# Your response

| Question | Your response |
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| **Question 3.1: Do you have further views about the implementation of STIR?** | The migration to IP networks presents an ideal opportunity to establish efficient mechanisms to reduce or eliminate unlawful calls. IP networks enable advanced functionalities that can help to target such calls. STIR may be one useful way to target unlawful calls. Any solution adopted or endorsed by Ofcom should reflect the evolving nature of the communications network, and enable carriers, resellers, and third-party users of telephone numbers to attest or sign numbers. |
| **Question 3.2: Are there any other approaches we should consider for addressing CLI authentication?** | Any CLI authentication approach, such as STIR, should enable carriers, resellers, and third-party users of telephone numbers to attest or sign numbers. A closed system that only allows full authentication to traditional number usage will be harmful to innovative number users in the ecosystem. However, the CLI authentication process must differentiate between (1) harmful CLI spoofing that is used to mislead with the intent to defraud or cause harm and (2) spoofing of CLI related to legitimate/beneficial purposes. There are many legitimate CLI uses that ensure the security of vulnerable individuals, help protect the privacy and safety of consumers, and encourage efficiency in businesses. Ofcom, therefore, should ensure the regulations do not limit these legitimate purposes. |
| **Question 3.3: Do you agree a common database would be required to support the implementation of STIR?** | As Ofcom's consultation rightly recognizes, IP networks allow for beneficial uses of numbers that are not possible for fixed voice services on the PSTN. (*See e.g.*, Consultation 3.4-3.5). As Twilio explained in its cover letter, its software enables users to implement these beneficial communications, such as providing alerts and notification, anonymous communications, and contact center solutions. Establishing a common database could help to facilitate the IP transition and the use of these services. In addition, a common database would likely help to address some of the concerns that Ofcom has articulated. |

| | However, a numbering database should be flexible. It must accommodate all legitimate number uses and not set up to accommodate only traditional voice calls. If a common database is used to attest calls, then, at a minimum, the database must provide a means for non-traditional providers and uses of numbers to be included in the database and attested to without compromising the technological advantages and consumer benefits of the services. To this end, Twilio urges Ofcom to engage with and include innovative communications platforms and providers in all discussions. |
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| **Question 3.4: What are your views on using blockchain technology as the basis for a common numbering database to support CLI authentication? What other solutions do you think should be considered and why?** | Twilio supports exploration of all possible technologies to support CLI authentication. Ofcom's exploration of the use of blockchain technology for CLI authentication should include whether it is suitable for use with new number uses and technologies. Here, too, Twilio urges Ofcom to engage with and include innovative communications platforms and providers to understand the implications of using blockchain technology. |
| **Question 3.5: What are your views on timeframes?** | Ofcom should ensure that any proposed solutions will work for all parties in the ecosystem before moving forward with any solutions. Therefore, Ofcom should move quickly, but maintain flexibility in its timeframes. |
| **Question 4.1: What are your views on the current implementation of number portability in the fixed and mobile sectors?** | The IP transition will open the door to competition from new and innovative services. Thus, the new ecosystem should allow consumers and business customers easily to port numbers from the old regime to the new regime, and from one provider to another in the IP-based ecosystem.<br><br>In particular, the numbering ecosystem should give equal access to numbers to qualified IP-based providers and to traditional carriers. At the same time, it is important to safeguard safe numbering resources and put in place common sense numbering rules to protect resources, limit nefarious uses, and preserve competition. |
| **Question 4.2: What are your views on sharing the functionality of a common numbering database for CLI authentication to also** | A dynamic database could provide multifunctional uses including to support improvements to the porting process. If |

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| **support improvements in UK porting processes?** | designed correctly, the database could limit the need for multiple databases. |
| **Question 4.3: We are currently supporting a blockchain pilot. Do you have any views on using this technology for port transactions and a routing database? Are there other alternatives that should be considered?** | **See answer to question 3.4.** |
| **Question 4.4: What are your views on implementation timeframes and the importance of a common database solution being available to support the migration of telephony services to IP?** | |
| **Question 5.1: What are your views on the potential for a common database solution to also provide shared functionality to support number management?** | A database that provides information about number reassignment would be particularly useful to limit unwanted calls to the recipient of a number that was reassigned to a new user. All legitimate users of numbers need access to such a database to ensure the process is efficient and effective. |
| **Question 5.2: What do you see as the benefits or disbenefits of changes to number management post PSTN retirement?** | The IP transition presents an opportunity to improve upon the current number management regime.  More flexible numbering assignments and access for the all eligible participants in the ecosystem will bring opportunities and encourage innovation**.** |
| **Question 6.1: Do you agree, in principle, with the need to develop and adopt a common numbering database? If not, why not?** | As explained throughout this response, Twilio supports a common numbering database in principle. However, the functionality of the database must be flexible and account for new and innovative number use cases that will become more commonplace after the IP transition. |
| **Question 6.2: If you do not agree with the need to develop and adopt a common numbering database, do you have any suggestions on how the issues we have set out in this consultation could be addressed?** | |
| **Question 6.3: Do you agree that in the first instance industry should lead the implementation of a common numbering database, with Ofcom providing support to convene and coordinate key activities? If not, what are your views on how implementation should be taken forward?** | All participants in the IP ecosystem should have a seat at the table and be involved in discussions regarding these complex issues.  In an all-IP environment, it is important not to replicate the same systems and processes in place for the PSTN.  Merely replicating the same system will have a detrimental impact on technological development, competition and consumer benefit.  All parties should be allowed to participate in the development of the processes and regulations for IP transition |

| | and, to this end, Twilio supports the development of industry standards. However, Ofcom should have some oversight and monitor activities to ensure that all participants have an equal voice in the discussions, and be willing to step in if needed to protect competition and the interests of consumers. |
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