Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules to Provide Spectrum for the Operation of Medical Body Area Networks	)	ET Docket No. 08-59

To: The Commission:

JOINT PETITION FOR RECONSIDERATION

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October 11, 2012

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Executive Summary

In this Petition for Reconsideration Philips Healthcare, GE Healthcare, and the Aerospace and Flight Test Radio Coordinating Council (AFTRCC) (together the "Joint Parties") petition the Commission to adopt specific rules changes to strengthen the MBAN and spectrum-sharing rules adopted in the *MBAN Report & Order*. Doing so will build upon the foundation laid in the *MBAN Report & Order* for improving patient medical care through MBAN deployment while protecting aeronautical mobile telemetry (AMT) primary operations in shared spectrum.

The Joint Parties very much appreciate the Commission's adoption of rules that authorize MBAN operation and a spectrum sharing arrangement that fully recognizes the primary status of AMT. The adopted rules are based on the proposal of the Joint Parties and provide a unique and forward-looking regulatory structure for MBAN grafted onto the Commission's pre-existing MedRadio rules that govern a variety of patient devices.

However, there are aspects of the MBAN rules that require clarification and modification if they are to provide the necessary basis for effective MBAN device operation and evolution. Other aspects of the MBAN rules require adjustment to ensure the most effective possible AMT-MBAN spectrum sharing arrangement.

In each instance the requested change or clarification is needed to fully attain the goal of improved healthcare promised by MBAN deployment while protecting against MBAN to AMT signal interference. Adopting the changes requested herein will result in more robust MBAN operations and decrease the possibility of interference.

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I. INTRODUCTION

Philips Healthcare (Philips), GE Healthcare (GEHC), and the Aerospace and Flight Test Radio Coordinating Council (AFTRCC) (together, the "Joint Parties"), pursuant to Section 1.429 of the Commission's Rules,[1] hereby petition the Commission to reconsider the rules adopted in its *First Report and Order and Further Notice of Proposed Rulemaking* in the above-captioned proceeding.[2] Adopting the rules changes proposed below will build upon the foundation laid in the *MBAN Report & Order* for improving patient medical care through MBAN deployment while protecting aeronautical mobile telemetry (AMT) primary operations in shared spectrum.

[1] 47 C.F.R. § 1.429.
[2] Amendment of the Commission's Rules to Provide Spectrum for the Operation of Medical Body Area Networks, *First Report and Order and Further Notice of Proposed Rulemaking*, 27 FCC Rcd 6422, 77 Fed.Reg. 55715 (pub. Sept. 11, 2012) (*MBAN Report & Order*).

II. BACKGROUND

The Joint Parties submitted a comprehensive proposal to the Commission in this proceeding in January, 2011. In that "Joint Proposal" they described an agreed upon method by which MBAN devices could be deployed in healthcare facilities using on a secondary basis the same spectrum that is used by AMT operations on a primary basis.[3]

The Joint Parties very much appreciate the Commission's adoption of rules that authorize MBAN operation and a spectrum sharing arrangement that fully recognizes the primary status of AMT. The adopted rules are based on the proposal of the Joint Parties and provide a unique and forward-looking regulatory structure for MBAN grafted onto the Commission's pre-existing MedRadio rules that govern a variety of patient devices.

The regulatory framework adopted by the Commission is based upon ensuring interference-free operations within the shared spectrum by implementing technological safeguards in MBAN equipment coupled with spectrum coordination based upon analytical radiofrequency software propagation tools. Specific safeguards adopted by the Commission are designed to prevent signal interference from MBAN devices to AMT receive sites.

There are, however, aspects of the MBAN rules that require clarification and modification if they are to provide the necessary basis for effective MBAN device operation and evolution. Other aspects of the MBAN rules require adjustment to ensure the most effective possible AMT-MBAN spectrum sharing arrangement.

Some of the issues raised below for reconsideration may appear to be relatively minor in the overall regulatory scheme, but adoption of the proposed changes will result in more robust

[3] *See* AFTRCC, Philips & GEHC *ex parte*, ET Docket 08-59, filed January 14, 2011. The Joint Parties clarified and discussed their proposal in subsequent filings in this same docket.

MBAN operations and decrease the possibility of interference. In each instance change or clarification is needed to fully attain the goal of improved healthcare promised by MBAN deployment while protecting against MBAN to AMT signal interference.

III. DISCUSSION

A. The Definition Of "Healthcare Facility" Should Be Narrowed.

The definition of "healthcare facility" adopted in Section 95.1203 significantly enlarges over that proposed by the Joint Parties the universe of eligible facilities and locations allowed to deploy MBAN devices using the shared 2360-2390 MHz spectrum. However, use of the shared spectrum at these smaller facilities is not necessary for the successful deployment of MBANs and the many thousands of additional potential locations create serious spectrum sharing concerns. Accordingly, we respectfully request that the definition of eligible "healthcare facility" be scaled back to include only hospitals and similar facilities that provide medical treatment for patient stays of 24 or more hours. [4] The purpose of limiting eligibility to hospitals and hospital-like locations is to restrict use of the shared spectrum to locations where multiple MBANs will be required for effective patient care and the need for monitoring most likely could not be accommodated using the limited 2390-2400 MHz unrestricted band.

The definition of healthcare facility in Section 95.1203 extends permissible MBAN locations beyond hospitals to "institutions and organizations regularly engaged in providing medical services through clinics, public health facilities, and similar establishments, including government entities and agencies …." "Clinics" are not "hospitals," number in the many thousands, and should not be authorized to conduct MBAN operations in the 2360-2390 MHz

[4] *See* AFTRCC, Philips & GEHC *ex parte*, filed January 14, 2011, Attachment B.

secondary band where AMT interference concerns exist. Such facilities generally are much smaller than hospitals. Therefore the uncoordinated 2390-2400 MHz band should provide sufficient spectrum for MBAN operations within them. On the other hand, use of the 2360-2390 MHz shared spectrum at these smaller facilities would create numerous additional opportunities for interference with primary AMT operations.

The Commission has provided the 2390-2400 MHz band for unrestricted use, including by clinics and similar establishments as well as by ambulances and in-home monitoring. Given this fact, it would be better to limit potential interference locations and husband spectrum coordination resources by narrowing the definition of healthcare facilities eligible to share the 2360-2390 MHz spectrum.

B. The Definition Of MBAN Should Include Single Sensor Configurations.

The definition of MBAN in Appendix 1 to Subpart E as "a [single] programmer/control transmitter and ***multiple*** medical body-worn devices"[5] (emphasis added) unnecessarily eliminates a P/C paired with a single body-worn device (*e.g.* a single sensor MBAN). There is no rationale expressed in the *MBAN Report & Order* for this restriction.

The need for single sensor MBANs will likely be common. Additionally, for operations in the 2390-2400 MHz band, network topologies are envisioned that would include multiple P/Cs or, under other circumstances, no P/C. (*See* below.) Accordingly, for the shared 2360-2390 MHz spectrum, we request that the word "multiple" be replaced with "one or more" in the definition of "MBAN". For the 2390-2400 MHz band, we request that "MBAN" be defined as a network of one or more body-worn devices, P/Cs, or both.

[5] *See* 47 C.F.R. § 95.1209(g) and Appendix 1 to Subpart E of Part 95.

C. The Definition Of MBAN "Body-worn Device" Should Be Modified Or Clarified to Include Bedside Devices.

The definition of "body-worn device" in Appendix 1 to Subpart E perhaps unintentionally excludes use of a MBAN to monitor certain patient functions through bedside equipment. The definition could be interpreted to require that all MBAN devices – except for the *single* programmer/control transmitter in each MBAN – be "placed on or in close proximity to the human body (e.g. within a few centimeters)".[6] However, devices such as infusion pumps, bedside monitors, and anesthesia machines typically are located a few *meters* away from patients and are envisioned to be included in MBAN networks and often may not be a P/C device.

The definition therefore should be modified to remove the "few centimeters" requirement. This would permit all of a patient's vital information to be monitored through the single MBAN, as intended. No MBAN device should be precluded from participating in a patient's MBAN merely because of the "few centimeters" requirement.

[6] *See* definition of "Medical body-worn devices" contained in Appendix 1 to Subpart E of Part 95.

D. MBAN Topology Should Not Be Limited In The Unrestricted 2390- 2400 MHz Band.

Section 95.1209(g) and the definition of MBAN contained in Appendix 1 to Subpart E (together) unnecessarily constrain MBAN communications to a "star" topology by allowing only a single P/C per MBAN and by prohibiting direct communications between body-worn devices. Communication between P/C devices belonging to different MBANs) also is prohibited unnecessarily. The Commission's stated rationales for these limitations relate exclusively to concerns with the 2360-2390 MHz shared band: to prevent extension of the MBAN beyond the confines of the medical facility, and to provide more certainty that each programmer/control transmitter will receive the control message over the facility's LAN.[7] Neither of these reasons is relevant to MBAN operations in the unrestricted 2390-2400 MHz band.

Transmissions in the 2390-2400 MHz band are permitted without registration or coordination, and without any geographic exclusion. The only purpose of the control message is to convey information relevant to sharing the 2360-2390 MHz band and restricting operation to indoors at healthcare facilities. These concerns do not apply to the 2390-2400 MHz band. The final rules permit simple MBANs to operate autonomously in the 2390-2400 MHz band without support for control message and without LAN connectivity.[8]

Accordingly, there is no legitimate rationale for imposing topology constraints on MBANs operating within the 2390-2400 MHz band. Multiple and no P/Cs should be allowed for MBAN operations in this band without limitation, and connections between and among P/Cs and body-worn devices should be freely permitted.

[7] See MBAN Order ¶ 37.
[8] *See id.* ¶¶ 49, 65, and 47 C.F.R. § 95.628(c).

E. MBAN Topology Restrictions In The Shared 2360-2390 MHz Band Should Be Amended To Permit Flexibility.

Section 95.1209(g) and the definition of MBAN contained in Appendix 1 to Subpart E (together) constrain MBAN topologies in the 2360-2390 MHz band in the same manner as in the 2390-2400 MHz band, discussed above. The *MBAN Report & Order* drew no distinction between the two subbands. The only filings on the topic requested that topologies not be limited.[9]

The rules as adopted prohibit both types of MBAN component, P/C and body-worn device, from connecting to a like-kind. That is, each body-worn device may connect only with its associated MBAN P/C, and the P/C cannot connect with any other P/C. This unnecessary restriction prohibits, for example, a body-worn device in the same MBAN under control of the same P/C from relaying data from another body-worn device to their mutual controller within the same MBAN if the signal is temporarily blocked by movement of the monitored patient's body. The rule also prevents two P/Cs from adjoining MBANs from communicating with each other to avoid MBAN interference or to otherwise make more efficient use of the spectrum.

Three changes would improve MBAN operation without affecting the potential for interference to AMT, the indoors-only requirement, or the integrity of each MBAN. These changes also would permit MBAN operations in the 2360-2390 MHz band as envisaged and designed into several of the IEEE 802.15 family of standards, including 802.15.4 and 802.15.6.

[9] Joint Parties' Nov 21, 2011 *ex parte* at p.5; AdvaMed Oct 5, 2009 comments at p.7.

First, communication between two P/Cs should be permitted in the 2360-2390 MHz band solely for the purpose of avoiding interference. In the IEEE 802.15.6 standard for MBAN, the active superframe interleaving MAC feature already is defined to allow two MBANs to share the same channel to avoid interference. This efficiency promotes good spectrum management and lessens the risk of interference. Securing the benefit of this feature is not possible if two P/Cs in the 2360-2390 MHz band cannot communicate with each other directly for this purpose. To provide a limiting function and ensure indoor enforcement, for MBAN operations located in whole or in part in the 2360-2390 MHz band, P/C to P/C transmission of a "control message" should be expressly prohibited at all times, including during a P/C to P/C communication for the purpose of avoiding interference.[10]

The requested exception is analogous to that already adopted in the MedRadio rules applicable to Medical Microprocessor Networks ("MMNs"): "a MedRadio programmer/control transmitter of an MMN may communicate with the MedRadio programmer/control transmitter of another MMN to coordinate transmissions so as to avoid interference between the two MMNs."[12] We request that the same exception be applied to MBANs for the same reason, *i.e.*, that MBAN P/Cs be permitted to communicate "to coordinate transmissions so as to avoid interference."

Second, we request that:

1. The restriction of 2360-2390 MHz MBAN communications to a star topology be enforced by requiring a single "coordinator node" or "hub" (*e.g.* as defined in IEEE 802.15.6) and

[10] Test procedures to ensure compliance with this limitation and the no-mesh principle are the type of issue that will need to be considered by the Commission's laboratory in designing tests for equipment authorization. *See* Section O, *infra.*

[12] *See* 47 C.F.R. § 95.1209(f)

2. Permitting either the P/C device or one of the body-worn devices to act as the coordinator node.

Under the current rules, the important distinguishing characteristics of the P/C device are (1) LAN connectivity to receive the control message and (2) not required to be on or in close proximity to the patient's body. In order to provide the most effective and efficient solutions for certain clinical scenarios, it will be important in some cases that the device having these attributes not be the same device that acts as the 802.15.6 hub or coordinator. For example, a fixed non-body-worn access point connected to the LAN could act as the P/C but one of the body-worn devices would act as the 802.15.6 hub or coordinator node. This is a natural and designed topology but perhaps inadvertently was not included by virtue of applying the MedRadio rules.

Adopting this adjustment to the Rules would preserve the interference protection mechanisms built into the system and continue to meet the Commission's expressed concerns with preventing formation of mesh networks.

Third, limited communication should be permitted between two body-worn devices within the same MBAN to enhance communication reliability. We propose to strictly limit to two the number of body-worn devices that can connect.[13] This is consistent with the protocol defined in IEEE 802.15.6 and should be subjected to compliance testing.[14] In this configuration the 'control message' is limited to the P/C that manages the body-worn devices to ensure that indoor enforcement is maintained. The power radiated from body-worn devices varies and can be quite small due to their proximity to the patient's body and the need to maintain low power to preserve battery life. For these reasons permitting body-worn devices to relay data in this limited manner will enhance clinical reliability.

F. Operation Of MBAN Devices Should Not Be Limited To Polled MAC Protocol.

Existing MedRadio Section 95.1209 appears to permit only a polled media access control (MAC) protocol when each body-worn device transmission requires a one-to-one poll from the P/C. Limiting MBAN devices in this fashion is unnecessary and unjustified. MBAN protocols such as IEEE 802.15.6 are likely to use more efficient MAC techniques, such as TDMA. Moreover, as noted above, it will often be advantageous for a body-worn device other than the P/C to act as the coordinator hub or node and, for MBANs operating only in the 2390-2400 MHz band, there is no reason to require a P/C device or any specific network topology.

There is no indication in the accompanying *MBAN Report & Order* that the limitation to a polled MAC protocol was intended with regard to MBAN devices. It appears, instead, to result

[13] Of course, reference to "the same MBAN" means a single patient. *See MBAN Report & Order* at para. 8: "The MBAN concept would allow medical professionals to place multiple inexpensive wireless sensors at different locations on or around a patient's body . . . ." and the definition of MBAN adopted in the *MBAN Report & Order*, *supra.*

[14] We expect that test procedures will ensure compliance with this limitation as well as other limitations applicable to MBAN devices during the Commission's equipment authorization process. *See also* Section III. O., *infra.*

from an inadvertent application to MBAN of the pre-existing MedRadio rule. The limitation is unnecessary for MBAN devices and would limit expected and future MBAN device design, and accordingly we request that the rule not apply to MBAN devices.

G. All MBAN Devices Should Be Required To Cease Transmitting In The Absence Of A Control Message.

Section 95.628(c) requires only the P/C to cease operating in 2360-2390 MHz in the absence of a control message. In addition to P/Cs, body-worn devices also should be required to cease operating in 2360-2390 MHz if they lose communication with their P/C.[15] It is critical that all MBAN devices – P/Cs *and* body-worn devices – cease operating in 2360-2390 MHz in the absence of a control message.

Accordingly, we suggest that the rule be revised to read as follows:

> A MedRadio programmer/control transmitter**, and its associated medical body-worn transmitters** shall not commence operating in, and shall automatically cease operating in the 2360-2390 MHz band if the programmer/control transmitter does not receive, in accordance with the protocols specified by the manufacturer, a control message permitting such operation. Medical body-worn transmitters **shall cease operating in 2360-2390 MHz if they lose communication with their associated programmer/control transmitter.** Additionally, a MedRadio programmer/control transmitter **and its associated medical body-worn transmitters** operating in the 2360-2390 MHz band shall comply with a control message that notifies the device**s** to limit transmissions to segments of the 2360-2390 MHz band or to cease operation in the band.

[15] As noted above, for MBANs where the P/C device is not acting as the coordinator hub or node, the communication with the P/C may be routed through a single other body-worn device that is acting as coordinator hub or node.

H. Immediate Cessation Should Be Required Of Any MBAN Causing Interference.

The *MBAN Report & Order* discussed, but did not adopt, a requirement for immediate shut-down in the event of interference. At para. 71 the Commission stated:

> Under the procedures suggested by the Joint Parties, if a health care facility is notified of MBAN interference to an AMT receive antenna, the MBAN system should be required to immediately cease transmission. We note that the Joint Parties' proposal does not clearly specify who is responsible for notifying the health care facility of interference and incorporates use of the transition plan concept, which we are not adopting.[16]

The Joint Proposal in fact contemplated that "the MBAN coordinator *would be the single point of communication* between the AMT parties to the hospitals and vendors . . . ."[17] This is a critical point. We urge that Section 95.1223(a) be revised to add at the end: "In the event a healthcare facility or the MBAN coordinator is notified of MBAN interference to an AMT receive antenna, the healthcare facility shall ensure that the interfering MBAN or MBANS immediately cease transmissions on the frequencies causing interference." This addition would provide important guidance to all concerned as to the serious obligations attendant to secondary MBAN operations in the shared 2360-2390 MHz band.

[16] *Supra* n.2 at ¶ 71.
[17] *Ex parte* dated January 27, 2012, at p. 2 (emphasis added).

I. Registration Of MBAN Replacement Devices Should Include Only P/Cs With Technical Differences.

The first sentence of Section 95.1223(a) requires that "a healthcare facility must register all MBAN devices it proposes to operate in the 2360-2390 MHz band with [the MBAN frequency coordinator]." However, the immediately-following Section 95.1223(b) provides that a healthcare facility must notify the MBAN frequency coordinator only when an MBAN *control transmitter* in the 2360-2390 MHz band is permanently taken out of service and is not replaced with a transmitter using the same technical characteristics as those registered with the coordinator. The two provisions appear to impose different requirements, and the first could be construed to require registration of identical replacement equipment as well as body-worn devices.

A requirement to register "all MBAN devices" would be unnecessarily burdensome and inhibit the envisioned evolution of MBAN, including in particular disposable band aid sized, body-worn sensors. Instead, healthcare facilities should be required to register only the number and type (*i.e.* by FCC ID, not unique serial number) of programmer/control transmitters ("P/Cs"). Replacement of P/Cs with units having the same technical characteristics should not require registration since this information has no effect on the frequency coordination process. Hospitals may have hundreds of P/Cs and replacement of P/Cs with the same type and technical specifications will be common. Such replacement will not affect the basis upon which frequency coordination was accomplished and should not require new or separate registrations. Section 95.1223(b) reads appropriately in this respect, but the beginning of Section 95.1223(a) may be interpreted as requiring a separate registration for each individual unit.

Nor should there be a separate coordination requirement for body-worn devices, such as sensors. One or more body-worn devices associated with a given P/C will operate in a

coordinated fashion (*e.g.* using TDMA), so a count of P/Cs will provide the information needed for accurate coordination calculations. Such body-worn devices already must be incapable of transmission in 2360-2390 MHz unless under the affirmative control of a P/C.

Accordingly, we propose that the first sentence of Section 95.1223(a) be amended to read:

> Prior to operating MBAN devices in the 2360-2390 MHz band, a health care facility must register with the frequency coordinator designated under § 95.1225. Operation of MBAN devices in the 2360-2390 MHz band is prohibited prior to the MBAN coordinator notifying the healthcare facility that registration and coordination (to the extent coordination is required under paragraph (c)) is complete.

Adopting this change will make possible body-worn devices that operate in an MBAN, and will also allow the expected evolution to disposable medical body-worn devices for which requiring an individual serial number would be totally impractical.

J. MBAN Coordinator Duties Should Be Explicit.

The MBAN coordinator duties set out in Section 95.1225 should be revised to make those duties clearer and more explicit. The proposed modification is consistent with that set forth in the text of the *MBAN Report & Order* but omitted in the rule. We suggest that Section 95.1225 (b)(2) be amended to read as follows.

> "(b) The frequency coordinator shall perform the following functions: . . . (2) Make an initial determination whether an MBAN is within line of sight of an AMT receive facility in the 2360-2390 MHz band and coordinate MBAN operations within line-of-sight of an AMT receive facility with the designated AMT coordinator as specified in § 87.305 . . . ."

K. Advance Consultation Requirement Should Be Clarified.

Consultation with AFTRCC as the primary spectrum coordinator is required when changes are made in MBAN location or operation pursuant to Section 95.1223(c). However, this was not

included in the Commission's discussion in paragraph 63 of the Report and Order. To prevent any misunderstanding, we request clarification that because changes in MBAN location or operation affect the line-of-sight status or other propagation characteristics regarding an AMT receive site, the Commission's rules prohibit MBAN operations under changed parameters until the MBAN coordinator **has consulted with the AMT coordinator and** determined whether a new or revised coordination with the AMT coordinator is required, and if so, coordination with the AMT coordinator is completed. This clarification would track Section 95.1223(c).

L. Antenna Height Should Be Clarified For Operation In 2390-2400 MHz.

Section 95.1213, a pre-existing MedRadio rule, limits outdoor antenna height to 9.8 feet *off ground.* As applied to MBAN, only operations in the 2390-2400 MHz band would be affected because operation in 2360-2390 MHz is limited to indoor use only. However, this height limit appears to unintentionally exclude second and all higher floors in buildings, such as on balconies and roof terraces. While the original purpose as applied to other MedRadio devices is unclear, five feet above a building's roof would be more sensible for MBAN operations in the unrestricted 2390-2400 MHz band.[18]

M. Attached Antennas Should Be Required For MBAN Devices Capable Of Operating In The 2360-2390 MHz Band.

Section 95.1213 should be revised in its applicability to MBAN to clarify that an antenna must be permanently affixed to its MBAN transmitter for devices that operate in 2360-2390 MHz. This change is probably necessary to prevent the use of unapproved antennas with MBAN devices in a manner that could cause the radiation of excessive power. Such situations potentially

[18] We expect deployment of outside-mounted antennas to be minimal. The only purpose might be to establish better communication paths within and around a larger house and its grounds by strategic antenna placement on a balcony, terrace or similar location for monitoring in and around the home.

could increase effective radiated power in ways that undermine the technical validity of the coordination.[19]

N. MBAN Equipment Labeling Requirement Should Be Strengthened.

The labeling requirement contained at § 95.1225(b)(2) should be strengthened to ensure that the label information is prominently displayed. The Joint Proposal provided that where it is not feasible to place the statement on the device itself, the statement be placed in the instruction manual for the transmitter on the first page in all capital letters. We continue to believe that such a requirement would be beneficial to ensuring that all personnel are fully aware of the operating status of MBAN devices.

[19] *See* Joint Parties, *Ex Parte* dated January 27, 2012, proposed revision to rule 95.639: "The antenna associated with any MBANS transmitter must be supplied with the transmitter and affixed directly to the transmitter without use of any connecting device…."

O. MBAN Equipment Authorization Requirements Should Be Published.

The Commission's decision does not change its equipment authorization rules, and no such changes are suggested by the Joint Parties. However, it is vital that the requirements for equipment authorization be clear for all to follow because of the unique and innovative nature of the spectrum sharing embodied in the MBAN rules and the necessity that MBAN devices not be able to transmit in the 2360-2390 MHz shared spectrum without authorization issued by the MBAN frequency coordinator. Unless all parties have confidence that equipment manufactured and marketed will be in strict compliance with the Commission's rules, a disincentive could be created for other parties, particularly spectrum incumbents, to consider similar spectrum sharing arrangements in the future. Similarly, manufacturers seeking to comply with the rules in their equipment design could be penalized for their diligent compliance if other vendors find ways to circumvent Commission requirements.[20]

The Joint Parties have submitted suggestions for specific procedures that could be followed in evaluating a particular MBAN device's compliance with the Rules. See *ex parte* dated September 7, 2012. The Parties look forward to continuing this discussion with the Commission's Laboratory staff, perhaps in conjunction with the periodic meetings of the Telecommunications Certification Body Council (TCBC) and constructing guidelines for test procedures.

[20] This concern is illustrated by the recent experience with non-compliant U-NII devices in the 5 GHz band. See, *e.g.*, FCC Enforcement Advisory: Enforcement Bureau Takes Action to Prevent Interference to FAA-Operated Terminal Doppler Weather Radars Critical to Flight Safety, DA 12-459, released September 27, 2012.

IV. CONCLUSION

For the reasons set forth above, the Commission should reconsider certain aspects of its Rules adopted in this proceeding and adopt the above-proposed changes.

Respectfully Submitted,

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