

UNITED STATES DEPARTMENT OF COMMERCE

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COMMERCE SPECTRUM MANAGEMENT

ADVISORY COMMITTEE (CSMAC)

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MEETING

+ + + + +

THURSDAY

JANUARY 17, 2013

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The committee met in Room 4830,  
1401 Constitution Avenue, NW, Washington,  
D.C., at 10:00 a.m., Brian Fontes and Gregory  
Rosston, Co-Chairs, presiding.

PRESENT:

BRIAN FONTES, CO-CHAIR

GREGORY ROSSTON, CO-CHAIR\*

LARRY ALDER

DAVID BORTH\*

MICHAEL CALABRESE

MARTIN COOPER

THOMAS DOMBROWSKY, JR.

DAVID DONOVAN

MARGARET FELDMAN\*

HAROLD FURCHTGOTT-ROTH

MARK GIBSON

DALE HATFIELD\*

KEVIN KAHN

DOUG MCGINNIS\*

MARK MCHENRY

JANICE OBUCHOWSKI

ROBERT PEPPER

PRESENT (CONTINUED):

CARL POVELITES

RICHARD REASER, JR.

DENNIS ROBERSON

CHARLES RUSH

DANIEL STANCIL

THOMAS SUGRUE

BRYAN TRAMONT

JENNIFER WARREN

ALSO PRESENT:

BRUCE WASHINGTON, Designated Federal  
Official

KARL NEBBIA, Associate Administrator, Office  
of Spectrum Management

TOM POWERS, OSTP

LAWRENCE STRICKLING, Assistant Secretary,

NTIA

\*Present via telephone

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P-R-O-C-E-E-D-I-N-G-S

(10:00 a.m.)

CO-CHAIR FONTES: Good morning, everyone, we're ready to begin our meeting. Before we begin I'd like to just see who is on the conference bridge. If you can identify yourselves so we know who's here, members only.

MR. HATFIELD: This is Dale Hatfield.

MR. BORTH: Dave Borth.

MR. MCGINNIS: Doug McGinnis.

MR. COOPER: Martin, Working Group 3.

CO-CHAIR FONTES: Is Greg Rosston on the call?

He will be joining.

CO-CHAIR ROSSTON: This is Greg Rosston.

CO-CHAIR FONTES: Hey, Greg, how are you doing? Very good.

CO-CHAIR ROSSTON: Great.

1 CO-CHAIR FONTES: Thank you for  
2 joining the call.

3 CO-CHAIR ROSSTON: Yes, I got a  
4 laugh already, that's good.

5 CO-CHAIR FONTES: No, we were  
6 doing the roll call and Larry had asked where  
7 you were, and I said you're probably in your  
8 second or third meeting already this morning  
9 on the West Coast, and then you came on.

10 CO-CHAIR ROSSTON: Exactly.

11 CO-CHAIR FONTES: So it worked out  
12 well. So Greg and I are co-chairing this via  
13 conference and in live, in person here.  
14 Before we begin, I'd like to turn it over,  
15 before we get into the substance of the  
16 meeting, I'd like to turn it over to Larry for  
17 any comments.

18 MR. STRICKLING: So I'm not  
19 substance, that's what you're saying?

20 (Laughter.)

21 MR. STRICKLING: I might need to  
22 change my opening remarks. What I was going

1 to say was, no. I have a couple of comments  
2 to make. But first I just wanted to again say  
3 how much we are looking forward to this  
4 meeting.

5 And we've got a number of meetings  
6 already scheduled here for the spring as all  
7 of the terrific work effort that's been  
8 underway, teaming industry with the agencies  
9 to solve these issues in the 1695 and the 1755  
10 band are worked through.

11 I'm very pleased with the progress  
12 we're making, I know that people have run into  
13 a couple of speed bumps along the way, but I  
14 think we're most importantly, we're attacking  
15 those issues, we're working our way through  
16 them, and I'm confident that with your  
17 continued deliberation and concentration and  
18 commitment to this effort we are going to have  
19 some good results at the end of the process.

20 One announcement, people may  
21 remember that the CSMAC is chartered for a two  
22 year period. Our charter actually comes up

1 for renewal this spring. Traditionally when  
2 we recharter, we also go out with a request  
3 for new members.

4 We are going to recharter the  
5 group, but what we are planning to do, given  
6 the fact that everybody is so deeply engaged  
7 in the current work effort, is to invite all  
8 current members to stay on for another year,  
9 we'll just extend everybody's term. It's not  
10 involuntary service, anybody who wants out can  
11 get out, but you will have to come talk to me  
12 personally to do that.

13 Most importantly though, I'm  
14 extremely pleased to announce that both Brian  
15 Fontes and Greg Rosston have agreed to  
16 continue on as the co-chairs of the group for  
17 the next year, and so I want to thank both of  
18 them. And I think we all appreciate the  
19 leadership that the two of you have brought to  
20 this very intense effort here over the last  
21 two year period.

22 I also have one other thing I'd

1       like to mention, now that Marty has made it  
2       here. I think probably everyone already knows  
3       that Marty has been selected by the National  
4       Academy of Engineering to receive the, what's  
5       it called? The Draper Award at their dinner  
6       in February.

7                       I understand this comes with a  
8       nice chunk of change, Marty, so look forward  
9       to seeing how you decide to spend all that  
10      money. But most importantly I think it's a  
11      terrific recognition for the contributions you  
12      have made in this business for many, many  
13      years.

14                      And I think on behalf of CSMAC I'd  
15      certainly like to pass along our high regard  
16      and congratulations to you for winning this  
17      very prestigious award, so congratulations.  
18      And with that, Brian, I'll turn it back to  
19      you.

20                      CO-CHAIR FONTES: Great. Greg, do  
21      you have any opening comments that are not  
22      sensitive? Greg, do you have any comments?

1 CO-CHAIR ROSSTON: No, I'm just  
2 glad that the video is one way and I can see  
3 your nice, pretty red tie but you can't see  
4 me.

5 CO-CHAIR FONTES: It's orange.  
6 (Laughter.)

7 CO-CHAIR FONTES: I just have a  
8 couple of comments to make and then we can go  
9 into the agenda today. First off, again I  
10 want to thank everybody for the work that you  
11 are doing. What we are doing I think is an  
12 incredible step forward.

13 The need for commercial interests  
14 to have additional spectrum and looking at  
15 sharing as a possibility, obviously the need  
16 for government to have its spectrum and to  
17 ensure the services of government function as  
18 they should with their utilization of spectrum  
19 is critically important to all of us and we  
20 recognize that. So we all have the common  
21 understanding of the value and importance of  
22 spectrum in what it is that we do from

1       wherever we sit.

2                   I think the challenges that you  
3       are addressing, that I think will make  
4       substantial contributions as we move forward  
5       is not only to take a look at the mechanics of  
6       the technical aspects of sharing, but also how  
7       we gain access to that information that will  
8       allow us to move forward effectively and  
9       efficiently in creating a sharing environment  
10      that's productive for all parties.  So I want  
11      to thank you for the work that you are doing.

12                   Just on a mechanics of the  
13      meeting, today at a little before noon I will  
14      have to leave.  Greg will pick up as chair  
15      from the phone and Bruce, if the phone call  
16      drops, et cetera, by the processes that we  
17      have here will step in.

18                   So I just wanted to announce that  
19      at the beginning.  I just, unfortunately there  
20      was a change in schedules for this afternoon.  
21      So with that, we'd like to move on to the  
22      agenda.  Karl, before I do that, do you have

1 any comments to begin with?

2 MR. NEBBIA: Not other than to  
3 thank everybody for all the work that you've  
4 done, so I know there's been a lot of time  
5 taken and the effort, and there's been a lot  
6 of at times challenging back and forth between  
7 government and industry.

8 And we greatly appreciate the fact  
9 that you have accepted the role of being in  
10 between. And so we thank you for that. Just  
11 want to tell you to keep your head down.

12 CO-CHAIR FONTES: Great. The next  
13 item in our agenda is old business. And this  
14 is the Interference and Dynamic Access  
15 Subcommittee replying to NTIA, Dave, you want  
16 to go into this?

17 MR. DONOVAN: I'll be very quick.  
18 this was in response to questions posed by  
19 NTIA I believe in July of 2012. At our last  
20 meeting in October a draft of our responses  
21 was presented to CSMAC and was essentially put  
22 out for folks to edit. We notified folks on

1 January 3rd, just to give a little jog on that  
2 incident, we had, edits were proposed by  
3 several people. Those edits have been  
4 included.

5 It's a long document, there were a  
6 lot of questions that were asked. Bottom line  
7 is the recommendations, most of the  
8 recommendations that were initially there,  
9 there have been no changes. I think perhaps  
10 the best, the most dramatic and really the  
11 best change was by Mark McHenry in terms of  
12 providing greater explanation, so I do want to  
13 thank you, Mark, that really was terrific.

14 We did make some other changes,  
15 there was some references to the PCAST report  
16 that we moved around and changed. I think the  
17 other thing deals with the enforcement issue  
18 in terms of the temporary restraint of  
19 interference, which was our TRO policy,  
20 Janice, I think that you had worked on.

21 The original answer to the  
22 questions was rather prescriptive, and I think

1 we toned that down and brought that back a  
2 little bit to make it a little bit less  
3 prescriptive, because you never know what  
4 situations you're going to face. But some  
5 basic elements and thoughts as to how one  
6 would go about that are there.

7 And I know we have other new  
8 business that's frankly, where the rubber  
9 meets the road more significant. I want to  
10 thank all of you and Mr. Chairman, with a push  
11 for approval, subject to minor editorial  
12 edits. That's about it.

13 CO-CHAIR FONTES: Karl?

14 MR. NEBBIA: Yes, I just, I think  
15 there was a lot of work that went into this  
16 and it is significant. So I appreciated the  
17 fact that you all put together responses to  
18 our comments, they were updated. I have taken  
19 time to look at them.

20 And I wanted to make a few  
21 comments, maybe draw attention to a few points  
22 along the way, and it's not to change the

1 recommendation, and I think at this point  
2 we're looking, this item becomes a closed out  
3 item.

4 But I wanted to mention a few  
5 areas, first of all related to the costs  
6 associated with recommendations, and certainly  
7 that one of the big challenges with the  
8 recommendations is that a good number of them  
9 recommend that NTIA seek additional resources,  
10 in some cases to perform a wide variety of  
11 activities such as more monitoring, more  
12 testing, NTIA actually doing research and  
13 development.

14 In some cases the tasks appear to  
15 be fairly expansive in terms of setting up  
16 maybe a new spectrum management architecture,  
17 much more reliant on connectivity, database  
18 interaction, these sorts of things. And of  
19 course, part of our reality here is we do live  
20 within a time of budget challenges, that we  
21 would expect will continue.

22 So I think we certainly read those

1 recommendations as recommendations, as ways to  
2 improve the processes, provide positive input,  
3 without necessarily declaring the sense that  
4 unless you do this, you know, the world kind  
5 of comes to an end.

6 So we see these as positive  
7 recommendations, not necessarily making a  
8 declaration that unless additional resources  
9 are reached, that we're going to have huge,  
10 huge issues.

11 Nonetheless, we will review each  
12 of those recommendations carefully and see how  
13 we can, you know, where we can move those  
14 things forward. It's important to recognize  
15 as we look at budget issues or proposals for  
16 the future, that each of those budget  
17 proposals gets costed, it gets scored in the  
18 budget process, and ultimately the scoring of  
19 the cost, which in this case we can take what  
20 the specific task is, we can come up with a  
21 projected cost of it, have to be compared  
22 against the benefits that are achieved.

1                   And in this case, many of the  
2 benefits of course, are not as clearly  
3 identified, they relate to possible  
4 improvements in spectrum access and so on,  
5 without necessarily being able to quantify it.

6                   So that I think is one of the big  
7 challenges we get into in putting forward, you  
8 know, proposals along that line. The costs  
9 are very concrete, the benefits are not quite  
10 so obvious or maybe scorable, so just to  
11 recognize that.

12                   There's a second component of  
13 this, with respect to the costs, that while  
14 some of the proposals recommend changes for  
15 NTIA to make in terms of federal spectrum  
16 management, some of them actually have cross  
17 agency implications, so they're not items that  
18 NTIA can strictly put in a budget proposal and  
19 say we would like to do this, because it  
20 implicates all the agencies having to, for  
21 instance, if we're going to create a new  
22 architecture where all the federal systems are

1       somehow tethered and reporting, that impacts  
2       all those agencies and they would have to have  
3       similar budget proposals linked to that.

4               The last thing related to the  
5       costs is that there's an indication in the  
6       text about considering the possibly that the  
7       Middle Class Tax Relief Act, resulting funding  
8       under CSEA could be applied in this direction.

9               And it's at least my understanding  
10       from our discussions with the OMB folks that  
11       the law is clear, that the costs that get  
12       covered, whether for relocation or for sharing  
13       are costs that are linked to the actual  
14       submission of transition plans. So that is  
15       where the costs are, in fact, provided.

16               So the challenge there becomes, to  
17       account for a cost there has to be a  
18       transition plan involved. And that is at a  
19       point where determinations have been made  
20       regarding auctions or regarding sharing and so  
21       on or reallocation, so that it makes it  
22       difficult to account for some of the types of

1 costs you're dealing with here in terms of  
2 research and development and so on, which  
3 appear to be costs that have to be very much  
4 up-front in the decision process, not at the  
5 point you're ready to set up an auction.

6 So those challenges are certainly  
7 part of what we're going to face in moving  
8 forward any that have to do with budget  
9 increases.

10 CO-CHAIR FONTES: Okay, Dave?

11 MR. DONOVAN: Karl, thank you.

12 And I understand exactly what you're saying,  
13 I mean this document was drafted originally  
14 in, I believe, 2010 so it starts off at sort  
15 of the 50,000 foot level, articulating some of  
16 the basic things that we need moving forward.

17 And while I certainly understand  
18 sort of the idea that doing wide ranging  
19 research costs a lot of money, I agree, I  
20 don't think this should be divorced for the  
21 specific issues that we have in front of us,  
22 whether it's 1755 or what have you.

1                   But I think what it does is that  
2                   as we go forward with specific bands, some of  
3                   the basic research or some of the work with  
4                   respect to dynamic spectrum access, with  
5                   respect to databases, some of that really has  
6                   to be done, now we will do it within the  
7                   context of the specific issues that we're  
8                   examining. So we're in --

9                   CO-CHAIR FONTES: David, I just  
10                  want to check, I just want to make sure  
11                  everybody's still on the call, that we didn't  
12                  lose connectivity.

13                  CO-CHAIR ROSSTON: We're good.

14                  CO-CHAIR FONTES: All right, thank  
15                  you.

16                  MR. DONOVAN: So I think, Karl,  
17                  we're in agreement?

18                  MR. NEBBIA: We are.

19                  MR. DONOVAN: Okay. But I think  
20                  that the analysis that's here in terms of  
21                  doing research on DSA or making sure we get  
22                  databases going, I think certainly can serve

1 as a guidepost as you deal with specifics.  
2 And so I think that's what, I think looking at  
3 that.

4 And that should handle also the  
5 middle class tax relief question, which is as  
6 you're using this as a guideline for  
7 addressing specific spectrum issues as we move  
8 forward, I think that's a way to take a look  
9 at it and merge the two concepts together.

10 I would also, and I failed, I  
11 thanked Mark, but I also want to thank Karl  
12 and Brian as well, who contributed with edits  
13 to the document.

14 CO-CHAIR FONTES: Oh, Tom, I'm  
15 sorry.

16 MR. SUGRUE: I just want to  
17 address the cost recovery under the new  
18 legislation. It was certainly the intent to  
19 liberalize what can be recovered through those  
20 auction revenues on the very straightforward  
21 ground that some of that prep work planning  
22 analysis can yield great benefits to the

1 government in terms of auction revenues.

2 And the ruling from OMB, or the  
3 interpretation like a lot of their  
4 interpretations frankly, I think unduly  
5 restrictive in that regard. Now there's no  
6 process I know of, you know, to take an appeal  
7 to the Court of Appeals, but although tempting  
8 as it may be, but there is going to be an  
9 effort in the Congress to sort of look at some  
10 spectrum issues again, and maybe do some fine  
11 tuning, nothing major I don't think? Perhaps  
12 the CSMAC could endorse getting some  
13 clarification around here, to put a little  
14 more wiggle in the joints.

15 Because I know that, I mean, when  
16 we talked with the people on the Hill the  
17 intent was to allow, you know, not unlimited,  
18 but not to have these narrow categories, you  
19 can't do this, you can't do that. I mean we  
20 were, you know, the first act OMB was saying,  
21 well it said replacement. So if you have a,  
22 you know, an '82, you know, Rambler, you've

1 got to replace it with another '82 Rambler,  
2 you know, is what it said.

3 And we said well no, it can't be  
4 interpreted that way in terms of systems, and  
5 I think we got that clarified, but the intent  
6 was certainly to allow money to be spent and  
7 to tap into those funds. You know, the  
8 auction produced billions of dollars and we're  
9 not talking about billions of dollars in this  
10 case.

11 MR. NEBBIA: Just to be clear,  
12 certainly in cases where there is a resulting  
13 reallocation and auction and so on, the costs  
14 associated with preparing for that, I think it  
15 clearly is not at issue.

16 I think that what is at issue is  
17 the question of whether you can do a lot of  
18 other generalized work on research and so on  
19 and some of the tasks that appeared to be  
20 possibly pulled under this is improvements to  
21 spectrum management under that thing. And I  
22 think that's where that issue came from.

1 MR. SUGRUE: I agree. It's not  
2 unlimited, it can't be, we just want a  
3 spectrum management in some unfocused fashion.  
4 But by improving the efficient use of the  
5 spectrum it presumably allows it to be, you  
6 get it shared more, you know, reallocated  
7 possibly more I mean, so there is a possible  
8 payoff. And it's sort of a chicken and the  
9 egg problem sometimes, you can't get to the  
10 point where you can do a specific transition,  
11 reallocation plan until you do the first part  
12 and you don't have the money to do the first  
13 part.

14 CO-CHAIR FONTES: Okay, Brian?

15 MR. TRAMONT: Would it lend  
16 clarity to the recommendations for David's  
17 purposes and for this draft if it said, you  
18 know, I think that there's language in there  
19 that says we seek, it recommends seeking  
20 advice from the General Counsel on whether or  
21 not the middle class tax cut act covers this,  
22 or if the conclusion is it doesn't support it,

1 then CSMAC endorses, you know, a change in the  
2 law to allow for this funding to come forward,  
3 or something along those lines.

4           That way, I mean I think we'd all  
5 be happy if it's covered by the current  
6 legislation. If it's not, I think the  
7 implication from the report is that we would  
8 endorse funding through some other mechanism.  
9 And so that might capture both and also, I  
10 know you'd be reluctant to have more money to  
11 Karl, but if that is our intent, I mean I  
12 think that the general notion, the  
13 recommendation is they're worth doing and we  
14 should find the funding to do it. So that's  
15 a friendly amendment I guess.

16           CO-CHAIR FONTES: Karl?

17           MR. NEBBIA: The next general area  
18 I wanted to raise, and we did set I think  
19 until 10:40 here, so I just wanted to get to  
20 some of the subjects that, as I could.

21           One of the other areas that's  
22 discussed in here is the issue about out of

1 band emissions and the regulation of out of  
2 band emissions. And one of the things that we  
3 tried to call attention to is the challenge  
4 that as we're doing planning, as we're making  
5 decisions, if there's not going to be anything  
6 said in the rules, other than the standard  $43$   
7  $10\log(P)$  as an out of band emissions  
8 specification, that's essentially what the  
9 people participating in the process are left  
10 to deal with.

11 Now we can suggest as the  
12 recommendations do in some places that well,  
13 we can actually work from the real life  
14 numbers that the companies can demonstrate for  
15 their equipment. The challenge becomes as we  
16 certainly encourage flexibility, we're trying  
17 not to be technology specific, the question  
18 always comes back up, well that's fine, we're  
19 getting informal promises about what one  
20 company or technology is able to do.

21 But it certainly doesn't protect  
22 us or guarantee us for the future that

1 somebody isn't going to go back to the 43  
2  $10\log(P)$ , which when we use that it generally  
3 shows there's going to be interference.

4 So there's a number of places in  
5 your recommendations that touch on this. One  
6 is on Page 6, Question 1.4. There's a couple  
7 others later on, on page 36 and Page 41, all  
8 touch on this. And I get the sense that the  
9 general approach you recommend is that we  
10 would in fact, use the real life equipment  
11 characteristics as much as possible.

12 So the question comes up, is that  
13 a position you would advocate in dealing with  
14 rules with the Commission, that we would in  
15 fact, set those numbers into the rules for the  
16 Commission to use?

17 CO-CHAIR FONTES: Richard?

18 MR. REASER: This is Rick. I've  
19 looked at this for awhile. I really think  
20 that we ought to get a group together and go  
21 redo the number. In fact, I talked to your  
22 guys about this and you can't even do fix

1 assignments using that number at NTIA, and you  
2 have to use other kinds of methods in order to  
3 do assignments on this in the federal side.

4           So why don't we just put together  
5 a group and go back, and reinvestigate this  
6 number, and come up with a new set of numbers  
7 and set a new standard, and get people working  
8 on that? Because I think that the current  
9 technical standard is it doesn't promote  
10 sharing at all. And if the idea is that we  
11 want to share the spectrum, then we need to  
12 come up with better sharing criteria and  
13 better kinds of definitions of out of band  
14 emissions.

15           And so I've kind of proposed that  
16 as something you want to lay on the CSMAC or  
17 some other special kind of working group,  
18 because I think this is going to represent a  
19 long term impediment toward efficient spectrum  
20 use, and it's something that we ought to take  
21 a look at. That number is quite old, and I  
22 don't think we need to be technology

1 dependent, but I think we can come up with a  
2 new standard that basically tightens up the  
3 out of band emissions requirements.

4 We've already done things like  
5 that in terms of just narrow banding of just  
6 LMRs and stuff like that. We just finished up  
7 that at my company and are ready to go with  
8 our 12.5. And, you know, we really probably  
9 should have taken the next step to go 6.25.  
10 So things do evolve over time in terms of the  
11 standard, but I think that's something that  
12 the NTIA and the Commission ought to take on,  
13 is to maybe redefine that.

14 MR. DONOVAN: You know, Karl, I  
15 think the basis for the recommendation was, is  
16 that  $43 \log(P)$  has sort of become that's it,  
17 and it's become a one size fits all. And I  
18 think the recommendation here was to recognize  
19 that that's not necessarily the case.

20 Now whether one adopts a new  
21 standard that's specific, technology specific,  
22 or we go through and adopt different rules, I

1 think the recommendation is that you're saying  
2 the one size fits all that we currently seem  
3 to have is that the time when this was  
4 drafted, really needs to be looked at again.

5 CO-CHAIR FONTES: This is just a  
6 reminder, this is Brian. When you speak to  
7 the mic, could you identify yourself so that  
8 folks on the call will know who you are?  
9 Thank you.

10 MR. NEBBIA: So --

11 CO-CHAIR FONTES: Karl.

12 MR. NEBBIA: -- I guess that  
13 really leads to the question, is it likely  
14 that somebody from the commercial community is  
15 going to propose to the Commission that you  
16 take that approach? Or are you asking us to  
17 apply that to the federal agencies and kind of  
18 go around the door and invite the Commission  
19 to take it on. At this point -- talking about  
20 it for a good number of years.

21 MR. DONOVAN: Well certainly in  
22 the context as we're going forward --

1 CO-CHAIR FONTES: Dave.

2 MR. DONOVAN: -- and looking at,  
3 Dave Donovan, and looking at spectrum sharing  
4 proposals, it seems to me that good spectrum  
5 management means you ought to take a look at  
6 it as you're going forward with federal share.

7 MR. REASER: This is Rick. I  
8 recommend that the government sort of lay that  
9 out as this sort of the steward and say  
10 listen, this is something we ought to take a  
11 look at, look for comments, get some, I mean  
12 a lot of people would prefer probably not to  
13 change it because it provides a lot of  
14 flexibility and guard bands for people.

15 But unfortunately I think that  
16 we're kind of beyond that. We kind of need to  
17 look at, you know, tightening things up so we  
18 can use the spectrum more efficiently and  
19 maybe move in that direction. So I would  
20 propose that the government, on the  
21 government's side as to the emission NTIA  
22 take, you know, lay that out there.

1 I don't think you're going to get  
2 people proposing. Change is tough as you  
3 know. And people that have existing systems  
4 and incumbents, they're not going to propose  
5 changes most likely.

6 MR. NEBBIA: Okay, this is Karl  
7 again. Before I go into my last topic area,  
8 I just want to note that certainly in every  
9 Commission rulemaking that comes up with  
10 putting out new limits, the people that have  
11 been operating under the 43 10log(P) forever  
12 always declare it's worked.

13 But then when you actually look at  
14 the devices they're using, they tend to meet  
15 a standard much, much better than that  
16 standard. And that the reality of them  
17 working is based on the fact that they're not  
18 actually living with that standard, they've  
19 tightened it up for themselves.

20 But we don't seem to be able to  
21 get past that in the concept of providing  
22 general rules for people. So in the end, we

1 end up justifying, well we've done this  
2 successfully under  $43 \log(P)$ , therefore it  
3 should be applied to everybody else the same  
4 way.

5 CO-CHAIR FONTES: Kevin?

6 DR. KAHN: Kevin Kahn. Yes but, I  
7 mean the problem you have here I think, is  
8 that you have to ask in who's interest is  
9 tightening the rules? And it's not in the  
10 interest of anyone who's already operating.  
11 I mean, you know, they're operating and they  
12 don't need it tight. It's in the interest of  
13 the national interest of improving efficiency.

14 So it seems to me that the only  
15 place that a movement to move to, you know,  
16 more efficiency oriented rules is going to  
17 come from is from the, kind of the public  
18 interest side of this which is the government,  
19 really. I mean, in some sense it's you guys  
20 in the FCC, trying to drive that back.

21 Because someone who's already  
22 operating has no particular insight to give

1 themselves a tighter requirement, even if they  
2 look at their equipment and say we need a much  
3 tighter requirement. I mean why would you,  
4 there's just no motivation for that.

5 So the only place this is going to  
6 come from ever is if it comes from you guys  
7 collectively in the process. So now I think  
8 that's what's being asked for is that, you  
9 know, we find a way to drive that efficiency  
10 from the one stakeholder in this process that  
11 actually is trying now to look out for how can  
12 we be more efficient.

13 CO-CHAIR FONTES: Thank you.  
14 Harold?

15 DR. FURCHTGOTT-ROTH: This is  
16 Harold Furchtgott-Roth. This is a little  
17 technical note.  $43 \cdot 10 \log(P)$  is not universal.  
18 2.5 band, for example, has a different out of  
19 band emission and the Commission does look at  
20 different noise levels in different parts of  
21 the rules.

22 CO-CHAIR FONTES: Karl, did you a

1       --

2                   MR. NEBBIA:  Yes, just kind of the  
3       last area I wanted to raise, there's a number  
4       of recommendations here that deal with issues  
5       related to interference reporting.

6                   And I guess, certainly while  
7       theoretically it's a critical issue, it  
8       certainly fits in to spectrum management  
9       concepts, I think we're not quite so clear on  
10      what the challenges the people see out there  
11      in terms of interference reporting.  If a  
12      federal agency receives interference, they  
13      report it through our process, it's relayed to  
14      the FCC who assists us in helping to hunt it  
15      down.

16                   On the other hand, if it comes  
17      from a complaint from the private sector, it  
18      doesn't matter what band it's in, whether  
19      it's, you know, we're getting it from a band  
20      where there's federal operations, they still  
21      go through the Commission, the Commission  
22      comes over and talks to us about working it

1 out.

2 So I think we have the authority  
3 to enforce rules with federal agency  
4 operations, I think we've got a process set up  
5 for taking those. And I'm not aware that it  
6 is a significant issue that we're facing.

7 Now we may put that in the context  
8 of, we've had some cases where there's  
9 interference into unlicensed type devices, and  
10 the reporting of interference into some  
11 unlicensed devices is to go to the local  
12 record or whatever, and not knowing that there  
13 is an FCC that could be contacted about it.

14 So, I mean that may be the nature  
15 of it. There was a component of this  
16 involving a shot clock for resolving  
17 interference. As far as I know, generally  
18 when we have these issues come up it's within  
19 a matter of days that the Commission is out  
20 chasing down interference to one of our  
21 people, so we're not quite aware of the idea.

22 But in the end, the real challenge

1 for us become resolving the interference,  
2 correcting it so that both users are capable  
3 of functioning, the government's getting  
4 protected and so on.

5 So the shot clock here appears to  
6 be designed around getting the thing in a  
7 system and getting some steps taken, when the  
8 real challenge for us in many cases is how do  
9 you resolve the interference? How do you fix  
10 the problem? And sometimes that means you're  
11 getting filters to put on people's equipment,  
12 it may mean moving some stuff, that becomes  
13 the real challenge.

14 So we're, you know, I'm not quite  
15 sure, you know, what we'll do in the end with  
16 the recommendations related to this concept  
17 because we haven't really seen it as, I guess  
18 such a critical problem.

19 CO-CHAIR FONTES: Jennifer?

20 MS. WARREN: Jennifer. Karl, just  
21 to follow up on that, are you suggesting that  
22 the shot clock concept would actually kind of

1 put in place a process that might draw out a  
2 process that's already working on its own  
3 rhythm that's fairly, you know, could be more  
4 rapid than a shot clock? Because I mean, I  
5 hate to disrupt something. I know I've been  
6 pinged very quickly when there's been  
7 interference issue by the FCC.

8 MR. NEBBIA: Well, I do think that  
9 it will require certainly additional  
10 management of the process to ensure that it  
11 falls within that, that let's say we haven't  
12 had the difficulty with. I think the  
13 Commission's been responsive to us.

14 For instance, at 5 Gigahertz,  
15 they've been responsive to us in identifying  
16 where the interference is. The challenge  
17 becomes the fixing of it so --

18 MS. WARREN: Right. Okay, thank  
19 you. That's a helpful point.

20 CO-CHAIR FONTES: Dave?

21 MR. DONOVAN: Yes, I think the  
22 idea in stepping back and looking at the shot

1 clock recommendation as well as the  
2 recommendation for temporarily resolving  
3 interference issues is, the level of sharing  
4 that we are now going to have between the  
5 federal systems and commercial systems is  
6 going to increase going forward and may very  
7 well increase exponentially.

8           Sitting here today, we do not know  
9 the level of either cooperation or  
10 interference that may get out there. But if  
11 you're sharing with a commercial entity, it is  
12 entirely possible that commercial entity's  
13 customers may be receiving interference be it  
14 from a federal system or vice versa.

15           And given the nature of  
16 interference, given the nature of the fact  
17 that a lot of folks don't know when they're  
18 receiving it, a lot of times it will get  
19 filed. And then people wait to try to sort it  
20 out, to look for a complete solution. And in  
21 fact, Karl, I think you've alluded to that.

22           And I think what the shot clock

1 really was designed to do or is designed to  
2 do, is to rather than slow down the process,  
3 it really is designed to expedite the process.  
4 And if you are in a situation where you were  
5 sharing, where either a federal system is  
6 being interfered with or vice versa, a  
7 commercial system is being interfered with  
8 from interference from a federal system, that  
9 shot clock would allow you to look at a  
10 number, and they may be temporary or just  
11 remedial steps to resolve the interference  
12 issue while you're looking for a more complete  
13 solution.

14 So it is a way simply as we're  
15 going forward, to literally just put a time  
16 line. I know, at least from my experience at  
17 the Commission, a lot of times you will have  
18 complaints filed and admittedly, they're  
19 amongst commercial entities where an  
20 interference complaint, the interference has  
21 existed for months, maybe years, finally a  
22 complaint is filed. And then you follow that

1 process and it takes a lot of time.

2 So again, I think conceptually the  
3 shot clock idea coupled with the temporary  
4 restraining interference concept, was a desire  
5 to look at an expedited way of resolving these  
6 things. Not necessarily on a permanent basis,  
7 but just to prevent harm from accruing during  
8 the interim.

9 HON. OBUCHOWSKI: Yes, Karl, I'd  
10 like to sort of echo that complaint.

11 CO-CHAIR FONTES: Janice?

12 HON. OBUCHOWSKI: Oh, sorry,  
13 Janice Obuchowski. I just wanted to echo that  
14 point and perhaps put a little bit of  
15 historical context on it. Of course, I don't  
16 think the issue is, has government stepped up  
17 in a hurry. I think government is doing its  
18 absolute best.

19 The issue really boils down to  
20 giving, in my estimation, a little extra heft  
21 to that and to reinforce what the private  
22 people as well as public people, that this is

1 not just good practice, but it is in fact, you  
2 know, on paper been articulated.

3 And yes you're right, lots of good  
4 cases, but I have seen and, you know, there's  
5 no necessary right or wrong, but the whole  
6 Nextel covered safety rebanding had to do with  
7 protracted and difficult interference, to the  
8 point that finally it worked ultimately to  
9 Nextel's advantage, there was a reband he  
10 said, we can't iron this out, we've got to  
11 sort this out, we've got to change things.

12 You know, that's kind of a  
13 nightmare scenario, but those are the kinds of  
14 things that lead people to not to want to  
15 share. So, you know, I think the enforcement  
16 toughening is a bit of a, it's an attempt to  
17 tell people you're going to need to share  
18 more, you're going to need to work in kind of  
19 close spaces. But the government will do  
20 everything it can to make this, you know, a  
21 mutually acceptable solution.

22 I mean, you can take the other

1 case, the 902 to 928, which is an unlicensed  
2 band. People were using interference, some  
3 people got into that band. Most people were  
4 good neighbors. Some people went into that  
5 band who were using interference in, you know,  
6 as a competitive tool.

7 We'd get in there and blast away  
8 and a lot of the other good players aren't  
9 going to be as effective competitors. And it  
10 wasn't really blasting away in terms of excess  
11 power, but they were operating across the  
12 band, operating very inefficiently, making it  
13 difficult for other unlicensed players to  
14 operate efficiently. You know, those kinds of  
15 behaviors are going to have to be dealt with  
16 if sharing's going to work over time.

17 CO-CHAIR FONTES: Okay. Any other  
18 comments?

19 MR. HATFIELD: This is Dale, could  
20 I make a comment?

21 CO-CHAIR FONTES: Sure, Dale.

22 MR. HATFIELD: A lot of this focus

1 this morning has been on the OOB and the  
2 transmitter side and, you know, I'm a broken  
3 record here in terms of worrying about what's  
4 happening on the receiver side, and I know  
5 that David, you've done a terrific job here  
6 and that's the challenges of a moving target.

7 But it seems that the PCAST report  
8 is talked about, but oftentimes kind of as  
9 sort of a summary form, and you know, the  
10 PCAST report suggests that, you know, this  
11 notion of receiver interference rather than  
12 receiver performance standards.

13 And I think there's places in here  
14 where that could be brought up a little bit  
15 clearer and perhaps even a little bit more  
16 than the FCC's TAC now has spent an awful lot  
17 of time on the receiver issue, especially  
18 related to the receiver interference limits.

19 And I'm not suggesting any changes  
20 in the recommendations whatsoever, but in  
21 hearing the conversation this morning and then  
22 going back through the document again in some

1 detail last night, perhaps that could be  
2 explored in a little bit more detail. Kevin  
3 Kahn is there, has sort of been involved in  
4 that too, Kevin, I don't want to put you on  
5 the spot, but whether you might want to  
6 comment.

7 DR. KAHN: Well, I mean, I think  
8 any comprehensive solution that, you know, is  
9 going to improve efficiency has to look at  
10 both sides of this equation. I mean, you  
11 can't, you have to have some kind of standard  
12 on that receiver side and I think, you know,  
13 as Dale said, the TAC against, excuse me,  
14 pushing on this as well, I think part of the  
15 whole notion of sort of why is he even  
16 complaining about -- really doesn't have a lot  
17 of substance to it because you complain about  
18 it because you did a crappy job on your  
19 receivers.

20 And that's kind of the status quo  
21 in some sense, is that there really isn't a  
22 standard on that side, not to mention that,

1 you know, the technology for improving the  
2 selectivity on the received side is actually  
3 a key element in being able to pack things in  
4 more closely.

5           So, you know, over time, you know,  
6 if we don't tweak both sides of that equation  
7 you're just not going to get as much out of  
8 this as you could. And I think the  
9 fundamental thing is that, you know, and this  
10 kind of, I'm going to take this opportunity to  
11 soap box a little bit to something Karl said  
12 earlier which is, you know, I know that like  
13 all of these little changes are not  
14 necessarily, and some of the big changes, not  
15 necessarily in the context of a specific band  
16 or rulemaking, but the trouble is, is if I  
17 step back and say what do I want spectrum use  
18 to look like in the United States 30 years  
19 from now, I'll pick some far down the line  
20 target, you know, I don't think you get to  
21 that vision, whatever any of us think that  
22 vision is, it's going to be something that's

1 a lot more advanced than what we do today in  
2 terms of how utilize that spectrum.

3 I don't think you get to that  
4 vision by simply looking at piecemeal,  
5 individual rulemaking because without an  
6 overarching context that says, we are going to  
7 take as a goal to get to this other place, and  
8 that isn't a leadership's, you know, position,  
9 it has to come out of both government and  
10 industry. And each step along the way, we're  
11 simply going to say well, it's too hard to  
12 make this change.

13 And that's why I have a little  
14 trouble with the thing you're saying earlier,  
15 Karl, it's not, I mean I know your intent is  
16 good there, but if it's always too hard for  
17 every individual rulemaking or every  
18 individual instance of sharing, then it is  
19 very, very difficult to ever think that we're  
20 going to move the overall center of gravity of  
21 this problem forward.

22 And so I mean, I think while we

1 need to focus on the specifics, no question  
2 about it, we have to have, as I think, you  
3 know, Rick was also kind of alluding to, we  
4 have to have a grander plan that's driving  
5 some of this work, even when not in the  
6 context of a specific band or a specific  
7 rulemaking, or we're simply never going to  
8 move the wall. And the receiver thing is just  
9 another part of that, you know, that total  
10 capability.

11 CO-CHAIR FONTES: Dennis, you had  
12 a comment.

13 MR. ROBERSON: Just a quick  
14 comment, mostly to follow up to Dale's  
15 comment. There is a paper coming out of the  
16 TAC that I would recommend to the group, that  
17 it should be formally issued the end of the  
18 month-ish, but it's on interference limits.

19 Many of you have been involved in  
20 that topic, but it's a substantial white paper  
21 that will hopefully be released with some  
22 things there, and I would recommend that to

1 the group because it is so important and it  
2 fits so nicely into the work that David and  
3 others have done in the group.

4 CO-CHAIR FONTES: David?

5 MR. DONOVAN: Dale, to your point,  
6 and I fully agree with you. I think, at least  
7 in terms of this document, if you look at the  
8 questions as they were framed by NTIA, there  
9 wasn't a real focus on receiver stands --

10 MR. HATFIELD: Right.

11 MR. DONOVAN: -- so the answers  
12 don't focus on them. But if you go back to  
13 the original document back in 2010 when I was  
14 younger and had less gray hair, there is a  
15 section on receiver standards. And I fully  
16 agree with you, you can't do one without the  
17 other, Dale, there's two sides. You've got to  
18 do both sides.

19 CO-CHAIR FONTES: Karl, did you  
20 have --

21 MR. HATFIELD: Could we take some  
22 editorials or is too late? Because I think,

1 I do place a little bit of expansive language,  
2 perhaps talking about, a little bit more about  
3 the CCAS's light and worry then a little bit  
4 about the TAC work. Would that, or is that,  
5 or do we want to completely bring it to a  
6 close?

7 MR. DONOVAN: Well Dale, I think  
8 look, and I'll do whatever the Committee wants  
9 obviously. I think the recommendations  
10 regarding receiver performance standards and  
11 their importance is in the original document.  
12 And so going into the TAC work on receiver  
13 performance standards would be editing a set  
14 of questions that weren't asked. But if you  
15 want to put an appendix or an attachment, I'm  
16 more than happy to include it, whatever the  
17 Committee wants.

18 CO-CHAIR FONTES: Dale, were you  
19 going to say something?

20 MR. HATFIELD: Well no, no. I  
21 wasn't suggesting anything substantial it  
22 just, there's been a lot of thought given to

1 it and not in particularly, not a receiver  
2 standard but rather the interference limits  
3 type approach. And it just seemed like it  
4 hurt here because receivers play such a  
5 critical role.

6 And I'm still concerned a little  
7 about too much focus on the transmit side and  
8 not about the receiver side. I think we could  
9 probably cover it in some minor editorials but  
10 again, I understand your desire to move ahead  
11 and close this out.

12 CO-CHAIR FONTES: Rick?

13 MR. REASER: What I would do is I  
14 would like to vote on the report today and  
15 maybe you could ask for an addendum to be  
16 published for the next meeting or something  
17 like that. Because we've been kind of  
18 delaying the approval for a long, long time.  
19 So I would finish the report now and then  
20 maybe an addendum could be introduced in the  
21 next meeting at Greg's place.

22 MR. NEBBIA: Yes, the report, this

1 is Karl, the report actually was approved  
2 before.

3 MR. DONOVAN: Yes.

4 MR. NEBBIA: So this is just part  
5 of the follow-up dialogue so I don't, it's not  
6 necessarily that you need an approval. I  
7 think everybody agreeing that the document  
8 presents responses and is accepted I think --

9 HON. OBUCHOWSKI: Can't we just,  
10 whoops, this is Janice again. Can't we just  
11 put something in the minutes of the meeting  
12 that says this is, you know, a contribution on  
13 the overall topic of efficiency, not intended  
14 to, and oh, we do also want to highlight  
15 there's other good work being accomplished and  
16 allude to the TAC and allude to receiver  
17 standards. I don't think anybody on this  
18 Committee would object to that.

19 CO-CHAIR FONTES: Okay. Dennis?

20 MR. ROBERSON: Just one final, and  
21 I point out an acknowledgment here, the work  
22 being done in the TAC actually was taking up

1 the work that had been done in this body that  
2 you referenced it, and then moving it to the  
3 next mile marker. So it really is a related  
4 piece of work to the work of this body  
5 already. So that's maybe a nice way to  
6 connect all these things together.

7 CO-CHAIR FONTES: Okay, great.  
8 Thank you, Dennis. So is it your choice then,  
9 David, to submit this report or file this  
10 report with the CSMAC as a response to the  
11 original document?

12 MR. DONOVAN: So moved, yes.

13 MS. WARREN: Second.

14 CO-CHAIR FONTES: Okay. Seconded  
15 by Jennifer. Any further discussion? Hearing  
16 none, we'll take a vote. All those in favor?

17 MALE PARTICIPANT: Aye.

18 FEMALE PARTICIPANT: Aye.

19 CO-CHAIR FONTES: Any who are  
20 opposed? Great. Thank you very much. Thank  
21 you, David, and thank you for all of you who  
22 worked on this. This has been a long process,

1 to say the least.

2 Okay, next we'd like to move to  
3 the reports of the various working groups.  
4 and we have Working Group 1, this is 1710 I  
5 should say, Megahertz Weather Satellite  
6 Receive Earth Stations. And Mark, are you  
7 making the presentation?

8 DR. MCHENRY: I'm going to do it.

9 CO-CHAIR FONTES: Thank you.

10 DR. MCHENRY: So there's some new  
11 graphs, we're giving out a hard copy. We're  
12 going to walk through the new graphs. This  
13 Working Group 1 is the meteorological  
14 satellites, 1695 to 1610. New Graph 2 shows  
15 participants and Ivan and Steve have been the  
16 leaders of then the golden job of corralling  
17 this, Dennis and I are the liaisons. And the  
18 FCC's been in there, and then a whole cast of  
19 thousands. I think it's more than 70, I don't  
20 know where 70 come from, that's a lot of  
21 people that work there.

22 MALE PARTICIPANT: Yes, I think

1 we're over 100 now.

2 DR. MCHENRY: Now the next chart  
3 gives an overview. And the purpose, this  
4 really is the purpose for all the working  
5 groups, was explore ways to do things better,  
6 but this specific group was improve modeling  
7 in commercial wireless networks, and reduce  
8 exclusion models. And, you know, that's what  
9 all work's been focused on there and in  
10 summary, that met those objectives pretty  
11 much. I think we're at the 99 percent level  
12 of those narrow objectives.

13 So the principle is just to take  
14 the Fast Track forward and start analyzing it  
15 and just we can go from the very large there,  
16 how to get them smaller. So then the area of  
17 focus was work through all the LTE parameters,  
18 the federal system parameters, limited  
19 propagation model of clutter. But in the end,  
20 you know, there's generally agreed upon to  
21 what the Exclusion Zones should be.

22 Notice this agreement from pieces

1 of the models, with the Exclusion Zone side is  
2 really pretty well in agreement on. The other  
3 thing that was agreement on would be change  
4 this idea of Exclusion Zones to Protection  
5 Zones, and we'll talk a little bit about that.

6 That was one of the reasons of the  
7 delay, a big change in thought of what it  
8 means, how you would manage it, and all the  
9 issues. That was all kind of identified and  
10 worked through. I think we kind of went  
11 beyond what they asked us to do. We adjusted  
12 the approach to a better approach.

13 The next chart shows the method of  
14 work, with a lot of work in developing what an  
15 LTE network was, different companies gave  
16 parameters for uplink, power link, power,  
17 transmits power model, and so forth. I think  
18 both sides really, it was kind of a lack of  
19 trust, a lack of understanding and detailed  
20 knowledge of what was going on. I think  
21 that's beyond all that. I think the  
22 government really understands LTE at a very

1 good level, and the industry guys understand  
2 the weather problem.

3 And both sides, it's very  
4 complicated. So the output is the model, base  
5 station parameters, interference, population,  
6 we really had a good set of modeling tools.

7 Oh, and I guess the availability  
8 of the other groups, now they'll have to  
9 tailor them because some of the assumptions  
10 don't work and vary on the that circuit to  
11 ground the ground, so they've been provided to  
12 the other working groups.

13 So Chart 5, is now we're kind of  
14 going into some little bit more detail. On  
15 the bottom line here is the, first of all it  
16 is the interference distance Exclusion Zone  
17 side has really been reduced, anywhere from 21  
18 to 89 percent.

19 I still think they're large enough  
20 that in a lot of places it's, you're going to  
21 want to share. They were never reduced down  
22 to the size near zero, where they can live

1 with the pure exclusions. They're still big  
2 enough that you want to find ways to share.

3 And we identified, there still  
4 needs to be some validation of the models,  
5 pieces of the models, that was worked on. And  
6 the other thing that was really analyzed is  
7 LTE can be done ten different ways. And I  
8 kept saying, well where's the white space, the  
9 TV white space? They had very specific  
10 sharing rules and knew exactly what each side  
11 should do.

12 That's not appropriate here,  
13 partly because LTE's so configurable and  
14 partly because you're dealing with one or two  
15 commercial entities and not the general  
16 public. And that came out here.

17 So this last bullet talks about  
18 this Exclusion Zone and Exclusion Zones. And  
19 they really nailed down what a Protection Zone  
20 was, and the definition of where a base  
21 station can be located. It's got to be X  
22 kilometers away from some central point,

1 versus the handsets or so forth.

2           The next chart talks a little bit  
3 more about the framework. In fact, I should  
4 have, there is a report now and it's 100 pages  
5 long. And I only printed out the first 20  
6 pages. There's an enormous amount of work and  
7 detail that they've done. And I think they're  
8 very, there's still some redlining in it, but  
9 we're nearly done with it.

10           And this framework is listed as an  
11 appendix in this document. And it talks about  
12 what a Protection Zone is. And just to define  
13 it, a Protection Zone, if your commercial  
14 entity's outside the Protection Zone, they can  
15 use the spectrum. But if they do cause an  
16 interference they have to get out. It's not  
17 an absolute thing.

18           And if they're inside the  
19 Protection Zone, they're kind of at the mercy  
20 of the federal user and have to prove that  
21 their a ways in. So they really work through  
22 who has the upper hand in band, what's the

1 level of proof. And I think they've got a  
2 very good process and mechanism to do this  
3 sharing from these Protection Zones.

4           And then another thing that was  
5 resolved is we're going to focus on power  
6 structural density at the receiver. We're not  
7 going to focus on where the base stations are,  
8 you know, if there's an argument or a  
9 calculation needs to be made, it's going to  
10 come down to this one parameter. So I think  
11 they've simplified the process of how they  
12 communicate when they go into these  
13 negotiations.

14           So then Chart 7 talks more about  
15 this framework, the need for a nationally  
16 approved prediction model. And they already  
17 have a kind of prediction model and there's  
18 some parallel prediction models. It's unclear  
19 to me exactly why you need to pick just one,  
20 as long as they're all roughly agreeing.

21           But you do need to have a, you'd  
22 hate to come to some place in Alaska and

1 approach the locals there and start flooding  
2 them with details. So you would have to have  
3 some level of agreement how to do  
4 calculations. And we have that.

5 On the second bullet it talks  
6 about the procedures, about who you call if  
7 there's a problem. That's been documented.  
8 And there's more focus on the procedures  
9 versus the criteria. We're back to this white  
10 space argument. The exact criteria of INR,  
11 that hasn't been resolved exactly. But the  
12 process, the procedures, has been resolved.

13 And then the last bullet talks  
14 about the who pays, and I guess you've already  
15 talked about, that's the ugly topic who pays.  
16 Obviously the weather people don't want to  
17 pay.

18 So then we talk about the testing  
19 program, view Graph 8. What's really lacking  
20 is a lot of one on one testing, where you have  
21 a satellite receiver and one LTE system and,  
22 you know, what's the receiver selectivity? We

1 just talked about that. The DDR ratio that,  
2 and since the documentation of the federal  
3 systems is not there, we really do need to do  
4 testing.

5 And everyone agree those tests  
6 need to be done, but it was beyond what we  
7 could do right now with the money we have,  
8 which is zero in the working group.

9 And then the idea of compliance  
10 and enforcement, there was some details about  
11 the 24/7, and that's been thought through so  
12 I mean, I'm just highlighting all the progress  
13 that's been made.

14 So now the specific  
15 recommendations, Chart 9, is that this band  
16 only be used for the uplink. Now it turns out  
17 that the downlink would have been easier for  
18 everyone to manage because the prediction  
19 uncertainty is much less.

20 And it's on the government's, I  
21 think the government kind of gave in a little  
22 bit allowing the uplinks to be used here. But

1 the commercial people really wanted the  
2 uplinks here so the government gave in. And  
3 so that was, there's no contention on that  
4 recommendation, and that was mentioned before.

5 And the last is Recommendation 2,  
6 is that we're going to, the zones are still  
7 big enough that there's going to want to be  
8 effort to move them in some places and some  
9 markets. And the places to move them have  
10 been identified.

11 The issues and the parameters and  
12 the requirements have been identified, but the  
13 Working Group has not exactly costed it yet  
14 and said, "oh, here's Solution X, we know it  
15 works." But they're, you know, pretty far  
16 down the road on doing that. So a lot of  
17 progress was made there.

18 And then Recommendation 3 is this  
19 framework, which is in this document which you  
20 don't have, and it gives a lot of detail. It  
21 talks about, you know, all the issues involved  
22 in the share, responsibilities, 24/7, and the

1 need for testing, that's all been laid out in  
2 the document. So that's the third  
3 recommendation is that we follow that  
4 framework.

5 And the CSMAC group is still  
6 interested in, you know, working on this. I  
7 don't think people want to quit. So we're  
8 hoping you don't disband Working Group 1, you  
9 give us a charter to keep working along at  
10 this. So I went a mile a minute. Dennis, do  
11 you have anything else to add or did I leave  
12 out any highlights?

13 MR. ROBERSON: No, I think you  
14 covered them well. The punchline is what Mark  
15 has already said, tremendous success actually  
16 in accomplishing what was asked and, in fact,  
17 going considerably beyond what was asked to  
18 try to come up what was asked in the specific  
19 to cover what was asked in the general, which  
20 is to come up with a robust solution that is  
21 meaningful.

22 Mark and I have gone back and

1       forth, being the good engineers that we are we  
2       can punch holes in almost anything that's  
3       here. And many around this table have this  
4       same characteristic, but have to pull yourself  
5       back and look at the successes of the group.  
6       And they are really numerous in terms of  
7       accomplishing agreed-to directions across a  
8       very large group of people and organizations  
9       with very diverse interests and needs.

10               So it really has been quite a  
11       success and has laid out the path forward with  
12       a lot of work that still needs to be done, but  
13       it is now well-structured work and work that  
14       is really quite manageable to undertake.

15               DR. MCHENRY: So you didn't charge  
16       them exactly to come up with a sharing  
17       mechanism. So they didn't do that. But what  
18       you charged them to do they did and did well.

19               But that last time we were we  
20       said, you know, we want to share in time or  
21       give the frequency plan. I think that's kind  
22       of the next step, is what exact schemes are

1 reasonable, and how much, what would the costs  
2 and details be? But that's not the charter at  
3 this point to do that. That's what I would  
4 suggest.

5 MR. ROBERSON: And to do the  
6 actual measurements. We've talked and there's  
7 agreement, Ivan's happy to have us hook into  
8 one of his antennas and look and actually see,  
9 have simulated UIs running around. And ITS is  
10 very capable of doing this, if they were  
11 chartered to do that, but that path of what  
12 the next steps is --

13 DR. MCHENRY: It's laid out here,  
14 it's pretty clear.

15 MR. ROBERSON: -- is laid out,  
16 well understood, and now we need to move  
17 forward on that. Some of the next steps as  
18 well is the FCC side and NTIA negotiation on  
19 what exactly you collectively need in order to  
20 undertake the auction.

21 DR. MCHENRY: You need white space  
22 type rules that specify everything or leave it

1 --

2 MR. ROBERSON: We believe, no --

3 DR. MCHENRY: -- we don't think  
4 you want that. We think you want an open  
5 framework with a more of a process  
6 recommendation than exact criteria. But it  
7 wasn't clear what level you think we need.

8 CO-CHAIR FONTES: Okay. Thank you  
9 very much. Any other comments from either of  
10 you?

11 DR. MCHENRY: No.

12 MR. ROBERSON: Well, maybe one  
13 final comment, and that is the paper itself --  
14 because we had hoped, we collectively, had  
15 hoped that we would be able to deliver that  
16 today. But one of the criteria that we've had  
17 is that we have full agreement. And right now  
18 there are still some, as Mark has said, some  
19 red line items. And the hope and desire would  
20 be that we could release that even as early as  
21 the end of today but we're -- you're nodding  
22 and that's good.

1 DR. MCHENRY: I think they should  
2 release it now to the CSMAC and start looking  
3 at it. But they want to resolve a few more  
4 things.

5 MR. ROBERSON: That's fair.

6 CO-CHAIR FONTES: Okay. Are there  
7 other comments? Any questions of this  
8 committee?

9 CO-CHAIR ROSSTON: This is Greg.

10 CO-CHAIR FONTES: Yes, Greg?

11 CO-CHAIR ROSSTON: Hello?

12 CO-CHAIR FONTES: Go ahead.

13 CO-CHAIR ROSSTON: Yes, so I just  
14 wanted to -- I sort of wanted all the working  
15 groups to include this question and address it  
16 when it comes their turn so I don't have to  
17 ask each one. But I want to make sure that  
18 there's a feeling that it's not -- that  
19 there's enough information for both the  
20 government side, from the commercial folks,  
21 and commercial folks from the government side,  
22 that it feels like it's going to be -- that

1 we're working together on this and that there  
2 was enough input from both sides in coming to  
3 a decision coming to things, that it's not  
4 just one side pushing it or, you know, if  
5 there's a concern, because I've heard some  
6 people worry that if, you know, that these  
7 models are not being available for them to  
8 cast and poke from the government side, then  
9 as CSMAC, we don't end up being asked to sort  
10 of recommend something that is not, that the  
11 government could do on its own. I want to  
12 make sure, it sounded like this group had very  
13 much input and working together. And I wanted  
14 to make sure that all the other groups  
15 addressed that as well.

16 CO-CHAIR FONTES: Good point.

17 DR. MCHENRY: That's clearly the  
18 case that we had a great deal of input on both  
19 government and commercial side. So that  
20 definitely is the case here.

21 CO-CHAIR FONTES: Great. Any  
22 other comments?

1 MR. CALABRESE: This is Michael  
2 Calabrese. Just a quick question. How many  
3 of these satellite downlink receive sites are  
4 there?

5 MR. ROBERSON: Eighteen.

6 MR. CALABRESE: Eighteen? And  
7 when you said reducing the separation distance  
8 by 21, 21 kilometers or?

9 DR. MCHENRY: Percentage, that's a  
10 percentage reduction.

11 MR. CALABRESE: I thought it was a  
12 range of percent.

13 MR. ROBERSON: Yes, of the size of  
14 the zone.

15 DR. MCHENRY: The shrinkage.

16 MR. ROBERSON: The shrinkage of  
17 the zone.

18 MR. CALABRESE: Okay, thank you.

19 CO-CHAIR FONTES: Bryan?

20 MR. TRAMONT: Bryan Tramont. So I  
21 hadn't focused on this before, but the scope  
22 of the work was 1695 to 1710. Is the nature

1 of the activity from 1675 to 1710 all the same  
2 or is it 1675 to 1695 different?

3 MR. ROBERSON: Different.

4 MR. TRAMONT: I'm getting the --  
5 okay, so that would be a totally different set  
6 of -- okay, got it.

7 DR. MCHENRY: Well, not totally  
8 different.

9 CO-CHAIR FONTES: Any other  
10 comment? David?

11 MR. DONOVAN: Just a question on  
12 the -- instead of sending us specific rules  
13 such as the white space, moving more towards  
14 a process. If I, and I may be getting ahead  
15 of ourselves here, but if I were a commercial  
16 entity in the share, and what I'm voting for  
17 and what is being recommended here is a  
18 process, if I go to an auction, how do I know  
19 what I'm buying?

20 DR. MCHENRY: Well, this is Mark.  
21 I agree with you. There is a decision, is the  
22 white space, which was totally, very narrow

1 with no flexibility, versus this which is  
2 really more, highly flexible. What generates  
3 the most money and the best value, you know?

4 MR. ROBERSON: But the benefit, it  
5 is very different. We actually have had a lot  
6 of discussion about this, even this morning  
7 over breakfast. But it's very different  
8 because of the answer to Michael's question,  
9 there are 18 explicit, fixed sites.

10 The Exclusion Zone is from five  
11 kilometers to 85 kilometers is it? Yes. So  
12 when you take a map of the United States, the  
13 vast preponderance of the area is outside the  
14 Protection Zone.

15 MR. DONOVAN: Okay, got you, okay.

16 MR. ROBERSON: Now when you try to  
17 apply this same methodology to another entity,  
18 another band, it may not work at all, and  
19 we're concerned about that. But for this  
20 specific solution, this is a very nice  
21 solution that's very workable because the  
22 zones, the Protection Zones themselves are so

1 small, and so discrete, and so fixed.

2 MR. DONOVAN: Good point. Okay,  
3 thank you.

4 CO-CHAIR FONTES: Okay, if there  
5 are no other comments, I'd like to turn over  
6 to Larry for a moment.

7 MR. STRICKLING: Yes, I'd like to  
8 ask a substantive question.

9 (Laughter.)

10 MR. STRICKLING: So I just wanted  
11 to clarify, I think this was implicit in your  
12 report, but obviously in our Fast Track Report  
13 two years ago we recommended re-purposing the  
14 top 15 Megahertz, 1695 to 1710.

15 We now have a statutory obligation  
16 to report to the President in February about  
17 this band. And what I'm taking away from your  
18 report is that at this point you see no reason  
19 for us to do anything other than to continue  
20 on with our recommendation to re-purpose this  
21 top 15 Megahertz, the 1695 to 1710, correct?

22 MR. ROBERSON: To re-purpose it in

1 the way that we described --

2 MR. STRICKLING: Right, right.

3 MR. ROBERSON: -- which is a re-  
4 purposing through sharing. It may be a longer  
5 term that out there in 2030 there's a notion  
6 that's maybe replaced and then this need would  
7 disappear altogether. But --

8 MR. STRICKLING: Right, right, but  
9 is it --

10 MR. ROBERSON: -- but re-purposing  
11 in this matter, absolutely.

12 MR. STRICKLING: Right. But your  
13 analysis actually has shrunk the size of the  
14 Exclusion Zones --

15 MR. ROBERSON: Right. And  
16 transformed --

17 MR. STRICKLING: -- but you've now  
18 also translated into Protection Zones and so  
19 that even with those areas there's an  
20 opportunity for the commercial industry to  
21 utilize spectrum even within what previously  
22 had been called an Exclusion Zone.

1 MR. ROBERSON: Correct.

2 MR. STRICKLING: Okay.

3 MR. ROBERSON: Each of the  
4 satellites, at times is not that much. And  
5 there is spectrum that it could be shared if  
6 it worked out a plan.

7 MR. STRICKLING: Good. So you  
8 guys have made, I think, very significant  
9 improvements, then, to our original  
10 recommendation from two years ago. Very good.  
11 Well, thank you.

12 CO-CHAIR FONTES: That was a  
13 substantive comment, that's correct.

14 (Laughter.)

15 MR. ROBERSON: I can see this  
16 going on all day. Okay, so at this point,  
17 this is just a briefing, an update, no vote or  
18 submission at this time. Hopefully in our  
19 February meeting we'll have a document to vote  
20 on and move forward. Again, thank you for  
21 your work, Karl.

22 MR. NEBBIA: I just wanted to

1 recommend that we do get the report output as  
2 quickly as possible so that everybody has a  
3 chance to look at it well in advance of that  
4 February meeting. So if it's ready even  
5 today, we would love to get it and get it out  
6 to everybody because we'd really like to  
7 finalize this one at that meeting.

8 CO-CHAIR FONTES: And I think that  
9 goes for any of the working groups who have  
10 documents that will be available for the  
11 February meeting, to have them out as soon as  
12 you have them available to distribute. Okay.  
13 Thank you very much.

14 Next we have Working Group 2, this  
15 is the 1755 to 1850, Law Enforcement  
16 Surveillance, Other Elements of Short Links,  
17 et cetera. So Mark, Tom, you're going to be  
18 making the presentation for --

19 MR. DOMBROWSKY: Yes, that's me.  
20 So with Working Group 2, we actually have a  
21 full final report that has been provided for  
22 folks to look at prior to the meeting. What

1 I did endeavor to do is also create a few  
2 PowerPoint slides that sort of went through  
3 the highlights of the report.

4 So if we turn to that, I actually  
5 start with the recommendation out of the  
6 working group rather than the sort of  
7 structure of the working group, so getting to  
8 the thing that people really want to read  
9 about.

10 So what Working Group 2 has  
11 recommended is that federal agencies should  
12 consider, in developing their transition  
13 plans, the list of 176 industry-defined  
14 economic areas according to their  
15 implementation priorities.

16 While industry would like that  
17 priority list to be precisely followed, they  
18 also understand that there's needs of the  
19 federal government to do what they're going to  
20 do when they do relocate. So that was sort of  
21 the understanding of this recommendation and  
22 the output of this working group.

1                   With that, to turn to the actual  
2 structure of the working group itself, it was  
3 co-chaired by both federal and commercial  
4 representatives, Rich von Bostel of the DOJ,  
5 and Mark Racek of Ericsson was the commercial  
6 representative.

7                   It was unusual, this working group  
8 was unusual in that we had a lot of work done  
9 in AWS-1, where sharing studies were actually  
10 done and actual real testing was done to see  
11 the effect of short video surveillance links  
12 to wireless, commercial wireless. And it was  
13 found that you could not do sharing based on  
14 the technology that was out there and the  
15 capabilities of the existing federal  
16 incumbents.

17                   So the focus here was really on,  
18 if we turn to Slide 4, was really focused on  
19 relocation rather than any spectrum sharing.  
20 And with that, the focus was on figuring out  
21 the priorities of the industry, of which  
22 markets they wanted the earliest access to, to

1 provide that list to the federal folks that  
2 were looking at relocation to say we'd like  
3 this market first, this market second, et  
4 cetera.

5 And the hope is to share this list  
6 with all the other working groups. We have  
7 one priority list from the industry to the  
8 federal government for all five working groups  
9 so everybody understands where the industry's  
10 coming from on priorities.

11 And with that, on Slide 5, we  
12 understand that, you know, different federal  
13 agency system types and operational  
14 requirements will require different clearing,  
15 geography and time lines. The economic area  
16 selection was made because we believe the FCC  
17 is likely to go down an economic area  
18 geography for licensing of this band.

19 And we certainly understand the  
20 agencies may very well have larger areas than  
21 economic areas that they need to clear,  
22 depending on what their system requirements

1 are, et cetera, and how they actually go about  
2 funding and relocation.

3 So with that, I think that's the  
4 overview of the report. The actual report is  
5 here for folks to look at as well. And I  
6 obviously defer to the co-chairs as to what we  
7 want to do next, whether we want to give folks  
8 a little more time to digest because they've  
9 had it for maybe a week or so, and then we  
10 could talk about it more in depth in February  
11 or finalize it in February. But all the  
12 information is here for folks to look at at  
13 this point.

14 CO-CHAIR FONTES: Very good. Are  
15 there questions or comments? Janice?

16 HON. OBUCHOWSKI: I had a  
17 question, sort of a point of information. In  
18 terms of the prioritization, I mean, it looked  
19 to me as though it was generally sort of  
20 descending order of population. But there  
21 must have been other factors as well.

22 So if you could just kind of

1 quickly recap what were the key factors that  
2 went into the prioritization, and were there  
3 difference among the carriers? And how did  
4 that get resolved?

5 MR. DOMBROWSKY: Yes, there was  
6 absolutely differences among carriers. I  
7 cannot speak for the carriers as to how they  
8 figured out what their priorities were, but  
9 it's not surprising that population drives  
10 where their build out's going to be.

11 But there were certainly certain  
12 markets where they don't have spectrum and  
13 they really needed it for a particular need  
14 that they had that ranked higher than others.  
15 And what was done was sort of a -- it's not a  
16 pure averaging, but we did do some level of  
17 mean distribution of the responses from the  
18 carriers to sort of come up with a summary  
19 number that all saw the final aggregate, not  
20 each other's priorities, but the aggregate,  
21 and could agree that that made the most sense  
22 and worked for them from what they had in

1 terms of their priorities.

2 HON. OBUCHOWSKI: And so there was  
3 pretty ready buy-in, or it worked out fine?

4 MR. DOMBROWSKY: It was actually  
5 an iterative process, not surprisingly. So  
6 the first go-round didn't quite meet what they  
7 want, but the second go-round got to where  
8 everybody did buy in completely.

9 HON. OBUCHOWSKI: Well, that's  
10 helpful because as you know, when you get to  
11 Committee 5, there are all sorts of issues in  
12 the sharing context, when competitors at some  
13 point, you know, have to come to grips with  
14 some issues such as that.

15 MR. DOMBROWSKY: Yes, exactly.

16 CO-CHAIR FONTES: Thank you.

17 MR. POVELITES: Where are they  
18 going to go?

19 MR. DOMBROWSKY: Where are they  
20 going to go? So I think that depends on  
21 particular agency I've seen. Some were  
22 looking to move up further up in the band as

1 a sort of two step process, some are looking  
2 at other bands, depending on what they're  
3 using it for, higher frequencies and in some  
4 cases even lower frequencies, depending on  
5 where the feds have access to spectrum that  
6 works well for what they were trying to do.  
7 And most of it's in the Fast Track Report and  
8 other reports in terms of where they're  
9 looking at and what their targets are for  
10 relocation.

11 CO-CHAIR FONTES: Did that answer  
12 your question, Larry?

13 DR. ALDER: Yes.

14 CO-CHAIR FONTES: Great.  
15 Jennifer?

16 MS. WARREN: That answered my  
17 question.

18 CO-CHAIR FONTES: Karl, did you  
19 have a comment?

20 MR. NEBBIA: Yes, just one last  
21 thing I wanted to mention. Certainly based on  
22 our experience with AWS-1, this idea of

1 prioritization for the agencies is a critical  
2 point. In fact, they came out of that saying,  
3 you know, if we had only known and understood  
4 what the industry priorities were, then we  
5 could have mapped out a plan.

6 And this community's been, I  
7 think, very flexible and willing to pursue the  
8 moving. They just needed to understand a good  
9 way to lay out a plan for them, because they  
10 have to plan how they're going to implement  
11 this across their agency. And clearly the  
12 last time around, they were on a different  
13 page than industry was on. And that led to  
14 immediate conflicts in timing and so on.

15 So obviously there's not an  
16 absolute answer here, that everything's going  
17 to go perfectly smoothly, but laying it out in  
18 this way I think really sets a great course  
19 for being able to move forward. And I think  
20 they are all very appreciative of being able  
21 to have that kind of discussion. So thank  
22 you.

1 CO-CHAIR FONTES: Great. Greg,  
2 this is Brian. My recommendation would be  
3 that we allow folks additional time to review  
4 this, and have this prepared for the February  
5 meeting for a vote by the group. Is that --

6 CO-CHAIR ROSSTON: Makes sense.

7 CO-CHAIR FONTES: Is that okay  
8 with you?

9 CO-CHAIR ROSSTON: Yes.

10 CO-CHAIR FONTES: Great. Okay,  
11 thank you. Thank you, Tom, for your report.  
12 Okay, next we have Working Group 3.

13 MR. ROBERSON: Brian, question --

14 CO-CHAIR FONTES: Whoops, sure.

15 MR. ROBERSON: -- so are we going  
16 to circulate the report, is there going to be  
17 like an email thing to make addition and  
18 subtraction like the Working Group 1? How's  
19 that going to work? If you want to vote on  
20 the next meeting, there's going to be a lot of  
21 work in between.

22 CO-CHAIR FONTES: I would hope

1 that if anybody had comments to this document  
2 they would report back to the committee prior  
3 to the meeting, to Tom or Jennifer or  
4 whomever.

5 MR. TRAMONT: The same way we had  
6 to David's, right, so it would be the same  
7 process. We open the available document, we  
8 all would email inputs, and then we'd try and  
9 finalize the revised draft a week before.

10 CO-CHAIR FONTES: Right, exactly.

11 MR. DOMBROWSKY: So we're if we're  
12 getting to a point, we're going to summarize  
13 to get all these comments and did they all  
14 align, and we put in there or there's a  
15 disagreement and we discuss it. That's what  
16 you're expecting us to do.

17 CO-CHAIR FONTES: Yes. Okay?  
18 Didn't like the yes answer?

19 MR. TRAMONT: I think Tom's 12-  
20 pager is easier than you guys' 100-pager.

21 (Laughter.)

22 CO-CHAIR FONTES: Remember when we

1 started this process --

2 MR. DOMBROWSKY: No good deed  
3 shall go unpunished.

4 CO-CHAIR FONTES: But it may be so  
5 thorough that there are very few comments.

6 (Laughter.)

7 MR. TRAMONT: Or very few people  
8 read it, depending on --

9 CO-CHAIR FONTES: Okay, Tom, thank  
10 you and the committee for their work.  
11 Jennifer?

12 MS. WARREN: Tom, just looking at  
13 the conclusion of the report where it cross  
14 references the NTIA report, which I did not go  
15 back and look at, I have to admit, was there  
16 a time line for reconciling the assumptions  
17 and preconditions? So when the decision would  
18 be made, whether comparable spectrum was  
19 available and that sort of thing?

20 I think your report, Tom, says  
21 that was left to the FCC and NTIA. Can you  
22 just educate us as to what, you know, you guys

1 are envisioning, or remind us to what you guys  
2 are envisioning with respect to that?

3 MR. NEBBIA: Well, the discussions  
4 on relocation of these devices is still  
5 underway. But what was laid out in the Fast  
6 Track Report by these groups was, in fact, a  
7 multi-step process. They are aware that  
8 digital technology for what they do is  
9 available. That would enable them to take the  
10 first step to vacate the lower portion of the  
11 band.

12 Then at some point, in order to  
13 further confine themselves, they believe that  
14 digital technology can be improved. And then,  
15 ultimately, we've got to identify a separate  
16 band for them to finally get out of the corner  
17 they would have painted themselves into.

18 So that approach has advantages  
19 and disadvantages. It provided the most  
20 orderly payout for them to move, also bought  
21 them some time to come up with what these  
22 other solutions were. The challenge becomes,

1 it is a multi-stage conversion of technology,  
2 which of course there were -- that was one of  
3 the reasons why the costs associated with this  
4 particular component were pretty high compared  
5 to what some might have expected.

6 MS. WARREN: Just to follow on if  
7 I might, so are the kind of pre-conditions  
8 really with respect to Phase 2 relocation not  
9 Phase 1? Phase 1 can be a go, it's really the  
10 transition from Phase 2 to something else that  
11 requires these other decisions.

12 MR. NEBBIA: That's right.

13 MS. WARREN: Is that right? Okay,  
14 thank you.

15 CO-CHAIR FONTES: Okay. Moving on  
16 to Working Group 3. Working Group 3 is the  
17 1755 to 1850 Megahertz Satellite Control and  
18 Electronic Warfare. Rick, are you?

19 MR. REASER: Yes. On the first  
20 slide it lays out our co-chairs as Colonel  
21 Martin, who's assigned to the National PNT  
22 Coordination Office here in this building, is

1 the federal co-chair. Then we had two  
2 industry co-chairs, Alex Gerdenitsch from T-  
3 Mobile and Rob Kubik from Samsung. And then  
4 Charlie Rush and I are the CSMAC liaisons, so  
5 next slide.

6 Basically, our group is looking at  
7 specifically where the, you know, where --

8 CO-CHAIR ROSSTON: Rick, can you  
9 speak up? And there's rustling by the phone.

10 MR. STRICKLING: Yes, those who  
11 are on the phone, please make sure you've  
12 muted your phone when you're not speaking yet.

13 CO-CHAIR FONTES: The rustling is  
14 someone who's on the bridge, not in  
15 Washington.

16 MS. WARREN: Because we can hear  
17 it now.

18 MR. REASER: Okay. So basically  
19 what we're looking at is sort of a industry  
20 priority, 1755 to 1780, but while taking into  
21 consideration the entire band. The things  
22 we're going to try to deliver at the end of

1 the study are some recommendations regarding  
2 how we would share with the satellite  
3 operations and then some improved coordination  
4 rules and procedures for electronic warfare as  
5 our outputs.

6 So the key things we've been  
7 looking at, basically three areas. One has to  
8 do with interference from the commercial  
9 mobile devices into the satellite receivers,  
10 and then interference from the satellite  
11 uplink stations into the commercial base  
12 stations, then also the electronic warfare.

13 We have made kind of some  
14 preliminary findings. In terms of the  
15 interference into the satellite receivers, the  
16 initial look at things by our group was that  
17 it seems to show that their interference would  
18 be acceptable. And that's based on, there's  
19 a report that was generated by NTIA, which was  
20 published back in March of 2001, that is 169  
21 pages. It had a 328 page DoD report, 65 pages  
22 of which dealt with these particular issues

1 back in February of 2001.

2 So the assumptions in that report  
3 were basically updated to account for the  
4 difference between IMT 2000 and 4G LTE, and it  
5 seemed to be acceptable amount. What's  
6 happening now is on the federal agency side,  
7 they're looking at a detailed study using  
8 information that's not available to the group.  
9 And they're going to let us know the answer to  
10 what their findings are using more detailed  
11 information that's not publicly available, and  
12 so we're waiting for that.

13 In terms of interference from the  
14 earth terminals, the satellite uplink  
15 terminals into the receiver base stations, or  
16 the commercial base stations, right now we're  
17 kind of sort of doing a worst case analysis  
18 that was done by industry that looks at, base  
19 assumes that the uplink stations transmit in  
20 all directions simultaneously, all frequencies  
21 at maximum power, and so we've come up with  
22 some models on that.

1                   And then what's happening is the  
2                   federal agencies are looking at that report,  
3                   we're supposed to get comments back on it and  
4                   they're doing their own study based on the  
5                   non-public information. And at some point  
6                   we'll get something back on that. But right  
7                   now, what we've had to go with is essentially  
8                   a totally worst case analysis based on those  
9                   other parameters.

10                   We've had one presentation on  
11                   electronic warfare a while back and we are  
12                   currently awaiting for some verbiage or some  
13                   wording or text from the federal side. Based  
14                   on the previous discussions on this, it  
15                   appears that, you know, electronic warfare can  
16                   continue to operate on a non-occurrence basis,  
17                   but they would like to have some improved  
18                   coordination procedures for people around  
19                   those places where they do that kind of stuff,  
20                   to help alleviate any future issues.

21                   So the next slide, 4. So  
22                   essentially just in terms of the status, we

1 are still waiting for the DoD to release its  
2 report on its detailed data. And so that's  
3 been kind of something we've been waiting for  
4 for awhile, so we're kind of stuck on that,  
5 the initial analysis based on public  
6 information says it seems to be okay.

7 And one of the concerns that I  
8 think is on the federal side is that now, what  
9 would happen if things keep on growing and how  
10 would that be controlled or mitigated against  
11 for satellite receivers and so forth? That's  
12 one of the concerns that's on the federal  
13 side.

14 The other issue of interference  
15 from the satellite uplink stations into the  
16 base stations, we've done this Phase 1 study  
17 based on the public information. We think  
18 that those interference zones or coordination  
19 zones could be reduced significantly with some  
20 rather simple kind of things that could be  
21 implemented on the uplink stations. There's  
22 a couple other things that can be done but,

1 once again, we're sort of waiting for the  
2 federal agencies to complete their study and  
3 report back what they can report back to us  
4 based on that.

5 One other thing is we did have a  
6 telecon with the United Kingdom people about  
7 kind of how this works. As you know, this  
8 band is used for mobile communications in the  
9 U.K. And they have successfully operated and  
10 there are actually DoD stations in that  
11 country which have basically cell towers very  
12 close to the uplink stations, like within five  
13 kilometers. And that's been able to be worked  
14 out.

15 Mike Goddard was the one we talked  
16 to, by the way, for those of you who remember  
17 Mike from the days of the RA and before they  
18 went to Ofcom. And so he told us that was  
19 workable.

20 In terms of what their rules are,  
21 it's basically everything's done on a non-  
22 interference basis, so essentially it's noted

1 that this occurs but there are really no  
2 specific technical criteria for how that might  
3 work or procedures and so forth. People are  
4 encouraged to talk to each other and it's just  
5 all kind of worked out I guess.

6 So what we are sort of waiting for  
7 is to see what kinds of information will we be  
8 able to get on the federal side to take a look  
9 at that to complete the study. And we would  
10 need to figure out, you know, how this would  
11 be coordinated based on what the DoD can and  
12 cannot release.

13 Okay, the next slide talks about  
14 the electronic warfare. And essentially  
15 we're, at this point, we're just waiting the -  
16 - that's on Slide 6 -- we're waiting for the  
17 text from the federal agencies to come over  
18 from DoD to do that. Then we'll take a look  
19 at that and then see if we can put it in the  
20 report.

21 In terms of our schedule,  
22 initially we had a lot of TBDs here, but we

1 had a meeting on Friday to kind of put  
2 together a new schedule. Next Tuesday is in  
3 some ways the day of reckoning for whether the  
4 schedule falls apart.

5           What is supposed to happen on  
6 Tuesday is we would get the review and  
7 consensus of the Phase 1 study, which  
8 essentially was done by industry from the DoD  
9 and hopefully get their comments out. And  
10 then they would also present us by next  
11 Tuesday with the electronic warfare text that  
12 would go into the reports. So we have a  
13 meeting on Tuesday and hopefully that will  
14 come together at that point and we'll get that  
15 part of it finished.

16           Then we get a little time to  
17 ourselves and work on, you know, what our  
18 consensus is on those things. And then we  
19 would get this interference study done by the  
20 20th. The other thing that's going to be  
21 really a pacing item is on the 21st of April  
22 is when we're supposed to get the draft, the

1 Phase 2 study from the government that talks  
2 about what they generally --

3 CO-CHAIR FONTES: Did you say  
4 April or March?

5 MR. REASER: February.

6 CO-CHAIR FONTES: Oh, February.  
7 Okay.

8 MR. REASER: I'm sorry, February.  
9 And we can kind of go through it. And then we  
10 would hope to have a final draft report in  
11 March and then issue the final consensus  
12 report at the end of March. But we have a  
13 ways to go on this schedule.

14 So the next slide sort of gives  
15 Charlie and I's sort of observation. We don't  
16 have any agreed recommendations for today's  
17 meeting; it should be obvious. We won't have  
18 a complete report for the February meeting  
19 either, that's not going to happen for awhile.  
20 And part of the problem is we haven't been  
21 able to get all the needed technical data from  
22 the government to complete all these studies

1 and so forth.

2 And another thing that kind of  
3 worries me a little bit, and I had a little  
4 interchange with Colonel Martins on the phone  
5 here, but we still haven't gotten comments on  
6 Phase 1 yet and, you know, depending on what  
7 those are, it's hard to say how we're going to  
8 reach a consensus on Tuesday because we  
9 haven't see the comments.

10 If there's no comments, then  
11 that's a no-brainer, we'll be done. But if  
12 there are comments, that could be an issue for  
13 us and we don't have them and they've got a  
14 couple days left before, you know, when we  
15 turn into pumpkins on Tuesday.

16 One of the other problems I have  
17 is, and that we have, is that all the  
18 satellite uplink stations are yet to be  
19 identified. Back in 2001, and I have to admit  
20 I helped work on that report as Karl and team  
21 over here know, we actually had a lot more  
22 information than was made available in

1 Appendix B to the DoD report in terms of all  
2 the lat logs, all locations for GPS and all  
3 the other sites and so forth.

4 We don't really have all that and  
5 things like how many antennas are at each  
6 site. That's somewhat not, that hasn't been  
7 released and those kinds of things. So we  
8 don't really have a good picture on where all  
9 the uplink stations are, and where they're  
10 located, and how many there are at each  
11 location. So that's one of the things I think  
12 that might be a difficulty for us.

13 So basically what we're trying and  
14 I think this might be going is, you know, I  
15 think in the end, the base stations and  
16 handsets will be allowed to operate, sent to  
17 a non-interference base, similar to the  
18 situation in the U.K. with sort of very little  
19 guidance is where this might be going.

20 Base stations will need to  
21 determine their own protection level based on  
22 something unless the DoD is able to release

1 some information about what the contours are  
2 in terms of interference powers and those kind  
3 of things that is usable. Right now we're  
4 making the assumption it's, you know, all  
5 azimuths, all directions, max power all the  
6 time, all frequencies. So that kind of gives  
7 you kind of a, that gives you the big dome,  
8 you know, of interference.

9 And the other thing that's of some  
10 concern to us is if the government doesn't  
11 believe that this protected interferences  
12 levels into the satellite receivers is  
13 acceptable, we're going to have to have some  
14 kind of methodology about how that really  
15 works because they can't, I don't think  
16 industry or anybody would be well served by I  
17 think hey, you need to stop doing 4G LTE now  
18 because we think we're getting some  
19 interference.

20 The other thing that was sort of  
21 pointed out by the U.K. guys, you know,  
22 there's a lot of stuff we don't really control

1 outside the government. These satellites  
2 generally don't operate just over the U.S.  
3 And these bands are pretty well built out in  
4 the other countries and we don't have a whole  
5 lot of control over that.

6 I mean, I think originally in  
7 2000, and Karl and I and Jennifer were at the  
8 conference, and we tried to prevent the  
9 designation of these bands, this IMT 2000  
10 bands. We didn't really get real far in that  
11 except maybe in Region 2 of some countries.  
12 But the point is that, you know, that's been  
13 on the books now for, you know, a dozen years  
14 now and so that's going to be another issue.

15 In the report, and I'm not saying  
16 I'll just say for the NTIA and the federal  
17 side is that in the report that was done in  
18 2001, we actually looked at the international  
19 impacts of this. And so there's tables and  
20 charts that talk about population centers:  
21 Paris, London, all the other places if the  
22 band was declared to be that case.

1                   And I think that the federal  
2 agencies would be well served to take a look  
3 at not just what happens here in the U.S. in  
4 terms of how we're going to do these auctions,  
5 but if there's going to be really concern for  
6 the satellite receivers, they really need to  
7 look at this in a global basis because the  
8 band has pretty much been declared a band for  
9 IMT 2000, which is sort of our, you know,  
10 globally. And that, so then Charlie, if you  
11 have any other comments you'd like to make.  
12 Maybe you want to make some about the build  
13 out thing, you were kind of worried about that  
14 one.

15                   DR. RUSH: Yes, thank you.  
16 Charlie Rush here. The likely outcome  
17 statement on the last viewgraph, I think we'd  
18 just like to explain a little bit more about  
19 what this means.

20                   At least in my mind, if we were  
21 asked today to make a firm decision as to what  
22 it is that you can say that can be used as a

1 basis for going forward to allow sharing or  
2 access to the band 1755-1850 by commercial  
3 entities in the United States based on what it  
4 is that we know is going on at this point with  
5 regard to electronic warfare and the satellite  
6 uplink control operations, these are the  
7 statements that we could make, that the  
8 handsets should be allowed to operate on a  
9 non-interference basis.

10 That process as Rick has  
11 indicated, seems to be working at least at the  
12 station, the uplink satellite control facility  
13 in the U.K. A very important point that Rick  
14 alluded to was the fact that this whole band,  
15 1710-1785, paired with the 1805-1885, is a  
16 commercial band that is identified for IMT.  
17 And it's used as a secondary band to the 800  
18 band in many, many countries in the world and  
19 it's being built out.

20 So the reality is, we're going to  
21 have to live with that. And just about the  
22 only country in the world that doesn't have a

1 viable mobile service in this band, whether it  
2 be 1st Generation, 2nd Generation, 3rd  
3 Generation mobile is the United States.

4 I'm not saying that this band is  
5 used all, from 1755 to 1785, but parts of this  
6 band are used in most countries of the world  
7 for mobile service. So the pressure is on for  
8 that to become a mobile band. Let's not get,  
9 you know, be mistaken about that.

10 With regard to the base stations  
11 determining their own protection levels,  
12 having looked at this issue over the course of  
13 the last ten years or so, with regard to  
14 potential operations in the 2 gigahertz band  
15 as part of the potential relocation, that came  
16 out of the decisions when we went through the  
17 first round of access to 1710-1755, most of  
18 the satellite control facilities in the United  
19 States are located in relatively rural areas.  
20 It's not all, that's not always the case.

21 I would think that there are ways  
22 in which an operator can certainly discern

1       whether or not they're being interfered with.  
2       And the assumption is that this band is going  
3       to be used for downlink, which means it's  
4       going to be based, will be used for uplink,  
5       I'm sorry, which means base station receive.

6                 So the operator can certainly  
7       discern whether he or she is having  
8       interference. And probably can take some  
9       options to move around to be able to deal with  
10      that. The operations, each of these channels  
11      that operate, operate on basically 4 megahertz  
12      channel. And it's very, very rare I believe,  
13      I could be corrected, but I think it's very,  
14      very rare that they operate in the full 4  
15      megahertz at any one time.

16                And unless there's an anomaly,  
17      which means that the satellite is tumbling or  
18      the rocket in a launch is going off course and  
19      has to be destroyed, they're not operating on  
20      a given frequency from a given location, 24/7,  
21      365.

22                So I think that there are ways of

1 being able to work around this. But it's not  
2 easy to convince, let's say a banker or  
3 someone like that, that they ought to put in  
4 a couple billion based on what Charlie Rush  
5 believes.

6 It would be nice if we had some  
7 data that would show what's happening on  
8 Boston Common relative to signals that are  
9 emanating from the new Boston site in New  
10 Hampshire. And if the results show that  
11 you're not seeing anything, it doesn't make  
12 any difference whether or not the reason  
13 you're not seeing it is because propagation is  
14 being blocked or whether the system is not  
15 operating at all.

16 The fact of the matter is if  
17 you're not seeing anything then maybe I can  
18 use it in Boston on the Boston Commons. And  
19 I may be very happy to do that as opposed to  
20 being sad about not being able to provide  
21 mobile service in Manchester, New Hampshire.  
22 It's a trade-off that I could make as an

1 operator.

2                   And the other thing that I think  
3 that, I would like to say, that concerns me  
4 quite a bit is a comment as I perceive it that  
5 there's concern on the part of the government  
6 that if they agreed that the interference into  
7 the satellite systems from the mobile handsets  
8 increases, that we're going to have a problem  
9 and that we're going to have to have some sort  
10 of safeguards against that.

11                   I don't know how we can implement  
12 that. It's pretty clear that one could assume  
13 that the demand for mobile services in the  
14 form of added capacity and the form of data  
15 rates is going to increase.

16                   I'm not sure that that increase is  
17 all just going to mean that in any given  
18 frequency band there's going to be more users  
19 operating at higher powers because these  
20 systems themselves, and unless there's a major  
21 shift in how we operate these systems, the  
22 systems themselves are interference-limited.

1 So you only can go up so far in power before  
2 you start killing your neighbor. And that's  
3 in absolutely no one's interest.

4 So I really don't see how we get  
5 to a point where we could come up with  
6 something that could be used to try to --  
7 measurable as to what happens if the systems  
8 grow, because the systems will grow. The  
9 question is, what measurable can you come up  
10 with that would allow you to assess that it's  
11 going to create interference? And if it does,  
12 how do you measure it?

13 Other than that, that's all I have  
14 to say. And I'd just like to thank Rick and  
15 certainly thank Rob and Alex for all the work  
16 that they've done, as well as the DoD and  
17 federal users' contingent led by Colonel  
18 Martin and his team, for helping us sort of  
19 work our way through this morass.

20 CO-CHAIR FONTES: Okay.

21 HON. OBUCHOWSKI: Well I'd like to  
22 make a couple observations.

1 CO-CHAIR FONTES: This is Janice.

2 HON. OBUCHOWSKI: Sorry, this is  
3 Janice. I'd like to make a couple  
4 observations. I don't think anybody around  
5 this table would dispute that the handwriting  
6 is on the wall as far as this band, that it's  
7 under challenge and there's no way that it  
8 will, and so I can't imagine that DoD, I mean  
9 they've been party to the decision to turn it  
10 over, over time. So I don't think, I mean  
11 that's really not a debating point.

12 On the question, however, of how  
13 to achieve this, I don't think, and this is  
14 your conclusion, but I don't think anybody can  
15 come away from this saying this is an easy  
16 matter. There's no clear cut, you know, way  
17 forward.

18 And we certainly, as the world's  
19 remaining superpower, heavily dependent on the  
20 intelligence that we're probably receiving  
21 through some of these satellites, we can't  
22 walk away from the problem.

1                   And to that end, I observe that  
2                   this information release that was more  
3                   plentiful, came out in February 2001. I  
4                   wonder if the same information release would  
5                   have been made in October of 2001. Over the  
6                   last decade, we have encountered numerous  
7                   cyber incursions, strategic electronic warfare  
8                   on a global scale. It's not being mitigated.

9                   So I don't know the answer, but I  
10                  don't think it's an easy, you know, it's an  
11                  easy point to make. These players have every  
12                  right to want to protect a lot of information  
13                  about their systems on the security side.

14                 And it behooves us as a country,  
15                 if we want to solve this problem and free the  
16                 spectrum up for more commercial use and  
17                 continue to lead the way on both fronts,  
18                 commercial as well as security, you know, to  
19                 answer it.

20                 And I, you know, I want to applaud  
21                 the committee because I think people proceeded  
22                 in good faith. And I think everybody's

1 learning from everybody else. But as we walk,  
2 you know, on to the next chapter, I don't  
3 think the answers are easy, but I think both  
4 sides are going to have to give a little and  
5 maybe give a lot.

6 CO-CHAIR FONTES: Okay, thank you.  
7 Kevin, you had a comment?

8 DR. KAHN: Yes, Kevin Kahn, I  
9 probably shouldn't be making it, but I always  
10 come back to the same place here which, you  
11 know, and Lord knows, I don't want to in any  
12 way, shape, or form, damage our defensive  
13 posture or our intelligence community or  
14 anything else.

15 But, you know, what we see here is  
16 an example of it. A, we see systems that are  
17 in fact operating apparently just fine in  
18 other jurisdictions. And what's more, are  
19 codified to have to operate that way around  
20 the world because those frequencies are, in  
21 fact, being deployed for commercial use  
22 against these kinds of systems.

1                   Second of all, if I break the  
2 government systems into honest-to-God warfare-  
3 oriented systems of some sort, I'll put, you  
4 know, kind of real-time intelligence in that  
5 category as well, and what I'd call more, it's  
6 not quite the right word, but I think you'll  
7 understand what I'm getting at, casual  
8 communication systems, not that they're casual  
9 in terms of not being important but, you know,  
10 they're not really likely subjects of attack  
11 by a, you know, a foreign party that we're  
12 engaged with.

13                   You know, the ones that are honest  
14 to God, real time warfare systems have much  
15 greater problems to deal with than handsets.  
16 I mean, let's be serious. If I can take down  
17 a critical warfare system by marshaling 100  
18 LTE handsets, that's not my concern then with  
19 the guys depending on that warfare system,  
20 because it is so damn trivial to generate far  
21 more interference with stuff that is far less  
22 sophisticated than a few damn handsets.

1           So I just think we have to keep a  
2           sense of perspective as we look at this. Yes,  
3           you know, we need to find ways forward that  
4           are cost-effective, it's sensible, and  
5           security-sensitive for the government systems.  
6           But at the same time, we have to look for real  
7           context that particularly the critical systems  
8           operate in. And handsets are not their  
9           biggest threat.

10           HON. OBUCHOWSKI: I wasn't making  
11           that point. I was making a point about  
12           release of information on satellite  
13           parameters. I agree with you, the threat  
14           would not be coming as a response to that from  
15           LTE handsets. But the release of the  
16           information enables behaviors that allow  
17           players far more serious than that to take a  
18           shot.

19           And again, I don't think we're  
20           going to finish this up. I just don't think  
21           it's an easy issue in this country and, you  
22           know, analogy to one system in the U.K.,

1 important though that may be, is not going to  
2 define the answer.

3 And I would further make the point  
4 that it did, you know, an alternative of  
5 course has been relocation. A unified  
6 satellite band is off limits, it's secondary  
7 at the FCC because of the broadcasting, you  
8 know, incumbents.

9 There are answers, but those  
10 answers involve sacrifice by way of freeing up  
11 other spectrums so these people can relocate.  
12 They also involve the costs of relocation,  
13 which are much heftier than the costs of  
14 sharing.

15 So we're going down this path  
16 because it was the decision of our government  
17 and the public policy that we ought to keep  
18 some of those systems where they are and  
19 share, because the alternative of relocation  
20 on a fast track was pretty costly.

21 So I don't think anybody's sitting  
22 here saying, oh gee whiz, we're being

1 intransigent. There was that willingness, it  
2 was ruled off the table at least in the first  
3 instance.

4 MR. NEBBIA: Jennifer had her hand  
5 up and Charlie, and if at all possible, we  
6 would like to get to the next working group,  
7 especially since we're not finalizing the work  
8 here so, you know.

9 MS. WARREN: I intend it to be  
10 short.

11 MR. NEBBIA: You are already  
12 short.

13 (Laughter.)

14 MS. WARREN: Oh! Okay, so Larry,  
15 can we talk about training?

16 MR. NEBBIA: I've been through all  
17 the classes.

18 MS. WARREN: Moving right along,  
19 to go back to the point that Charlie was  
20 making, first of all, I do think that we need  
21 a larger conversation about releasability of  
22 data. And I think, you know, a number of the

1 working group reports will be teeing that up,  
2 including ours.

3 But I thought it was interesting  
4 the forecasting of kind of where this working  
5 group might end up given where it is now. But  
6 one of the things that I just wanted some  
7 clarification on, and if it takes too much  
8 time we can do offline is Charlie, when you  
9 were referring to the interference levels,  
10 were you talking about the actual absolute  
11 power of the LTE or the system or were you  
12 talking about the aggregate interference  
13 caused by the growth of the number of mobile  
14 handsets that would be operating at any given  
15 time? I didn't understand if you were talking  
16 about aggregate interference or just an  
17 absolute power level. Can you just clarify or  
18 tell me offline?

19 DR. RUSH: There is, this is  
20 Charlie, an LTE system like a CDMA system is  
21 interference-limited. So there's only so much  
22 power that can be engendered out of, for the

1 activity in one cell before it starts to  
2 interfere with what's going on in the adjacent  
3 cells.

4 And a lot of effort goes on within  
5 an operator and between operators to make sure  
6 that they minimize the potential for intracell  
7 interference within the system, an intercell  
8 interference.

9 MS. WARREN: That's what you  
10 meant.

11 DR. RUSH: And that will continue  
12 to be the basis for operation as long as we  
13 are operating with a cellular-based paradigm.

14 MS. WARREN: Thank you.

15 DR. RUSH: Now I didn't mean to  
16 imply, and I hope no one has taken it that  
17 way, that what we're trying to do here is to  
18 gain access to a band of frequencies that  
19 would really harm the government if the  
20 commercial side was, you know, was -- been  
21 able to gain access to that.

22 The fact of the matter is that we

1 have very little data that shows how mobile  
2 systems can operate in the presence of these  
3 kinds of, for lack of a better word, satellite  
4 tracking facilities or satellite operational  
5 facilities or satellite radars, whatever you  
6 want to call them, they're big systems that  
7 are transmitting lots of power, okay?

8           And they're only being transmitted  
9 in a few places around the world. The United  
10 States is probably the biggest user of this  
11 band for that, because since the band is not  
12 being used around the world for this kind of  
13 operation except maybe a few places in Russia  
14 and one place that I know of in England, maybe  
15 some place in the southern hemisphere.

16           So the pressure clearly is on to  
17 gain access to this for mobile because  
18 everybody else is doing it. But yes, there is  
19 an issue with saying, okay, we will turn this  
20 band over. And you can't just say, okay, I'm  
21 going to turn this band over and by the way,  
22 if I have 400 satellites or 300 satellites or

1 even 50 satellites, I'll just go up there and  
2 I'll just change the batteries.

3 I mean, one doesn't do that with  
4 satellite systems because of the cost, you're  
5 talking ten, 15 years out in order, before you  
6 can refurbish the whole inventory. It's a  
7 slow, tedious process.

8 It's a lot easier, even though it  
9 does potentially drive me crazy at times and  
10 very, very frustrating. Overall, it's a lot  
11 easier to try to work out a solution here on  
12 the ground than to either give up or say,  
13 well, let's, you know, let's wait 15 years and  
14 we won't have any satellites that will be  
15 impacted by this particular thing.

16 MR. STRICKLING: Can I say  
17 something?

18 CO-CHAIR FONTES: Sure.

19 MR. STRICKLING: I just wanted the  
20 record to reflect, that question could only  
21 have come from a person of great stature and  
22 wisdom. And I'm sure Karl would agree.

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(Laughter.)

CO-CHAIR FONTES: There's a lot of great stature here. Tom, you had a comment. And what we'd like to do is to try to wrap up this group's presentation, if you don't mind.

MR. SUGRUE: This is a general comment, I think it applies to, I'm sorry, Tom Sugrue, to the subsequent working groups as well, just about sharing information and following on what Charlie said. I think the point of that isn't to jeopardize national security, and I know you're not suggesting that, Janice, but the point was to find solutions.

And this band is being used you say commercially around the world for mobile systems. When we share information we, first of all, I think we can provide the agencies a lot of comfort that the scope of the problems is likely less than they're worried about, and they're right to be worried about it.

And if there are problems then we

1 could address it here in this country through  
2 whatever techniques we have to minimize the  
3 interference, that is a problem. And right  
4 now again, as Rick said with a lot of worst-  
5 case scenarios, you just, you don't really  
6 have much to go on.

7 We found a similar thing in the  
8 1710 to 1755 band, as you know T-Mobile is  
9 very active in that band and clearing. And  
10 initially, a lot of worst-case scenarios, not  
11 much information and so forth.

12 Finally we got past that and once  
13 we did, the process worked the way I just  
14 described. The government side got a lot of  
15 comfort, the level of interference was not as  
16 acute as perhaps they might have worried  
17 because they understood our systems, our  
18 deployment plans, and so forth.

19 Vice versa, if there were problems  
20 and we knew, okay, that's a problem, we can't  
21 do X, Y or Z; we've got to do it differently.  
22 And so it's really just to try to solve the

1 issue, not to do anything to hurt the systems.

2 CO-CHAIR FONTES: Thank you very  
3 much. Thank you for the work that's been done  
4 on this committee, not an easy task. None of  
5 these committee assignments or working group  
6 assignments are easy. Next we'd like to go to  
7 Working Group 4, and this is the 1755 to 1850  
8 Megahertz Tactical Radio Relay, and the Joint  
9 Tactical, I'm sorry, what?

10 MS. WARREN: Sorry, JTRS.

11 CO-CHAIR FONTES: Yes, I was going  
12 to say the Joint Tactical Radio Systems.  
13 Before we go into the presentation here, and  
14 Mark, are you making this presentation?  
15 Before we do that, I'm going to have to be  
16 leaving here shortly so, Greg, I want to  
17 basically at this point turn it over to you  
18 and to Bruce.

19 Bruce will be your eyes and ears  
20 here around the table in terms of identifying  
21 people to speak. And again, I want to express  
22 my apology for having to do this, but

1 schedules were moved around that I had later  
2 this afternoon to this, earlier afternoon. So  
3 Mark?

4 MR. GIBSON: All right, good  
5 morning. All right, so as Brian said, this is  
6 the Working Group 4 which deals with microwave  
7 J, Tactical Radio Relay and JTRS. JTRS was  
8 added in the middle of the process, and you  
9 might know JTRS as software-defined radio  
10 because those terms seem to be used  
11 interchangeably. What I forgot to put in this  
12 deck was the co-chairs of this group, which  
13 include Dave Pierce from the DoD and Mike  
14 Chartier, so that was my bad.

15 The next slide is an overview of  
16 the deck, we're just going to go to the Slide  
17 3. So for point-to-point microwave, there is  
18 a lot of experience with that from AWS-1. And  
19 so while the group wasn't ready to make  
20 recommendations on that per se, I think that  
21 we're working toward recommendations in the  
22 near term.

1                   What we want to do is we want to  
2                   combine all the recommendations in one final  
3                   report, so we may not make recommendations in  
4                   February, and you'll see where our schedule is  
5                   later on, but I think, you know, for the most  
6                   part for this group microwave was low-hanging  
7                   fruit and we're in pretty good shape with  
8                   that.

9                   One comment to make on it, if you  
10                  see in Bullet 2, that there is actually some  
11                  precedent out there from AWS-1 and we're going  
12                  to stand on that precedence, so we're probably  
13                  going to parrot the rules as well as the  
14                  public notice that came out from the NTIA and  
15                  the Commission back in April of 2006 that  
16                  described the process.

17                  Where we are right now with this  
18                  equity specifically is trying to determine  
19                  whether we need to dig into interference  
20                  criteria, and whether there is a difference  
21                  between transitional sharing and long-term  
22                  sharing.

1                   And then finally, we're also  
2                   trying to overlay the work that has come from  
3                   the previous working groups, one I think came  
4                   from 1 or 2, the list of the market areas, to  
5                   possibly prioritize relocation of microwave  
6                   systems consistent with where there may be  
7                   high value deployment for carriers.

8                   So that's where Working Group 1,  
9                   or Point-to-Point Microwave is. On the other  
10                  thing, I'd like to thank Working Group 2 or 1,  
11                  before I forget, was the taxonomy on the  
12                  concept of protection areas and coordination  
13                  zones. That's good work and I think that it's  
14                  helpful, maybe in not terms of reference, but  
15                  something I think we can all use.

16                  We're struggling with the  
17                  difference between what an exclusion zone may  
18                  mean, what a protection zone may mean, and  
19                  what a coordination zone may mean. And they  
20                  may mean different things to different people,  
21                  and they may mean different things to  
22                  different equities, so we're going to take

1 that work and keep it.

2 For the Tactical Radio Relay  
3 Systems and the next one which is JTRS, we're  
4 struggling with being able to make any  
5 determinations at this juncture as to whether  
6 sharing it, or relocation versus sharing is  
7 where we are. There was really no data in the  
8 report that we are using to identify the  
9 situation with sharing.

10 There was a figure put in the  
11 report of \$160 million for relocation, but we  
12 don't have any detail on how exactly we can  
13 share with those systems. And so we're  
14 crunching through that process right now.

15 This is one equity that's fairly  
16 highly deployed nationwide, different than  
17 AWS-1. AWS-1, I believe, there were 16 or 18  
18 locations, which is now down to two, and that  
19 process has working very well and we'll try to  
20 use that process to the extent it makes sense  
21 here.

22 But for these TRR systems, we're

1 in the process now of trying to determine how  
2 big these areas are, these protection areas  
3 are, and we have a set of results now, which  
4 we'll probably have to go back and redo  
5 because there is other work that's going on,  
6 which is sort of working with, under a  
7 technical working group that was kicked out of  
8 Working Group 5, but which Working Group 4,  
9 well, not kicked out of, but use --

10 MR. NEBBIA: Just say exiles.

11 MR. GIBSON: Exiles, yes, it's an  
12 exiled group and we're kind of, no, it's a  
13 working group that sort of overlays both. And  
14 that working group was developed out of 5 and  
15 4 is glomming on to it, to use some of the  
16 technical aspects of the analysis which  
17 primarily relate to the, how we determine a  
18 cell layout for analysis, how we employ a  
19 propagation model, and how we use interference  
20 objectives.

21 And so you'll hear more from 5,  
22 but we're still struggling within the working

1 groups on exactly how to use that. And we  
2 don't want to waste the government's money  
3 running studies unnecessarily, so we're very  
4 mindful and very appreciative of the work that  
5 has been done so far, the work that was done  
6 to create the NTIA report, and then the work  
7 that the DoD is doing to support this work in  
8 TRRs and JTRS.

9 Nonetheless, there's still more  
10 work to be done. You see in this brief, which  
11 is just a status report, that we've only  
12 really done three of 86. And we're not saying  
13 we have to do all 86, but we've got to do more  
14 than three to be able, well to make that  
15 determination. And that's kind of where this  
16 working group stands.

17 Nonetheless like I said, there is  
18 a precedent with respect to what was done with  
19 AWS-1, and we're going to try to see to what  
20 extent that work is germane to this issue  
21 here, so that's the TRRs.

22 The JTRS, it's a little bit more

1 challenging. If you look at the NTIA report,  
2 the only reference really to these and its SDR  
3 systems is that there's no applicable cost for  
4 these. So we're struggling with how we share  
5 with them or whether we relocate them. And we  
6 recognize there's more work that needs to be  
7 done and DoD is doing some of that analysis  
8 for these systems. And so this is one of  
9 those things that it's just TBD.

10 We're hopeful to have some better  
11 results, you know, by February, but we are  
12 kind of at, almost at square one with some of  
13 the work we've done. And we just don't know  
14 enough about these systems yet to make any  
15 determination on them.

16 The other issue we've run into  
17 with these systems is that the latest on them  
18 is that the data for these systems is not  
19 releasable to industry. We understand it's  
20 releasable, it's FOUO, so it should be  
21 releasable to some extent but we're not  
22 really, we're struggling a little bit with how

1 we get to that data. And that's, you know, we  
2 see these references to trusted agent which  
3 we're also struggling with, we and Working  
4 Group 5. So this is one where you just say  
5 stay tuned, wait until the film comes out I  
6 guess and it will be a blockbuster.

7 So finally, you know, I've blown  
8 through this pretty quickly. Finally with  
9 respect to the schedule, you know, I'm just  
10 not at a position to say what our schedule is  
11 just yet. I had to submit this for  
12 publication about a week ago.

13 Since then, there's been some new  
14 information on how DoD is running these  
15 analyses, and we understand that we should get  
16 some results within a few weeks, probably in  
17 time for the February meeting, to at least  
18 show some preliminary results, but certainly  
19 not within time to make any determinations or  
20 any recommendations.

21 So, you know, I guess the takeaway  
22 from this is, we're still working, we're

1 working hard. DoD is doing a lot of work.  
2 We've heard it loud and clear, they're taking  
3 it out of hide, we all appreciate that as  
4 taxpayers. And so that's kind of where it is.  
5 It was pretty quick, but questions?

6 CO-CHAIR ROSSTON: Thank you very  
7 much. I need, the video is about three, it's  
8 very good by the way, coming over the video  
9 but it's about three seconds behind so I can't  
10 recognize anybody in real time. But if Bruce  
11 would call on people, I think that would be  
12 helpful.

13 MR. WASHINGTON: Any comments?  
14 No? There are no comments, Greg.

15 MR. GIBSON: Good job! See, once  
16 Brian left everything goes smooth.

17 MR. TRAMONT: And he's a lot  
18 taller than some of you.

19 (Laughter.)

20 CO-CHAIR ROSSTON: I was going to  
21 say that I run a short meeting.

22 MR. TRAMONT: At a macro level, a

1 lot of what Mark said applies with equal force  
2 to Working Group 5. Jennifer and I are the  
3 liaisons along with Tom, reporting back here.  
4 And Colonel Reese, as well, you've done a very  
5 nice job as our co-chairs.

6 As you recall, Working Group 5 was  
7 subdivided into four sub-working groups,  
8 dealing with air combat training systems,  
9 aeronautical mobile telemetry is the second  
10 one, small unmanned aerial systems, I try not  
11 to use the acronyms because I find this  
12 clearer for everyone, and finally precision  
13 guided munitions and other miscellaneous  
14 systems. So within the Working Group 5,  
15 there's four subgroups.

16 In addition we did spin out the  
17 technical working group that has been lending  
18 support to Working Group 5 as well as Working  
19 Group 4. We have had a series of in-person,  
20 face-to-face meetings as well as a series of  
21 conference calls over the course of our time  
22 since we were chartered or first met in July

1 of last year.

2 We have made progress in  
3 developing the various methodologies that we  
4 will use for interference to the airborne  
5 systems, but there's still a lot of work that  
6 needs to be done. And like some of the other  
7 working groups, we face some real challenges  
8 that have caused our timeline to slip.

9 The time line initially set up  
10 called for our work to be done by now, but the  
11 complexities have led to the point where today  
12 we're probably about six months behind  
13 schedule. And we're hopeful that sometime  
14 during the summer we'll be able to have final  
15 work product. Jennifer and I have a dinner  
16 bet on the exact timing of how that's going to  
17 work out.

18 So even with those delays, we had  
19 hoped that we could have our work complete on  
20 ACTs today, however an issue arose about the  
21 nature of the LTE interference modeling and  
22 whether we should assume that the LTE model

1 was done in a uniform grid pattern or we  
2 should use an actual network to give a more  
3 realistic assessment of what the commercial  
4 model would look like. This has been a very,  
5 very hot topic over the last few days.

6 Now it appears we're headed  
7 towards an anonymized network approach through  
8 the good graces of Comsearch, that would be  
9 able to use a real network but it would be  
10 made anonymous if you will, by the Comsearch  
11 efforts.

12 So as a result of this change, we  
13 will have a more realistic assessment, but the  
14 analysis done to date by Allion, DoD's  
15 contractor that's working with us on a lot of  
16 these matters, will need to be rerun and the  
17 final report will be delayed as a result of  
18 that.

19 So under the new schedule, we are  
20 hoping that the sub-working groups can begin  
21 producing additional data somewhere between  
22 late February through May, with a final report

1 hopefully ready by mid-June. And obviously  
2 we'll continue to have our meetings as we've  
3 discussed.

4           The greatest challenge is one that  
5 Mark flagged, which is sort of this  
6 confidential information, how to maintain  
7 confidentiality of non-public information  
8 while providing the industry representatives  
9 with the appropriate role in the evaluation  
10 process.

11           The trusted agent approach that  
12 Mark flagged with NTIA and to some degree the  
13 FCC playing this role, that is they would look  
14 at information that's not going to be able to  
15 be made available to the industry. But the  
16 parameters of how the trusted agent  
17 arrangement would work have not yet been  
18 defined.

19           And there's a lot of concern on  
20 the industry side about how much transparency  
21 they would have under the trusted agent  
22 process, would the trusted agents have

1 sufficient time or technical expertise to do  
2 what needs to be done to assess what Allion  
3 and the government actors are doing. So this  
4 is a large issue for our group that we really  
5 struggle with and it will need to be resolved  
6 before we can make substantial progress and  
7 certainly in order to meet the deadlines.

8 Jennifer and I have talked a lot  
9 about internally, you know, this is a  
10 precedent-setting opportunity and process.  
11 And it has a lot of challenges associated with  
12 it. And we think that it's very important  
13 that for Working Group 4 and 5, as well as for  
14 the larger challenges that we face as a  
15 country that we get a process in place that  
16 allows for commercial entities and government  
17 to work together in a trusted environment to  
18 ensure that there's a real assessment of the  
19 national interest and how to move forward on  
20 these things. And so this seems to be the key  
21 now of the issue that we face. And I think  
22 that I summarized everything in our one slide.

1 I know Jennifer may have some supplemental  
2 comments.

3 MS. WARREN: Just to emphasize one  
4 or two points, while the ACTs analysis has  
5 been delayed and we won't have that until end  
6 of February, I think the other sub-working  
7 groups will be producing their analyses in a  
8 staggered fashion. By staggered, we mean AMT  
9 may be, it will be faster perhaps than  
10 precision guided munitions. So all of that's  
11 going to be worked, we're not going to hold it  
12 all up for the final, so each of the sub-  
13 working groups will complete when they do and  
14 then that will be shared up to the Working  
15 Group 5.

16 I think we can discuss, you know,  
17 whether we hold off everything for a final  
18 Working Group 5 report or if we, you know,  
19 sever it. I think that's still to be  
20 determined by the time lines that, you know,  
21 if we stick to these time lines or if there  
22 are further challenges that come up.

1                   And I just want to emphasize and  
2 perhaps there's a discussion we can have,  
3 Karl, about the process for getting to options  
4 for data releasability. It's something that's  
5 common to all the groups, it needs to be a  
6 process that, you know, is broader than  
7 spectrum experts and spectrum. It's not a  
8 spectrum issue, it's a security classification  
9 issue, it's a data release issue that has much  
10 broader precedent and implications, and there  
11 just needs to be the right people involved to  
12 look at what are the carve outs for spectrum  
13 or not, or what have you.

14                   And as Brian said, this is  
15 precedent-setting for future sharing  
16 discussions, not just this band. And I'm just  
17 a little worried about, you know, getting  
18 options on the table for both government and  
19 industry to look at and decide how or whether,  
20 you know, any of the options meet the needs.  
21 So I just wanted to highlight that because I  
22 think --

1 MR. TRAMONT: When you say  
2 options, you mean process options.

3 MS. WARREN: Process options, yes.

4 MR. TRAMONT: Or how to deal with  
5 these issues. And especially because the  
6 systems are not monolithic, right, some of  
7 them are secret, some of them are FOUO, and  
8 there needs to be, I think at a higher level  
9 than the working group, a decision made about,  
10 you know, so what is the industry prepared to  
11 do to make this process work? Who are they  
12 prepared to get clearances, how long will that  
13 take? Can we get that, how does that work?  
14 What is the government willing to do and how  
15 do we get to a common approach?

16 So I think that's the real  
17 challenge and sort of developing a process for  
18 FOUO, a process for secret and et cetera, so -  
19 - I don't know if Mark, you want to go.

20 MR. GIBSON: Actually, I'd like to  
21 make a comment because there's an issue that's  
22 at least across these two working groups. And

1 that is an update of the information that was  
2 made available before, in terms of the number  
3 of assignments.

4 We're still running on the data  
5 that came out two years ago, maybe three years  
6 ago. And we're hearing a little bit that some  
7 of that's changed. One other thing I didn't  
8 touch about in my presentation is that, for  
9 example, for some of these TRRs, the area of  
10 operation is the state of Iowa or the state of  
11 Ohio or the state of Pennsylvania. And that  
12 means a much different sharing methodology  
13 than if it's just the bases within there. So  
14 that's one issue.

15 The other is just the number of  
16 assignments. If it's increasing or decreasing  
17 that's fine, but if we're looking at -- and we  
18 don't even have any information on the number  
19 of assignments associated with JTRS. So, you  
20 know, I think I speak for both working groups  
21 where, you know, any more information that  
22 could be updated that's already been released

1 would be very welcome at any juncture in the  
2 process, but the sooner the better.

3 MR. WASHINGTON: Rick, back to  
4 you. Oh, Karl?

5 MR. NEBBIA: Yes, let me just  
6 note, we certainly in the process knew we were  
7 breaking a lot of new ground. We had some  
8 examples in our 5 Gigahertz Wi-Fi effort that  
9 we'd gone through a number of years ago, where  
10 a lot of information was shared, some of it  
11 very generalized at the beginning and later as  
12 we got into it -- and remember this is with  
13 the unlicensed community so it's not an easily  
14 identifiable crowd -- we were able to work  
15 through some approaches where people with  
16 clearances directly engaged in testing and  
17 work like that.

18 So we didn't want to up-front try  
19 to proscribe all the structural mechanisms  
20 that would go into this because we had worked  
21 through some of those in the past. The  
22 difficulties have certainly been greater in

1 that we've had data sharing in order to  
2 perform analysis. We're also -- so they've  
3 come up with a construct for a trusted agent  
4 doing the analysis after the sides have both  
5 put in their inputs and agreed to an analysis  
6 method.

7 We've also talked about, in terms  
8 of NTIA and the FCC or some other group,  
9 possibly looking over what those outcomes  
10 were. Ultimately, we are going to have to ask  
11 ourselves the question, what information  
12 absolutely is necessary for the auctions when  
13 that time comes up. And it may be a slightly  
14 different set of parameters.

15 And then lastly, if we're really  
16 going to encourage a coordination mechanism  
17 that goes on, what the expectation sharing  
18 information is going to be there.

19 So at least in those latter  
20 points, it might even be a good thing for  
21 CSMAC to begin thinking about, and maybe by,  
22 you know, February we may want to assign a

1 task there related to this idea of what  
2 information is really necessary at auction  
3 time and what information or what mechanisms  
4 are necessary in the coordination processes  
5 that would go on once you know who the auction  
6 winners were.

7 So I think we should at least give  
8 that some thought ahead of time. I know we're  
9 kind of racing to get back on the schedule,  
10 any other comments before? We've got a  
11 couple.

12 MR. REASER: Yes, I think it would  
13 be a great help, the trusted agent thing. It  
14 started to creep into our group, and it may  
15 have crept in already and we don't know it,  
16 but I think that the issue is that what --  
17 like one of the things, like I think that at  
18 some point they're going to have to clear in  
19 some industry people to see what's going on  
20 because no one's going to really trust what's  
21 under the hood unless they can see it.

22 But one of the big concerns is,

1       like for our group is, like, well, what  
2       exactly you assuming about the lay down or the  
3       roll out of an LTE system? And are you  
4       implementing it properly, because it's  
5       complicated. And so you want to have an LTE -  
6       - not going back and telling their buddies  
7       classified, I mean, that's not even the issue.  
8       The issue is whether what's going on by the  
9       trusted agent is, can it be trusted that it's  
10      accurate?

11                   And so that is really, I think  
12      that's the concern I've sort of heard from  
13      industry. So there has to be some way of  
14      building some trust in the trusted agent  
15      world, because, you know, it's pretty  
16      complicated, this LTE stuff, we agree it's  
17      pretty complicated.

18                   MR. NEBBIA: Janice?

19                   HON. OBUCHOWSKI: First, to that  
20      point I would ask you to reach across to the  
21      FCC and, you know, I know they want to go out  
22      with the rulemaking and they need to go out

1 with the rulemaking relatively quickly to pull  
2 off an auction that potentially involves this  
3 band.

4           There's a lot of confusion on, or  
5 not confusion, there's been a lot of, you  
6 know, concern about delay on the government  
7 side related to, you know, security levels, et  
8 cetera.

9           I sat in on a five hour discussion  
10 related to grid versus real network. One of  
11 the big issues was among the private sector  
12 companies that could not -- which is why we've  
13 yielded this theoretical, anonymous real  
14 network companies don't want to share their  
15 network designs with one another just like  
16 they weren't happy with sharing LTE designs.  
17 That's fine, I mean, it's totally  
18 understandable. It's commercially important  
19 information.

20           But as we go forward, I really  
21 think the FCC has to pull together industry.  
22 And it's not at the good faith working group

1 level here. People like Steve Sharkey's got  
2 a body double. He's been like ten different  
3 committees at once. You know, it's not this  
4 level that can resolve this stuff. And  
5 absolutely, the FCC and the industry has to  
6 decide in real time how much information and  
7 in what form needs to be provided to whom at  
8 these companies before the auction.

9 I think the process with T-Mobile  
10 worked great, in part because T-Mobile got its  
11 people cleared, they had won the auction, they  
12 were in there operating in a very nitty-gritty  
13 fashion.

14 But when we're looking at the  
15 upcoming auction involving this, there's going  
16 to be a lot of information that I would want  
17 if I were a bidder or if I were a banker. And  
18 I agree, I probably wouldn't want to rely on  
19 a trusted agent, which is why there is a lot  
20 of concern on a private sector, you know,  
21 there wasn't really a happy ending to that  
22 meeting, as I saw it, on part of the private

1 sector, justifiably.

2 We can't resolve that. The FCC  
3 has to get to work and it has to bring in the  
4 proper people from all the companies that they  
5 think might be interested and work this  
6 through at an entirely different level, in  
7 their own self interest of running an auction  
8 in this brave new world where there's going to  
9 be some form of sharing.

10 MR. NEBBIA: Jennifer?

11 MS. WARREN: Just two points,  
12 because I thought something that Janice raised  
13 was interesting. I didn't see how -- well,  
14 when industry requested that the analysis  
15 shift from, you know, the grid to the  
16 randomized, real network approach, how did  
17 industry come to an agreement as to what the  
18 data was or what that would look like? That  
19 must be a precedent for how, you know, data is  
20 being shared among, you know, the various  
21 potential licensed carriers.

22 And then my second question was, I

1        imagine it was easier in the first AWS with T-  
2        Mobile because they were the licensee. Here  
3        what's, I think, very precedent-setting is  
4        that we're dealing with the unknown of who  
5        will be, so it's not just clearing the heir  
6        presumptive, but a lot of contenders. And I  
7        think that's very different and very valuable  
8        precedent work that we're doing here. But  
9        we've got to figure -- I just want to  
10       emphasize, I really think we have to figure  
11       out that MO going forward.

12                    MR. NEBBIA:    Mark?

13                    MR. GIBSON:    Let me address -- I  
14       have two things I want to address. First is  
15       it occurred to me as I was thinking through  
16       what I had said a minute ago that I wasn't  
17       clear enough about the -- at least for Working  
18       Group 4 and I think also for 5, that the re-  
19       working of the analysis results was at the  
20       request of industry. Industry pushed it  
21       pretty hard.

22                    Part of the reason was that the

1 results weren't meaningful for LTE, in some  
2 regards. And the other is for some of the  
3 JTRS systems, the results weren't meaningful  
4 at all.

5 With respect to the cell layout  
6 that Jennifer was referring to, I can add a  
7 little clarity to that because Brian referred  
8 to the work that we did. And we took it in  
9 the shorts too, we did that free of charge so  
10 I want to be sure everybody's aware of that,  
11 although it was very minimal.

12 MR. NEBBIA: That's a different  
13 use of the word shorts but that's -

14 (Laughter.)

15 MR. GIBSON: Yes, well. Moving  
16 right along. It was realized -- and I don't  
17 want to get too much into the work of  
18 technical working group -- but there was a  
19 thought that -- and this more or less came out  
20 of 5 -- that grid layout would tend to over-  
21 predict interference with the way the grid was  
22 being done, I'll leave it at that.

1                   There was a conversation that  
2                   occurred right before the holidays that  
3                   perhaps there may be the availability of a  
4                   real cell layout or semi-real cell layout.  
5                   And because we do a lot of the coordination  
6                   work for a lot of the carriers across all the  
7                   -- sharing with, mostly with private  
8                   microwave, it was suggested that we might have  
9                   some of that information, and we do.

10                   And so what we did is we went back  
11                   to the various carriers who own that  
12                   information, got permission to use it for this  
13                   effort, but we did this sort of randomization.  
14                   And by virtue of randomization, what we did is  
15                   we inserted a variable to move the site some  
16                   random distance just based on a random number.  
17                   And then, so we made that data available. And  
18                   that is what was talked about at length at the  
19                   meeting last week. So that's the detail on  
20                   that.

21                   MR. WASHINGTON: Marty?

22                   MR. COOPER: I'm just a little

1       troubled by the use of the term real and grid  
2       systems.  LTE is still a work in process.  And  
3       we don't even know what the ultimate  
4       technology used in LTE is.  So any data that  
5       they come up with in this thing is going to be  
6       problematic and troublesome.  And I don't know  
7       how diversity is going to be interfered with  
8       to deal with that.

9                   MR. WASHINGTON:  Someone -- yes,  
10       go ahead, Tom.

11                   MR. SUGRUE:  I was just going to  
12       add, on the sharing of information on the  
13       commercial side, that our techniques and as we  
14       refer to get over that problem, I was just  
15       checking with Steve.  And we think there  
16       really aren't those problems.

17                   HON. OBUCHOWSKI:  T-Mobile's been  
18       very forthcoming.  I mean, just to be blunt,  
19       that's issue at this meeting, but that is not  
20       where the consensus led.

21                   MR. SUGRUE:  Well, we think we can  
22       work it out with our fellows on the commercial

1 side, let me put it that way rather than no  
2 issue. And we'll certainly endeavor to do  
3 that. And even the AWS-1, we were very much  
4 involved and we work with them. And their  
5 information was included, or sometimes they  
6 come and remind us. But there are ways to do  
7 it.

8 HON. OBUCHOWSKI: Okay.

9 MR. WASHINGTON: Harold?

10 DR. FURCHTGOTT-ROTH: Harold  
11 Furchtgott-Roth, just following up on one that  
12 Janice made. At an auction, the control of  
13 information among bidders is not limited to  
14 one person, bidding party, or potentially it's  
15 a very large number of people because there  
16 are a lot of people involved in the bidding  
17 process. It's difficult for me to see that  
18 information can be classified in any way and  
19 have a meaningful auction. So that's -- I  
20 just toss that out there, that Janice's point  
21 for an auction actually is a very problematic  
22 one.

1 MR. WASHINGTON: Okay. Greg, back  
2 to you. We're at the committee questions and  
3 discussions.

4 CO-CHAIR ROSSTON: Okay, we had a  
5 lot of comments and discussion, but is there  
6 anything that people from the committee wanted  
7 to bring up at this point in time?

8 MR. WASHINGTON: Looks like there  
9 are not.

10 CO-CHAIR ROSSTON: Okay, I think  
11 we'll turn it over to Karl now for the Near-  
12 Term and Hot Topics.

13 MR. NEBBIA: Okay, very quickly,  
14 just wanted to indicate under the near-term  
15 objectives, this is what, the one we've been  
16 working for on here, is the center of what  
17 we're doing. So I would just want to  
18 encourage everybody to keep pressing ahead, I  
19 think this is very, very important work and I  
20 think it is groundbreaking. But that's where  
21 our focus is going to remain for the short  
22 term. There may be other bands that we may

1 want to use this forum for in the future in a  
2 similar way, so we have to keep that in mind.

3 With respect to the hot topics  
4 we're dealing with, I think part of that is  
5 what some of those other bands are that are on  
6 our plate right now, not necessarily brought  
7 in here but a very active 5 Gigahertz for  
8 unlicensed, this very active topic. We hope  
9 to be able to provide our outcome report here  
10 shortly.

11 And we also have an interest in  
12 this, with the international community is  
13 going to be looking at 5 Gigahertz, so the WRC  
14 prep schedule is not necessarily slow moving  
15 or for the faint of heart, you know, it's  
16 going to be moving along quickly. So that's  
17 a critical item.

18 Secondly, the 3.5 Gigahertz  
19 activities over at the Commission, where  
20 they've started their process of looking at  
21 how they can improve outcomes that we provide  
22 in our Fast Track. And so I think it might

1 behoove us to ask whether there's some  
2 involvement that CSMAC can play in that now  
3 that the Commission actually has a rulemaking  
4 underway, maybe the things that we can do in  
5 establishing a group to look at some of those  
6 issues and help us through that, once again in  
7 bringing government and industry together.

8           Also then, last wanted to touch on  
9 the spectrum management improvements group  
10 before has focused to a great extent on data  
11 improvements on our side. And one of the  
12 things that it's left us looking at very  
13 closely is how we would approach a data  
14 cleanup effort and whether it's limited to a  
15 few specific priority bands or, more broadly,  
16 certain aspects we believe will be dealt with  
17 in improving our data checks, some of that  
18 included in FSMS develop.

19           But, for instance, some of those  
20 data checks will never resolve the issue of  
21 whether an agency has turned the system off  
22 and taken it down and just not put the report

1 in. So we've asked ourselves a lot of  
2 questions about how we would realistically go  
3 about this, would it help if our frequency  
4 assigners re-reviewed records that they may  
5 have already reviewed several times, is that  
6 going to yield real benefits?

7 If we go back to the agencies who  
8 submitted the data and say we'd like you to  
9 check this one more time, will that yield  
10 many, you know, benefits? Going out in the  
11 field and trying to do measurements to  
12 identify whether people are doing things the  
13 way they said they would, and seeing we've got  
14 250,000 government records, not an easy  
15 challenge, some of them are nationwide  
16 allocations.

17 So we have convened a group within  
18 NTIA to try to pursue this issue of how we  
19 would specifically do this, so we are trying  
20 to follow up in that area. So that's my  
21 general layout, wanted to move along as  
22 quickly as possible given our time today. But

1 they are some of the things we're looking at  
2 as follow up. So that's all I have. Now come  
3 the public comment.

4 MR. WASHINGTON: Greg, it's back  
5 to you for the opportunity for public comment.

6 CO-CHAIR ROSSTON: Okay. First,  
7 before that, is there anyone who has questions  
8 for Karl? And if not, then we'll move  
9 straight to the public comment. I'll let you  
10 recognize people, Bruce, if you would do that  
11 for me.

12 MR. WASHINGTON: Sure. If there  
13 are no individuals who wish to make public  
14 we'll move forward. There are none, Greg.

15 CO-CHAIR ROSSTON: So the next  
16 thing on the meeting is the schedule of the  
17 next meeting, which looks like it's going to  
18 be in the building where I'm sitting, which is  
19 great, February 21st at Stanford, and the  
20 address is on the agenda.

21 I wanted to take a moment to thank  
22 everybody who's been working so hard on, not

1 only from the CSMAC on these different  
2 committees, but also from all the different  
3 working group members. We have a huge number  
4 of people from the government, from the  
5 private sector, everybody working together to  
6 make big progress on this. And I think this  
7 is extremely important and it's going very  
8 well, but we still have a lot of work to do.  
9 But I wanted to thank everybody for doing  
10 that. If there is nothing else, I think we  
11 can adjourn the meeting. And we're only seven  
12 minute behind the schedule.

13 MR. WASHINGTON: We're officially  
14 adjourned.

15 (Whereupon, the meeting concluded  
16 at 12:22 p.m.)  
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18  
19  
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21  
22

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Advisory Committee Meeting

Before: US DOC

Date: 01-17-13

Place: Washington, DC

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