



**Wireless Innovation Forum's Comments to
the FCC regarding the Notice of Proposed
Rulemaking in the Matter of Unlicensed Use
of the 6 GHz Band**

Document WINNF-RC-5001

Version 1.0.0

13 February 2019

TERMS, CONDITIONS & NOTICES

This document has been prepared by the Spectrum Innovation Committee to assist The Software Defined Radio Forum Inc. (or its successors or assigns, hereafter “the Forum”). It may be amended or withdrawn at a later time and it is not binding on any member of the Forum or of the Spectrum Innovation Committee.

Contributors to this document that have submitted copyrighted materials (the Submission) to the Forum for use in this document retain copyright ownership of their original work, while at the same time granting the Forum a non-exclusive, irrevocable, worldwide, perpetual, royalty-free license under the Submitter’s copyrights in the Submission to reproduce, distribute, publish, display, perform, and create derivative works of the Submission based on that original work for the purpose of developing this document under the Forum's own copyright.

Permission is granted to the Forum’s participants to copy any portion of this document for legitimate purposes of the Forum. Copying for monetary gain or for other non-Forum related purposes is prohibited.

THIS DOCUMENT IS BEING OFFERED WITHOUT ANY WARRANTY WHATSOEVER, AND IN PARTICULAR, ANY WARRANTY OF NON-INFRINGEMENT IS EXPRESSLY DISCLAIMED. ANY USE OF THIS SPECIFICATION SHALL BE MADE ENTIRELY AT THE IMPLEMENTER'S OWN RISK, AND NEITHER THE FORUM, NOR ANY OF ITS MEMBERS OR SUBMITTERS, SHALL HAVE ANY LIABILITY WHATSOEVER TO ANY IMPLEMENTER OR THIRD PARTY FOR ANY DAMAGES OF ANY NATURE WHATSOEVER, DIRECTLY OR INDIRECTLY, ARISING FROM THE USE OF THIS DOCUMENT.

Recipients of this document are requested to submit, with their comments, notification of any relevant patent claims or other intellectual property rights of which they may be aware that might be infringed by any implementation of the specification set forth in this document, and to provide supporting documentation.

This document was developed following the Forum's policy on restricted or controlled information (Policy 009) to ensure that that the document can be shared openly with other member organizations around the world. Additional Information on this policy can be found here: http://www.wirelessinnovation.org/page/Policies_and_Procedures

Although this document contains no restricted or controlled information, the specific implementation of concepts contain herein may be controlled under the laws of the country of origin for that implementation. Readers are encouraged, therefore, to consult with a cognizant authority prior to any further development.

Wireless Innovation Forum TM and SDR Forum TM are trademarks of the Software Defined Radio Forum Inc.

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Unlicensed Use of the 6)	ET Docket No. 18-295
GHz Band)	
)	
Expanding Flexible Use in)	GN Docket No. 12-354
Mid-Band Spectrum)	
Between 3.7 and 24 GHz)	

COMMENTS OF THE WIRELESS INNOVATION FORUM

The Wireless Innovation Forum (WinnForum) is pleased to provide these comments to the above-captioned proceeding.¹

1 Introduction

WinnForum is a U.S.-based, international non-profit, multi-stakeholder organization driving technology innovation in commercial, civil, and defense communications around the world. WinnForum members bring a broad base of experience in Software Defined Radio (SDR), Cognitive Radio (CR), and Dynamic Spectrum Access (DSA) technologies in diverse markets and at all levels of the wireless value chain to address emerging wireless communications requirements through enhanced value, reduced total life cost of ownership, and accelerated deployment of standardized families of products, technologies, and services.

¹ FCC 18-147, *Unlicensed Use of the 6 GHz Band; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz* (rel. Oct. 24, 2018) (NPRM).

2 Multi-stakeholder Groups (MSG)

WInnForum commends the Commission's continued efforts to put more spectrum to broad use through innovative spectrum-sharing methods. For example, such innovations are key to making 150 MHz of Citizens Broadband Radio Service (CBRS) spectrum available in the 3.5 GHz band for myriad new uses.

The Commission seeks comment in the NPRM about possible roles and activities that a multi-stakeholder organization could contribute to make 6 GHz spectrum available for unlicensed uses.² WInnForum is a technology-neutral multi-stakeholder organization with members that span all sectors of the wireless telecommunications industry.

To the extent that this proceeding creates issues that must be addressed through technical compromise among incumbents and new entrants in the band, WInnForum members have expertise in all relevant areas, with representatives from many of the same companies that are potentially affected as incumbents or new entrants (or both). WInnForum members recognize the desire for rapid new unlicensed deployments in 6 GHz. The existing WInnForum framework can help reach convergence in areas of contention efficiently and expeditiously, while both protecting incumbents and providing for rapid deployment of new unlicensed systems in the band. Unlike CBRS, which required significant time to develop standards and procedures to satisfy complex and classified government operations, the 6 GHz Automated Frequency Coordinator (AFC) concept as proposed is much lighter weight, does not require new standards, and exists to protect incumbents whose operations are fully transparent through existing public databases. Under the best circumstances, incumbent protections will be fully specified and agreed prior to an Order in this proceeding. More likely, however, some points of contention will remain, and WInnForum is

² NPRM at ¶ 34.

ready and able to address them rapidly. Areas of focus might include the following, which are within the areas of WinnForum's expertise:

- Propagation models
- Interference protection criteria
- AFC framework
- Security
- Interference determination, reporting and mitigation
- AFC testing and certification

WinnForum members have contributed significantly to developing standards and guidelines necessary to the success of the CBRS band. During the CBRS proceedings,³ the Commission noted the following when discussing WinnForum's role as an MSG:

...we agree with ... the Wireless Innovation Forum, and others, that a multi-stakeholder process could provide insight into the technical factors and interference limits between coexisting services in the 3.5 GHz Band.⁴

We further note that the specific policies and protocols needed to enforce this general requirement may be developed as part of the SAS approval process and may be informed by the work of an industry-led multi-stakeholder group.⁵

...we believe that a multi-stakeholder group focused on the complex technical issues raised by this proceeding could provide us with a wealth of valuable insights and useful information. A broad-based group incorporating wireless carriers, network equipment manufacturers, potential SAS Administrators, satellite operators, existing 3650-3700 MHz band licensees, and other parties with an interest in the 3.5 GHz Band could be instrumental in developing answers to some of the novel technical questions raised by the Citizens Broadband Radio Service rules. We hope that any such group would work collaboratively towards innovative solutions that would encourage the rapid development of the Citizens Broadband Radio Service, protect valuable incumbent operations, and benefit all potential stakeholders in the band.⁶

³ FCC 15-47, 30 FCC Rcd 3959 (5), *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report & Order and Second Further Notice of Proposed Rulemaking (FNPRM) (2015).

⁴ *Id.* at 289.

⁵ *Id.* at 312.

⁶ *Id.* at 416.

WinnForum has provided an environment where all CBRS stakeholders could collaborate on these efforts. We are confident that WinnForum could, if requested, provide a framework to collaboratively study and develop guidelines around the suggestions provided above (and others as needed), and do so on a rapid timescale, consistent with the expectations of the unlicensed community.

3 Summary

WinnForum has a long history of establishing and leading successful MSGs composed of commercial equipment vendors, OEMs, database providers, network operators, academia and government agencies. We stand ready to work with the Commission and all those interested in developing AFC in the creation of an MSG for this effort.

Respectfully submitted,

By /s/:
Bruce Oberlies
President and Chair
The Wireless Innovation Forum

February 13, 2019