Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
GE Healthcare Proposal to Allocate the 2360-2400 MHz Band on a Secondary Basis for Operation of Wireless Medical Body Sensor Networks	)	ET Docket No. 08-59
	)	
	)	
	)	

COMMENTS OF
WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, INC.

The Wireless Communications Association International, Inc. ("WCA"), by its attorneys, hereby submits its initial response to the Commission's April 24, 2008 *Public Notice* soliciting comment on a proposal by GE Healthcare ("GEHC") for "the allocation of spectrum on a secondary basis in the 2360-2400 MHz band and for the adoption of service rules under Part 95 for the operation of wireless medical 'body sensor networks' ("BSNs")."[1] Assuming the Commission agrees with GEHC that existing allocations are insufficient to support BSNs,[2] WCA has no objection to the proposed reallocation, *provided that BSNs truly will be limited to secondary status under Section 2.105(c)(2) of the Commission's Rules*.[3] Unfortunately, while the GEHC *ex parte* submission

[1] *See Public Notice*, "Office of Engineering and Technology to Treat *Ex Parte* Comments of GE Healthcare as Petition for Rule Making and Seeks Comment," ET Docket No. 08-59, DA 08-953, at 2 (rel. Apr. 24, 2008)["*Public Notice*"].

[2] WCA is aware, for example, of the development of technologies capable of supporting BSNs in spectrum that is currently available on an unlicensed basis. *See* Merritt, "Startup puts wireless monitor on a band-aid," *EE Times* (Feb. 4, 2008), *available at* http://www.eetimes.com/showArticle.jhtml?articleID=206104047 (last visited May 27, 2008).

[3] In pertinent part, Section 2.105(c)(2) mandates that operations in a secondary service "(i) Shall not cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date; [and] (ii) Cannot claim protection from harmful interference from stations of a primary

advancing its BSN proposal consistently references that BSNs will be limited to secondary status, and the *Public Notice* soliciting comment reiterates that BSNs will be secondary, the specific rules proposed by GEHC would afford BSNs primary status as against services operating outside the 2360-2400 MHz band.[4]

WCA is troubled that, while GEHC goes to great trouble to demonstrate its ability to coexist as against other authorized users of the 2360-2400 MHz band, its filings include virtually no discussion of the extent to which BSNs may suffer interference from authorized services that utilize spectrum outside the 2360-2400 MHz band.[5] From the very limited information that GEHC has put forth, neither WCA nor the Commission can determine just how vulnerable BSN devices will be to potential interference due to out-of-band emissions ("OOBE") or overload from, for example, satellite Digital Audio Radio Service ("SDARS") terrestrial repeater operations at 2320-2345 MHz, Wireless Communications Service ("WCS") usage of 2305-2320/2345-2360 MHz, Mobile Satellite Service ancillary terrestrial component ("MSS/ATC") operations at 2483.5-2495 MHz, Broadband Radio Service and Educational Broadband Service ("BRS/EBS") usage

---

service to which frequencies are already assigned or may be assigned at a later date . . . ." 47 C.F.R. § 2.105(c)(2)(i) and (ii).

[4] *See Public Notice* at 2; Ex Parte Comments of GE Healthcare, ET Docket No. 06-135, at 1, 9, 12, App. A at 18, App. A at 24, App. B at 25, App. C at 34 (filed Dec. 27, 2007) ["GEHC 12/7/2007 *Ex Parte*"].

[5] For example, Appendix C of GEHC's proposal, titled "Coexistence Engineering Analysis," only addresses "the potential for harmful interference from [BSN] devices to other authorized radio services *in the 2360-2400 MHz band.*" GEHC 12/7/2007 *Ex Parte*, App. C at 1 (emphasis added). Interference implications for services outside the 2360-2400 MHz band are not included. A more recent *ex parte* filing made by GEHC suffers the same flaw. *See* Letter from Ari Q. Fitzgerald, Counsel to GEHC, to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 06-135, Attachment at 18-21 (filed Feb. 6, 2008)["GEHC 2/6/2008 *Ex Parte*"]. This is curious, given GEHC's emphasis on the importance of assuring that BSNs operate reliably. *See* GEHC 12/7/2007 *Ex Parte* at 7.

of the 2496-2690 MHz band; and unlicensed wireless broadband operations at 2400-2483.5 MHz. Given, however, (a) that BSN receivers will have to be relatively sensitive to receive the very low power signals from BSN transmitters and (b) that transmitters in other services that operate at higher power levels will inevitably come in relatively close proximity to wearers of BSN receivers, the potential for OOBE and blanketing interference cannot be discounted.[6] Suffice it to say that GEHC and other potential BSN vendors should bear the burden of designing BSN equipment that can coexist with the various primary services that might cause OOBE or blanketing interference to BSNs – these incumbent services should not be required to modify their designs for the benefit of GEHC.

WCA would like to believe that GEHC and the medical community are well aware of the potential risk of OOBE and blanketing interference, and that they are prepared to accept the risks associated with being a secondary service. The text of GEHC's proposed rule amendments, however, suggests that while GEHC may be aware

[6] For example, there are a wide variety of WiFi devices operating in the 2.4 GHz band, from Apple iPhones to laptop computers to WiFi access points, that the wearer of a BSN is likely to come into contact with. Similarly, the Commission is well aware of the proposal by Open Range Communications to lease MSS/ATC spectrum in the 2483.5-2495 MHz band for the provision of a wireless broadband service using Time Division Duplex WiMAX technology. *See Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands*, Report and Order and Order Proposing Modification, IB Docket No. 07-253, FCC 08-98, at ¶¶ 6-7 (released April 10, 2008). Again, if this service proves as popular as its advocates hope, mobile subscriber units likely will come in relatively close contact to wearers of BSN devices. Although a BSN wearer is less likely to come within a matter of feet of a SDARS terrestrial repeater, those devices operate at such higher power levels that close contact is not necessary to result in interference. In each case, it should be noted, the potential for interference is exacerbated by the fact that GEHC proposes that BSN wearers outside of hospitals or other medical facilities be restricted to use of the 2360-2370 MHz and 2390-2400 MHz bands – the very portions of the 2360-2400 MHz band most susceptible to OOBE interference. *See* GEHC 12/7/2007 *Ex Parte* at 12.

of the potential risk, it is not prepared for BSNs to accept the burdens of a secondary service. For example, in its proposed amendment to the Table of Frequency Allocations, GEHC adds Non-Federal Government (NG) Footnote 186 as follows:

> The 2360-2400 MHz band is allocated on a secondary basis for non-Federal mobile use . . . and is limited to Medical Body Area Network Service (MBANS) operations. *MBANS stations are authorized by rule on the condition that they do not cause harmful interference to, and must accept interference from, stations authorized to operate on a primary basis in the 2360-2400 MHz bands.*[7]

The import of the italicized second sentence is obvious. If the proposed NG Footnote 186 were to stop after the first sentence, WCA would have no objection to its adoption. It appears that the second sentence of proposed NG Footnote 186 is intended to limit the generality of the first sentence and render BSN operations secondary only with respect to spectrum users with primary status in the 2360-2400 MHz band. Although the drafting of proposed NG Footnote 186 may be ambiguous, GEHC's proposed language for Sections 95.611(b) and 95.617(a) leaves no doubt as to its intentions.[8] These specific rules proposed by GEHC make clear that BSNs would be secondary only relative to other services in the 2360-2400 MHz band.[9]

---

[7] *Id.*, Appendix A at 18 (proposed amendment to Section 2.1093(c) of the Commission's rules) (emphasis added).

[8] *See* GEHC 12/7/2007 *Ex Parte*, App. A at 24.

[9] Proposed Section 95.1611(b) provides that "(b) Operation is subject to the condition that MBANS transmitters do not cause harmful interference to, and must accept interference from, stations authorized to operate on a primary basis in the 2360-2400 MHz bands." *Id.* Proposed Section 95.1617(a) provides that "(a) MBANS master transmitters shall be labeled as provided in Part 2 of this chapter and shall bear the following statement in a conspicuous location on the device: 'This device may not interfere with stations authorized to operate on a primary basis in the 2360-2400 MHz bands, and must accept any interference received, including interference that may cause undesired operation.'" *Id.* In neither case can the language proposed by GEHC be

Thus, if GEHC's has its way, BSNs would not be required to accept interference from services outside the 2360-2400 MHz band (*e.g.*, SDARS, WCS, MSS/ATC, BRS/EBS, etc.), and could insist on protection from services authorized to operate at power levels and with spectral masks that may not fully protect BSNs from potential interference. Since GEHC's proposal provides no data as to the potential vulnerability of BSNs to interference from non-cochannel operations, service providers in spectrum surrounding the 2360-2400 MHz band and the Commission can only speculate as to the implications of the proposed language of NG Footnote 186, Section 95.611(b) and Section 95.1617(a).

Regardless of GEHC's intentions, it is imperative that the Commission eliminate any further doubts about the issue before taking any further action on the GEHC Proposal. Specifically, should the Commission determine that the GEHC proposal merits further consideration, then any *Notice of Proposed Rulemaking* on the subject should clearly state (and proposed NG Footnote 186, Section 95.1611(b) and Section 95.1617(a) should be amended to reflect) that any BSNs or other facilities operating under GEHC's proposed allocation for the 2360-2400 MHz band will be secondary to *all* frequency bands. This will assure SDARS, MSS/ATC, WCS, BRS/EBS and other licensed spectrum users that they may continue to invest in and deploy their networks without having to protect BNSs operating pursuant to GEHC's proposed allocation at 2360-2400 MHz from interference that might be caused by transmissions that otherwise comport with the FCC's rules.

---

squared by its consistent assertion that BSNs would operate on a secondary basis generally.

WHEREFORE, for the reasons set forth above, WCA requests that any further action on the GEHC proposal be taken in accordance with the recommendations in these comments.

Respectfully submitted,

THE WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, INC.

By: /s/ *Paul J. Sinderbrand*
Paul J. Sinderbrand
Robert D. Primosch

WILKINSON BARKER KNAUER, LLP
2300 N Street, N.W.
Suite 700
Washington, DC 20037-1128
202.783.4141

Its attorneys

May 27, 2008