Your response

Question	Your response
Question 1: What is the market opportunity for D2D services? What is the nature of the benefits that could be delivered to people and business in the UK and what do you estimate the magnitude of the benefits to be?	Confidential? – N In general, HAPS D2D offers an economic way to support a variety of use cases, including greenfield connectivity in areas where there are no terrestrial networks and filling in gaps (known as white spots) in cellular coverage, which are typically small and geographically non-contiguous areas.
Question 2: Are there any wider citizen or societal benefits that D2D services could deliver that the market might not deliver? What is the nature of these benefits and why might the market fail to deliver them? For example, what role could D2D have in improving the availability of 999 services in the UK?	Confidential? – N HAPS D2D can support automotive-related, public safety and agricultural use cases, as well as other commercial services. Automotive use cases include emergency calls, the remote unlocking of shared cars, the provision of safety-related traffic information, such as road hazard warnings, vehicle software updates and in-car entertainment. HAPS can also connect various environmental sensors to provide early warnings of natural disasters, while agricultural use cases include crops and soil health monitoring, geo-fencing (to detect movement into and out of the farm) and livestock tracking. In the aftermath of a disaster, HAPS D2D can help affected communities overcome terrestrial communication blackouts. By enabling swift and efficient communication, HAPS can enhance situational awareness, support search and rescue efforts, and aid in the recovery and rebuilding process.
Question 3: Subject to suitable regulatory frameworks being in place, do you have an interest in offering D2D services or expanding an existing service, in the UK? Which customer segments, devices and use cases would be served? Would your D2D service complement or compete with services delivered over existing mobile?	Confidential? – Y / N Not relevant to HAPS.
If you have considered launching or expanding a D2D service in the UK: **Question 4:** What technology and network architecture do you consider	Confidential? – Y / N Not relevant to HAPS.

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appropriate to use to deliver D2D services? For example, what altitude and how many HAPS, LAPS or satellites would be required to deliver an initial service? **We're aware that different technologies and network architectures will have different costs, performance, and spectrum efficiency trade-offs**.	
Question 5: What capacity (e.g., Mbps/Km_2/MHz) and quality of service (e.g., latency) could be delivered with the D2D service you are proposing? What percentage of the UK landmass could be covered, and would coverage be provided indoors?	Confidential? – N In the use cases listed in answers 1 and 2, it is assumed that low data rates (1 Mbps or less) to high data rates (200 Mbps or more, especially downlink) and delays of 10 ms or less will be required for D2D. HAPS can meet these requirements and depending on the HAPS airframe, weight of the payload, etc, HAPS can typically provide connectivity of between 50 and 100 Mbps per beam, with a peak of 200 Mbps. As a result, each beam can support ~2,000 concurrent voice calls.
Question 6: To inform our future policy development, which spectrum band would you like to deploy the service in? How much bandwidth would be required to provide the service at launch?	Confidential? – Y / N Not relevant to HAPS.
Question 7: What take-up profile do you assume in your planning? For example, the number of active devices, monthly calls made, and data transferred per device. What is the roadmap for enhancing your network to meet anticipated future growth? What additional infrastructure and/or spectrum would be required? When?	Confidential? – Y / N Not relevant to HAPS.

Question	Your response
Question 8: What are the use cases and the benefits these services would deliver? What technology, network infrastructure and frequencies would be required to deliver the service? What are the advantages of using this MSS spectrum compared to other bands?	Confidential? – Y / N Not relevant to HAPS.
Question 9: What current, or future, technology developments will offer the opportunity for more efficient use of MSS spectrum? E.g., more spectrally efficient, or greater ability to share spectrum.	Confidential? – Y / N Not relevant to HAPS.
Question 10: Could your existing, or proposed, service coexist with other users of the same frequencies within the MSS spectrum bands? If so, how is coexistence achieved? If not, please explain why sharing is not possible.	Confidential? – Y / N Not relevant to HAPS.
Question 11; Do you expect D2D services to be available prior to WRC-27? What services and benefits do you think an authorisation prior to WRC-27 might bring to UK consumers and businesses?	Confidential? – Y / N Not relevant to HAPS.
Question 12: Are there any mobile bands that should be prioritised for satellite based D2D?	Confidential? – Y / N Not relevant to HAPS.
Question 13: Are there existing systems that you consider could be subject to an increased risk of harmful interference from the introduction of satellite based D2D using mobile bands? If yes, are there specific mobile bands that you consider should be avoided to reduce this risk?	Confidential? – Y / N Not relevant to HAPS.

Question	Your response
Question 14: Do you have any views on how spectrum for D2D services should be authorised? Does this vary by band, or type of NTN? Please explain the reasoning behind your preference.	Confidential? – N HAPS D2D is a solution that provides efficient coverage in currently unserved or underserved areas by using the same frequencies as existing terrestrial mobile networks. In addition, unlike satellite D2D, HAPS is defined as a station in the terrestrial service in the Radio Regulations. In other words, HAPS can simply be considered as IMT base stations located at a height of 20 km, the HAPS Alliance supports the introduction of an appropriate regulatory framework, especially with regard to licence fees, where no additional fee is required if the MNOs have already paid the licence fee for the ground base station.
Question 15: Are there any other points that you think would be useful in our considerations? In providing your response, please provide as much evidence as possible.	Confidential? – Y / N Not relevant to HAPS.

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