

## Your response

Question	Your response
<p><b>Question 4.1: Do you agree that if BT's migration to an IP network is unpredictable, it could result in increased charges for providers routing calls to its network? Are there any other issues that might arise as a result of its migration?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 4.2: Please state which of these measures you consider would be appropriate for securing efficient migration and why?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 4.3: Would the regulation of charges for media conversion, switching and conveyance for calls routed via IP networks be an effective means of preventing excessive charges and promoting an efficient migration to IP?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 4.4: Do you agree that it remains appropriate that telecoms providers maintain their discretion to designate a single POI at which the FTR will apply?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 4.5: Do you agree with our assessment about how BT's market position in relation to interconnection might change during migration to IP?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 4.6: Do you agree that there is unlikely to be a need to impose regulation on BT's interconnection circuits once migration to IP is complete?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 4.7: Do you agree that we should continue to regulate BT's TDM interconnection circuits as the industry migrates from TDM to IP based networks?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 4.8: Do you agree that it would not be necessary to impose regulation on interconnection circuits at BT's IP network during migration?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 5.1: Do you agree that BT's role is less central to the provision of end-to-end connectivity and that telecoms providers now</b></p>	<p>Confidential? – Y / N</p>

<p>have a choice of transit providers with whom they can interconnect?</p>	
<p><b>Question 5.2: How might the transition to IP networks change the pattern of interconnection and how might this affect how E2E connectivity is achieved?</b></p>	<p>Confidential? – Y / N</p> <p>It is our understanding that NICC is has a number of work projects under study in different Task Groups. The SIP Task Group’s work plan includes SIP NNI profile, SIP NNI Interworking Specification, and SIP Implementation Guidance Document. This work is of fundamental importance and critical to the evolution of the Networks in the UK. These comments are provided in consideration of the above.</p> <p>IP Interconnection among service providers is significantly increasing as the transition of the Public Switched Telephone Network (PSTN) from Signaling System No. 7 (SS7)/ Time-Division Multiplex (TDM) to SIP/IP networks progresses. Current deployments of SIP/IP in the core carrier networks have exposed operational and implementation differences on how IP for SIP traffic works ‘on the wire’. These differences complicate interconnection, and in some cases require ‘protocol normalization’ to achieve full interoperability. There are hundreds of IETF SIP and 3GPP specifications that are open to interpretation, creating ambiguity in the detailed options that are implemented. This often requires Session Border Controllers or Interconnection Border Control Function (IBCF) proxies to reconcile the signalling between service providers and resolve those ambiguities. Time and effort is also required to document the differences and configure the Session Border Controller (SBC) or IBCF proxy to implement the necessary changes to the on the wire protocol.</p> <p>Therefore, as the NICC understands it is important to identify a baseline set of features that should be common to all IP NNI implementations for voice service.</p>
<p><b>Question 5.3: Do you agree that General Condition A1 is sufficient to ensure that telecoms providers can obtain interconnection and that additional access obligations may no longer be required to ensure end-to-end connectivity? If not, please explain why and</b></p>	<p>Confidential? – Y / N</p>

<p>what obligations you think are necessary.</p>	
<p><b>Question 6.1: Do you agree with our initial view that a lack of standardisation of IP interconnection may give rise to a risk of consumer harm?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 6.2: To what extent is there divergence among telecom providers in respect of the IP standards they are using? Do you consider a lack of standardisation of IP interconnection to be (or likely to be) an isolated issue or more widespread, which may require an industry-wide solution?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 6.3: What measures, if any, do you consider may be appropriate to address risks arising from a lack of standardisation of IP interconnection?</b></p>	<p>Confidential? – Y / N</p> <p>As the NICC understands it is important to agree on an NNI profile applicable to the interface between the home network of the originating party and the home network of the terminating party; or between the home network of either party, and a transit network. The profile is limited to the information exchanged at the reference points. The behaviour of network elements upon receipt of such information is governed by other specifications. The NNI Profile does not account for every interconnection scenario and although Providers may voluntarily employ it to facilitate interconnection planning, it is not a replacement for the technical discussions required during the development of commercial interconnection arrangements. The scope of this profile should include but not be limited to:</p> <ul style="list-style-type: none"> <li>• Define a reference architecture that sets forth the common functional entities for Carrier to Carrier Interconnection. This reference architecture will be from the perspective of the interconnection points between carriers and will not deal with implementation details inside the networks on either side of the IP NNI.</li> <li>• Define the normative standards (including IETF RFCs, 3GPP, and other existing standards)</li> </ul>

	<p>associated with these protocols that are supported by each element of the reference architecture. Where required, the options that MUST or SHOULD be supported within a given standard will also be defined for this profile.</p> <ul style="list-style-type: none"> <li>• Define for this profile the customary methods for negotiating protocols, protocol extensions, and exchanging capability information between carriers. The methods of formulating SIP protocol messages are where multiple options exist in standards.</li> <li>• Define for this profile the presentations of Fully Qualified Domain Names in “From:” and “To:” fields, including P-Asserted Identity (PAI).</li> <li>• Define support for underlying transport [e.g., User Datagram Protocol (UDP), Transmission Control Protocol (TCP), and Stream Control Transmission Protocol (SCTP)].</li> <li>• Define an audio codec selection strategy that minimizes the need for transcoding and a transcoding strategy that balances the workload between originating and terminating carrier.</li> </ul> <p>The NNI Profile is not intended to “certify” equipment and does not establish a new “compliance” requirement for existing or future products and services.</p>
<p><b>Question 6.4: Would it be useful to consider the case for intervention in relation to technical standards for interconnection ahead of our next market review?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 7.1: What are your views on the factors that we have highlighted as having a bearing on the setting of termination rates? What other developments should we consider?</b></p>	<p>Confidential? – Y / N</p>
<p><b>Question 7.2: What are your views on the</b></p>	<p>Confidential? – Y / N</p>

options we present for regulating the fixed and mobile call termination markets? Which appears to be the most appropriate regulatory option?

Please complete this form in full and return to [icandtermination@ofcom.org.uk](mailto:icandtermination@ofcom.org.uk) or:

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