Testimony of Harold Feld
Senior Vice President
Public Knowledge

Before the
U.S. House of Representatives
Committee on the Energy and Commerce
Subcommittee on Communications and Technology

Hearing On:
Oversight of Incentive Auction Implementation

Washington, DC
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Good morning Chairman Walden, Ranking Member Eshoo, and members of the subcommittee. I am Harold Feld, Senior Vice President at Public Knowledge, a public interest nonprofit dedicated to the openness of the Internet and open access for consumers to lawful content and innovative technology. I am pleased to have the opportunity to appear before you once again to discuss the implementation of the FCC's first ever spectrum incentive auction.

Executive Summary

A bit more than 2 years ago, I testified before this Subcommittee about what was then a proposal to consider giving the FCC authority to conduct incentive auctions. As I said at the time, the incentive auctions provide a rare case for a 'win-win-win' in public policy. Done thoughtfully, the incentive auction could provide new low-band spectrum licenses for wireless carriers to meet expanding demand and enhance competition and provide revenue to pay for a national wireless network for first responders, while enhancing the efficiency of the unlicensed TV white spaces service and preserving free over-the-air television.

I still believe we can do this. But we cannot succeed if we rush heedlessly forward out of impatience to hold an auction however ill-designed. Nor will we achieve this by forcing false

choices between licensed and unlicensed spectrum, or between enhancing competition and paying for FirstNet. To the contrary, efforts to follow what seems like the straightforward path to maximizing revenue by minimizing guard bands or refusing to adopt rational spectrum aggregation limits are likely to make this auction a failure rather than a success.

Perhaps most importantly, we must give the FCC staff time to develop a proper record and to do their jobs. Constantly hectoring staff that they are moving too fast or too slow, issuing too many public notices or not enough, being too generous to broadcasters or not generous enough, scheming to undermine licensed spectrum with inflated guard bands or being in the pocket of this or that faction of the industry is worse than not helpful. It creates an atmosphere of suspicion and pushes staff to retreat into the bowels of the Portals at a time when we need the maximum amount of transparency and trust between staff and stakeholders.

Background

Congress' inclusion of Title VI in the Middle Class Tax Relief and Job Creation Act of 2012 was a groundbreaking and critical step forward for U.S. communications policy and the advancement of new and innovative technology in the 21st century. It was groundbreaking because of the creation of the FCC's authority to create and execute a two-sided incentive auction for the first time in history. This mechanism for fairly repurposing spectrum that is already allocated uses market based principles to encourage more efficient use of this valuable public resource and make room on the spectrum allocation for new uses and technologies to develop. The legislation was a critical step because it opened up spectrum to allow for greater growth and competition in the licensed wireless broadband market, while preserving a

commitment to unlicensed spectrum to be used for new innovative services, some of which may not even have been invented yet. The legislation also balances the priorities of repurposing spectrum for new uses with the goals of funding an interoperable public safety wireless network in accordance with the recommendations of the 9/11 Commission.

I continue to believe that all these goals remain possible. Certainly it takes patience and a well developed record to find the way to balance these competing goals. I commend the FCC for working so diligently to get the numerous details right so that all these working parts will mesh together, rather than fly apart.

Conversely, I find it very unfortunate that some continue to try to create artificial choices among the goals Congress created. We are well aware that the final language of the Act represented a compromise between Members and stakeholders with very strongly held opinions on the appropriate policy to follow. Rather than refight these battles again and again, we should embrace the compromise. Rules that ignore the compromise struck by Congress, pretending that one faction triumphed over the other when it did not, do more than violate the language of law. Such efforts threaten to unbalance the complex machinery Congress dictated for running the auction, potentially dooming all these efforts.

Allow the FCC to do its job

Perhaps most importantly, Congress should remember that every economist that testified on incentive auctions – regardless of political affiliation – urged that the FCC must have maximum discretion to design and run the auction. Certainly Congress must maintain oversight.

But Members should also recognize both the tremendous skill and experience the FCC has brought to bear on this complex problem and the FCC's history of success since Congress authorized spectrum auctions 20 years ago. It is entirely appropriate to require the FCC to explain its choices. It is counter-productive to tell the FCC before it even makes choices that it has chosen wrong.

Since passage of the Act, the FCC has moved quickly to design this first-ever incentive auction to reflect the several goals of the legislation and with the input of all critical stakeholders. In order for the incentive auction to be successful two things are necessary. First, all stakeholders and FCC staff need to work in a transparent, participatory way to determine the various aspects of auction design, band plan options, and repacking processes. Second, the FCC must enact rules that respect and balance the various goals of the legislation rather than bowing to pressure from one interest in favor of another.

Most importantly for those following from outside, the structure created by Congress depends on maximizing the difference between what it has to pay broadcasters and what it can persuade wireless carriers to pay. If the FCC recovers 120 MHz of spectrum, but ends up giving 90% of the proceeds to broadcasters to facilitate recovering that much spectrum, the auction cannot pay for FirstNet. By contrast, an auction that recovered somewhat less spectrum, but where the Federal government kept much more of the revenue, would potentially produce far more revenue for the government. As a result, the FCC must strike a balance between providing real incentive to broadcasters to return some or all of their spectrum use rights – particularly in

constrained markets – while not proving so generous that the government fails to meet its revenue goals.

This means that, invariably, some stakeholders will not get the rules they want. Furthermore, because the interest of the federal government is somewhat at odds with the interest of both wireless carriers (who would prefer to acquire licenses as cheaply as possible) and broadcasters (who would prefer to sell for the highest value possible), any so-called "industry consensus" requires very careful examination.

Finally, even where consensus on major issues emerges, the details matter – more than usual. To say there is a "consensus" for a particular approach can be misleading if the consensus runs one-molecule deep and then splinters into different positions.

Unjustified and Counter-Productive Browbeating

In May, the FCC's Wireless Bureau released a fairly routine Public Notice on alternatives to the incentive auction band plan. The Public Notice acknowledged up front that nearly all wireless carriers and broadcasters had opposed the initial "down from 51/down from 37" proposal in the Notice of Proposed Rulemaking (NPRM). The public notice therefore sought to explore possible variations in a pure "down from 51" either proposed in the record or suggested by staff based on the record and the public band plan workshop.

This form of public sorting out of the technical details of a first-of-its-kind auction proceeding is to be expected by the expert agency for spectrum management. It was a

transparent way of reacting to previous concerns about plans that had been raised by commenters in the record and at a band plan workshop a few weeks prior.

The reaction by some to this routine Public Notice was disappointing and unproductive, especially in such a challenging proceeding. Several mobile companies criticized FCC staff for not favoring the plan that they preferred. Oddly, Commissioner Pai issued his own statement blasting the Wireless Bureau for not recognizing what he believed to be the consensus band plan, even claiming that staff had exceeded their authority. However, the record will show that many consumer groups, competitive mobile companies, and tech companies have shown that the perspective of large incumbent mobile providers are not the only view to be considered.

It is one thing to disagree on substance, but it is another to browbeat staff for conducting an open and transparent process. An incentive auction designed by large incumbent mobile companies alone would be a disaster. Consumers and other stakeholders rely on an independent FCC staff to conduct transparent processes. Public political pressure by Commissioners and others, based on FCC staff efforts to simply do the job the American people expect of them, only serves to intimidate future efforts to include all opinions in the proceeding and could potentially harm the creation of balanced rules for the incentive auction that serves all the goals of the statute.

Recently, some stakeholders (including some that complained about release of the May Public Notice) have complained that staff should release further details with regard to auction details such as repacking methodology and auction rules. It is simply not fair to berate FCC staff

for having the temerity to release a Public Notice, to go so far as to accuse the staff of exceeding their delegated authority by issuing the Public Notice, then ask, "Why aren't you issuing more public notices." That this Committee has recently considered a bill to further constrain the ability of staff to act on delegated authority likewise sends a clear message to staff that the safest course is to do nothing.

Browbeating of staff over process, in a rather obvious effort to try to drive how staff considers substance, does a disservice to the hardworking staff at the Commission and undermines any hope of developing the incentive auction rules in an open and transparent way. If we want to see more Public Notices that help develop the record and focus stakeholders on the remaining critical issue, parties cannot respond to transparency with hostility.

Balanced Goals

Returning to substance over process, we must likewise remain focused on the statute as written. Since the Middle Class Tax Relief Act was passed, many folks have worked to reframe the goals of the law. The statute however is clear and provides for a variety of goals and outcomes that, if implemented well, should all be attainable.

As an initial matter, the Middle Class Tax Relief Act preserved existing FCC authority both generally, and specifically with regard to implementation of the TV "white spaces" service, unless explicitly altered by statute.[1] The statute did nothing to alter the overall goals of the FCC's auction authority to promote the public interest by adopting rules that encourage

[1] §6403(i)

innovation[2] and that "avoid[] excessive concentration of licenses."[3] Congress also retained the prohibition on consideration of auction revenue as a public interest benefit.[4]

Congress did make several specific alterations with regard to both unlicensed operation in spectrum recovered from broadcasters and with regard to limits on participation in the incentive auction. These explicit provisions provide the outlines of the balanced path the FCC must follow to actualize the goals Congress included in the Middle Class Tax Relief Act provisions on spectrum.

Nurturing Continued Innovation In Unlicensed

As members of Congress and FCC Commissioners across the political spectrum have repeatedly stated, unlicensed spectrum remains one of our great spectrum innovations. The United States became the first country in the world to authorize flexible access to spectrum through a simple certification mechanism that dramatically lowered barriers to entry and innovation. Simply try to imagine a world today without such everyday devices such as garage door openers or free Wi-Fi in public buildings, from coffee shops to the halls of Congress. Bluetooth technology which operates over unlicensed spectrum has made phone conversations in cars safer with hands free technology, and the automobile industry is already testing the use of unlicensed spectrum to move the idea of auto piloted cars from science fiction to reality.

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[2] 47 U.S.C. §309(j)(3)(A).
[3] 47 U.S.C. §309(j)(3)(B).
[4] 47 U.S.C. §309(j)(7)(B). By implication, Congress clearly intended that the combination of revenue from the incentive auction and the additional auctions required by Section 6401, but there is a considerable difference between an expectation expressed in the statute that a combination of spectrum auctions would raise $7 billion to cover FirstNet's construction costs and a command to maximize auction revenue for the incentive auction in direct violation of 47 U.S.C. §309(j)(7)(B).

In particular, authorization to use TV white spaces (TVWS) under Republican FCC Chairman Kevin Martin, and subsequent modifications under Democratic Chairman Julius Genachowski, have opened the door to a dramatic advances in hared spectrum technology. Just this month, West Virginia University announced that it would utilize TVWS to provide wireless broadband for its entire campus and surrounding neighborhoods, including free Wi-Fi on public transit. In Cape Town, South Africa Google is piloting wireless broadband connectivity using TVWS to rural areas, while Microsoft has a separate pilot project in Kenya. With the large reserve of TVWS in rural areas of the U.S., many communities will look to TVWS networks as a possible solution to the economic challenge of rural broadband deployment. It is too early to know if this will succeed, but initial projects on college campuses through Air U. and in small cities like Wilmington, NC will help answer these questions over the coming years.

Congress knew that the incentive auction could either enhance the efficiency of TVWS and encourage new investment, or wipe out this promising new technology altogether. Congress opted for the first course, instructing the FCC to structure the incentive auction in a way that compensated for the loss of spectrum in some markets by creating the potential for meaningful use in all markets through unlicensed in the 600 MHz guard bands.

The final version of the Act rejected both the initial House approach of restricting TVWS use solely to the surviving broadcast bands, and the Senate approach of authorizing a direct allocation for exclusive unlicensed use if the FCC recovered more than 84 MHz of spectrum from broadcasters. The compromise version explicitly preserved the use of the remaining

broadcast service for TVWS, while permitting the FCC to authorize unlicensed use in the 600 MHz guard bands.[5] At the same time, the use of unlicensed spectrum should not undermine licensed use of the 600 MHz band either by causing harmful interference[6] or by inflating the guard bands beyond what is "technically reasonable."[7]

This compromise illustrates the necessary balance the Commission should adopt. Congress clearly intended to foster the further development of unlicensed technology and TVWS in particular. The FCC may consider how to facilitate this development through the use of guard bands, and may certainly take the impact of its decisions on the development of the TVWS into account. At the same time, consideration for unlicensed use alone cannot drive the Commission's decision making.

In short, according to the Middle Class Tax Relief Act, unlicensed remains an important part of the wireless ecosystem. But it is only one part. The size of guard bands can – and should -- reflect, among other things, a desire to ensure sufficient national access to unlicensed spectrum to encourage investment and deployment in urban markets as well as rural markets. At the same time, concerns over unlicensed use cannot so dominate the Commission's thinking that they actively undermine the viability of licensed services.

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[5] *See* §§6403(i); 6407.
[6] §6407(e).
[7] §6407(b). By adopting this language, Congress explicitly rejected the alternative – and more restrictive – language that guard bands be no bigger than 'technically necessary.' The word 'reasonable' denotes discretion (albeit bounded discretion), especially when combined with the Commission's responsibility (unaltered by the statute) to encourage innovation and flexibility. *See,* 47 U.S.C. §§303(g); 309(j)(3)(A).

It is in this context that I am particularly pleased to see recent statements by Commissioner Pai that the Act clearly authorizes use of unlicensed in the guard bands, and that we should focus on how to do so without causing harmful interference to licensed services. The best way to focus on this question would be for staff to hold a workshop and issue a Public Notice specifically on this question.[8]

Until details can be filled in, Public Knowledge continues to support calls from a broad range of stakeholders such as Comcast, Broadcom, The Wireless ISP Association (WISPA), and Google -- along with public interest organizations such as Free Press, Consumer Federation of America, and the New America Foundation – to create a 20 MHz contiguous block of spectrum for unlicensed in the "duplex gap" between the uplink and downlink paired spectrum. Based on previous experience with duplex gaps, and in light of the propagation characteristics of the 600 MHz spectrum, this size would represent the optimum trade-off for licensed services to build inexpensive handsets that minimize internal filters and potential self-interference while providing adequate spectrum on a national basis for broadband in both urban and rural settings.

Critically, the 20 MHz duplex gap is not the only way to provide adequate unlicensed spectrum to meet urban and rural needs. This is why a further public notice is imperative.

The Myth of "Inflated" Guard bands

Opponents of unlicensed use have repeatedly stated that the law prohibits the use of unlicensed in the guard bands. Some have even gone so far as to argue that the law prohibits

[8] Staff previously committed to holding a workshop on this issue at the band plan workshop on May 3, 2013.

guard bands entirely, or requires the FCC to confine them to some arbitrary minimum. As noted above, this ludicrous claim violates the plain language of the statute, which not only explicitly preserves FCC authority to create band plans with guard bands but which rejected the more restrictive "technically necessary" for the more flexible "technically reasonable."

The alternative argument of opponents of unlicensed use is the effort to create a false choice between guard bands and auction revenue. This ignores that well managed guard bands enhance the value of licensed portions of the spectrum by lowering the cost of equipment design. Similarly, the increasing synergistic use between licensed and unlicensed spectrum, notably in the development of "Wi-Fi offload" and "carrier grade Wi-Fi," show how permitting Wi-Fi in the guard bands would actually enhance value and thus ***increase*** auction revenue.

To illustrate this point, consider the following analogy. The development firm of Henry and Anna decide to develop some prime real estate for residential use. They build houses with lawns and driveways so that people can invite guests and hold parties while protecting the neighbors from each other's noise. They leave some open common space for playgrounds and to enhance the feeling of community. They use some land for green space to set the houses back from the main road. They end up building 20 houses.

Fred and Greg, rival developers who hold a similar plot of land, can't believe how much money they think Henry and Anna are leaving on the table with all this "wasted" space. They build townhouses jammed up as close to each other as possible, with the bare minimum number of parking spaces. By leaving no common space or open area, they cram in 30 houses.

But a funny thing happens. Henry and Anna can sell their houses for $500,000 a house, because they have all this space and it makes a very nice community. Fred and Greg can only get $150,000 for their houses, because no one wants to pay as much for houses jammed on top of each other, with everyone hearing their neighbor's business, no place for friends or relatives to park when they visit, and houses flush against the street.

At the end of the day, Henry and Anna make $10,000,000, while Fred and Greg make only $4,500,000. Despite all the wasted "green space," Henry and Anna end up making $5,500,000 more than Fred and Greg.

The same logic holds true with guard bands. Maximizing the number of MHz auctioned by having licenses piled one on top of the next with no guard bands does not mean more revenue from the auction any more than maximizing the number of houses in a development automatically means more money for the developer.

Competition: Spectrum Aggregation/Band Plan

Perhaps the most important goal to consumers in the construction of a balanced incentive auction implementation is the assurance that the rules will promote competition in the mobile broadband industry. Following the dominance of the 700 MHz Auction in 2008 by AT&T and Verizon, it became conventional wisdom that the overwhelming advantage of AT&T and Verizon in low-band spectrum meant a long, slow slide to duopoly. Only aggressive action by the Commission in 2011 and 2012 – adoption of data roaming rules, blocking AT&T's effort to

acquire T-Mobile, and pressure on Verizon to divest spectrum to T-Mobile as part of the Spectrum Co. Review – created any expectation that competition remained viable.

The benefits of competition have become increasingly visible since the FCC and the Department of Justice Antitrust Division (DoJ) took steps to ensure that the market would contain at least 4 national firms. Billions of dollars of new investment flowed into the market as both T-Mobile and Sprint attracted new interest. AT&T began a process of "refarming" it's 2G spectrum for 4G use and, spurred by competitive pressure, has moved rapidly to deploy LTE nationally. A revitalized T-Mobile has offered the first innovation in handset upgrades in years, forcing AT&T and Verizon to respond.

It is no coincidence that this dynamic market action follows regulatory action to promote competition, whereas the market remained virtually moribund from 2008-2012 when competition appeared dead. Only competition forces companies to invest in network improvements and pass along efficiencies of scale to customers, rather than pass along the surplus to shareholders. By contrast, when competition declines, the surviving dominant firms can afford to decrease capital expenditures on network improvements because frustrated customers have nowhere else to go.

AT&T and Verizon continue to enjoy dominance in part because of their superior holding of spectrum below 1 GHZ, aka "low band spectrum." These companies acquired this advantage in substantial part from free low band licenses distributed to the incumbent local exchange carriers (ILECs) before the Commission began to auction spectrum in 1993. To pretend that this

market distorting regulatory largess constitutes a free market triumph that regulators should respect is therefore quite disingenuous.

Likewise, the claim that AT&T and Verizon need additional spectrum because of their large customer base profoundly misstates the facts. To the contrary, as noted above, it is competition that forces companies to become efficient and pass those efficiencies on to their customers. As both the Department of Justice and the FCC transaction team found in the AT&T/T-Mobile transaction, AT&T in particular has used spectrum acquisitions to support a profoundly ***inefficient*** network architecture. Indeed, the fact that Verizon supports more customers with less spectrum demonstrates that the problem for AT&T is not a spectrum shortage to meet demand, but a refusal to reengineer its network to provide more efficient coverage.

The DoJ has emphasized the importance of getting low band spectrum into the hands of competitors. Because the incentive auction represents the last chance to put valuable low band spectrum in the hands of competitors, the FCC should adopt rules of general applicability – as permitted by the Middle Class Tax Relief Act of 2012 – to prevent AT&T and Verizon from capturing the lion's share of the licenses.

The "No Piggies" Rule

The FCC can achieve this competitive goal in two ways. First, it can adopt a total limit on the amount of spectrum, particularly low band spectrum, a single company can hold. The Commission had such a hard "spectrum cap" until 2003. Not coincidentally, elimination of the

spectrum cap initiated a period of steady consolidation and a dramatic decline in competition to the detriment of consumers.

Alternatively, the Commission could adopt an auction specific rule that would prohibit any one company from capturing too many licenses in the 600 MHz auction. This "No Piggies" rule would permit AT&T and Verizon to participate, while leaving significant spectrum on the table to attract many smaller bidders.

No Piggies Means More Auction Revenue

Auction experts will tell you that maximizing revenue requires two things. First, lots of bidders need to show up. Second, they cannot collude to divide the licenses among each other.[9] To achieve step one requires creating a set of rules that encourages as many bidders as possible that they can actually win enough licenses they need to make showing up worth the expense of playing. Participating in an auction costs a great deal of money. Companies go to capital markets to arrange for both the large "up fronts" needed to participate and to be able to pay for the licenses if they win. The companies set up huge "war rooms" with auction experts to track and advise them. Failing to win licenses, not only means the vast expenditure of money and resources is wasted. Publicly traded firms will lose significant stock value if they fail to win licenses deemed critical to their future growth, or if investors believe that they significantly overpaid in order to win the spectrum from Verizon and AT&T.

[9] *See, e.g.,* Paul Klemperer, "Using and Abusing Economic Theory," Journal of the European Economic Association, 2003, 1, 272–300.

Unless a firm believes it has some chance of success in the auction that will justify the cost and the potential risk of market backlash for a failed auction attempt, it will do better to sit on the sidelines.

Without the No Piggies Rule, there is every reason to believe that AT&T and Verizon will repeat their success from the 2008 700 MHz auction. No matter how much T-Mobile or Sprint (or other competitors) may need the spectrum in absolute terms, it is not worth the expens and risk of entering the auction if they cannot win.

A simple analogy illustrates the problem. My neighborhood association sponsors a basketball tournament with a $10 entry fee and a $500 prize. Should I enter? Well, if we pretend I am a decent amateur player, then it would make sense. The entry fee is relatively small, and even if I am not the best basketball player in the neighborhood, I am close enough to my neighbors that I believe I have a chance to win.

Now pretend that instead of playing my neighbors, I have the option to participate in a basketball tournament against the 1985-86 World Champion Boston Celtics. The entry fee is $50,000, but the prize is $10 million! This is a much higher potential return on my investment than the previous example, albeit for a much higher upfront cost and with a much reduced (*i.e.*, non-existent) chance of winning. Should I enter?

Unless I'm in the market for a divorce, the obvious answer is no. This bet makes absolutely no sense despite the potential return on investment. I would need to mortgage my

house and go into crippling debt simply to enter the competition, fully aware I would have no chance of winning against Larry Bird today, never mind when he was at the peak of his career.

Similarly, in the absence of a No Piggies Rule, it makes no sense for T-Mobile or Sprint to spend millions of dollars to enter the spectrum auction because they have virtually no chance of winning enough licenses to justify participation. Sadly, spectrum auctions are not Disney movies. Failure is always a (very painful) option, and the need to win does not make winning any more likely than not really needing to win. The fact that Sprint, T-Mobile and other competitors really need the spectrum does not, oddly enough, make it any more likely they will win or make it cheaper for these companies to get the necessary capital. To the contrary, the fact that they need the spectrum to remain competitive but are unlikely to win it drives up the cost of capital and increases the backlash when they lose.

Even without a No Piggies Rule to encourage smaller players to participate, the number of potential bidders has dropped significantly since the 700 MHz auction in 2008. Alltel and MetroPCS no longer exist. Leap may not exist by the time the auction takes place.

Opponents of the No Piggies Rule like to paint a stark picture of the auction failing if AT&T and Verizon do not participate. But an auction limited to AT&T and Verizon is equally likely to fail. The FCC must bring all potential bidders to the table, something only a No Piggies Rule can hope to accomplish.

Band Plan, Bidding Rules and Other Factors

Numerous other factors impact the likely success of the auction. With regard to bidding rules and other factors such as repacking, we lack a good sense of the FCC's current thinking. These matters will, hopefully, becomes the subject of future public notices to further develop the record.

With regard to the band plan, the one thing agreed upon by nearly all competitors agree upon is that the band plan should optimize paired spectrum. Inclusion of supplemental downlink (SDL) spectrum below Channel 37 appears more likely to increase competition problems in light of the difficulties in integrating spectrum below Channel 37 with other low band spectrum below 1 GHz. Furthermore, based on the current experience with 700 MHz A & 700 MHz B block spectrum, it seems unlikely that manufacturers will develop equipment for supplemental downlink unless AT&T and/or Verizon capture significant SDL licenses.

Market Variability

Finally, the Wireless Bureau's May Band Plan Public Notice raised the question of "market variability." This would give the FCC flexibility to recover more spectrum in some markets than in others. Market variability potentially resolves the problem of holdouts in the most constrained markets. Without such flexibility, the FCC is limited in every market to the spectrum available in the most constrained market. This could essentially starve the auction for spectrum.

At the same time, too much variability creates significant problems. It is highly unlikely that equipment will be developed for a the markets where large amounts of spectrum can be

recovered given that the largest markets are most likely to be constrained. Commenters have also noted significant interference potential if there is too much variability in the band plan caused by market variation.

To balance these concerns, the Commission needs a *uniform core* with *flexible edges*. The Commission should establish a clear limit on the potential variation from the uniform core set by the most constrained market. This would reduce the value of holding out in the most constrained markets, without introducing so much uncertainty in the band plan as to undermine the ability of potential bidders to adequately assess the value of the licenses.

Thank you to the members of the subcommittees for your time and I look forward to the opportunity answer your questions.