Your response

Question	Your response
Question 1: **a) Do you agree with our characterisation of the ways in which mobile calls enter the UK? Please give an explanation for your answer where appropriate.** **b) What do you think is the relative importance and / or significance of each of the different routes used for calls to enter the UK? Please provide evidence for your answer.** **c) If you provide mobile services to UK consumers, what international gateway provider(s) does your organisation use (including in-house services)? In addition, please explain the nature of the international gateway services you rely on.**	**Highlighted part of answers to 1b) and c) are Confidential** a) The characterisation of the ways in which mobile calls enter the UK is correct for mobile roaming calls made on 2G/3G networks. These calls travel from the roaming network to the destination network via the international voice network. If the roaming call is destined to the UK, it could transit one or more international carriers before entering the UK network via an international gateway operator. Unfortunately, it is possible for fraudsters to inject calls with spoofed CLI into the international voice network via an operator with access to the international voice network who does not validate CLIs. In contrast, VoLTE (and in future VoNR) roaming calls travel to the UK home network via data bearers established between the roaming network and the home network and routed via one or more GRX networks. These data bearers are secure by design, making it impossible for fraudster to inject calls with spoofed CLIs. b) We believe that VoLTE roaming traffic will be rapidly overtaking 2G/3G voice roaming traffic. ✂. However, it is difficult to predict at this stage if and when 2G/3G voice roaming will cease to exist globally . c) Three UK is a provider of mobile services to UK customers, including international roaming services. ✂.
Question 2: **What variables and factors should we take into account when considering whether – and, if so, how - to address the harms caused by spoofed UK mobile numbers?**	In addition to the variables set out in paragraph 3.8 of the document, Ofcom should also take into account the cost and complexity for the industry to develop any proposed solution.

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Question 3: **a) What is the scope and scale of consumer harm caused by spoofed UK mobile numbers?** **b) What are the consumer impacts of spoofed UK mobile numbers more broadly?** **Please provide evidence to support your responses.**	a) In general, we believe that the vast majority of calls with spoofed CLI are made with malicious intent to commit fraud, and that this may lead to significant financial and emotional harm to victims. Several studies are available to support this, such as those quoted by Ofcom. Whether the spoofed CLI is fixed or mobile makes little difference to victims. b) The ability of fraudsters to spoof the CLI is a key factor contributing to the loss of trust in telephone numbers by consumers, with many ignoring calls from numbers they do not recognise. Also, businesses have been led to seek alternative and more secure channels to interact with consumers, such as social media, apps, etc.
Question 4: **a) How significant is the volume of spoofed mobile calls from abroad?** **b) Is there any evidence that scammers are moving from spoofing fixed to mobile UK CLI?** **Please provide evidence to support your responses.**	**Highlighted part of answer to question 4a) is confidential** a) We have no way to measure the volume of spoofed mobile calls from abroad using UK CLIs as such calls, once they enter our network, they appear the same as legitimate calls. ✂. However, this includes all nuisance calls, vishing calls, various sales calls (which might be not harmful, but they are nuisance in the nature) as well as spoofed calls. Please note that customers may decide to report scam calls via other channels (e.g. Action Fraud) or not report them at all. b) We have no evidence to support this statement. However, it seems reasonable to assume that with the recent implementation of UK fixed line network number blocking by international gateway providers and the upcoming extension to fixed line presentation numbers, the only route left open for fraudsters to exploit is spoofing mobile CLIs.
Question 5: **How will developments in deployment of mobile technologies in the UK and abroad affect the problem of**	We agree that VoLTE roaming and in future VoNR roaming are inherently secure technologies that make CLI spoofing impossible for fraudsters.

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spoofed UK mobile calls from abroad? Please provide evidence to support your response.	VoLTE roaming is being aggressively rolled out by all UK MNOs, primarily driven by closure of more and more 2G/3G networks around the world. As stated above we believe that VoLTE roaming traffic will constitute the vast majority of outbound roaming voice traffic in the next 1-2 years. However, it would be unrealistic to assume that 2G/3G voice roaming will cease globally in the short term.
Question 6: **a) What is your preferred option for addressing scam calls made from abroad using spoofed UK mobile numbers, and why (including the pros and cons of the different solutions)?** **b) Do you think it is possible to identify a solution that could be implemented relatively quickly now, and which would enable implementation of a more robust and effective solution in the future? If yes, what solution fits these criteria? Please give an explanation for your response.** **c) What would be the advantages and disadvantages of obtaining more information about, and oversight of, the international gateway providers which bring calls into UK networks, in the context of tackling use of telecommunications networks to facilitate fraud and scams? Please give an explanation for your response.** **d) What would be the advantages and disadvantages of industry-led solutions, and where might regulatory intervention be required? Please give an explanation for your response.**	a) Three UK is an active member of the NICC subgroup developing ND1526 - Report of the options to support the verification of mobile roaming calls when blocking of UK CLIs. This report provides a high-level description of the technical options available to address scam calls made from abroad using spoofed UK mobile numbers, including a detailed list of pros and cons for each option. The options listed in ND1526 can be directly mapped to those identified by Ofcom in this CFI. Three UK is aligned with the majority of the NICC subgroup members in favouring the “CAMEL home routing” options over the “roaming query” options. b) We believe that the options under the “CAMEL home routing” umbrella represent the best compromise from a time to market and cost perspective. However, more detailed technical work is required at industry level (led by NICC) to narrow down the options to a single one that could be rapidly implemented by all international gateway and mobile operators in the UK. c) We believe the additional information obtained with option 2c (CAMEL home routing: withheld CLI+) would be of limited value. Typically, international gateway providers act as transit carriers and calls are originated somewhere else up the chain. Therefore, in the majority of cases, the additional information obtained with option 2c would not help identify the networks originating spoofed calls. Moreover, the vendor development effort required to inject the additional information/metadata in the call signalling could significantly increase deployment time and cost.

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	d) For any solution to be effective at eradicating scam calls using spoofed mobile CLIs, all providers must agree to make the required changes within a specified timeframe. Even if only one or more providers are not on board, there would still be a potential route available for fraudsters to exploit. Furthermore, it is not clear that an industry led solution could reach consensus quickly.
Question 7: Are there any international experiences of tackling this issue that you think are particularly relevant for the UK? Please provide evidence and an explanation for your answer.	N/A
Question 8: **Are the factors outlined in the section 'framework for evaluating options' the right things to think about when making a decision on options to address spoofed UK mobile numbers, and are there any additional factors which we should consider? Please explain your response where appropriate.**	We agree with the proposed framework. In evaluating the various options, we would encourage Ofcom to pay careful consideration to the potential industry cost and build a realistic implementation roadmap, taking into account the time required for the industry to formalise technical specifications, vendors to develop/enhance their products and operators to deploy solutions. Moreover, 3G will be switched off by all UK operators by the end of 2025 (on current plans), with 2G to follow by the end of 2033, so any solution under consideration must be reasonable and proportionate given the decreasing volume of consumer harm being addressed.

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