.50: We consider this a very weak proposition and one fraught with danger for users of video services. It is vital that access to 999 services are subject to quality of service guarantees and it is not reasonable (or legal in our view) to suggest that

” such access does not need to meet any achieve any particular degree (or quality) of access in order to constitute 999 access.”

This regulation must be strengthened.

A6.68: this lists a number of actions which can be taken. We consider that these can be adapted to provide a solution and that investigation of these should be mandated. Only in the case of the final point of switching calls to PSTN, would this be inappropriate to the users of video telephony.

A6.69: We can already provide an analysis of these elements in regard to video telephony. Without regulation of the video telephony connections and transmission, it will not be possible in future to guarantee quality of service for Deaf users. It is vital that these analysis are carried out now to provide a more meaningful set of guidelines.

A6.70: this problem for certain service providers would not be a difficulty if the network is configured correctly now – ie if OfCom mandates the provision of 999 services for voice and video over IP.

- 6.7: we are concerned that reliance on commercial organisations to provide information on the limits and weaknesses of their provision is likely to be ineffective. No commercial organisation will promote and admit to limitations on the service it offers. This is clear in the current marketing of broadband access where only maximum download “speeds” are quoted and contention issues affecting quality and data loss and delay are not mentioned at all. In addition, and especially significant for IP telephony, there is virtually no mention of the asynchronous aspect of the provision and that upstream bandwidth is simply insufficient when contention is taken into account. We consider it unrealistic to imagine that service providers will advertise their weaknesses – they have not done so up to now.
- 6.8-6.9: We concur with the minority who believe emergency services must be provided. In particular for our client group, the lack of service provision in this respect is crucial. Since we know it can be provided, then it will constitute a breach of DDA in our view, to proceed without this access.
- 6.12: Deaf BSL users would agree that access to 999 services are a fundamental right.

- 6.15: we are extremely uneasy with OfCom's conclusions and believe that it is impractical to proceed in this way. We do not consider that it is likely that service providers will meet the requirements of Deaf BSL users and this will lead to costly breaches of DDA and potentially life threatening crises.
- 6.38 onwards: We consider the whole approach of this code to be ineffective and inappropriate to Deaf BSL users. Service providers in general are unable to communicate with such users except in the crudest of fashions whether in terms of marketing, sales, billing or maintenance and so deviations and fine definitions of service limitations will simply not be accessible to users.  
The correct approach for OfCom has to be to provide the service level required in order to deliver point to point voice and video telephony – anything less than this is a step backwards in telecommunications history and should be deemed unacceptable.
- 7.6: We agree entirely with OfCom's view that self-regulation is not a viable option for voice and video telephony over the Internet.
- 8.10: This proposal is symptomatic of the exclusion of Deaf users who have limited access to text based information. This is not a practical solution to providing information and does not meet the requirements for duty of care of Ofcom in regard to supplying information to Deaf sign language users. This level of information can be supplied without inordinate expenditure – see [www.deafstation.org](http://www.deafstation.org)
- 8.18: Such research will need to allow hands on access to proposed service as the theory of Voice and Video telephony service is fine but until users are able to test the current provision and to understand its weaknesses, they will be unable to provide adequate data. It must do more than set up a few focus groups as previous Ofcom commissioned work has done.

## *Regulation of VoIP Services Consultation*

Response to Questions in the document

From Professor Jim Kyle, on behalf of the Deaf Studies Trust, Bristol

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The response should be read in conjunction with the general document submitted as comment on the consultation – file submitted: VoIP OfCom Response\_JKyle\_DST

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?

These priorities are important ones. However, it should be clear that VoIP refers to telephony services over the Internet and the guidelines have to cover videophones as well as voice phones. The technological considerations are similar and the rights of Deaf sign language users to telephony services to an equal extent are to be included. The implications for service providers are significant but not insurmountable and should be set out by OfCom guidance. Having researched this area and as a provider of video telephony services and support using current Broadband provision we have data on the issues surrounding quality of service, video relay and the performance of the Internet in regard to point to point video telephony on the Internet.

Question 2: Do respondents agree with this approach for the interaction between network providers and PATS providers?

It is reasonable for there to be SLAs between the various service providers – however, this has to be set within clear standards for the delivery of point to point voice and video telephony services. Such standards have to take into account the full network realities of contention and of increased use of the Internet for interactive gaming, for video download and for IP TV. In essence, there has to be a cast iron guarantee of quality service to voice and video telephony across the network.

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?

We consider that regulations relating to the guaranteed delivery of voice and video telephony services must cover all locations and mobility circumstances.

We consider that an intelligent network which is able to identify individual users and the purpose of their connection (through their data stream) will be able to provide the service whether nomadic or mobile.

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?

The primary issue which has not been dealt with in this consultation is the adequacy of the delivery mechanism for the services.

In the case of Deaf sign language users of video over IP for videophone communication, there are serious concerns that current Broadband configurations unfairly discriminate against these users of the telephony services. In effect, video telephony while demonstrably possible on the Internet is grossly affected by the inability of the network to identify such traffic and to make provision for it which would guarantee the quality of service. Put simply, contention issues at the local exchange, data loss in transmission during a video call and misleading service/bandwidth announcements relating to asynchronous service, mean that video telephony is currently inoperable.

This situation is even worse when one considers that Deaf sign language users have no alternatives – ie the use of voice on PSTN or mobile text messaging is not accessible for communication at the level of hearing people's expectancy for complexity of interaction. We know also from our community research that there has been a serious decline in the use of text phones and in the use of text relay (TypeTalk) use among the Deaf community. In effect Deaf people are subject to discrimination in telephony services.

It is vital that OfCom include point to point video telephony in its standards for provision and that these are explicit to all operators.

This applies equally and with great force, to the need for direct access to emergency services – ie Deaf people should not be offered relay services in the case of emergency but rather direct video telephony to a service centre staffed by signing operators. We have already tested this concept and shown it to be effective.

Question 5: Are there particular issues in relation to VoIP services that should be addressed in this review?

We consider that the consultation so far fails to include video telephony and does not in any way address the needs and rights for telephony of Deaf sign language users.

Question 6: Do you have any comments on Ofcom's proposed modification to the PATS definition in GC 18?

We consider that the needs of all users to have access to 999 services is paramount and any changes to the definitions must ensure the viability and integrity of services from any location whether by voice or video over IP.

Question 7: Do you agree with the proposed application of the code?

This question is somewhat vague. We are supportive of the notion of a code as long as it sets the quality standard for point to point Video telephony.

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?

No such attempts and requirements to inform Deaf users of any aspect of marketing, sales, billing or maintenance of their telephony services have so far proved operable. There is currently little likelihood of self regulating operators being able to provide the necessary information to Deaf people in sign language even though this is possible – see [www.deafstation.org](http://www.deafstation.org)

Question 9: Do you agree with the proposed approach for informing customers where access to emergency calls is not available?

We do not accept that any service can be offered without emergency calls – such a dilution of the USO is a breach of rights and takes telephony back a stage in its evolution. We believe that emergency services access is possible in all cases if the network is configured properly and we are prepared to demonstrate our data and work on this.

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?

As before we do not accept this as a viable position for OfCom to allow. Alternative means of alerting emergency services must be found in the case of power failure.

Question 11: Should the code be extended to point of signature acknowledgement in respect of reliability of access to emergency calls?

We do not accept that there are circumstances where emergency services cannot be alerted even in the case of power failure. There are alternative means whereby Deaf users could be provided with an alternative/emergency device for radio access. We consider that if hearing users are offered mobile phone alternatives or pstn alternative, then Deaf people must be offered another means in the case of power failure to broadband service.

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?

There are strong grounds for finding a means to determine the user's location. One imagines that if this is solely the user's responsibility then this may be problematic. Some means of finding the local IP address combined with an acknowledgement of change of location by the user may be sufficient.

Question 13: Do you agree with the proposed approach to informing consumers where services do not provide emergency location information?

Yes it is essential. But this will require operators to find a means to communicate with sign language users.

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

No comment on this.

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?

We do not accept the basic premise. We consider that telephony services should move forward not backwards. Any changes to service provision must be an enhancement not a reduction. We consider it naïve to believe that users would knowingly accept a lower quality service when the technology exists to maintain and to enhance the service to users.

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

As long as the code of practice acknowledges the need to set quality of service standards which are no less stringent than they are now and that the code encompasses the provision of video over IP as well as voice, then we support the mandatory position.

Question 17: Do you consider that the overall programme of activities is appropriate?

These activities are on the surface appropriate to the circumstances described for VoIP. However, we are not assured that OfCom have at present the capacity to deliver consumer education to Deaf sign language users – viz the web site which is inaccessible; nor do we believe that the OfCom commissioned research so far, has actually reached Deaf community users – and this will not be done without the involvement of a specialist Deaf research organisation. Not only are we unsure as to the capacity to carry out the necessary research but we are very worried that the time for examination of the principles of video telephony is now ... before the network

characteristics are set in stone and before Deaf people are left behind again by commercial interests.

The Deaf Studies Trust has a great deal of data on Deaf access to services, has a long track record of working on video telephony, has a functioning small network of Internet videophone users which we use as a test bed for new products and services, has set up and analysed the use of interpreter relay and Deaf relay services, has piloted the emergency services through videophone with the police and significantly has collected traffic data from real video calls at various times and in various conditions on the Internet. We are prepared to share this data now in order to ensure that Deaf sign language users are included in the network planning and development.

We consider that intervention on this front in 18 months or 2 years time (which would be implied by the programme of consumer education and research), will be too late to ensure the viability of services.

Question 18: In light of Ofcom's Consumer Policy Review, are there other consumer education measures that Ofcom should consider?

Yes in regard to Deaf sign language users the information has to be provided in a sign language form.

Question 19: Do you have comments on this proposed enforcement approach?

No

Question 20: Are there other areas of research activity that Ofcom should consider to ensure it understands market developments?

It is vital that Ofcom is able to measure the likely impact of other Internet activities on the provision of voice or video over IP. There has been no mention of the measurement of data loss or of contention issues which have a direct impact on the quality of service. The real network conditions have to be investigated before a regulatory standard is imposed.

Question 21: In relation to ensuring high availability of 999 access, are there other measures that Ofcom could consider?

The proposed measures completely ignore the situation of Deaf users who do not have access to an alternative direct person to person communication. Given the principle that services should go forwards and not backwards, then it will not be reasonable to say that Deaf people have no access now and so why should they have it in future. We believe that urgent consideration be given to Deaf users who will rely on video telephony for access to all services and to other people.

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 additional 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 Deaf people could be particularly vulnerable.

Question 26: Have there been any instances of a VoIP service being compromised or used to deliver malware or a DoS attack?

No information

Question 27: Are there any other considerations that need to be taken into account when a provider does not have a UK entity?

No information

Question 28: Is it reasonable to ask VoIP service providers to participate in schemes designed for e-commerce?

No comment

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?

No additional comment

Question 30: Do you have any comments on Ofcom's views on the meaning of abovementioned terms and legal concepts?

no

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?

Yes, as long as design for all principles are applied and as long as the vision of telephony services is broadened to include video telephony, then the requirements of Deaf sign language users can be included. Based on our technical research, we can provide technical details on how this should be approached.

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?

We have begun to develop solutions for the maintenance of quality of service which will enable service providers to deal with this question. There are important steps which can be taken.

Question 33: What additional steps could a VoIP service provider take to support nomadic users with regard to maintaining network integrity?

As in Q32, we are working to provide these solutions.

Question 34: Do respondents consider whether other options to ensure continuity in the case of a power outage are appropriate?

No information

Question 35: What other steps could be taken to provide reliable location to assist the emergency services in their work?

No comment

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?

No comment

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?

Our major concern is that OfCom establishes an appropriate VoIP standard of point to point transmission – setting out exact limits for packet loss, delay and integrity. Such standards are necessary in order to monitor network operations which underpin the services. If the video (or even the voice) signal does not reach its destination without distortion or delay, then the other considerations of service are futile.

Without a measurable quality of service for video and for voice over IP, our 21<sup>st</sup> century telephony proposals will take us backwards and not forwards.