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To: Office of Communications (Ofcom)

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Re: Comments on Consultation re: Award of Available Spectrum: 2500-2690 MHz, 2010-2025 MHz, and 2290-2300 MHz

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A. INTRODUCTION.

The Wireless Communications Association International, Inc. ("WCA") appreciates the opportunity to respond to Ofcom's Consultation regarding its proposal to make spectrum available in the 2500-2690 MHz (referred to herein as "2.5 GHz" or "2.6 GHz"), 2010-2025 MHz and 2290-2300 MHz bands for, among other things, wireless broadband service. WCA is the trade association of the wireless broadband industry; its membership includes a wide variety of wireless broadband system operators, equipment manufacturers and consultants interested in the global deployment of licensed and unlicensed spectrum in all frequency bands made available for wireless broadband service. WCA is truly an international organization – it currently has nearly 230 members on six continents, including most of the wireless broadband sector's leading carriers and vendors who provide or support the provision of fixed, portable and mobile broadband service throughout the world. In addition to being the wireless broadband industry's primary advocate in the United States, WCA actively assists in developing positions on spectrum policy before the International Telecommunications Union ("ITU"), the World Radiocommunication Conference ("WRC") and other international fora. Most recently, through the efforts of its Global Development Committee, WCA has participated in proceedings before the European Commission ("EC") and Agcom (the Italian telecommunications regulatory authority), endorsing a regulatory framework that promotes technological and service neutrality in spectrum available for wireless broadband service.[1] WCA thus has a direct and immediate

[1] *See, e.g.*, Comments of Wireless Communications Ass'n Int'l before the European Commission re: Review of the EU Regulatory Framework for Electronic Communications Networks and Services (Oct. 17, 2006); Comments of Wireless Communications Ass'n Int'l before Autorita per le Garanxie nelle Comunicaxioni (Agcom) re: WiMAX Public Consultation (Dec. 13, 2006).

interest in Ofcom's efforts to promote the development of wireless broadband service in the spectrum bands listed above.

As a general proposition, WCA continues to believe that competition is created by lowering barriers to entry, and that barriers to entry are lower where regulators give service providers maximum flexibility to select and deploy the technologies that are best suited for their operations. Moreover, the governing regulatory framework must give service providers a fair opportunity to evaluate emerging technologies and determine which of them are most suitable for satisfying the changing demands of their customers. These principles lay at the core of WCA's 2002 proposal to overhaul the licensing and technical rules in the US for provision of wireless broadband service in the 2.5 GHz band. The Federal Communications Commission ("FCC") has now adopted much of WCA's proposal, and as a result wireless broadband operators now have an unprecedented opportunity to expedite deployments of 2.5 GHz wireless broadband service across the country without the burden of outdated or unnecessary regulation. Hence, as discussed in WCA's comments below, WCA believes that the optimal regulatory model is one based on technological and service neutrality and reliance on competitive forces, not government mandates, to maximize benefits to consumers.

B. RESPONSES TO SPECIFIC QUESTIONS.

Question 3: Do you agree that Ofcom should authorize use of the spectrum bands 2500-2690 MHz, 2010-2025 MHz and 2290-2300 MHz?

Yes. As a general proposition, the unavailability of spectrum below 3 GHz for advanced wireless applications remains a matter of concern within the wireless industry: "Spectrum is a scarce resource that is arguably poorly utilized in some areas. New technologies suffer most in this environment as they are often restricted to use of higher frequencies with inherently limited propagation and, thus, higher deployment costs for covering large territories."[2] Ofcom's proposal to open the 2500-2690 MHz, 2010-2025 MHz and 2290-2300 MHz bands thus is timely, especially given the increasing use of 2 GHz spectrum throughout the world for wireless broadband services (particularly in North and South America), the growing interest in the 2.5 GHz band in Europe (Norway, for example, has announced that it plans to auction the 2.5 GHz band in October 2007), and the attention that the 2.5 GHz band will continue to receive at WRC-07 and in other international fora. Indeed, in a recent communication the EC observed that "[e]xisting and new operators wishing to implement different wireless access technologies (*e.g.* UMTS and WiMAX) want to use the 2.6 GHz band . . ., which is of prime interest for mobile communications and for wireless internet access."[3] Moreover, the globalization of wireless broadband service at 2.5 GHz requires that the band be made available for that purpose in as many countries as possible, as quickly as possible. As noted by the EC, "[h]armonisation of spectrum usage at EU level has been successfully implemented in some spectrum bands to ensure the rapid implementation of new technologies and to reap the benefits of economies of

[2] "Position paper on flexible spectrum management," Intel Corporation *et al.* at 1 (Oct. 27, 2006), available at http://ec.europa.eu/information_society/policy/ecomm/doc/info_centre/public_consult/review_2/comments/bt_pipex_intel_dell_27102006.pdf

[3] "Wider choice for users through more flexible radio spectrum use: Frequently Asked Questions," Memo/07/68 (Feb. 20, 2007), available at http://www.europe.eu/rapid..

scale."[4] In turn, harmonization will provide consumers with the cost savings that naturally flow from the economies of scale inherent to a global market:

> In the wireless sector, market size matters. The current rapid rate of innovation in IT industry-related radio applications can be linked to this industry's focus on driving prices down for consumers by providing low-cost, standardised (*i.e.* non-proprietary), interoperable solutions – WiFi and Bluetooth are good examples. Besides relying on quick and cost-free access to radio spectrum, this approach is predicated on large markets being open to new applications, leading to greater incentives to invest and significant economies of scale.[5]

Question 4: Do you agree that awarding licenses by auction would be the appropriate mechanism for authorizing use of the spectrum bands 2500-2690 MHz, 2010-2025 MHz and 2290-2300 MHz?

WCA fully supports Ofcom's recommendation that the spectrum at issue be auctioned. In addition, WCA supports initiation of an auction of the 2.5 GHz band in the UK as soon as practicable, preferably by the end of 2007.

Generally speaking, efficient, market-driven use of spectrum (and the consumer benefits derived therefrom) is best promoted by an inclusive licensing process that assigns spectrum via competitive bidding. Simply put, auctions provide bidders with incentives to deploy networks quickly in order to obtain a return on their investment. Moreover, auctions are economically efficient -- as noted by the FCC, "auction designs that award licenses to the parties that value them most highly" yield the optimal result both for industry and consumers, since those parties "are most likely to deploy new technologies and services rapidly, promote the development of competition for the provision of those and other services (including, but not limited to cellular, SMR, paging, and other wireless services), and thus foster economic growth."[6] Hence, particularly in a regulatory environment where wireless providers are permitted to deploy any variety of services and technologies in accordance with market demand, a carefully designed competitive bidding process can efficiently identify the providers best equipped to compete in that environment, and thereby speed delivery of new services while producing significant revenues for the public treasury.

The US experience with spectrum auctions confirms as much. Indeed, within four years after Congress's 1993 passage of legislation authorizing the FCC to hold auctions, the agency had more than 4,300 licenses to auction winners who were either offering or preparing to offer

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[4] *See* "A market-based approach to spectrum management in the European Union," Communication from the Commission to the Council, the European Parliament *et al.*, at 4 (Sept. 14 2005), available at (http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0400en01.doc.

[5] "A Forward-Looking Radio Spectrum Policy for the European Union: Second Annual Report," Communication from the Commission from the Commission to the Council and European Parliament, at 3 (Sept. 6, 2006) (emphasis in original), available at http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0411en01.doc.

[6] *Implementation of Section 309(j) of the Communications Act -- Competitive Bidding*, 9 FCC Rcd 2348, 2360 (2004).

service to the public in nine different wireless and satellite categories. Winning net bids in the auctions for that four-year period alone totaled $23 billion.[7] The FCC subsequently stated the following:

> FCC auctions, such as the broadband PCS spectrum auctions, resulted in the creation of many new wireless telecommunications companies. Indeed, 53 percent of the licenses awarded thus far by auctions have gone to small businesses, many of which are new entrants in the telecommunications market. Also, several of the largest telecommunications enterprises, such as Sprint Telecommunications and the Bell Operating Companies, have formed alliances to establish nationwide PCS networks. For subscribers, these new firms represent new choices for improving wireless service at lower prices. . . A recent Yankee Group report identifies over 40 markets that now have three wireless competitors and 10 markets with four competitors. This report notes that pricing in competitive markets with at least one new PCS operator averages 18 percent lower than in markets with no PCS competitors. . . In monetary terms, the most important effect on the economy is not the auction revenues but that these firms are now investing in infrastructure that will permit them to offer services in competition with each other and with other existing telecommunications companies.[8]

Question 7: Do you agree with Ofcom's proposals for license conditions (technology neutrality, tradability, conditions of tenure and absence of roll-out obligations)?

WCA strongly supports Ofcom's endorsement of technical and service neutrality for the spectrum at issue, particularly the 2.5 GHz band.

As noted in the 2005 Report of the Commission's Wireless Broadband Access Task Force, "a more flexible and market-oriented approach to spectrum policy is the better course to provide incentives for users to migrate to more technologically innovative and efficient use of the spectrum, and to provide the services that markets determine are most valued, including broadband services."[9] This, in turn, requires that service providers be given as much freedom as possible to evaluate, select and deploy technologies capable of providing the services most desired by consumers at any given time.

Conversely, substitution of government intervention for marketplace judgments about technology is a recipe for failure. In particular, regulators must not make the mistake of forcing service providers to invest in and deploy technologies prematurely or otherwise in a manner that is not economically sustainable. It must not be forgotten that successful deployment of wireless broadband service will require billions of dollars of investment and a substantial commitment of human and technical resources over an extended period of time. Service providers will be denied a fair opportunity to earn an acceptable return on those investments if regulators confine them to a limited universe of technologies irrespective of market demand.

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[7] *See FCC Report to Congress on Spectrum Auctions*, 13 FCC Rcd 9601 (1997).

[8] *Id.* at 9625-6 (footnotes omitted).

[9] *See* Report of the Wireless Broadband Access Task Force, Federal Communications Commission, GEN Docket No. 04-163, at 64 (Feb. 2005).

The North American experience with the 2.5 GHz band has reaffirmed the wisdom of Ofcom's recommended approach. In the United States and Canada, there currently are far more 2.5 GHz deployments using "pre-WiMAX" technologies than those complying with the current IMT-2000 standard. In other cases, however, operators have concluded that their local markets will best be served by delaying deployment to await emerging standards-based technologies, particularly those based on the 802.16 standards developed through IEEE. Ultimately, this technological freedom drives the innovation necessary to optimize services in a dynamic environment. The FCC's new regulatory framework for the 2.5 GHz band (based largely on the model proposed by WCA) embodies that principle by permitting flexible use of whatever technologies are dictated by consumer demand, subject only to whatever interference protection rules are necessary to ensure that operators deploying incompatible technologies are able to co-exist without disrupting each other's services.[10] As such, the FCC's new 2.5 GHz rules are an example of how it is possible to achieve a workable, pro-competitive compromise between technical flexibility and reasonable protection against interference, even among users of supposedly irreconcilable technologies in the same spectrum.

For similar reasons, service neutrality (commonly referred to in the US as "flexible use") also is essential to maximize investment and diversity of offerings in wireless broadband spectrum, including the 2.5 GHz band. As observed in the WBATF Report, wireless broadband is a highly adaptable service capable of supporting almost limitless applications. Moreover, technological innovation will continue to push wireless broadband towards greater portability and mobility, which in turn will further improve the quantity and quality of broadband services available to consumers. Further, the WBATF Report reaffirms that much of the wireless broadband industry's success in the US to date can be traced to the FCC's preference for market-based rules that promote flexible use of spectrum without arbitrary restrictions on what services operators may provide to their customers at any given time. Thus, it is imperative that the UK's regulatory model chart a similar course by affording wireless broadband operators the freedom to fully evaluate consumer demand in their local markets and deploy the services they believe will best satisfy that demand. Likewise, wireless broadband operators must have the flexibility to change their service offerings in direct response to changes in consumer demand – a regulatory model that locks operators into providing obsolete or low-demand services for any length of time simply makes no sense as a matter of economics or public policy.

Here again, the US experience with the 2.5 GHz band demonstrates the wisdom of a flexible regulatory approach. Nearly ten years ago, when the FCC first adopted comprehensive rules for wireless broadband at 2.5 GHz, the service was primarily a fixed offering that required a line-of-sight between the operator's transmission facilities and the customer's antenna, which was usually an outdoor installation on the customer's rooftop or elsewhere on the customer's premises. In 2002, however, it became clear that 2.5 GHz operators needed to implement cellular designs to ensure ubiquitous coverage and satisfy growing market demand for portable

[10] *See Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 14165 (2004); *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Order on Reconsideration and Fifth Memorandum Opinion and Order and Third Memorandum Opinion and Order and Second Report and Order, 21 FCC Rcd 5606, 5649 (2006).

and/or mobile wireless broadband service. Thus, in response to the regulatory reform proposal submitted by WCA, the FCC has dramatically revised its 2.5 GHz bandplan and associated licensing and technical rules. As a result, the new bandplan (which is similar in basic philosophy to that proposed in the Consultation) (i) supports services that are best offered over low-power cellular networks *and* those services that are best offered over high-power, high-site facilities, and (ii) affords licensees the flexibility to switch between the two as necessary to meet evolving consumer demand, subject to interference protection rules necessary to ensure peaceful co-existence among operators using different technologies. Ultimately, the FCC's regulatory framework for the 2.5 GHz spectrum will achieve what Ofcom appears to be striving for here, *i.e.*, reliance on marketplace forces to determine what service sets will provide maximum benefit to users of wireless broadband service.

Finally, WCA supports Ofcom's recommendations that licenses should be freely tradable among qualified parties. In the US, a vibrant secondary market for licenses has proven to be an efficient vehicle for putting spectrum in the hands of those who value it the most and thus are most likely to put spectrum to its highest and best use. Indeed, the FCC has long been of the view that economic efficiency is best promoted "by providing spectrum users with flexibility of spectrum use and ease of transferability in order to allow maximization of the value of the services provided."[11] More recently, the FCC has adopted rules to streamline its process for approving assignments and transfers of licenses, and thereby "minimize administrative delays, reduce transaction costs, encourage more efficient use of spectrum, promote spectrum fungibility, and otherwise facilitate the movement of spectrum toward new and higher valued uses." WCA believes that a similar approach should yield comparable benefits in the UK.[12]

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In sum, WCA believes that Ofcom generally has charted the proper course for promoting deployment of new wireless broadband and other advanced services in the 2500-2690 MHz, 2010-2015 MHz and 2290-2300 MHz. WCA thus looks forward to working cooperatively with Ofcom as necessary to bring Ofcom's proposals to fruition.

[11] Report of the Spectrum Policy Task Force, Federal Communications Commission, ET Docket No. 02-135, at 21 (Nov. 2002).

[12] *See Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, Second Report and Order, Order on Reconsideration and Second Further Notice of Proposed Rulemaking, 19 FCC Rcd 17503, 17555 (2004).