Consultation response form

Background

The GSA (Global mobile Suppliers Association[1]) is the leading industry supplier association, whose Members and Associates include most of the leading mobile suppliers. GSA develops strategies and plans, and contributes studies and technical analysis to international, regional and individual country policymakers and regulators to facilitate the timely availability of spectrum for use by mobile network operators. GSA has a focus group for spectrum topics for technical and regulatory matters of radio spectrum pertaining to the successful evolution of International Mobile Telecommunication (IMT) and associated radiocommunication systems. GSA comprises a team of spectrum and regulatory affairs specialists from GSA Executive Member and GSA Member companies. In addition, GSA reports regularly on global spectrum developments.

If any additional clarifications are required for this response, please do not hesitate to contact: Rauno Ruismaki, rauno.ruismaki@nokia.com, Chair of GSA CEPT spectrum group.

Introduction

The GSA welcomes the opportunity to provide views and feedback on Ofcom's proposal regarding authorising Direct-to-Device (D2D) services in Mobile bands in the UK. Please find GSA responses to the consultation in the section below.

Question	Your response
Question 1: Do you agree with our assessment of the business models that could potentially emerge?	Confidential? – Y / N

[1] [illegible].com

Question	Your response
Question 1(a): Are there any other business models that you think could deliver benefits for people and businesses in the UK?	Confidential? – Y / N
Question 1(b): Are there any business models that could not operate under our proposed approaches?	Confidential? – Y / N
Question 2: Do you agree with our assessment of the benefits that could be realised through authorisation of D2D services?	Confidential? N GSA aligns with Ofcom's expectation that the benefits of D2D services would be realised through providing supplementary coverage for existing IMT terrestrial networks rather than providing a substitute for existing terrestrial infrastructure. We also agree with Ofcom that in the UK, in contrast to other countries with large areas of low population density and poor or no coverage in those areas (such as Australia, the US and Canada), the potential benefit of D2D services would be limited.
Question 2(a): Are there any other benefits for UK citizens and businesses that could be realised?	Confidential? – Y / N
Question 3: Do you have comments on how emerging D2D technology should support 999 service provision?	Confidential? – Y / N GSA agrees that D2D has the potential to extend 999 services to unserved area. Since access to 999 services may be restricted to voice, D2D providers should make sure users are aware of any limits to access to 999 services.
Question 4: Are there any mobile spectrum bands not in scope of our proposals that you think we should consider?	Confidential? –N No, there is not. For all considered bands, it is critical to ensure the protection of the IMT terrestrial services within the UK and in neighbouring countries,

Question	Your response
	taking into account the aggregate interference from multiple MSS satellites from the same MSS system and the possible aggregate interference from multiple MSS systems. GSA also agrees with Ofcom that operation of D2D networks in TDD bands is more complex and there is an increased risk of interference to adjacent channel mobile systems.
Question 5: Does deployment in supplementary downlink spectrum (SDL) present any challenges in comparison to other bands? Is there interest in deploying in this spectrum?	Confidential? –N As Ofcom highlights the potential use of SDL spectrum should be in conjunction with an FDD band, in which, emissions in the uplink direction are authorised for D2D. Such requirement ensures that the D2D services can also be supported without hardware modifications to UEs that are already available in the market.
Question 6: Do you agree with our proposal to limit this authorisation to the UK mainland and territorial waters? If not, please explain why.	Confidential? – N Yes
Question 7: Do you agree that our proposed technical conditions for D2D satellite emissions will protect mobile services delivered by other operators in adjacent areas and in adjacent spectrum?	Confidential? – N 1) The pfd limits that Ofcom proposes for the protection of IMT UEs that operate in the same channel in adjacent areas (i.e. neighbouring countries), will likely not be sufficiently robust to protect all UEs in all cases. The reasons for that are the following: 1.a) In FDD bands below 3GHz, FWA CPE terminals (UEs) utilise the band to deliver high-speed reliable broadband connectivity. Within the product portfolios of many GSA members there already exists a range of equipment solutions for FWA CPE in FDD bands below 3GHz, featuring antennas with higher than the -3dBi gain which Ofcom has assumed in their

Question	Your response
	analysis. The protection of those UEs cannot be ensured with the pfd values proposed by Ofcom. 1.b) From the calculated pfd limits, Ofcom derives the resulting RSRP (equal to -126 dBm) corresponding to those pfd limits, stating that it is 6 dB lower than the sensitivity levels of UEs (-120 dBm). It is worth highlighting that NB-IoT UEs with coverage enhancements can operate at lower sensitivity levels than -120 dBm. In addition, tests performed at ETSI (TS 138.133 V.18.5.0) indicate that the level of "Qrxlevmin", which is the parameter representing the minimum required signal strength for a cell to be considered suitable by a UE during cell selection or reselection in RRC_Idle and RRC_Inactive states, is lower than -126 dBm/SCS. 1.c) Although Ofcom recognises D2D is a new technology and that the number of potential satellite operators offering D2D services remains uncertain, it is crucial to address from the outset the risk of aggregate interference that arises from multiple satellite systems operating in the same frequency in adjacent areas (i.e. in neighbouring countries). While Ofcom acknowledges the potential interference that could emerge from multiple D2D constellations towards IMT networks, GSA believes that a robust framework should take all necessary preventive measures to ensure protection of terrestrial IMT from potential interference from multiple D2D systems. In our view, the investigation of a suitable apportionment factor is necessary to address this issue, which is also under consideration in the discussions under WRC-27 AI 1.13. 1.d) Finally, the comparison of cross-border coordination levels and pfd limits for D2D, as a justification for the proposed pfd limits in this

Question	Your response
	consultation, overlooks a key distinction. The cross-border coordination levels have been developed on an equal spectrum access basis, i.e. operators on both sides of the border are willing to accept a certain level of mutual interference. However, this principle does not apply to D2D services, which at the moment operate on a no-interference-no-protection basis under Radio Regulations Article 4.4. 2) GSA has also concerns regarding protection of IMT BSs for the following reasons: 2.a) The rationale behind Ofcom's proposal to limit the elevation angle to 20 degrees is not clearly explained. A justified assessment by Ofcom needs to be presented on why such selection was made and how it ensures the protection of IMT BSs. 2.b) IMT BS antenna downtilt in the field may vary depending on the implementation needs, which in turn will alter the gain pointing towards the horizon and the pfd required for the BS to be protected. 2.c) Interference analysis of AAS BSs equally important to assess and determine the required elevation angle restriction. Such analysis is missing from Ofcom's proposed technical conditions. 2.d) We note that based on the preliminary system characteristics submitted in ITU-R WP4C, the minimum elevation angles of MSS satellites in the bands considered by Ofcom can vary from 20-50 degrees.
Question 8: Do you agree with out high-level co-existence assessment for other services in adjacent spectrum to D2D?	Confidential? – Y / N

Question	Your response
Question 9: Are there other services co-channel or in adjacent spectrum that you think we should take into account when assessing coexistence? If so, please provide evidence of the nature of interference and what level of protection you consider is necessary.	Confidential? – Y / N
Question 10: Do you agree with our preferred authorisation approach (option 2)? If not, please set out your reasoning.	Confidential? – N GSA welcomes the adoption of an authorisation approach that is based on compliance with the required coordination requirements and enables prompt enforcement action in case of interference.
Question 11: Are there any alternative authorisation options, not discussed here, that you believe are worth considering?	Confidential? – Y / N
Question 12: Do you agree with the proposed conditions?	Confidential? – Y / N
Question 13: Do you have any other comments on the proposals set out in this document?	Confidential? – N GSA would like to reiterate the importance of sufficiently protecting the terrestrial IMT networks from the potential interference from D2D services. To achieve this, the development of adequate protection levels for all possible UEs and scenarios, together with transparent coordination processes and shielded enforcement procedures from the very beginning of the D2D authorisation is vital. While we recognise Ofcom's initiative to be the first regulator in Europe that consults on the development of a potential D2D authorisation framework, prior to WRC-27, we would like to highlight the importance of revising such framework, an expectation already recognised by Ofcom, after the decisions of WRC-27 on AI 1.13.

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