Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 0, 1, 2, 15 and 18 of the Commission's Rules regarding Authorization of Radiofrequency Equipment	)	ET Docket No. 15-170
	)	
Request for the Allowance of Optional Electronic Labeling for Wireless Devices	)	RM-11673
	)	

To: The Commission

REPLY COMMENTS OF
THE BOEING COMPANY

The Boeing Company ("Boeing") files these reply comments in response to the Commission's Notice of Proposed Rulemaking ("*NPRM*") considering updates to the rules that govern the evaluation and approval of radiofrequency ("RF") devices.[1] The comments indicate wide agreement that the proposed rule changes have the potential to streamline the Commission's procedures and reduce the administrative burden for both companies and the Commission. In order to minimize disruption of ongoing industry processes and critical research activities, Boeing and other commenters recommend the following modifications to the rules proposed in the NPRM.

[1]Amendment of Parts 0, 1, 2, 15 and 18 of the Commission's Rules regarding Authorization of Radiofrequency Equipment, ET Docket No. 15-170, Request for the Allowance of Optional Electronic Labeling for Wireless Devices, RM-11673, Notice of Proposed Rulemaking, FCC 15-92 (rel. Jul. 21, 2015) ("*NPRM*").

I. THE FORM 740 FILING REQUIREMENT SHOULD BE DISCONTINUED, BUT THE INFORMATION COLLECTION REQUIREMENT SHOULD BE MAINTAINED IN A STREAMLINED PROCESS

The commenting parties uniformly agree with the Commission's proposal to eliminate the requirement to file Form 740.[2] The Commission's recent announcement that it would temporarily waive the filing requirement, pending resolution of this proposal, provides further indication that the Form 740 requirement is no longer justified.[3]

Boeing does not agree, however, that compliance at the point of entry into the United States should be a "self-regulating activity,"[4] as some commenters have suggested. Instead, Boeing concurs with the suggestion of Echostar/Hughes that "the Commission and [Customs and Border Protection ("CPB")] should work together to assure that upon elimination of FCC Form 740 filings, compliance with CBP's existing routine information collection requirements will be sufficient to permit import of RF devices."[5] Boeing believes that an explicit government information collection at the point of importation, albeit streamlined, serves a valuable role for importers as a compliance tool or administrative checkpoint to ensure that United States import and electronic device regulations are being followed. In that regard, Boeing concurs with TIA's recommendation that the Commission should provide an explicit list of the elements importers

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[2] *Id.*, ¶ 120; *see e.g.*, Comments of the Wi-Fi Alliance, ET Docket No. 15-170, at 11 (Oct. 9, 2015) ("*Wi-Fi Alliance Comments*"); Comments of CTIA, ET Docket No. 15-170 at 12 (Oct. 9, 2015) ("*CTIA Comments*").

[3] Amendment of Parts 0, 1, 2, 15 and 18 of the Commission's Rules regarding Authorization of Radiofrequency Equipment, ET Docket No. 15-170, Order, FCC 15-135 (Oct. 19, 2015).

[4] Comments of TIA, ET Docket No. 15-170, at 29 (Oct. 9, 2015)("*TIA Comments*").

[5] Comments of EchoStar Technologies LLC and Hughes Network Services, LLC, ET Docket No. 15-170, at 6 (Oct. 9. 2015)("*Echostar/Hughes Comments*").

must submit to CBP in order to comply with the Commission's requirements.[6] Google recommends development of a "list of information that importers would need to submit to CBP to substantiate compliance with Commission rules" and suggests that the Commission "work closely with CBP to align the agencies' regulations and information collection requirements."[7] This approach of streamlining the compliance requirements while maintaining the underlying information collection would reduce the administrative burden on importers and the Commission while retaining sufficient compliance obligations to ensure that parties continue to comply with the Commission's equipment authorization and importation requirements.

II. THE DECLARATION OF CONFORMITY AND VERIFICATION PROCEDURES SHOULD BE COMBINED AND COMPLIANCE INFORMATION SHOULD BE INCLUDED WITH THE PRODUCT

The comments broadly support the Commission's proposal to unify the self-approval process into a single requirement for a "Supplier's Declaration of Conformity" ("SDoC").[8] This proposal will reduce administrative burdens for the Commission and for industry, and will provide more clarity as to the appropriate approval process for a given device. Representatives from multiple industries agree with the proposal, including Intel, Google, the Information Technology Industry Council, and Echostar/Hughes.[9]

An additional benefit of this change would be that all devices, including devices previously subject only to verification, would be required to have the equipment compliance statement supplied with the product (and possibly also online, see Section III, below). This

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[6] *Id*.

[7] Comments of Google Inc., ET Docket No. 15-170, at 21.

[8] *Id*., ¶ 24.

[9] Intel Comments at 2; Google Comments at 2-4 Echostar/Hughes Comments at 3-4.

would require manufacturers to address definitively their SDoC requirements at the time of packaging and initial sale, and allow later confirmation by importers and distributors. This, in turn, would assist end users in ensuring that the RF devices they are using are compliant with the Commission's rules.

III. ELECTRONIC LABELING SHOULD BE SUPPLEMENTED WITH RELIABLE ONLINE ACCESS TO REQUIRED PRODUCT INFORMATION

Representatives of the wireless service and device community express broad support for the proposed E-Label rules, noting the reduced cost and increased flexibility of electronic labels.[10] Many of the comments also provide support for Boeing's further recommendation that the adoption of the E-Label rules should include a requirement to make this information available online in a standard form.

Physical labeling provides a reliable and easily referenced summary of the rules applicable to a particular piece of equipment, making the labels valuable to importers, distributors, and end users, who must be able to reliably determine that a particular device is authorized and under which rules. Electronic labeling, by contrast, requires powering on, operating, and navigating through the interface of a device to locate the labeling information; a process that may differ significantly from device to device. Such information may be difficult or impossible to access if the device is separated from the user manual, not to mention if it is damaged, partially assembled, lacking a power source, or in a different language. In contrast, making this information readily available online would provide much of the same value as physical labels without the costs and limitations identified by some commenters.

[10] *NPRM*, ¶ 93; Comments of Samsung, ET Docket No. 15-170, at 2-3 (Oct. 9, 2015); Comments of Cisco, ET Docket No. 15-170, at 20 (Oct. 9, 2015), TIA Comments at 23-25.

Boeing notes further that the Commission already proposes to require that instructions on how to access electronic labeling be made available on the product's website.[11] We submit that the Commission should require that the label information also be provided on the website, where it could be easily located.[12] The comments confirm that making labeling information available online is consistent with current practice and consumer expectations. The Wi-Fi Alliance notes that "detailed information regarding equipment to be sold can typically be found online."[13] Both CTIA and TIA note that "consumers may more often look to the Internet for instructions on how to operate their devices before reading user manuals."[14] The Commission's rules should meet this expectation, and take advantage of the low cost and flexibility of electronic labeling by providing a duplicate of this information online where it can be reliably found and easily located by a web search.[15]

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[11] *NPRM*, ¶ 98.

[12] As Samsung explains, regarding the benefits of electronic labeling, "[c]onsumers will appreciate finding all required regulatory information using one consistent mechanism, rather than being required to look multiple places for various regulatory disclosures (*e.g.*, packaging, user manual, electronic display, or the physical device)." *Samsung Comments* at 3. These same benefits urge strongly in favor of making this information available online.

[13] *Wi-Fi Alliance Comments* at 11.

[14] *CTIA Comments* at 11 (citing Telecommunications Industry Association, Petition for Rulemaking, RM-11673 at 12 (Aug. 6, 2012)).

[15] Such a webpage could also provide information on certifications for regulatory bodies in other countries, which would be exceedingly valuable to users and organizations that must oversee compliance across multiple countries. The Commission should consider recommending (but not requiring) that product webpages provide device approval information from other countries as well.

IV. THE PERSONAL USE IMPORTATION EXCEPTION SHOULD BE EXPANDED TO INCLUDE PROFESSIONAL USE

Boeing concurs with the many parties that recommend expanding the personal use exception to cover not only licensed and unlicensed devices,[16] but also devices that are used by an individual for personal or professional purposes, as long as they are not for resale.[17] As commenters have explained, many devices carried by travelers are essential tools of the trade. The Wi-Fi Alliance urges the Commission to expand the exemption to cover "personal use in the course of business," noting that "[m]ore than ever, RF components are an integral part of devices that ordinary Americans use every day."[18] Intel and TIA both urge the Commission to raise the limit of ten devices and construe "individual use" to include "any activity undertaken by an individual or corporation…*where* the device(s) is/are not intended for transfer or sale."[19] CEA likewise supports the general proposal that the device limit be increased from three to ten, and urges the Commission to "clarify that the personal use exception also governs prototype devices that a business traveler brings to the United States for demonstration and not for lease or sale."[20]

An expanded exception would substantially streamline the import process for travelers hand-carrying uncertified—but otherwise compliant—devices. Boeing therefore urges the Commission to slightly modify the proposed language of the exception to make clear that RF devices may be imported if "…ten or fewer devices are being imported for the individual's

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[16] *NPRM*, ¶ 125.

[17] 47 C.F.R. § 2.1204(a)(7).

[18] *Wi-Fi Alliance Comments* at 13.

[19] *TIA Comments* at 35, *Intel Comments* at 11-12.

[20] Comments of CEA, ET Docket No. 15-170, at 18 (Oct. 9, 2015).

personal or professional use and are not intended for sale."[21] This revised exception, encompassing both personal use by individuals and internal use (without resale) by corporate personnel, would continue to provide adequate protection against harmful interference without unduly restricting access to these devices for the individuals who rely on them at work and at home.

V. THE COMMISSION'S RULES MUST NOT LIMIT WIRELESS DEVICE RESEARCH AND DEVELOPMENT BY UNDULY RESTRICTING MODIFICATION OF SDR SOFTWARE

Boeing notes the voluminous record of comments expressing concern with the potential implications of the Commission's proposal to broaden restrictions on the modification of Software Defined Radio ("SDR") requirements.[22] The substantial discussion on the SDR issue appears to arise partly from a lack of clarity about the nature of the proposed rule, which, perhaps out of an abundance of caution, is being interpreted differently by commenting parties. Boeing acknowledges the necessity of a level of assurance that RF devices perform consistent with the frequencies, power levels, and other attributes that form a condition of equipment approval. At the same time, any rules adopted must ensure that engineers, systems designers, and security researchers continue to have access to the precise functions of these devices at a low level to enable them to upgrade, patch, or modify the unregulated aspects of the device.

Google observes that the *NPRM* "does not specify the 'well-defined measures' on which the Commission proposes to rely; some approaches could result in manufacturers having to lock down devices like wireless routers."[23] In this, the NPRM is consistent with the policy laid out

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[21] *Compare NPRM*, Appendix A at 2.1204(a)(7).

[22] *NPRM*, ¶ 46.

[23] Google Comments at 8.

on the Unlicensed National Information Infrastructure ("U-NII") proceeding, in which the Commission explicitly "decline[d] to set specific security protocols or authentication requirements," recognizing that they could "hinder the development of the technology used to provide such security, and be unduly burdensome on manufacturers."[24] Boeing does not advocate for specific security protocols here. We note, however, that clarity is required as to specific attributes of the radio software that the Commission's proposed lockout is intended to apply to. Such clarity is necessary to avoid adopting an overly broad rule that could impair innovation, security, and day-to-day operations.

In particular, advocates from the open source community caution against an interpretation that would prohibit "reflashing" of devices, which would appear to bar the use of open source (third party) firmware such as DD-WRT and OpenWRT, which are widely used by IT departments, researchers, security professionals, and others.[25] The open source community urges the Commission to focus on rules that are narrowly tailored to address only those regulatory parameters that are "critical."[26] Such parameters might include the permissible frequencies and power level, but should not interfere with other software or firmware controls that are not related to RF parameters, such as encryption, network protocols, and user interface.[27]

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[24] Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, First Report and Order, FCC ¶ 54.

[25] Comments of the New America Open Technology Institute, ET Docket No. 15-170, at 1, 5 (Oct. 9, 2015); Center for Democracy and Technology, ET Docket No. 15-170, at 2-3 (Oct. 9, 2015).

[26] *See, e.g.*, Comments of the Software Freedom Law Center, ET Docket No. 15-170, at 2-4 (Oct. 9, 2015) ("*SFLC Comments*"); Comments of the New America Foundation Open Technology Institute, ET Docket No. 15-170, at 1, 5 (Oct. 9, 2015); Comments of the Information Technology Industry Council ("ITIC"), ET Docket No. 15-170, at 7 (Oct. 9, 2015).

[27] *See, e.g. SFLC Comments* at 6-7.

Boeing is confident that the Commission does not intend the proposed rule to prohibit the use of commonly used and important utilities.

Ultimately, Boeing believes that both opponents and advocates of the Commission's proposal desire the same outcome, which is reliable access to inexpensive, powerful, and non-interfering SDRs. Although the implementation must be worked out carefully, the details are less important than the outcome of ensuring that entities engaged in research and development continue to have ready access to the settings on these devices and be able to freely modify them within their authorized parameters.

VI. CONCLUSION

Adopting the above recommendations will promote greater administrative efficiency for industry and the Commission, without disrupting established industry procedures and critical research that relies on the import and use of RF devices. Boeing therefore supports the proposed rules, with the modifications identified.

Respectfully submitted,

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