



Federal Communications Commission  
Office of Legislative Affairs  
Washington, D.C. 20554

Office of the Director

July 2, 2015

The Honorable Greg Walden  
Chairman  
Subcommittee on Communications and Technology  
Committee on Energy and Commerce  
U.S. House of Representatives  
2125 Rayburn House Office Building  
Washington, D.C. 20515

Enclosed please find responses to the Questions for the Record regarding the Commission's appearance before the Committee on March 26, 2015, at the hearing entitled, "Next Steps for Spectrum Policy"

If you have further questions, please feel free to contact me at (202) 418-0095.

Sincerely,

A handwritten signature in cursive script that reads "Michael Dabbs".

Michael Dabbs  
Director

cc: Anna Eshoo, Ranking Member, Subcommittee on Communications and Technology

**Attachment—Additional Questions for the Record**

**The Honorable Gus Bilirakis**

1. **We all know that there is a spectrum crunch in this country for licensed and unlicensed services. I believe unlicensed spectrum offers a real promise for the future, and I've been very interested in the growing "Internet of Things" which is reliant on unlicensed spectrum. I was proud that a team from USF was a part of the Internet of Things showcase yesterday having invented a way to more efficiently track perishable goods.**

**Because of the lack of unused spectrum, I think spectrum sharing is an important option for efficiency and access in the future.**

**Can you talk about what the FCC is doing to make sharing a reality in the 5.9 GHz (giga-hertz) band, which might be our best short term opportunity?**

**RESPONSE:** The spectrum at 5850 – 5925 MHz (5.9 GHz) is allocated for the Intelligent Transportation Service on a primary basis. The Commission proposed to permit unlicensed devices to share this spectrum on a non-interference basis and invited comment on the specific technology to enable sharing. The Institute of Electronics and Electrical Engineers established a Tiger team to develop sharing methodologies but recently reported that it was unable to achieve consensus. A major manufacturer of unlicensed devices recently advised that it plans to provide a prototype device for testing but it may still be a few months before it is available. We anticipate that testing will be a collaborative effort among the National Telecommunications and Information Administration, the Department of Transportation and the FCC.

2. **I'm intrigued by the broadband deployment opportunities you mention in your testimony for industrial applications, including health care. I've got a lot of seniors and veterans in my district that are increasing involved in the healthcare market. I enjoyed our joint health and telecom subcommittee hearing last Congress that focused on this new intersection of treatment and technology.**

**I've seen wireless technology that can organize medical records and keep track of medications, and the future of sensor technology seems to be boundless.**

**Can you expand a little more about how you envision the future of wireless technology's impact on the health care sector and where, including the 3.5 gigahertz band and elsewhere, might there be room for efficient spectrum utilization?**

**RESPONSE:** We have all seen the explosion of applications on wireless networks, including healthcare applications. The Commission's policy of flexible use for

commercial spectrum supports innovation and allows for spectrum uses that take advantage of rapid changes in technology. As you note, the 3.5 GHz band presents additional opportunities for a variety of broadband applications. The technical characteristics of the band and the spectrum access system used to coordinate Citizens Broadband Radio Service use will allow for a high degree of spatial and spectral re-use, particularly for indoor operations, within the band. As such, the Citizens Broadband Radio Service could provide new options for hospitals, doctor's offices, and other medical facilities with a need for secure private networks. In addition, wireless carriers and Wireless Internet Service Providers may use the band to supplement their service offerings, which could facilitate telemedicine.

- 3. I understand that the FCC is in the process of drafting rules to make the 3.5 GHz band available for mobile broadband. I also understand that the Navy uses this spectrum for ship-borne radar and that the exclusion zones along the coast would cover over 50 percent of the population, including major cities with significant populations that would most benefit from access to this spectrum.**

**Are you exploring ways to increase commercial access in this space for coastal populations and has there been any progress in tailoring the size of these exclusion zones so that both objectives can be addressed?**

**RESPONSE:** On April 17, 2015, the Commission voted unanimously to adopt a Report and Order and Second Further Notice of Proposed rulemaking establishing a new Citizens Broadband Radio Service for shared wireless broadband use of the 3550-3700 MHz band. This band is currently used by the Department of Defense for shipborne and ground-based radar operations (shipborne radars are limited to the 3550-3650 MHz portion of the band). These operations will be designated as "Incumbent Access" and protected from harmful interference from Citizens Broadband Radio Service users.

In developing this Report and Order, the Commission worked extensively with NTIA, the Department of Defense, and the military services to develop a two-phase approach to protect incumbent federal radar systems while maximizing the utility of the band for wireless broadband services. In phase 1, federal radar systems will be protected by "exclusion zones" that are significantly smaller than those proposed in NTIA's 2010 Fast Track Report and the Commission's Further Notice of Proposed Rulemaking. In phase 2, these radar systems will be protected by an Environmental Sensor Capability that will detect the presence of radar transmissions and report that information to the SAS.

As a result of this sharing arrangement, the Citizens Broadband Radio Service has a clear path, in phase 2, to be accessible nationwide when radar transmissions are not detected in an area.

### The Honorable Bill Johnson

1. **What data and analysis are you relying on to support the claim that the relocation fund will be sufficient? Under the FCC's current plan for repacking broadcasters, would the relocation fund be sufficient to pay for the move of all broadcasters after the auction is over, or just a portion of those moves?**

**RESPONSE:** At this point, we have no reason to believe that the \$1.75 billion Broadcaster Relocation Fund will be insufficient to cover broadcasters' relocation costs. In order to ensure the sufficiency of the fund, we have proposed to optimize the final broadcaster channel assignments to minimize relocations costs. We have proposed that this optimization will: (1) maximize the number of stations assigned to their pre-auction channel; and (2) avoid reassignments of stations with high anticipated relocation costs, based on the most accurate information available. These steps, taken together, will help to ensure that the \$1.75 billion Reimbursement Fund is sufficient to cover broadcasters' relocation costs and that the Fund is disbursed as fairly and efficiently as possible.

2. **What is the FCC's plan in case the relocation fund is not sufficient to pay for moving all broadcasters?**

**RESPONSE:** We are taking appropriate measures to disburse funds as fairly and efficiently as possible to ensure the sufficiency of the Reimbursement Fund. If future developments suggest that the \$1.75 billion Reimbursement Fund will be insufficient to cover all eligible costs, the Commission has delegated authority to the Media Bureau to develop a prioritization scheme for reimbursement claims.

3. **Will the FCC commit to ensuring that broadcasters that do not participate in the voluntary incentive auction but are assigned new channels and thus required to move in the repacking process will not be required to pay for any portion of that move that comes as a result of changing channel assignments?**

**RESPONSE:** Broadcasters who are assigned to a new channel in the repacking process because they choose not to participate in the auction, or participate but are not selected, will be eligible for reimbursement of their reasonably incurred costs from the Reimbursement Fund.

### The Honorable Chris Collins

1. **I am concerned that border stations – such as those in Buffalo and Rochester – may be disadvantaged by an insufficiency of the relocation fund and reimbursement window if International coordination is not completed before the auction. Is the FCC making any arrangements for stations that can only be repacked following agreements with Canada and Mexico to be reimbursed if those moves can only occur after the three-year reimbursement window?**

**RESPONSE:** We continue to make progress in negotiations with both Canada and Mexico and fully expect to reach arrangements with Canada and Mexico that will enable us to carry out the repacking process in an efficient manner consistent with our goals for the auction. In the unlikely event that a border station has not been able to complete construction on its new channel assignment by the end of the 36-month construction period, that station may request authorization to operate on temporary facilities. The Commission will make every reasonable effort to accommodate such requests. We also believe the reimbursement process will provide sufficient flexibility for any stations that encounter difficulties constructing new facilities along the Canadian and Mexican borders. We fully intend to make initial allocations quickly to help broadcasters initiate the relocation process. If cases occur in which a broadcaster's move to a new channel is delayed because of international coordination, that delay need not jeopardize reimbursement. We have afforded stations the flexibility to update their cost estimates if they experience a change in circumstances during the reimbursement period. Moreover, our process recognizes that construction for certain stations may run up against the end of the 36-month reimbursement period and therefore includes a final allocation, to be made based on actual costs incurred by a date prior to the end of the three-year period, in addition to a station's estimated expenses through the end of construction.

### **The Honorable Anna Eshoo**

- 1. In an effort to unlock more unlicensed spectrum, Reps. Latta, Matsui, Issa, DelBene and I recently introduced the Wi-Fi Innovation Act. Our bipartisan, bicameral bill directs the FCC to conduct tests within the 5 GHz spectrum band to determine if spectrum can be shared without interfering with current users. What is the FCC's timeframe for completing testing in this band? What is the Commission doing to ensure consumers who rely on Wi-Fi are protected if LTE-U technology is deployed in this band or any other band in which Wi-Fi currently operates?**

**RESPONSE:** The draft legislation focuses on the spectrum at 5850 – 5925 MHz (5.9 GHz) that is allocated for the Intelligent Transportation Service on a primary basis. The Commission proposed to permit unlicensed devices to share this spectrum on a non-interference basis and invited comment on the specific technology to enable sharing. The Institute of Electronics and Electrical Engineers established a Tiger team to develop sharing methodologies but recently reported that it was unable to achieve consensus. A major manufacturer of unlicensed devices recently advised that it plans to provide a prototype device for testing but it may still be a few months before it is available. We anticipate that testing will be a collaborative effort among the National Telecommunications and Information Administration, the Department of Transportation and the FCC.

The Office of Engineering and Technology and the Wireless Telecommunications Bureau recently issued a public notice to develop a record on LTE-U technology and how it may share spectrum with other technologies such as Wi-Fi. We are evaluating the responses we received in response to that notice, and are also closely monitoring discussions in and among international standards bodies.

- 2. In 2012, Congress reached a compromise intended to ensure unlicensed use of the guard bands. I'm concerned that some stakeholders are arguing that unlicensed should not be permitted in the duplex gap. Do you see any reason why TV white space devices cannot operate at low power in at least the duplex gap, as the Commission ordered last May?**

**RESPONSE:** The Commission proposed to allow unlicensed operation in the duplex gap and other parts of the 600 MHz and TV spectrum. Comments have been filed both in support of and in opposition to these proposals, including various technical analyses. We are evaluating the record in the proceeding, and intend to present final recommendations to the Commission in the coming months.

- 3. Over the past year and a half, I've urged the agency to engage proactively in outreach to broadcasters about the benefits of participating in the upcoming incentive auction, so I was pleased when the FCC announced in November that they would be taking this outreach on the road with more than a dozen trips, covering about 50 markets, including San Francisco. While respecting confidentiality, can you characterize how these visits have been received by broadcasters?**

**RESPONSE:** The response from both small and large broadcasters to our broadcaster information sessions was very positive. In each city visited, the Incentive Auction Task Force staff conducted a general presentation and met confidentially with individual broadcasters upon request. The information sessions enabled broadcasters to gain a better understanding of the auction and the opportunities it presents, including not only relinquishment of their spectrum but also channel sharing and moving from the UHF to the VHF band. The sessions also enabled the Incentive Auction Task Force staff to address broadcasters' questions about the post-auction transition and reimbursement process. Before, during, and after the end of our outreach, we've continued to meet with broadcasters at the Commission's offices and via teleconference.

- 4. In late 2013, Congressman Dingell and I wrote to the Commission about the need for coordination with Canada and Mexico so that Americans in border areas don't lose access to free, over-the-air television signals. What's the status of these negotiations?**

**RESPONSE:** The negotiations between our counterparts in Canada and Mexico are on-going and productive. We have been having regular meetings with Canada and Mexico. In late 2014, Industry Canada issued a consultation that proposes a band plan like ours, and we expect them to complete this consultation soon. We are also in the process of coordinating a DTV plan that accommodates Mexico's DTV transition and auction needs and also provides channels for the U.S. to use in repacking.

**The Honorable Yvette Clarke**

- 1. The FCC's Designated Entity (DE) program promotes diversity of ownership and helps small businesses to compete in the FCC's auctions for new wireless frequencies.**

**How does the Commission plan to improve the DE program, in light of the recent criticisms of the program during the AWS-3 auction?**

**RESPONSE:** On June 25, 2015, Chairman Wheeler circulated a balanced proposal to modernize the Commission's approach to small business participation in wireless spectrum auctions, also known as the competitive bidding rules. The Commission initiated a proceeding in October 2014 to revisit its competitive bidding rules, last updated in 2006, prior to next year's Incentive Auction. In response to today's wireless marketplace, the proposed reforms will provide more flexibility for *bona fide* small businesses, including women- and minority-owned businesses and rural service providers. At the same time, the reforms will increase transparency and efficiency to prevent abuse, as well as protect the integrity of the Commission's auction process. The proposed reforms are meant to ensure that large corporations cannot game the system and that bidding credits will flow only to small businesses and rural service providers, all while revamping outdated policies that no longer serve today's marketplace.

For example, the proposal would cap the total value of bidding credits that a small business or rural provider is eligible to receive in any one spectrum auction. Moreover, the proposal would include measures to prevent unjust enrichment of ineligible entities by strengthening attribution rules. Furthermore, the proposal would prohibit joint bidding agreements that involve a shared strategy for bidding at auction but permit arrangements that are solely operational (*e.g.*, roaming or leasing), provided they are disclosed.

The proposed reforms will also ensure that bidding credits continue to flow to small businesses and rural service providers. For instance, to incentivize rural service providers to compete more effectively in future spectrum auctions and provide consumers in rural areas with competitive offerings, the proposal establishes a new rural service provider bidding credit. Additionally, the proposal would provide flexibility in using spectrum won at auction to *bona fide* small businesses, as well as increase the applicable revenue thresholds to qualify as a small business for the first time since 1997.

2. **How does the Commission plan on preserving access to unlicensed spectrum in order to ensure that innovative Wi-Fi-based technology is able to continue to benefit society?**

**RESPONSE:** The Commission proposed to provide access to spectrum for unlicensed devices in the 600 MHz band that is the focus of the Incentive Auction and in the white spaces in the spectrum that remains allocated for TV broadcasting. We are continuing to evaluate the comments that have been filed and will present final recommendations to the Commission in the coming months. Wi-Fi today operates in spectrum at 2.4 GHz and 5 GHz. Last year the Commission took action to make 100 MHz of spectrum in the 5 GHz band more usable for Wi-Fi and other unlicensed technologies. The Commission also proposed to provide access to 195 megahertz of additional spectrum in the 5 GHz band for unlicensed use, and we are continuing to work with interested parties on solutions to enable unlicensed to share this additional spectrum without causing harmful interference to incumbent services.

3. **Much of the incentive auction's success is based on broadcaster participation. They will, in turn, provide the demand for the auction's next stage. What is the plan to ensure that broadcasters adequately participate in the auction and what incentives are the FCC offering to increase their engagement?**

**RESPONSE:** We agree that the key to a successful auction is broadcaster participation, and the Commission has taken a number of steps to encourage robust participation. We have proposed an opening bid methodology that would offer very generous bids to broadcasters around the country. We have adopted an auction format, called a "descending clock" that will be make it easy for interested broadcasters to participate in the auction without ever having to reveal their drop-out price. We've also worked hard to educate broadcasters on the full range of options available to them in the auction – including not only relinquishment of their spectrum but also channel sharing and moving from the UHF to the VHF band. Finally, we have undertaken an extensive outreach and education program that included information sessions in 30 markets around the country to give broadcasters a better understanding of the auction and the opportunities it presents. Before, during, and after the end of our outreach, we've continued to meet with broadcasters at the Commission's offices and via teleconference. As we move forward, the Task Force will continue to make sure broadcasters are well-informed about the auction, and will conduct bidder seminars and mock auctions to ensure broadcasters are confident in their participation.

4. **I commend the FCC on its aggressive, and very forward thinking approach to spectrum policy. I'm also interested in how the FCC will work towards fostering meaningful participation of small, minority- and women-owned businesses in the upcoming incentive auction. Mr. Sherman, will you speak to this point please?**

**RESPONSE:** Please reference the response to Question #1 above.

5. **I understand that critical processes post incentive auction involve REPACKING and CHANNEL SHIFTING to accommodate acquired broadcast spectrum. Can you share how the FCC proposes to engage in these processes, and ensure that consumers are adequately informed about the impacts?**

**RESPONSE:** In order to create a contiguous block of spectrum suitable for mobile broadband in what is now the TV band, some of the TV stations that will remain on the air after the incentive auction will need to move to new channels. The Commission will assign new channels to full-power and Class A stations, consistent with the Spectrum Act. In making these assignments, the Commission has proposed maximizing the number of stations that stay on their pre-auction channels, avoid channel reassignments for stations with high anticipated relocation costs, and minimize the maximum aggregate new interference. Broadcasters who are relocated to new channels will be reimbursed for their relocation costs out of the \$1.75 billion TV Broadcaster Relocation Fund, funded by proceeds from the forward auction of the repurposed TV band spectrum that Congress created in the Spectrum Act. The Commission has adopted specific requirements for transitioning broadcasters to inform consumers prior to the transition if the stations they view will be changing channels, encourage them to rescan their receivers for new channel assignments, and educate them on steps to resolve potential reception issues.

6. **Is there any discussion currently at the FCC about the consumer outreach that will be necessary to minimize viewer confusion and disruption after stations are repacked?**

**RESPONSE:** The Incentive Auction Report and Order specifically adopted an obligation for the Commission to help educate consumers on the post-auction transition. In the Report and Order, the Commission directs the Consumer and Government Affairs Bureau to develop a comprehensive plan to engage with consumers and ensure that consumers do not lose service. The Commission also recently voted to largely reaffirm broadcasters' consumer education requirements established in the Report and Order.

7. **Has there been discussion about setting aside monies for an education initiative?**

**RESPONSE:** The Incentive Auction Report and Order specifically obligated the Commission to specify a plan to provide for consumer education following the incentive auction. Although the auction is still many months away, the beginning planning stages for providing consumers with relevant, important information are underway. We will ensure that this effort will be funded sufficiently to effectively educate consumers.