

U.S. DEPARTMENT OF COMMERCE  
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NATIONAL TELECOMMUNICATIONS AND INFORMATION  
ADMINISTRATION (NTIA)  
+ + + + +  
MEETING OF THE COMMERCE SPECTRUM MANAGEMENT  
ADVISORY COMMITTEE (CSMAC)

+ + + + +  
TUESDAY,  
JULY 27, 2010

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The Committee convened at 9:00 a.m. in Room 1107 of the Institute of Telecommunications Sciences, located at 325 Broadway, Boulder, Colorado, Dale N. Hatfield and Bryan Tramont, Co-Chairs, presiding.

MEMBERS PRESENT:

Dr. David E. Borth  
Corporate Vice President for Advanced  
Technology, Standards and Common Engineering  
Enterprise Mobility Solutions, Motorola Inc.  
Michael C. Calabrese  
Vice President and Director, Wireless Future

Program, The New American Foundation

Martin Cooper  
Executive Chairman and Co-Founder, ArrayComm,  
LLC

Susan Crawford

Faculty, Cardozo Law School; former Special  
Assistant to the President for Science,  
Technology, and Innovation Policy

MEMBERS PRESENT: (cont.)

Mark E. Crosby  
President & Chief Executive Officer,  
Enterprise Wireless Alliance

David L. Donovan  
President, MSTV, Inc.  
Gary Epstein  
Executive Vice President for Law and  
Regulations, SkyTerra Communications

Dr. Brian Fontes  
Chief Executive Officer, National Emergency  
Number Association

Dr. Harold Furchtgott-Roth  
President, Furchtgott-Roth Enterprises

Robert M. Gurs  
Director of Legal & Government Affairs,  
Association of Public-Safety Communications  
Officials  
Dale N. Hatfield  
Independent Consultant and Adjunct Professor,  
University of Colorado

Dr. Kevin C. Kahn  
Senior Fellow, Director of the Communications  
Technology Lab, Intel Corporation

Dr. James Andrew Lewis

Senior Fellow and Director of the Technology  
and Public Policy Program, Center for  
Strategic and International Studies  
Dr. Mark A. McHenry  
President, Shared Spectrum Company

Darrin M. Mylet  
Co-Founder, Spectru-Station/Wireless  
Infrastructure & Network Services (WINS)

MEMBERS PRESENT: (cont.)

The Honorable Janice Obuchowski  
Founder and President, Freedom Technologies

Robert Pepper  
Senior Managing Director, Global Advanced  
Technology Policy, Cisco Systems, Inc.

Mr. Neville Ray  
Senior Vice President, Engineering and  
Operations, T-Mobile USA, Inc.

Mr. Richard Reaser, Jr.  
Head, Spectrum Management Department, Raytheon  
Space & Airborne Systems

Gregory Rosston, Ph.D.  
Deputy Director, Stanford Institute of  
Economic Policy Research, Stanford University

R. Gerard Salemm  
Executive Vice President - Strategy, Policy,  
and External Affairs, Clearwire Corporation

Bryan Tramont  
Managing Partner, Wilkinson Barker Knauer, LLP

Jennifer Warren  
Vice President, Technology Policy &  
Regulation, Lockheed Martin Corporation

ALSO PRESENT:

Larry Adler

Co-Leader, Alternative Access Group and  
Project Manager, Google

Byron Barker

Joe Gattuso

Acting Director of Congressional Affairs,  
National Telecommunications and Information  
Administration

Brian Lane

Executive Officer, Institute for  
Telecommunications Sciences

Mike Marcus

Director, Marcus Spectrum Solutions

Karl Nebbia

Associate Administrator, Office of Spectrum  
Management, National Telecommunications and  
Information Administration

Larry Strickling

Assistant Secretary for Communications and

Information, Department of Commerce

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

9:09 a.m.

DR. HATFIELD: Thank you, Joe,  
very much. For the purposes of folks on the  
phone, why don't we go around the room and  
identify ourselves, and then we can also have  
the folks -- members of the Committee who are  
participating telephonically also identify  
themselves.

So, Mark, do you want to start?

DR. MCHENRY: I'm Mark McHenry  
with Shared Spectrum Company.

DR. KAHN: Kevin Khan, Intel.

MR. COOPER: Marty Cooper, Dyna.

MR. ALDER: Larry Alder with  
Google.

MR. DONOVAN: David Donovan with  
MSTV.

MR. HATFIELD: Dale Hatfield.

MR. STRICKLING: Larry Strickling,  
NTIA.

MR. NEBBIA: Karl Nebbia, NTIA.

1 MR. EPSTEIN: Gary Epstein.

2 MS. WARREN: Jennifer Warren.

3 MR. PEPPER: Robert Pepper, Cisco.

4 MR. MYLET: Darrin Mylet,

5 Adaptrum.

6 MR. SALEMME: Gerry Salemme,

7 Clearwire.

8 MR. TRAMONT: Great, and who do we  
9 have on the phone?

10 MR. GURSS: This is Bob Gurss from  
11 APCO.

12 MR. RAY: And Neville Ray from T-  
13 Mobile.

14 DR. FURCHTGOTT-ROTH: And Harold  
15 Furchtgott-Roth.

16 MR. TRAMONT: And Dr. Fontes, do  
17 you mind introducing yourself as well?

18 DR. FONTES: I am here.

19 (Laughter)

20 MR. TRAMONT: And Brian Fontes is  
21 also here as well.

22 With that, I'll turn it over to

1 Dale, who will handle the welcome.

2 MR. HATFIELD: Okay, yes, I'd like  
3 to welcome everybody to the Commerce Spectrum  
4 Management Advisory Committee.

5 And of course, it's particularly  
6 my pleasure to welcome you to Boulder, since  
7 I didn't have to travel. I traveled only five  
8 miles to get here this morning.

9 And it's a little cooler here, I  
10 think, than what you've been experiencing,  
11 those of you from D.C. It's cooler in the  
12 evening, I'll put it that way, okay.

13 So, that's it. I just welcome you  
14 all and Bryan, is there anything else I need -  
15 -

16 MR. TRAMONT: Michael Calabrese  
17 has arrived as well. Welcome aboard.

18 MR. HATFIELD: Michael's here now,  
19 and I'll turn it over to Assistant Secretary  
20 Strickling. Larry?

21 MR. STRICKLING: Thank you, Dale,  
22 and I'll just add our welcome to you, to the

1 ITS, Institute for Telecommunication Sciences.

2 I hope many are you are able to  
3 stay for the ISART conference that opens today  
4 and continues on for the next several days  
5 here as well, where we should have some good  
6 discussion on sharing technologies and some of  
7 the other cutting-edge issues in spectrum.

8 I think it's good for all of us to  
9 get out of our natural habitats at least once,  
10 and it's great that we're able to do it where  
11 Dale only has to come five miles.

12 So, welcome. I hope everybody  
13 enjoys themselves while they're out here for  
14 today, and hopefully the next few days for  
15 ISART.

16 And if there's anything you need  
17 from us while you're here in the building,  
18 feel free to ask. Thanks.

19 MR. TRAMONT: I also want to  
20 extend a special welcome to members of our  
21 spectrum policy class. It's CU Boulder that  
22 Dale and I teach together.

1 I hope that the members of the  
2 Committee and the members of the public who  
3 are here will take the opportunity at the  
4 break and afterwards to visit with the  
5 students and impart some of the vast knowledge  
6 that you've come to obtain over your careers  
7 and the work here on the Committee. So  
8 welcome to all the students.

9 MR. HATFIELD: And we'll put a  
10 question or two on the quiz at the end for  
11 you.

12 (Laughter)

13 MR. TRAMONT: We will proceed  
14 through the Socratic method for the balance of  
15 the Committee meeting.

16 (Laughter)

17 So, with that --

18 MR. STRICKLING: Do the rest of us  
19 get credit for that?

20 MR. TRAMONT: Let's see what we  
21 can work out at CLE for you.

22 MR. STRICKLING: I need it, let me

1 tell you.

2 MR. TRAMONT: With that, we had an  
3 overview of the labs -- is Brian --

4 MR. LANE: Yes.

5 MR. TRAMONT: Yes, there he is,  
6 he's ready for action.

7 MR. LANE: Yes.

8 MR. TRAMONT: Brian Lane,  
9 Executive Officer of the ITS, was gracious  
10 enough to spend some time with us this morning  
11 and give us an overview of ITS here in Boulder  
12 for the benefit of the Committee and our  
13 deliberations.

14 So with that, I'll turn it over to  
15 Brian.

16 MR. LANE: Oh, thank you, and  
17 fourth welcome. And on behalf of Al Vincent,  
18 you know, welcome to Boulder, welcome to our  
19 laboratory here in ITS.

20 And one of my jobs is to serve as  
21 a body double for Al when he's tied up. He's  
22 over in the other room, and if I'm not

1       convincing, let me put on my glasses so I look  
2       like Al.

3                       (Laughter)

4                       I think most of you know what we  
5       do here. We are -- we like to think of  
6       ourselves as the U.S. Government's telecom  
7       lab. So we support NTIA, we're the  
8       engineering and science arm of the  
9       organization.

10                      And we've been around under one  
11       arm or another since World War II, helping  
12       federal agencies and the private sector too,  
13       to explore, to solve, and better understand  
14       telecom challenges and problems and to advance  
15       research principles. So that's really, in a  
16       nutshell, what we're about.

17                      But as part of the DOC -- let's  
18       see -- as part of the DOC goals, we like to  
19       see ourselves as an organization that  
20       contributes to the broader goals of trade, of  
21       commerce, and in terms of NTIA, to better  
22       manage and improve spectrum management.

1                   So here's just a few of the things  
2                   or areas where we do feel we support that.

3                   In terms of spectrum and  
4                   propagation measurements, our program helps  
5                   improve spectrum management through the better  
6                   understanding of the spectrum environment, and  
7                   telecom systems.

8                   Our technical contributions,  
9                   particularly to standards committees, really  
10                  helps those firms here in the US to compete  
11                  abroad and to enter the foreign markets.

12                  Our technical contributions also  
13                  have to deal with working directly with  
14                  industry, and we can do that through  
15                  cooperative research and development  
16                  agreements.

17                  And we also develop tools for  
18                  industry, and I'll talk a little bit more  
19                  about those, to help the industry to better  
20                  design telecommunications systems, to develop  
21                  emerging systems, and to enter the  
22                  marketplace.

1                   And then finally, this is an area  
2 where we're just starting to involve NASA  
3 spectrum sharing research, but our goal of  
4 this program is to really help the industry to  
5 grow, particularly since we have a resource  
6 that is becoming more and more scarce.

7                   The point of this slide is, you  
8 know, we are a pretty small organization, we  
9 have 65 permanent employees here at ITS. We  
10 have a handful of contractors, and we have a  
11 relatively small budget.

12                   But the point here is that we are  
13 a unique agency. Half of our funding comes  
14 directly from Congress, and this helps us to  
15 maintain those long-standing programs that  
16 I'll talk about.

17                   But the other half of our funding  
18 comes from other federal agencies in the  
19 private sector. And what we're trying to do  
20 here is support their specific telecom needs.

21                   Here's just a list of our major  
22 research programs. I'll talk in more detail

1 about these.

2 Let me just point out that  
3 spectrum sharing research is sort of new and  
4 evolving for us. The other programs have been  
5 around for years, and as I recently told a  
6 budget examiner who was looking through our  
7 research to find some of the older programs  
8 that he felt were no longer relevant, these  
9 programs evolve with the technology and with  
10 the challenges.

11 So when you look at what we do,  
12 you can go back at the time when we were  
13 studying how to balance signals off the  
14 troposphere to get communication signals to  
15 Europe in World War II, to the sending  
16 communication signals through space, line-  
17 tied, wireless, broadband. So we've evolved  
18 with the technology, so our programs are not  
19 static at all.

20 The public safety program is  
21 unique in that it is funded predominantly by  
22 NIST in collaboration with the Department of

1 Homeland Security and the Department of  
2 Justice. So this is a program that's 14 years  
3 in the running, and really, what we're trying  
4 to do is solve the inter-operability programs  
5 between technologies across different levels  
6 of government.

7 And you'll see that our current  
8 areas of research, we're looking at land  
9 mobile radio standards, developing broadband  
10 standards. We're testing interoperability  
11 devices and we're trying to help those  
12 emerging technologies prosper in advance.

13 Our radio propagation research is  
14 one of our core strengths at ITS. I mean,  
15 it's been around a long time. A lot of those  
16 prediction models that we've developed have  
17 been widely used by industry.

18 We've developed these tools and  
19 models, and we place them on our website as  
20 part of the service.

21 So you can actually go onto this  
22 TA services, we call telecommunications

1 analysis services, and find models. And  
2 broadcasters often use these to design and  
3 place their antennas and transmitters and the  
4 whole bit.

5 So that's one service we offer  
6 that's very mature. And what we're trying to  
7 do over time is to convert the technology into  
8 GIS application so you have a better sense of  
9 the terrain that you're working with.

10 We are developing models for both  
11 indoor and outdoor use. The current focus is  
12 on developing models, prediction models, for  
13 short-range, mobile-to-mobile, application,  
14 ultra-low antenna heights. And we're also  
15 developing ground conductivity measurement  
16 systems.

17 Spectrum measurement research --  
18 this is also a very mature program at ITS.  
19 And RSMS program, the acronym stands for Radio  
20 Spectrum Measurement Science, is really a  
21 combination of equipment and assets with  
22 highly-skilled engineers.

1                   So it's really those highly-  
2 skilled engineers who can really use this  
3 equipment and look at things like channel  
4 occupancy, look at what individual  
5 transmitters are doing, and look at the noise  
6 and bit environment in general.

7                   So, what our program tries to do,  
8 we support OSM, and IRAC, and other federal  
9 agencies with interference issues. We're  
10 often looking at radar systems or other  
11 critical communications systems.

12                  This -- the one thing I want to  
13 point out here, this radio jamming system, is  
14 one application where we sent our truck out to  
15 a prison in Maryland to do some testing, and  
16 if anybody is aware of or knows where our  
17 truck is, please give us a call, we're  
18 offering a reward.

19                  (Laughter)

20                  Just to make a joke. But that's -  
21 - we send that truck all around.

22                  PARTICIPANT: I saw it parked out

1 in front of the side this morning.

2 MR. LANE: That's a picture of the  
3 RSMS van. And you can go out and take a tour  
4 of it. It actually did go out to the prison,  
5 did some testing out there. We sent it all  
6 across the country to deal with these  
7 interference issues.

8 And hopefully we'll get into some  
9 more occupants -- looking at occupancy and  
10 spectrum occupancy over the next few years.

11 The Table Mountain Quiet Zone -- I  
12 see it more as an asset than a program per se.  
13 I mean, it's an 800 acre facility and quiet  
14 zone just outside of Boulder, Colorado.

15 We have a number of residents  
16 there doing research from other federal  
17 agencies, local to Boulder, and a lot of  
18 private sector organizations that go out and  
19 use that site to do field testing.

20 So, in any given year, we may have  
21 five to ten small companies out there doing  
22 work, and a number of federal programs out

1       there doing research as well.

2                   And, like I said, it is a quiet  
3       zone.  There are federal and state regulations  
4       that limit the transmissions over the site.  
5       And it's perfectly flat, so it remains a very  
6       good environment for doing telecom system  
7       testing.

8                   And here's some of the residents -  
9       - other residents, at Table Mountain.

10                   And finally, some of the other  
11       work we do is -- we participate in some of the  
12       standard bodies, and here are a few of the  
13       committees where we actually have leadership  
14       roles on these committees helping these  
15       committees to develop the standards and  
16       recommendations on industry standards.

17                   And there's just a list of the  
18       committees that we're currently participating  
19       on.

20                   So, in a nutshell really, that is  
21       what we do.  We have someone on our staff --  
22       is Frank still here?  Frank's there.

1                   We kind of refer to him as Dex,  
2                   because he's our walking, talking  
3                   encyclopedia, so if you have any questions,  
4                   really, about what we do and more sort of that  
5                   technical realm, Frank is a good person to  
6                   talk to.

7                   And of course, if you're going to  
8                   ISART, you'll hear more about what we're doing  
9                   in the area of spectrum sharing, which I  
10                  didn't talk much about because I think you're  
11                  going to hear a lot about what OSM and NTIA is  
12                  doing in terms of this test bed pilot work.

13                  And we're hoping that we have some  
14                  funding proposals in there for the next couple  
15                  of years. We're hoping that the funding for  
16                  these programs will actually help us expand  
17                  research and do spectrum sharing and cognitive  
18                  radio and some of those applications.

19                  MR. TRAMONT: Questions for the  
20                  Committee, or folks on the phone, too?

21                  Sure, go ahead.

22                  MR. CALABRESE: That's great to

1 know, I didn't realize what a range of things  
2 you do.

3 One thing that you know you  
4 mentioned, your occupancy measurements and one  
5 truck, I seem to have heard that years ago  
6 there were more -- more of that activity, you  
7 know, that there were, I don't know, five,  
8 six, or whatever trucks that were going  
9 around, I mean, the actual occupancy  
10 measurements. What was the thinking behind  
11 the sort of phasing that out?

12 MR. LANE: Frank has been here for  
13 quite some time. I know we did -- back about  
14 15 years ago, we did quite a few measurements  
15 in LA, and a few other cities.

16 That's a good question.

17 MR. TRAMONT: Repeat the question  
18 for the people on the phone so they can hear  
19 it.

20 MR. LANE: The question is, has  
21 ITS de-emphasized doing broadband spectrum  
22 survey measurements over the years, and if so,

1       why?

2                       I would say that ITS did, at one  
3       time, do more spectrum survey measurements  
4       than it has done in recent years. We never  
5       had five or six vehicles. We've never had  
6       more than about two vehicles that were really  
7       set up to do the measurements.

8                       And in recent years, we've had  
9       just higher-priority work that we needed to do  
10      in terms of electromagnetic compatibility  
11      studies, and, in fact, in the most recent  
12      years, sharing studies.

13                      And we do think that this is  
14      probably a good time to reevaluate the  
15      possibility of doing more of the broadband  
16      spectrum surveys.

17                      But at the time that we had done  
18      surveys for Denver, San Francisco, San Diego,  
19      and Los Angeles, about 10 to 15 years ago, at  
20      that particular point in time, there wasn't  
21      much more to be learned from that avenue of  
22      inquiry.

1                   And, as I say, we're looking now  
2                   at whether we want to try to re-emphasize  
3                   that. But we do have a lot of other high-  
4                   priority work that we do also have to do  
5                   related to interference studies and spectrum  
6                   sharing studies.

7                   MR. TRAMONT: Additional questions  
8                   from the Committee? Anybody on the phone?

9                   I think we're going -- we'll have  
10                  public participation at the end if we can,  
11                  Mike.

12                  TELEPHONE MODERATOR: We do have  
13                  two questions on the phone. And I was  
14                  wondering, is there a fan blowing in your  
15                  room? Because it's really hard to hear the  
16                  speakers very well.

17                  MR. TRAMONT: We'll check on the  
18                  fan. So do we have questions from the  
19                  Committee on the phone? Members of the  
20                  Committee have questions on the phone?

21                  TELEPHONE MODERATOR: I don't know  
22                  if they're from the Committee, but I have two

1 questions.

2 MR. HATFIELD: We only, at this  
3 point, will take questions from members of the  
4 Committee. They will have identified  
5 themselves as speakers as of yet.

6 MR. TRAMONT: Then we can take --  
7 we'll take -- we have a session for public  
8 participation at the end.

9 TELEPHONE MODERATOR: Actually,  
10 all speakers have open lines. They can just  
11 speak at any time.

12 MR. TRAMONT: Great, thanks.

13 Darrin?

14 MR. MYLET: Yes, I think it's very  
15 encouraging that we're hearing that this group  
16 is considering during more measurements.  
17 Because it's tough to always revert back and  
18 talk about 2005 or 2006, shared spectrum  
19 surveys, we always reference those.

20 I think it would be nice to  
21 actually reference some stuff here recently,  
22 perhaps even in Boulder. Why not do studies

1 here in Boulder and report those online?

2 I have a question regarding the  
3 NIST public safety trial network. How  
4 involved are you in --

5 MR. LANE: The broadband network?  
6 We're working in some seed money from NIST to  
7 scan up a network. It's -- we're still  
8 waiting for the technology from industry.

9 It's my understanding, both -- we  
10 will have a couple nodes set up here in  
11 Boulder, and I think one in DC, starting  
12 shortly, so industry can get on and test some  
13 of the broadband applications.

14 It's not a very large effort.  
15 It's very similar to the DSA spectrum testing  
16 that we're doing as part of this test pilot  
17 with OSM.

18 MR. TRAMONT: Any additional  
19 questions from the Committee before we move on  
20 to the President's Executive Memorandum?

21 Great, Brian, thank you. Thanks a  
22 lot.

1 MR. LANE: Right, sure, thank you.

2 MR. TRAMONT: Really appreciate  
3 it.

4 It's been an eventful few months  
5 within the administration on spectrum issues,  
6 and so Karl has agreed, although he's  
7 physically not present --

8 Oh, there you go. Oh there, he's  
9 already up there. I was like, he was over  
10 there a second ago.

11 Karl has agreed to give us an  
12 overview of the President's announcements, and  
13 then we'll go from there into the review of  
14 the CSMAC recommendations.

15 So, with that, we'll turn it over  
16 to Karl at the podium.

17 MR. NEBBIA: Good morning. Marty  
18 told me last night he was really looking  
19 forward to my song and dance this morning. So  
20 I hope I meet Marty's requirements, although  
21 I did leave my karaoke machine behind, so I'm  
22 going to have to do this without music today.

1                   Also, one thing I found coming  
2 here to Boulder, you've got to kind of get  
3 into the local scene. So this is actually the  
4 first time that I've ever been seen in public  
5 without a tie on.

6                   (Laughter)

7                   And my administrative assistant  
8 made me the mistake of putting me in the  
9 Holiday Inn at the far north end of town, and  
10 I took the bus down, the city bus, so I'm kind  
11 of going green. But I was the only person on  
12 the bus who did not load my bicycle on the  
13 front of the bus.

14                   (Laughter)

15                   It's certainly a different  
16 environment than DC.

17                   Today, I'm going to be talking  
18 about the Presidential Spectrum Memo, which  
19 was signed the 28th of June, and with great  
20 fanfare, at New America Foundation, and got a  
21 lot of -- certainly a tremendous amount of  
22 interest.

1           The way I would really like to  
2 describe this is that the President's memo is  
3 first, ambitious, second, it is comprehensive,  
4 and third, it is flexible in where it's going.  
5 So let me switch to the next slide.

6           First of all, I want to note that  
7 in fact, it is ambitious in the concept that  
8 it's taking on putting together a plan for 500  
9 megahertz.

10           I know that many have indicated  
11 that -- certainly CTIA indicated that they  
12 were looking for 800 megahertz. But if you  
13 remember back in 1992, I think we came up with  
14 200 at that point, and that was a time where  
15 there was probably some more low-hanging  
16 fruit. So 500 is actually a significantly  
17 greater number, an aggressive number to  
18 pursue.

19           It's also -- the plan is  
20 comprehensive. And it not only talks about  
21 the plan for the spectrum itself, but it  
22 provides for investigation into approaches for

1 supporting that effort through incentives and  
2 assistance, and finally emphasizes the need  
3 for research on new sharing technologies  
4 because as we look forward, more and more  
5 users are getting packed in the same amount of  
6 spectrum.

7 The aspect of exclusivity is  
8 probably going to be more and more challenging  
9 as we go on.

10 So I'll talk about each of these  
11 individually. The plan and milestones itself,  
12 I think it's important that we be clear on  
13 what is in the memo with respect to this.

14 First of all, we are required to  
15 put together a plan and milestones by October  
16 1st of this year.

17 Now, that's going to be a plan for  
18 how we're going to identify the 500 megahertz.  
19 Under the memo itself, there is not a  
20 requirement there to identify the 500  
21 megahertz in October. So this is going to be  
22 putting together the plan of work to carry out

1       that effort.

2                   It's going to be in collaboration  
3 with the Commission, given that, you know,  
4 we're playing an equal role here in  
5 identifying the spectrum.

6                   It's giving us 10 years to make  
7 that transition. And I know that, certainly  
8 in talking with the folks over at OSTP, we  
9 want to set an aggressive goal for 10 years.

10                   Remember, '92 was the last time we  
11 really significantly did something along this  
12 line. So 10 years, for many of us, seems like  
13 a long period of time, but in this work, it  
14 really isn't.

15                   But they've also insured, I think,  
16 in their discussions with us, that as we get  
17 to that 10-year point, if there's something  
18 that can be done in 11, and it accomplishes  
19 great things, they would rather that we be,  
20 you know, broad in our approach and making  
21 sure that we look at as much as possible, not  
22 live by -- there's a hard-and-fast 10 year,

1 you then have to back up in the Commission's  
2 rule-making process and so on, so that you, in  
3 the end, push all the decisions back into a  
4 very early period where maybe we're not ready  
5 to make them.

6 So, 10 years is, I still think, a  
7 very aggressive goal. We are going to be  
8 looking at federal and non-federal spectrum,  
9 and spectrum that is shared at this point, so  
10 this is not aimed at coming -- all the  
11 spectrum coming out of the Federal Government.

12 Obviously, the Commission has put  
13 about 280 megahertz kind of on the table for  
14 discussion thus far, and that work's going to  
15 be moved forward.

16 But also, we're talking about  
17 spectrum that is suitable for fixed and  
18 mobile, not -- interestingly enough there, the  
19 suitable was selected specifically not to  
20 select a specific frequency limit. But once  
21 again, the goal has got to be to meet fixed  
22 and mobile broadband requirements.

1           So, there's no 3 gigahertz limit,  
2           there's no 4 gigahertz limit, and so on. But  
3           in the end, if we put 80 gigahertz on the  
4           table, frequencies up in that range, it may  
5           not meet the fixed and mobile requirements, so  
6           that's where that fits in.

7           Also, we're looking for licensed  
8           and unlicensed applications. We are not doing  
9           this strictly to support licensed broadband,  
10          but it could be unlicensed.

11          Also, we've not designated whether  
12          the spectrum is going to be exclusive or  
13          shared. We realize that in many of the bands  
14          that we have to look at that there are going  
15          to be infrastructure pieces that may not be  
16          moveable, and therefore, we're going to have  
17          to look more at shared opportunities.

18          Now, it's always important that  
19          you remember, shared does not necessarily mean  
20          unlicensed, though it can. But shared can be  
21          a licensed environment, very much so.

22          And then, it tells us that we're

1 to take into account these very critical  
2 items, the existing and planned federal, state  
3 and local, tribal capabilities, things like  
4 international implications, which, once again,  
5 we're looking at a band right now that has  
6 significant international applications.

7 And ultimately, as we've discussed  
8 in this body, the issue of enforcement is a  
9 critical one, to set up a lot of sharing  
10 routines that you cannot enforce has certainly  
11 issues to it.

12 And then the last thing it does,  
13 it guides us to use a thing called a Policy  
14 and Planning Steering Group.

15 This is probably one of the least  
16 known groups in the Federal Government.  
17 Actually, it was set up a few years ago to  
18 engage executive and political-level people at  
19 the various spectrum-using agencies to include  
20 OMB and OSTP in the mix of the discussions.

21 These are significant differences  
22 from what the IRAC currently offers us, so,

1 we're going to be working within that body.

2 With respect to the funding and  
3 incentives and assistance, OMB has been  
4 specifically directed to work with us to  
5 ensure that the funding and incentives and  
6 assistance is there for the agencies.

7 Now, a lot of what that involves,  
8 I think, is looking at ways to improve the  
9 Commercial Spectrum Enhancement Act that's  
10 already on the books. That was the mechanism  
11 for transferring funds to federal agencies  
12 when they relocated.

13 But we're looking at a number of  
14 changes at this point. And you'll note that  
15 there are already on the table Senate and  
16 House bills related to this.

17 And the items that I'm going to  
18 enumerate here quickly are items that we have  
19 been providing in feedback to the folks on the  
20 hill concerning what we see from experience  
21 some of the needs are.

22 And they involve things like

1 planning and research funds. None of that up-  
2 front money has been provided before for the  
3 federal agencies, and therefore, any of that  
4 planning work that goes into these moves,  
5 they've had to take essentially out of pocket.

6 In some cases, the equipment that  
7 we have, if it's to be designed for a new  
8 band, is going to require some research. And  
9 that money is going to have to come up-front  
10 to fuel the process.

11 Also, as any of you who have been  
12 involved in the last relocation will note,  
13 that you often contacted spectrum offices from  
14 these agencies that were one or two people.

15 And when you had a daily call in  
16 to them, saying, can we turn this system on or  
17 turn that system on, they were really ill-  
18 staffed to deal with that aspect.

19 And once again, the aspect of  
20 looking for funding through the Spectrum  
21 Relocation Fund to support that is one of the  
22 things that we're looking at.

1                   Also, another aspect was, agencies  
2                   were funded to move from one band to another  
3                   and buy new government systems. If they in  
4                   fact chose to lease commercial systems, the  
5                   amount of time that that was covered under the  
6                   Relocation Act funding -- or Relocation Fund  
7                   funding was limited, I believe, to three  
8                   years.

9                   So, people who really wanted to  
10                  get off the federal merry-go-round of buying  
11                  and building equipment found that difficult to  
12                  do.

13                  They were also in some cases told  
14                  that they could only get equipment that was  
15                  comparable to what they had, and the only  
16                  place to get equipment that was comparable to  
17                  what they had was on Antiques Roadshow on  
18                  Monday nights.

19                  (Laughter)

20                  So, that just didn't exist. We're  
21                  opening those doors.

22                  And then the last thing that I

1 think is very interesting is the issue of, if  
2 we're going to move into a sharing realm that  
3 is still not without cost.

4 Even though you're not actually  
5 relocating systems, there's costs involved  
6 with modeling, analysis, testing, all these  
7 things, and so on.

8 So, that's all part of what we  
9 envision as parts of the incentives and the  
10 systems.

11 And then the last part is spectrum  
12 sharing technologies. This is a critical  
13 aspect for where we need to go. I've listed  
14 a few items here that we may be considering in  
15 that, coming up with generic or general test  
16 methods.

17 Places that we can go and do this,  
18 once again, we've got a quiet zone out here in  
19 Boulder that may be capable of handling some  
20 types of tests, but other large-scale tests  
21 that may or may not fit the requirement.

22 There's also funding issues for

1 this activity. And ultimately, how are we  
2 going to regulate these types of systems? And  
3 as Brian said earlier, aspects of basic  
4 research in these concepts are going to go on.

5 There's a number of agencies here  
6 that we're going to be working with, that are  
7 already engaged in this activity.

8 Most of you are aware of DOD,  
9 certainly, and their work down this path. But  
10 NSF and DOJ, others are fully engaged in this  
11 work, in developing systems for the Federal  
12 Government.

13 So, the last thing I wanted to  
14 mention is fast-track bands.

15 Well, everybody wants to know,  
16 well, what's a fast-track band? How does a  
17 fast-track band get on the table?

18 This is a term that's being used  
19 as part of the work under the Presidential  
20 Memo, but it's not specifically mentioned in  
21 the memo.

22 And this came up as we were

1 looking -- as the Commission put out in their  
2 national broadband plan the fact that they  
3 were, first of all, looking for spectrum to  
4 match with the 2155 to 2180 band, and that  
5 they were hoping to make -- move forward with  
6 an allocation within five years, and then,  
7 ultimately, to connect with that, we needed to  
8 make our decision as to whether it was go or  
9 no-go by October of this year.

10 Now, you'll note in the four bands  
11 that we have on the list, the first two are  
12 ones that actually hold -- or held some  
13 potential for matching with the 2155 to 2180.

14 The other two bands are others  
15 that we saw holding some possibility for rapid  
16 action.

17 And for the past few months, we  
18 have been meeting and discussing these. The  
19 1675 to 1710 is a meteorological band, in  
20 general, with radiosondes and radio --  
21 meteorological satellite downlinks in that  
22 band.

1                   We have found that, in fact, the  
2 vast majority of users in that band are not  
3 licensed or registered. They are receiving  
4 dishes all over the country used by public  
5 safety, weather, new TV and radio weather  
6 reporting groups, universities, and so on.

7                   So that's one of the types of  
8 challenges that we face even as we go out with  
9 our measurement band. All of those dishes  
10 that are listening and taking out data don't  
11 register.

12                  So that's one of the bands we're  
13 looking at. 1755 to 1780 is one of the bands  
14 to which many of the systems from 1710 to 1755  
15 were rolled into during the last relocation.  
16 There's a lot of Government satellite  
17 operations in there, law enforcement activity.

18                  And at this point, due to the fact  
19 that a decision could not be made on this  
20 band, and a plan laid out for the folks to  
21 move, this has been taken off the fast-track,  
22 but it is going to be very much considered

1 over the longer haul.

2 3500 to 3650 is really a military  
3 radar band with high-powered airborne,  
4 shipborne radar systems, mobile radar systems,  
5 so we're looking at that very closely, mostly  
6 from the perspective of whether, in certain  
7 portions of the band, that most of the systems  
8 are out to sea and we might get significant  
9 opportunities on the land side.

10 And then the last two pieces  
11 there, these are actually the ends or edges of  
12 a radar altimeter band for which, in all of  
13 our previous measurements, we've never been  
14 able to find emissions in those outer ranges.

15 The struggle there is that band is  
16 committed internationally through ICAO  
17 agreements, ITU agreements. And to turn that  
18 around, to get a conclusive answer by October  
19 1st, also, from our standpoint, has put that  
20 on the back burner -- certainly not likely to  
21 have a decision made by that point.

22 So, that's the work that we're

1 doing right now. It's going on within the  
2 PPSG, has been since about March, and we're  
3 moving that forward rapidly.

4 So, I'm open to any questions.

5 This was intended just to be an overview of  
6 where we are. And any questions or thoughts?

7 Yes, sir.

8 MR. EPSTEIN: Karl, are those last  
9 two bands -- I understand what you say about  
10 the potential difficulties with them, but are  
11 they, in your mind, potential for sharing, for  
12 matching up with AWS3 or not?

13 MR. NEBBIA: Yes. These two  
14 bands, once again, the first two were actually  
15 put on the table specifically looking at that.  
16 The other two, they looked at opportunities  
17 that we might be able to reach a fairly quick  
18 conclusion on them.

19 Once again, because in this case,  
20 we saw no record in any of our databases, in  
21 any of our measurements, that anybody was  
22 using these two portions.

1                   One of the things that's been  
2                   raised during the discussions, however, is  
3                   that we obviously -- well, in these bands,  
4                   neither on the SEC side or our side do we  
5                   require licensing for these devices. So, in  
6                   reality, we don't actually have a lot of data  
7                   on what they look like.

8                   And we also, as the FAA has  
9                   brought up, we may not find any U.S. equipment  
10                  that operates in those ranges. But if a  
11                  foreign aircraft comes in, they're coming in  
12                  under IFEO agreements, and we may not have  
13                  accurate data on what they're doing.

14                  So it's -- that presents a  
15                  challenge here.

16                  MR. EPSTEIN: Just a quick follow-  
17                  up. And I'm out of my element here, but I  
18                  would assume that the different bands have  
19                  different technical propagation  
20                  characteristics, and they would raise  
21                  potential challenges for pairing, depending  
22                  upon what the bands are.

1                   MR. NEBBIA: Yes. And that's why  
2 these connect most closely on the pairing  
3 side. There's certainly, as you go up higher  
4 in frequency with current technology, people  
5 will -- I mean, people already,  
6 internationally, there's some WiMAX  
7 development at 3.4 to 3.54, but it's more, I  
8 think, of a -- more of a fixed oriented set-up  
9 than the mobile that's being implemented at  
10 2500, 2690 here in the U.S.

11                   So, those issues are going to have  
12 to be faced technically as we move on.

13                   MR. TRAMONT: So there's a lot of  
14 other bands out there, and we've made  
15 measurements, and I wouldn't have picked these  
16 bands.

17                   So what -- we couldn't get a  
18 rationale why the other bands aren't on the  
19 fast track? I mean, there's -- every band,  
20 there should be reason it's either on or off.

21                   MR. NEBBIA: Yes. Well, once  
22 again, part of the emphasis was in trying to

1 find ones that were linkable.

2 The second aspect was, there are  
3 other bands that we have that we've begun  
4 developing a greater list. And on that  
5 greater list, there are ones that we believe  
6 that there may be sharing opportunities.

7 But the challenge is, having gone  
8 through the five years WiFi effort, if you  
9 think you're going to make a decision, do the  
10 modeling analysis, the measurement, and  
11 testing by October 1st to ensure that you can,  
12 in fact, do something in a specific band, we  
13 did not believe that that was going to happen.

14 MR. TRAMONT: Is there like a list  
15 of every band and why it's not on the table?  
16 Would you ever release, kind of, your first-  
17 order analysis of all the bands?

18 MR. NEBBIA: I'm not sure exactly  
19 ultimately what will be released, but we are  
20 going to go through a disciplined process of  
21 looking at the bands that we have, and trying  
22 to determine which have possibilities.

1                   And then as we go forward with our  
2                   reporting process --

3                   MR. DONOVAN: It just seems like  
4                   the reason you picked these is we had existing  
5                   data, it was a schedule issue. These are  
6                   maybe not the best bands, but it was more of  
7                   a, this is what you already had to have going.

8                   Is that the right reason you  
9                   picked these bands? No.

10                  MR. NEBBIA: Okay, Jennifer.

11                  MS. WARREN: Karl, is it fair to  
12                  say that if this is driven for pairing with  
13                  AWS3, that there is desire only for exclusive  
14                  access, and so any band that would be more  
15                  appropriate for pairing wouldn't even be  
16                  acceptable for purposes of STC and industry  
17                  that want access?

18                  MR. NEBBIA: Well, I'm not sure  
19                  the term exclusive access is a good one,  
20                  because, for instance, with the 1675 to 1710  
21                  band, we're not really exploring completely  
22                  exclusive access.

1           In fact, part of the issue was in  
2 making some decisions within six months, the  
3 question was, could we realistically make  
4 plans within that time if relocation was  
5 required.

6           So the bands that we've ended up  
7 talking about here, we've talked about from  
8 the perspective of not moving the government  
9 systems out, but coming up with ways that they  
10 could be used without that, because it was  
11 impossible to plan moving government systems  
12 within six months. I mean, that just couldn't  
13 happen.

14           So instead, we're looking at this  
15 band. I believe the satellites are going to  
16 stay, very much so. We've got several sites  
17 operated by NOAA and some other major players  
18 who take the data process and so on that we  
19 would be working around in a geographic  
20 aspect.

21           And then the other aspect that  
22 comes as far as we know, as the critical need

1 for spectrum is in high-density areas, that  
2 there's going to be large portions of the  
3 country where people can still be out there  
4 with their dishes getting the weather data.

5 It's just, they're probably not  
6 going to be able to do it in New York City or  
7 Philadelphia or wherever, major cities like  
8 that, where you would think -- maybe we're  
9 wrong here, but you would think, they've got  
10 optional ways of getting the data that don't  
11 require them to be pulling it in direct.

12 So leaving the systems there --  
13 once again, once again, about five or six  
14 month deadline that we have by October 1st,  
15 that's the critical part.

16 Mr. Chairman -- or you want to  
17 direct traffic, Dale, or you want to --

18 MR. ADLER: Bryan was sort of --

19 MR. TRAMONT: I was just traffic-  
20 copping, so I thought Michael was first, and  
21 then we'll go to Dale.

22 MR. ADLER: Right.

1 MR. CALABRESE: Okay, well, it  
2 just directly relates.

3 So is what you're saying right now  
4 -- it seems like you're implying actually  
5 something kind of -- what might be something  
6 new, which is that at least for 1675/1710 and  
7 3500/3650, maybe others, that portions may be  
8 reallocated for exclusive use, and other  
9 portions may be reallocated for shared use?

10 In other words, this may be a mix  
11 of exclusive/shared?

12 MR. NEBBIA: Well --

13 MR. CALABRESE: I mean, these  
14 bands, depending on whether you can get the  
15 government -- so it breaks this into two  
16 parts.

17 You're saying that you don't  
18 expect to clear 1675/1710. I'm wondering if  
19 you're expecting to clear 3500 and 3650 within  
20 a few years of all-government use.

21 And if not, are you talking about  
22 a mix of exclusive -- you know, reallocation

1 for exclusive use, maybe, in certain  
2 geographic areas, and then in other geographic  
3 areas allowing shared use to the extent it's  
4 compatible with the continued government use?

5 MR. NEBBIA: It's pretty  
6 complicated, once again, due to the fact that  
7 we had until October 1st to actually make the  
8 decision on whether something could be done,  
9 and the five year point essentially to get the  
10 relocation done. That set some limits on us.

11 So in this case, we're actually --  
12 we have had no discussions at this point about  
13 actually moving any of the meteorological  
14 satellite activity out of that band.

15 It's one of the few meteorological  
16 satellite bands that exists anywhere, and it's  
17 critical for those systems.

18 So those major downlinks to the  
19 data processing centers, we have not had any  
20 discussions about moving them out of the band.

21 Now, ultimately, could they be  
22 moved in location? That's a possibility,

1 moved in location.

2 Right now, there's a couple of  
3 major ones that are right in D.C. We'd all  
4 like 422, and so on. And 3500 to 3650, once  
5 again, you've got big radar systems require  
6 probably not only redesign of the radar  
7 theoretically being that it would go to  
8 another band, but redesign of the aircraft  
9 that they're in, redesign of the ships that  
10 they're on.

11 So, at this point, what we're  
12 looking at here, is that most of the  
13 operations in this range are actually out of  
14 state. So that opens up a great possibility  
15 of land-based, exclusive licensing.

16 But it may mean you don't break  
17 the coastline. So -- but you may get  
18 opportunities for other parts of the country.  
19 But obviously the coastline's an important  
20 market.

21 But as we move forward, we're  
22 going to have to be creative as to how we get

1 land opportunities.

2 There's also other issues with  
3 that band regarding high-power radars in the  
4 adjacent band that may make difficulties.

5 Longer term, can we look at  
6 sensing and other types of hearing  
7 capabilities? Certainly. But in the time we  
8 had, once again, we were not going to be able  
9 to work through a sensing analysis measurement  
10 and all of this with DOD and make them at all  
11 confident by October.

12 So this is looking at a  
13 significant subset of the possibilities.

14 MR. TRAMONT: Okay, Dale and then  
15 Kevin, I think.

16 MR. NEBBIA: And we have time  
17 issues here --

18 MR. TRAMONT: Yes, we still --  
19 we'll do a couple more if we can.

20 MR. NEBBIA: -- and I have a  
21 second presentation I'm supposed to make.

22 But, I'm sorry, who's next?

1 MR. TRAMONT: Dale?

2 MR. HATFIELD: You know, based on  
3 that, maybe we'd better go ahead. I can ask  
4 you offline.

5 MR. RAY: A question from the  
6 phone, if possible. Neville.

7 MR. TRAMONT: Neville, go ahead.  
8 We'll do one more.

9 MR. RAY: Yes. Morning, Karl,  
10 sorry, and gents, sorry I'm not there.

11 Karl, thank you for the  
12 presentation. I hear the comments on 1755 to  
13 1780.

14 Obviously, this is, you know, a  
15 major opportunity with the international  
16 harmonization around that band in AWS, and AWS  
17 becoming a major band here in the Americas,  
18 not just in the US, but in Canada and Latin  
19 America for both 3G services and future LTE  
20 services.

21 So, I understand the comments  
22 around October the 1st. But what are the next

1 steps that we now take in looking at 1755 to  
2 1780? Because this is a band that has  
3 significant interest for the commercial  
4 operation of wireless services in the U.S. and  
5 North America.

6 MR. NEBBIA: Well, certainly that  
7 band will be a part of the broader work that  
8 we begin, as part of the plan and milestones -  
9 - there will be certainly further discussions  
10 as we finish up the fast-track work.

11 But it will certainly be part of -  
12 - a main part of the consideration for the  
13 future. I mean, we certainly recognize the  
14 place that it has in international agreements  
15 that already exist, and what's being done in  
16 other countries.

17 But, once again, the only reason  
18 it's come off the table for fast-track was all  
19 the various complexities, the things that we  
20 were going to have to deal with in that period  
21 of time.

22 MR. TRAMONT: Kevin, do you have a

1 quick one?

2 DR. KAHN: Yes, I think what I  
3 heard was two interesting philosophies that  
4 seemed to be implicit in the discussion here.

5 In the 1675 band discussion, the  
6 philosophy seems to be, look, we'll make it  
7 available unless we know we're right near  
8 somebody who has to receive it. And then  
9 basically, you know, if the stuff we start  
10 deploying interferes with somebody's ability  
11 to receive it, well, you know, that's fine,  
12 they have other ways than most places to get  
13 it.

14 That's sort of, the new guy gets  
15 to come in there, and he's going to operate  
16 okay because he's the stronger of the two.

17 The philosophy I think I heard  
18 espoused in the 3500 band is sort of the  
19 reverse of it, which also may make sense,  
20 which is, hey, we've got some high-powered  
21 stuff, you can use it anywhere you want, but  
22 recognize that you're going to blown off the

1 air periodically if you happen to be, in this  
2 case, on the coast.

3 And I think those are actually  
4 both interesting philosophical approaches to  
5 sharing, which are -- much more opportunistic  
6 than I think I often hear about sharing, where  
7 there's a lot of sort of pre-planned  
8 mechanistics around sharing.

9 Are those -- A, is my reading of  
10 what you said more or less accurate? And I'm  
11 trying to be a little simplistic.

12 And B, do you see those  
13 philosophical approaches being ones that can  
14 apply more broadly, do you think, over time,  
15 as you start to look at more bands?

16 MR. NEBBIA: Well, first of all, I  
17 think it's important to be clear. The 1675 to  
18 1710, we are concerned about the people who  
19 are there. There are issues that are going to  
20 have to be looked at in terms of, obviously  
21 groups have invested in what's there, and so  
22 on.

1                   But, in the long run, we feel like  
2                   our job is to locate opportunities, to move  
3                   forward with -- as aggressively as we can,  
4                   recognizing that there are some things that  
5                   will be very challenging to move, and  
6                   therefore we've got to emphasize ways that  
7                   they can operate compatively.

8                   And the one case -- the group that  
9                   we were talking about as the one being  
10                  impacted, were those ones that, once again,  
11                  are unregistered, unlicensed. They're passive  
12                  receivers.

13                  There are potentially other  
14                  options for them to get the data that they  
15                  really need. We're not doubting the fact that  
16                  we need the data.

17                  On the other hand, once again,  
18                  changing some of these military major radar  
19                  systems is a significant undertaking.

20                  And once again, as we're looking  
21                  to progress things as rapidly as possible and  
22                  make opportunities as rapidly as possible, in

1 reality, where those radars are, in many  
2 cases, we may have to learn how to live and  
3 work around them, live with them.

4 In other cases, we may be able to  
5 look over a longer term, and say, well, some  
6 of these radars, maybe they don't have to be  
7 to this end of this band, because we've  
8 already got a lot of stuff at the other end.  
9 Maybe we could just move that down with the  
10 other radars and have them kind of work in the  
11 same environment.

12 So, we're trying to look at this  
13 broadly, and as flexibly as possible, and as  
14 creatively as possible, to come up with  
15 opportunities. I think we're going to have to  
16 have that.

17 MR. TRAMONT: Great, Karl. Thank  
18 you very much.

19 Karl's second presentation is  
20 looking at an overview of the impact of the  
21 CSMAC recommendations for the 2006/2008  
22 timeframe, just to give folks an overview of

1 the progress that has already been made based  
2 on the good work of the Committee.

3 I also have been handed a note to  
4 let everyone know that the ITS password for  
5 WiFi is csmaccsmac, continuing our famous  
6 branding work here.

7 With that, Karl, back to you.

8 MR. NEBBIA: Yes, if you want to  
9 pull that up. I thought I just hit slide  
10 show, right?

11 (Off-the record comments.)

12 Okay, this next discussion is  
13 going to be about the recommendations that the  
14 Committee drafted during the first period,  
15 2006-2008.

16 And this is something that shortly  
17 after that period, we did sit down in NTIA and  
18 go through the list. Joe actually has to  
19 report in one certain way to GSA -- I think  
20 it's GSA, is it GSA, or -- GSA, regarding  
21 recommendations made by the group.

22 And one of the things I want to

1 stress, when Joe has to make that report, he  
2 has to give counts of things that have been  
3 implemented and so on.

4 So he actually has to know what  
5 the recommendation is, so that he can say yes  
6 or no. So we'll be talking about that a  
7 little bit as we go on.

8 MR. TRAMONT: Hey Karl, I just got  
9 some feedback that folks in the front are  
10 having trouble hearing you if you move too far  
11 away from the mic.

12 MR. NEBBIA: If I move too far --  
13 okay.

14 MR. TRAMONT: So if you could stay  
15 close, that would be perfect, thanks.

16 MR. NEBBIA: Okay. I'm just kind  
17 of up in the gunslinger mode, you know, being  
18 out here in Colorado --

19 MR. TRAMONT: Yes, I understand.

20 MR. NEBBIA: You've got to keep  
21 moving --

22 MR. TRAMONT: It's your new

1 Boulder identity.

2 (Laughter)

3 MR. NEBBIA: I think it was Butch  
4 once said long ago, you know, you've got to  
5 keep moving. Actually, it lowers the target  
6 profile, so.

7 Okay. So, in looking at the  
8 recommendations, they were broken out in a  
9 number of groups.

10 And you should all have this  
11 table, which I have to acknowledge is a cut-  
12 down version of the actual recommendations.  
13 And every time, of course, we have to rewrite  
14 them, there is some information that's lost.

15 But for a point to work from, we  
16 actually use the transition report that was  
17 written by the previous Committee, not the  
18 individual packages of recommendations,  
19 because it was very, very hard for us to pull  
20 out specifically what the recommendations  
21 were.

22 The transition report put them on

1 a large list and so on. So that's actually  
2 what we work from.

3 The first group of recommendations  
4 all had to do with the test bed. And I have  
5 to say overall, that the general concept of  
6 the test bed and other components, we moved  
7 forward with those recommendations.

8 The only things that we really  
9 could not do at this point were expand the  
10 test bed in that we did not have additional  
11 funding or staff to carry it out.

12 So we're essentially doing an  
13 initial test bed pilot dealing with the 410 to  
14 420 band, and one of the commission land  
15 mobile bands, and looking at a cognitive  
16 radio, which is one of the things that y'all  
17 encouraged us to do, look at, during the  
18 research. We were within the frequency range  
19 you had recommended and so on.

20 But the other thing we were really  
21 not able to do was to shift the activity  
22 outside of NTIA at this point, was some

1 recommendations there about getting other  
2 groups to do it, getting outside funding, that  
3 sort of thing.

4 And, at least at this point, we  
5 believe very strongly that at least in these  
6 initial days of the development of these  
7 technologies, that the test procedures and  
8 approaches have to be very disciplined, where  
9 everybody understands what the test plans are,  
10 what the results are going to produce, and  
11 that everybody's walked through the tests  
12 where they all can then agree on the outcomes  
13 and so on.

14 We don't believe really that this  
15 work at this point can be done on a y'all  
16 come, everybody kind of go off and do your own  
17 test, and we will go with that.

18 But in general, the  
19 recommendations there were clear and  
20 straightforward, and we're moving ahead with  
21 that work.

22 The next area dealt with

1 government adoption of commercial  
2 technologies. And the biggest challenge for  
3 this -- for us -- excuse me, I'll stay near  
4 the mic -- was the fact that they were very,  
5 very focused on land mobile types of  
6 technologies, network technologies, which the  
7 Federal Government uses to a very limited  
8 extent.

9 Our land mobile world is  
10 essentially confined to two bands, 162 to 174  
11 megahertz and 406 to 420, with DOD also doing  
12 some work at 380 to 399.9. But nonetheless,  
13 they're fairly small pieces of spectrum with  
14 lots of assignments in them, mostly using,  
15 currently now, narrow-band trunking.

16 Some of them are still wider band,  
17 25 kilohertz. Some of them are still not  
18 trunking. But that's the route we're going.

19 In fact, the reality is that the  
20 700 megahertz band, as the Federal Government  
21 is able to work alongside state and local  
22 public safety and work with the commercial

1 community, will probably be the first time we  
2 really get to explore these concepts of being  
3 part of a greater network, using commercial  
4 technologies and so on.

5 So that those recommendations,  
6 although I think they give us good advice for  
7 how to approach that, it was a challenge for  
8 us to see them in the context of the kinds of  
9 bands and technologies that we're currently  
10 using.

11 But certainly as we move forward,  
12 looking at 700 megahertz, our work is going to  
13 be looking toward using commercial  
14 technologies, using commercial access wherever  
15 possible, coming up with standards that  
16 provide for commonality and so on.

17 The next group of recommendations  
18 dealt with monitoring and different types of  
19 pro-active management.

20 Once again, we are still  
21 monitoring on a somewhat limited basis, and I  
22 think one of the challenges that we find there

1 is that monitoring can be a resource-heavy  
2 requirement, to analyze lots of bands at lots  
3 of different locations. But nonetheless, we  
4 will continue to work on monitoring.

5 The NTIA is looking for other ways  
6 to improve the relocation process. And once  
7 again, we've talked about in the last  
8 briefing, these kinds of capabilities that we  
9 would see as improvements to the process.

10 Most of the recommendations coming  
11 from the private sector side, and working  
12 through the House and Senate bills, have been  
13 oriented more toward improving the planning  
14 and time lines that the agencies provide. And  
15 in fact, we believe some of these aspects are  
16 necessary to accomplish that.

17 There were a number of  
18 recommendations dealing with defining  
19 efficiency by radio service. And we, through  
20 Ed Drocella's group at NTIA, are working on  
21 those issues, but they are very complex.

22 Every service is different, the

1 technologies are different. You can't talk  
2 about radar efficiency in the same way you  
3 talk about mobile radio efficiency. They're  
4 just two completely different things, and  
5 we're continuing to work on them.

6 The one we like the most is  
7 efficiency for passive systems. That was  
8 fairly easy for us.

9 And then last, you've recommended  
10 us moving forward on cognitive techniques,  
11 which is certainly our desire to do. It is  
12 the focus right now of our spectrum sharing  
13 test bed.

14 Byron Barker in NTIA heads up a  
15 group called the Dynamic Spectrum Access  
16 Coordination Group. That is the government's  
17 kind of internal mechanism right now of  
18 staying on top of where the technology  
19 development is in these areas.

20 And then, as you saw in the  
21 Presidential Memo, the last area of work  
22 emphasizes this, and we'll be pressing ahead

1 with that work.

2           There was then some discussions  
3 about operational efficiencies, which once  
4 again, I think, dealt mostly with spectrum  
5 management techniques.

6           And we're continuing to address  
7 our processes, whether it's through IT or  
8 other mechanisms. And one of our primary  
9 goals right now, however, since we know  
10 there's a lot of interest in transparency, is  
11 we're going to work to make available and  
12 understandable information regarding our  
13 spectrum use and processes.

14           I can't guarantee that that means  
15 direct access to the data, because as all of  
16 you or many of you know, the data that we have  
17 in our government master file actually belongs  
18 to the agencies that provide it to us, and we  
19 do not have the ability to just turn over  
20 their data at will.

21           But, we are working very hard to  
22 make the information available and

1 understandable.

2           So, the last area in the  
3 recommendations once again gets back to  
4 federal land mobile. There was a series of  
5 recommendations there, and we, as I said  
6 earlier, we're going to continue to work with  
7 our land mobile users to work toward shared  
8 infrastructure.

9           In fact we've recently clarified  
10 in our NTIA manual how agencies and non-  
11 federal users can begin to work together to  
12 share infrastructure projects, once again,  
13 primarily in land mobile sharing, where we've  
14 made it clear that it's simply a matter of a  
15 federal agency coming in, making their  
16 requests to us, having an agreement with the  
17 non-federal entity, and the non-federal entity  
18 coming in on their side with a request for the  
19 spectrum from the FCC. We marry them  
20 together. It's very possible.

21           The request on the non-federal  
22 side, it includes federal frequencies, and

1 federal requests can include non-federal  
2 frequencies. We, together with the FCC, just  
3 marry these up, and we can move it forward.

4 There's a project like that  
5 Interior has been running for moving forward  
6 for a little while out in the west.

7 But ultimately, as we look at all  
8 the input that we received about specific  
9 standards and determining that, it's  
10 essentially an issue for the agencies to  
11 decide what meets their requirements the best.

12 We will certainly try to guide and  
13 shepherd use of the spectrum. But ultimately,  
14 they have requirements that they have to  
15 ensure that they meet.

16 The last thing, I just want to  
17 make a few general comments here, once again,  
18 to encourage you to please, as you write  
19 recommendations, make it clear what the  
20 actionable item is in terms of what you want  
21 NTIA or what you think NTIA should do.

22 We appreciate all the background,

1 but in the end, when Joe has to count them,  
2 and we have to decide whether we're taking  
3 action on them, we have to be able to identify  
4 specifically what they are.

5 I also want to note, many of us  
6 come from engineering backgrounds, and we went  
7 to schools that taught us that we could tack  
8 as many clauses and phrases together as  
9 possible and still have an understandable  
10 sentence.

11 I want to guarantee, it cannot be  
12 done.

13 (Laughter)

14 So, if you want us to understand  
15 what the specific recommendation part of the  
16 sentence is, then I suggest that you make that  
17 specifically clear, okay?

18 (Laughter)

19 If you tack on several parts, we  
20 start asking, well, which was the part you  
21 were actually trying to get us to do?

22 And then, the last thing was, I'd

1       like to encourage you -- our staff is  
2       available to provide input to you on processes  
3       and so on.

4                       But, for instance, a couple of the  
5       recommendations came out encouraging us to set  
6       up committees to work on stuff. Those  
7       committees already existed within the IRAC,  
8       speak directly to meet the kind of requirement  
9       that was met.

10                      We already have a website that  
11       tells people what the status of their request  
12       is in shared bands and so on.

13                      So, as you make the  
14       recommendations, please, you know, or in  
15       interaction with our staff, seek them out  
16       about, well, how does the process work now?  
17       They'll be able to explain it to you.

18                      I know our staff really has  
19       appreciated the opportunity to work with all  
20       of you. It is questions that they have that  
21       they commonly come back to me and say, Karl,  
22       if they're going in this direction, I don't

1 think that's a good one. Do I interfere with  
2 it? Do I try to say, no, no, no, don't do  
3 that?

4 And that's where you kind of get  
5 into these things where you make a  
6 recommendation that is kind of out of touch  
7 with where our processes really are. They  
8 want to, well, do I try to straighten that out  
9 or not?

10 Well, I will encourage them on  
11 that type of thing. So please do that,  
12 provide the information that's necessary for  
13 our understanding, so.

14 MR. TRAMONT: Just -- on that last  
15 part, do you think it's very important as we  
16 go through the reports that we get a baseline  
17 from the staff and sort of seek out that  
18 guidance as a jumping-off point for whatever  
19 recommendations go forward, to underscore  
20 Karl's point?

21 Because it doesn't do anyone any  
22 good to develop vast recommendations that have

1 already been implemented.

2 It's not a productive exercise for  
3 most.

4 MR. STRICKLING: This is just an  
5 easy credit.

6 (Laughter)

7 MR. TRAMONT: Check that one off.  
8 With that, Dale, you had a  
9 comment?

10 DR. HATFIELD: I just had a --  
11 this may have come up before, but remind me.

12 You say that -- well, you claim  
13 that the government master file data belongs  
14 to the individual agency. And is that a  
15 presidential directive? Is that a rule that  
16 Larry's adopted?

17 I mean, that seems to me sort of  
18 to make a little bit of difficulty for  
19 transparency. I mean, under what basis does  
20 it belong to the individual agencies? It  
21 seems to me it belongs to the public, in some  
22 sense.

1                   MR. NEBBIA: The information  
2 belongs to the agencies in the sense that for  
3 instance, anything that has national security  
4 classification to it, the classification  
5 authority with the individual program actually  
6 has to make the decision as to what the status  
7 of that is. And that's all in line with a  
8 classification guide that's linked to the  
9 program.

10                   Then, the other aspect that comes  
11 into play here is the FOIA exception, which  
12 once again, the agency -- the information  
13 belongs to them. They have to make that  
14 decision.

15                   So, for instance, if somebody  
16 comes to us, and asks us for information about  
17 one of the federal records, our chief counsel  
18 is going to turn it back to the agency that  
19 provided the information before release can be  
20 given.

21                   So, that's the way the process has  
22 to work. They make the determination as to

1 the availability of their information.

2 MR. MYLET: So, Karl, you're  
3 saying is that it's not that the data are  
4 owned by the agency, the process is owned by  
5 the Agency?

6 I think that's an actually an  
7 important decision, Dale, and, you know, so  
8 focusing on that in terms of streamlining the  
9 process is different than the underlying data.

10 MR. NEBBIA: Well, I think -- the  
11 control of the information does belong to  
12 them. If we want to say they own the  
13 information, that's probably not as  
14 significant as the fact that they control the  
15 process for determining the releasability.

16 Lovely Ms. Warren?

17 MR. TRAMONT: Jennifer, did you  
18 have something?

19 MS. WARREN: My original question  
20 is different than what I'm going to say now,  
21 and then I'll come back to my original  
22 question.

1                   Just to follow up on this point, I  
2                   mean, this is much broader than spectrum data.  
3                   I mean, this applies to all aspects, and it  
4                   extends across programs to releasability not  
5                   only to domestically, but internationally.

6                   And this is not a spectrum-  
7                   specific directive and guidance, so, very  
8                   different, in a much broader context.

9                   I guess my question had to do more  
10                  -- and thank you for the presentation, Karl.

11                  There were a number of  
12                  recommendations that the prior CSMAC  
13                  incarnation made that asked NTIA to reach out  
14                  to the FCC.

15                  And I was curious as to what the  
16                  results of that outreach were, and whether the  
17                  FCC had implemented any of the  
18                  recommendations, or begun implementation of  
19                  the things that were identified as being  
20                  meaningful by this Committee? Thank you.

21                  MR. NEBBIA: Would you like to,  
22                  based on the table, point out any of those

1       that you want to specifically refer to, and  
2       then maybe I can --

3                   MS. WARREN:  No, more generally.  
4       I assume it would have been a general meeting  
5       with them to share with them, and I'm just  
6       kind of curious if you guys were tracking for  
7       them, or if they would be willing, perhaps, to  
8       share with this Committee at some other time  
9       what their implementation of our -- if any --  
10      of our recommendations might be?

11                   It would just be interesting  
12      feedback, overall.  Thank you.

13                   And in addition to that --

14                   MR. NEBBIA:  Sure.

15                   MS. WARREN:  -- it's also  
16      meaningful as to whether or not we bother  
17      going forward.

18                   MR. TRAMONT:  Right.  Right.

19                   MS. WARREN:  If it's being  
20      disregarded, I think it's important to know  
21      that in terms of balance of our time and  
22      effort.

1 MR. TRAMONT: Just one point on  
2 that, as I recall the way we conceived of  
3 this, and Larry can correct me here, is that  
4 our recommendations are recommendations to  
5 NTIA, and then NTIA can decide whether or not  
6 they recommend it to the FCC. I don't think  
7 it's an automatic pass-through.

8 So, it would only be as to  
9 recommendations that the NTIA felt worthy of  
10 passing on to the FCC. So, it's a couple-step  
11 process.

12 MR. NEBBIA: Right. I guess in  
13 that context, there are a few that come  
14 quickly to mind. There was one that talked  
15 about the FCC establishing a public website  
16 for tracking applications that seek access to  
17 federal spectrum.

18 Once again, our response to that  
19 is, we've already created the website that I  
20 think people can have access to. So we really  
21 haven't pursued the commission to create a  
22 duplicate type of website on that sense.

1                   On the other hand, there were a  
2                   couple right below that on the table that we  
3                   should align our application processes, and  
4                   we're certainly working to facilitate  
5                   improvements in the data exchange.

6                   The application processes  
7                   themselves in the Commission's case, they've  
8                   got a wide variety of applications, depending  
9                   on what type of service you're in. So, they  
10                  don't all quite align that clearly.

11                  And one of the ones that's been  
12                  interesting as we've begun to enter into the  
13                  spectrum discussion is the recommendation that  
14                  y'all made about when you're doing relocation  
15                  to know what it is you're relocating for.

16                  And that we -- I think, based upon  
17                  the history, and that is that we turned a lot  
18                  of spectrum over in the past where some of it  
19                  has not gone to great use.

20                  MR. TRAMONT: Right.

21                  MR. NEBBIA: Other pieces of it  
22                  have. But some of it has not. And that is

1       because we hadn't -- we didn't have an  
2       identified item that we're looking to put in  
3       there.

4                       But as we move forward on that, of  
5       course, there's discussions about whether  
6       people want to use LTE or WiMAX. Those things  
7       create different environments for sharing.

8                       Also, as the Commission keeps open  
9       its idea about whether it wants to use TDD or  
10      FTD as we're still identifying spectrum, if  
11      we're going to share it, it's likely that  
12      we're going to need to know what it's going  
13      for. If we're going to relocate it, maybe not  
14      so much.

15                      MR. TRAMONT: Right. Thank you,  
16      Karl, very much, very helpful.

17                      So, we're going to take a five  
18      minute break. We're going to try to shave  
19      five off the break time if we can, and  
20      reconvene at about 10:25, and then we'll kick  
21      it off with David Donovan's report.

22                      Thanks.

1                   (Whereupon, the above-entitled  
2 matter went off the record at 10:19 a.m. and  
3 resumed at 10:28 a.m.)

4                   MR. TRAMONT: We are back for our  
5 session today, and we will begin with the  
6 subcommittee status reports and discussion of  
7 the drafts.

8                   The report that is the furthest  
9 along and prepared for adoption today is the  
10 report of the adjacent band dynamic spectrum  
11 access subcommittee. We received a full draft  
12 of the report at the last CSMAC in Washington,  
13 and they're now prepared to move on to the  
14 next step.

15                   So with that, Mr. Donovan.

16                   MR. DONOVAN: Thank you, Mr.  
17 Chairman.

18                   You have before you the draft of  
19 the interference and dynamic spectrum access  
20 subcommittee. This document was presented at  
21 the last CSMAC meeting, so it has been part of  
22 the public record for several months.

1                   In addition, it was also  
2                   distributed to CSMAC members I believe about  
3                   a week ago, just for final updates or any  
4                   final thoughts.

5                   We have received edits. I've  
6                   received some edits, frankly, fairly late,  
7                   last week. So what you have before you really  
8                   is a base document that incorporates some, but  
9                   not all, and I do want to get to that, edits  
10                  from the various parties who have submitted  
11                  suggestions.

12                  I would, Mr. Chairman, if I might,  
13                  I have before me and have read a document  
14                  that's been filed by M2Z, a statement  
15                  regarding M2Z, which raises some issues  
16                  regarding this particular document.

17                  I haven't had a chance to analyze  
18                  all of the suggestions or considerations in  
19                  here, but I would ask that it be placed into  
20                  the record, so that we may consider some of  
21                  these issues.

22                  MR. TRAMONT: Absolutely, and I

1 think that was the request from M2Z, so we'll  
2 definitely proceed with that in the record.

3 MR. DONOVAN: All right. Some of  
4 these issues we have discussed in the  
5 subcommittee. Others I think warrant  
6 consideration.

7 Thank you.

8 Without going through line-by-  
9 line, I think that there are several things in  
10 the document that I would just like to  
11 highlight regarding specific edits.

12 First is that there was a  
13 suggestion that, while the report makes  
14 recommendations regarding NTIA and other  
15 federal agencies, some of these do apply to  
16 the FCC. So where appropriate, the FCC has  
17 been included.

18 In addition, while the report,  
19 several times, recommends that funding be  
20 increased, there are recommendations in there  
21 that get a little bit more specific regarding  
22 seeking funds from Congress, and also

1 suggesting congressional action or auction  
2 revenues or fees as a jumping-off point for  
3 discussion.

4           There was a concern regarding the  
5 one of the recommendations in which we  
6 recommended that spectrum inventory be  
7 completed for frequencies on which sharing is  
8 proposed.

9           We want to make clear, and the  
10 document now makes clear before you, that what  
11 we were contemplating is obviously supporting  
12 -- and the subcommittee clearly does support  
13 the spectrum inventory legislation that is now  
14 on Capitol Hill. We clearly support that.

15           There was a concern in the  
16 subcommittee regarding the timing of  
17 completing the spectrum inventory before  
18 certain sharing activities took place.

19           And so I think it was a desire of  
20 the subcommittee to say that, look, if you  
21 wanted to move forward with sharing before  
22 completing a universal inventory, you at the

1 very least, before you create the database and  
2 move forward, you should inventory that  
3 specific part of the spectrum first.

4 So it is not inconsistent at all  
5 with legislation. In fact, I think it just  
6 further supports it.

7 The other issue is with respect to  
8 the database and the confidentiality of the  
9 database and the sensitivity in terms of both  
10 proprietary information and also government  
11 information.

12 I think included in its  
13 recommendations, and perhaps we can make this  
14 clearer, is that it's certainly no desire that  
15 as part of the database that there should be  
16 any disclosure of certain classified  
17 information. There also may be some  
18 confidential information as well from a  
19 proprietary standpoint.

20 There was an issue regarding  
21 investment in equipment should not be stranded  
22 due to new services and devices that cause

1 interference. And this really is an important  
2 discussion. We went around and around on  
3 this.

4 And the question was, and I think  
5 Mark was a key advocate in this debate when we  
6 remember our tortured discussions on this.

7 And the question was, is that as  
8 you go forward and you start doing spectrum  
9 sharing alternatives or new options, what  
10 happens to existing legacy equipment? And to  
11 what extent do you do with the investment in  
12 that equipment?

13 And we as a subcommittee initially  
14 decided that investment in existing equipment,  
15 be it by the government or be it by consumers,  
16 should not be stranded.

17 I think there was a concern that  
18 perhaps that standard was a little bit too  
19 strict, in that it may prevent information  
20 going forward or prevent information going  
21 forward overall.

22 So the word unnecessarily has been

1 added to that recommendation, so that it  
2 should not unnecessarily strand existing  
3 equipment.

4 So, I think what that does is give  
5 at least a little bit more room moving forward  
6 with that.

7 I think the other issues are  
8 fairly straightforward. There is an important  
9 section here on enforcement, which I think  
10 going forward is something that both us and  
11 certainly the Spectrum Access Subcommittee  
12 really has to look at. It may require sort of  
13 a case-by-case approach in dealing with those  
14 issues.

15 There are a couple of issues that  
16 -- and Larry, if I could raise them now, I  
17 think that were raised by edits that we  
18 received from Larry, which I think warrant  
19 some discussion.

20 The first was a recommendation, or  
21 a statement, that frequency coordination gets  
22 more complex when sharing spectrum with

1       unlicensed devices, and coordination may be  
2       impossible if such devices are untethered or  
3       not connected to an accurate spectrum  
4       database.

5                   And I guess one of the issues was,  
6       I guess, the concept of tethered.  Larry, I  
7       think you had a concern that not all  
8       unlicensed devices have to be tethered.  And  
9       I think maybe we can even discuss that  
10      offline.

11                   I think our concept is, as even  
12      under the FCC's for example, (inaudible-phone  
13      ringing) approach, that the devices, in some  
14      form or another, are tethered to a database.  
15      And I didn't know whether you wanted to  
16      discuss that here or not, but I wanted to  
17      (inaudible-phone ringing)

18                   MR. TRAMONT:  Yes, I'd have to go  
19      back and review the comments.  I don't  
20      actually remember the specific one.  But I  
21      think my concern was that -- I think the  
22      comment was addressed to unlicensed the

1       general, and we have many examples of  
2       unlicensed devices today that aren't tethered.

3               So I'd have to go back and look at  
4       the details. So that's probably better for an  
5       off-line discussion on it.

6               But that was my concern is that  
7       the statement was very broad. TV white space  
8       is just one thing.

9               MR. DONOVAN: I agree. I think  
10       while it flows from that construct, I think  
11       one of the issues with whether you're sharing  
12       with either TV white spaces or other devices,  
13       I think the real question is to what extent  
14       there are -- there are a number of management  
15       systems, control systems, you can do sensing  
16       certainly is one which does not necessarily  
17       imply a database if you want to go sensing  
18       alone.

19               If you go with a database  
20       approach, though, I guess the fundamental  
21       question is whether or not the device has to  
22       be connected in some way, shape, or fashion,

1 to a spectrum database. So that, I think,  
2 frames the issue and we can certainly discuss  
3 that. I think that was a concern.

4 MR. CALABRESE: Although, that  
5 seems to have nothing whatever to do with  
6 whether it's unlicensed or licensed, right?  
7 It's just a question of whether on a  
8 particular band, you happen to have all the  
9 device to be somewhat connected to the  
10 database.

11 MR. DONOVAN: correct. I think  
12 the issue, it gets a little bit highlighted in  
13 the unlicensed, not that it's unique. But in  
14 the licensed model, if there was interference,  
15 obviously, you have a licensee that one can  
16 agree and talk to.

17 The issue becomes perhaps a little  
18 bit more heightened -- the sensitivity becomes  
19 a little bit more heightened in an unlicensed  
20 model, because you may not have a particular  
21 licensee which you can contact.

22 Therefore, it becomes even more

1 important that the devices work and work  
2 properly, and be connected to an accurate  
3 database.

4 Obviously, you're right. In a  
5 licensed model, you certainly don't want  
6 licensed entities interfering as well. But in  
7 the unlicensed regime, in a sharing unlicensed  
8 regime, it becomes a little bit more important  
9 that the devices themselves get tethered to  
10 this database.

11 MR. TRAMONT: And this just maybe  
12 be a slight nuance in that -- the work --  
13 David, I think the dichotomy you set up is an  
14 exclusive licensed regime.

15 There are licensed regimes where  
16 the licensee may not have exclusive control.  
17 And there could be, indeed, hundreds of  
18 licensees. And that could add a layer of  
19 complexity that is more similar to some of the  
20 unlicensed issues you just brought up.

21 MR. DONOVAN: Absolutely right.  
22 No, either a light licensing or collective

1       licensing --

2                   MR. TRAMONT:   Yes.   Increased --

3                   MR. DONOVAN:   -- you run into  
4       exactly the same thing.

5                   MR. TRAMONT:   Yes, yes.

6                   MR. DONOVAN:   And I can make that  
7       we will make that edit accordingly.   If you  
8       don't want to draw that distinction, we can  
9       certainly.

10                   I think the one other thing, and  
11       we can -- which is a fundamental issue, and it  
12       has cropped up in the TV context, but I think  
13       it's also more general, is whether or not the  
14       devices that connect to the database should be  
15       limited to those that have been certified or  
16       approved by some entity, either the commission  
17       or NTIA, in order to access the database.

18                   Larry, we've had long discussions  
19       with this, that's lasted for about a year or  
20       so.

21                   (Laughter)

22                   The report recommended -- the

1 recommendation is that those devices in fact  
2 should be certified by the FCC and/or the  
3 appropriate government entity.

4 I think you're looking for more  
5 expansive here. I think your original edit  
6 was suggested to delete that specific  
7 recommendation.

8 Again, we can talk offline, or we  
9 can have a discussion here, but it is an  
10 important philosophical, I think, issue, for  
11 spectrum management in the context of overall  
12 share.

13 MR. ADLER: The other thing -- let  
14 me make a comment there. So, in the  
15 particular TV white spaces band, there's this  
16 idea of a database that the devices would  
17 connect to.

18 And David and I have had this  
19 long-standing debate, and I draw a separation  
20 between making the data available, as to what  
21 devices -- not devices -- so, in the TV white  
22 spaces, the data available is what channels

1       you could use and what powers you could use in  
2       this area.

3                   And I believe that that data  
4       should be kind of generally available.  People  
5       should have access to it.

6                   And access to the data itself is  
7       not permission to broadcast on it or not.  It  
8       is simply data of availability.

9                   And I draw a separation between  
10      the data availability and any mechanism you  
11      want to put in place to grant permission for  
12      devices.

13                   So that was the genesis of my  
14      recommendation, that I read that those two  
15      issues were being conflated.

16                   MR. DONOVAN:  I certainly agree  
17      that certainly from a policy perspective that  
18      the data should be made available.  I think  
19      the question becomes a little bit more  
20      problematic whether it's white spaces or  
21      anything else as to whether in the operational  
22      phase, whether any device can access a

1 particular database and simply begin to  
2 operate whether it's, you know, FCC certified  
3 or not, or part of that overall process.

4 I think there are some issues that  
5 crop up there that are -- it's not just unique  
6 to TV white space.

7 DR. KAHN: Well, I didn't think  
8 you said that the device itself would operate  
9 unless it met standard SEC licensing for its  
10 band, true?

11 MR. CALABRESE: Exactly. I just--

12 DR. KAHN: I mean, he wasn't  
13 saying the device could operate simply because  
14 it could access -- I'm just trying to, you  
15 know, understand what you guys are arguing  
16 about.

17 And what I specifically heard was,  
18 there's a database. Anybody can look at the  
19 database. You want to operate a physical  
20 device, it's got to be certified, like always.

21 MR. DONOVAN: And there has to be a  
22 communication back and forth between --

1 MR. CALABRESE: That's not what  
2 the report is saying, though. The language it  
3 has to go with -- there's language here that  
4 says, limit access to database information to  
5 the incumbent devices that are authorized to  
6 use the database.

7 DR. KAHN: Why would you do that?

8 MR. CALABRESE: The problem -- the  
9 problem with that -- well, it's different than  
10 saying --

11 MR. DONOVAN: That's what I'm  
12 saying.

13 MR. CALABRESE: -- the device has  
14 to be --

15 DR. KAHN: That's weird. Why  
16 would you limit the information?

17 MR. DONOVAN: Well, because what  
18 you're doing in -- and we should take this  
19 online. This conversation could last another  
20 year.

21 MR. TRAMONT: But this is  
22 important.

1 MR. CALABRESE: This is just the  
2 TV white -- in fact, there's about seven of  
3 these items here that are just a replay of the  
4 TV white space database debate, which is still  
5 ongoing, in which there's two sides.

6 And this report, I mean, just to  
7 be frank, is putting the Committee -- putting  
8 CSMAC on one side against the FCC, for the  
9 most part, because if you look at the bullet  
10 points under the database, by my count, seven  
11 of eleven bullet-pointed recommendations are  
12 contrary to how the FCC is likely to operate  
13 the TV white space database.

14 And so, you know, I think it's  
15 just not necessary, because the nature of the  
16 database, on every one of these points, simply  
17 depends on the band. It's going to depend on  
18 the band and the service.

19 And you can't say that these --  
20 that all of these restrictions need to be this  
21 rigorous or this rigid in advance.

22 DR. KAHN: Well, let me ask -- let

1 me ask -- can I ask a hypothetical?

2 MR. CALABRESE: Sure.

3 DR. KAHN: Suppose that I was  
4 somebody thinking about buying a white spaces  
5 device.

6 MR. CALABRESE: Yes.

7 DR. KAHN: Don't have it yet.

8 MR. CALABRESE: Correct.

9 DR. KAHN: Is there any reason  
10 that I shouldn't have access to an application  
11 that would let me ask the question of the  
12 database, were I to get a white space device,  
13 could it operate here, and if so, what channel  
14 would it operate on?

15 Is there some reason why I, as a  
16 citizen, couldn't get the answer to that  
17 question?

18 MR. DONOVAN: If it wasn't -- if  
19 it was part of this -- and see, that's the  
20 problem. It should not necessarily be limited  
21 to the TV whitespace.

22 If, in fact, the government is

1 going to go forward and order sharing, whether  
2 it's in this band or any other band --

3 DR. KAHN: Well, all right --

4 MR. DONOVAN: And you're sharing -  
5 - and you're sharing with -- particularly if  
6 you're sharing in a situation where you do not  
7 have a licensed entity, I think the question  
8 becomes, what devices would be allowed to  
9 operate in that band on those frequencies.

10 DR. KAHN: No, no, no. But you  
11 didn't answer my question. I don't own the  
12 device yet. I'm thinking about acquiring such  
13 a device.

14 MR. DONOVAN: Correct.

15 DR. KAHN: I want to ask the  
16 question -- oh, sorry. I want to ask the  
17 question of the database, were I to get a  
18 device, could I operate it here, and if so, on  
19 what band would it operate? That does not  
20 seem --

21 MR. DONOVAN: No, I don't disagree  
22 with you at all.

1 DR. KAHN: Okay. Then that means  
2 that -- to do that, the database must be  
3 available, independent of devices. That's not  
4 saying that any device can operate.

5 MR. DONOVAN: Well, exactly.

6 DR. KAHN: It's --

7 MR. DONOVAN: And I think that's  
8 the important issue here.

9 DR. KAHN: Right.

10 MR. DONOVAN: That it's not a  
11 question of not denying the public access to  
12 this information. The question is whether or  
13 not the devices in fact that operate on those  
14 frequencies, whether or not it has to be  
15 certified by the appropriate government --

16 DR. MCHENRY: They're asking, can  
17 a stranger just access the database to see  
18 what's going on?

19 MR. DONOVAN: Sure.

20 DR. MCHENRY: Well, it says no.

21 MR. DONOVAN: The answer is yes.

22 DR. MCHENRY: It says no.

1 DR. KAHN: The document says no.  
2 I think that's the objection.

3 MR. DONOVAN: I think the document  
4 was interpreted in the context of an  
5 operational device.

6 In other words, a device that has  
7 not been certified should not be able to get  
8 access to the database and operate on those  
9 frequencies.

10 DR. KAHN: Leave out the word  
11 operate.

12 MR. DONOVAN: Or transmit.

13 DR. MCHENRY: Devices cannot  
14 operate unless they're certified. That's just  
15 an --

16 MR. DONOVAN: But there has to be  
17 a connection between the device and the  
18 database. That's the critical thing.

19 DR. KAHN: I'm not sure what  
20 you're telling me.

21 MR. CALABRESE: And the other --  
22 and the language doesn't limit access to

1 database information. It says, more  
2 specifically inside, but --

3 MR. DONOVAN: Okay. We'll make --  
4 we can make the edit.

5 MR. CALABRESE: But the other  
6 reason too, is, imagine if you're an  
7 entrepreneur, and you want to decide whether  
8 to invest, you want to know whether you're  
9 going to be able to operate, and the public  
10 may want to --

11 MR. DONOVAN: I don't disagree  
12 with you.

13 DR. MCHENRY: The bullet needs to  
14 be written.

15 DR. KAHN: That bullet says,  
16 nobody can touch the database unless you're a  
17 certified device.

18 MR. DONOVAN: The edit is duly  
19 noted, and we'll make the correction.

20 MR. TRAMONT: And just to be  
21 clear, it will say that the public should have  
22 access to the database --

1 MR. DONOVAN: Right.

2 MR. TRAMONT: But that in order --  
3 that devices that operate the band must be  
4 certified in order to utilize the database in  
5 order to operate.

6 MR. DONOVAN: And consistent with  
7 national security, with other classified --

8 MR. TRAMONT: But the public will  
9 have access to the database.

10 MR. DONOVAN: Sure. I don't think  
11 that that's a problem.

12 MR. TRAMONT: That's what needs to  
13 be changed. There's a consensus on that.  
14 Okay.

15 DR. MCHENRY: Although there's a  
16 security issue, though. Some guy would hack  
17 in and do a denial of service attack --

18 MR. TRAMONT: Sure, sure, and we  
19 don't want to make --

20 DR. MCHENRY: And you'd have to  
21 give a credential to get access --

22 MR. DONOVAN: Precisely.

1 DR. MCHENRY: -- because we don't  
2 want to be hacked, manipulated.

3 MR. DONOVAN: Precisely.

4 DR. MCHENRY: That was the intent  
5 of this bullet.

6 MR. DONOVAN: Well, we'll make --  
7 if I could request editorial improvements,  
8 we'll make editorial improvements on it.

9 MR. TRAMONT: Sure, of course.  
10 All right.

11 Any --

12 MR. DONOVAN: I think those were  
13 sort of the two major sort of policies.

14 MR. TRAMONT: Other comments on  
15 this report?

16 MR. CALABRESE: Well, yes, just  
17 coming back around, you know, I've had seven  
18 of the eleven bullet pointed recommendations  
19 on the database are directly contrary to where  
20 the FCC is likely to end up with the TV bands  
21 database, which just sort of -- I mean, I  
22 think just sort of really reflects not that

1 the TV bands database will be in the right  
2 place or all uses of databases for dynamic  
3 spectrum access in the future, but that really  
4 the report should probably be phrased much  
5 more in terms of depending on the particular  
6 band and circumstances.

7 Because I think this whole thing  
8 is phrased too much as a one-size-fits all, so  
9 for example, just, you know, the very first  
10 bullet point, says that the database must be  
11 real time. It must be able to update in real  
12 time.

13 The Commission has pretty much  
14 decided that's not the way they're going to do  
15 it. That's incredibly expensive, and it's not  
16 always necessary.

17 So, Karl, for example, when he was  
18 up there was suggesting that the main problem  
19 in terms of accessing certain bands may be  
20 exclusion zones.

21 Well, those exclusion zones don't  
22 need to require, you know, a real-time updated

1 database, and the continuous re-authorization  
2 of devices from second to second.

3 It may just simply be that the  
4 devices need to know periodically from a  
5 database where those exclusion zones are, and  
6 where they are located in terms of their own  
7 GPS.

8 And I could go down, and it's  
9 bullet point after bullet point, where it's  
10 contrary, it's the TV white space debate  
11 played out.

12 This takes one side against the  
13 FCC's -- where the FCC's likely going to go.  
14 And it's not that we -- not that one side or  
15 the other is right, but that it's really going  
16 to depend.

17 And I think this needs to be  
18 rewritten to be much more conditional. In  
19 terms of, you know, you want to consider real-  
20 time in certain circumstances, and it's not  
21 necessary in other circumstances.

22 The government needs to have

1 administrative -- needs to have administrative  
2 control in some circumstances, and not in  
3 others.

4 MR. DONOVAN: We could get into a  
5 very long discussion here, I mean, for  
6 example, with respect to whether it has to be  
7 in realtime, the document does say we have  
8 these -- so it's not -- it's not an absolute  
9 condition.

10 But the document has been out  
11 there, Michael, now, for three months. And  
12 I haven't received any of those specific  
13 comments at all. And so I'd be more than  
14 happy to consider them, and I think we should.

15 The discussion and the things that  
16 are raised in here are not unique or specific  
17 to the white space issue, although, I will  
18 say, and I do think it's important for all of  
19 us here, is that as we move forward, and Jerry  
20 will -- and Gerry will run into this as well,  
21 as we move forward with the concept of sharing  
22 going forward, the proceeding that's moving

1 the fastest in developing those issues is in  
2 fact the FCC's white space mission.

3 So, a lot of the issues that are  
4 arising in that context are very specific  
5 issues, which I think we're going to have to  
6 address going forward.

7 And, I'll be more than happy to  
8 work with you, Michael, on some of the  
9 language discussions here.

10 But there are no conclusions.  
11 They're just issues that the entities ought to  
12 discuss and ought to look forward or at least  
13 look out for as you're going forward with the  
14 database recommendation. They're certainly  
15 not conclusive at all.

16 MS. CRAWFORD: Bryan? Dale?

17 MR. DONOVAN: I'm sorry.

18 MR. TRAMONT: Does someone -- a  
19 Committee member on the phone?

20 MS. CRAWFORD: Bryan? Dale?

21 Bryan, Dale, it's Susan Crawford calling in.

22 I apologize, it's my very first meeting here,

1 I hope you can hear me.

2 I have just joined the Committee  
3 and I'm very honored to be part of it.

4 I share some of Michael's concerns  
5 about the process here. This is the first  
6 chance I've had to look at the documents, and  
7 I just want to know, how is this group going  
8 to act with respect to this draft?

9 Are we voting? Surely we don't  
10 want to do a line edit, but we want to come to  
11 some consensus about what this report is going  
12 to say.

13 Can you give me some advice about  
14 the process here?

15 MR. TRAMONT: Susan, thank you,  
16 I'm glad you were able to join.

17 David presented a scope of work  
18 document two meetings ago, if I'm correct, and  
19 some draft conclusions, and then at the last  
20 meeting, presented a full draft that has been  
21 put up on the website about three months ago.

22 And so our aspiration had been to

1 vote the item at this meeting, which has been  
2 our traditional process, with the draft being  
3 presented at the meeting before for public  
4 comments.

5 So our hope had been to move,  
6 indeed, to adoption here today. So, if that's  
7 responsive.

8 I don't know, Dale, if you want to  
9 share?

10 DR. HATFIELD: No, I just get  
11 concerned that these things go on forever, and  
12 we need to reach closure.

13 And I think here there's been  
14 pretty adequate notice given, the fact that  
15 we've had a draft out and so forth.

16 MR. TRAMONT: Bob, did you have  
17 something else in addition to that -- Jennifer  
18 -

19 DR. PEPPER: No, I just -- I  
20 think, there, some specific language that can  
21 fix the problem. And I guess the question is,  
22 you know, a recommendation would be to, again,

1 give David some editorial privileges to fix  
2 it.

3 And so, for example, on this one,  
4 Michael's point, building off of what Karl  
5 said, real time, where needed and feasible --

6 MR. NEBBIA: It says with respect  
7 --

8 DR. PEPPER: -- where feasible and  
9 needed would be, if nothing's dynamically  
10 changing, you don't need the real time, the  
11 cost.

12 But those are really, I think,  
13 relatively minor changes that could be dealt  
14 with offline as part of sort of an editorial,  
15 you know, modification -- and still be able to  
16 adopt.

17 DR. HATFIELD: So you're  
18 suggesting that we can go ahead and adopt it  
19 today, subject to those --

20 DR. PEPPER: Subject to those  
21 edits, yes.

22 MR. TRAMONT: I mean, it is a 65

1 page report, or more. I forget where we ended  
2 up, but a lengthy report.

3 DR. HATFIELD: 72, and I carried  
4 it all around DC.

5 (Laughter)

6 MR. TRAMONT: Excellent, yes, and  
7 multiple copies, as I understand.

8 So, perhaps we can, consistent  
9 with Bob's recommendation, since we've had  
10 some discussion here, adopt with editorial  
11 privileges.

12 If something emerges that there is  
13 not a consensus and we're not able to get to  
14 closure on, then we can bring it back, but it  
15 would be with the expectation that we're done.

16 MR. MYLET: I would like --  
17 exactly -- that are consistent with what the  
18 conclusions are of the documents.

19 MR. TRAMONT: Good. And then Karl  
20 right after Jennifer, yes.

21 MS. WARREN: Sorry.

22 First, I want to support that line

1 of action. I think there's a lot of work  
2 that's been going on here, so I'm fully in  
3 accord and encourage that.

4 A separate point, though, and I  
5 wasn't going to address this, but since it's  
6 been raised twice, I'm a little concerned by  
7 our being in any way bounded by a proceeding  
8 that maybe three people over there are very  
9 active in.

10 When we -- and I read this  
11 document, I'm not bounded by the discussion  
12 going on in the FCC by any parties here. And  
13 I think the report stood very well on its own.  
14 And so, I'm supportive of this.

15 I'm just very concerned about  
16 anybody trying to bring into our group a  
17 barrier of what's going on in one agency. I  
18 think we're supposed to be thinking outside of  
19 that, and not only driven by that in our  
20 particular hats that we wear when we're not  
21 sitting here.

22 MR. TRAMONT: Karl? I'm sorry.

1 Karl?

2 MR. NEBBIA: I just wanted to  
3 note, our engineering people who kind of  
4 followed along with the work did indicate to  
5 me that they were hoping maybe as this goes  
6 forward that we could continue some of the  
7 discussion on some of the technical aspects  
8 that maybe weren't quite as sexy, didn't catch  
9 as much attention as some of the normal heated  
10 debate.

11 And this involved things like  
12 application of guard bands, where  
13 traditionally, it's been the new entrant  
14 that's had to come up with some guard band to  
15 protect everybody else.

16 We've just gone through a rule-  
17 making, in fact, where the aeronautical  
18 telemetry people, who are essentially --  
19 who've been there for many years, really had  
20 to eat the guard band. So it doesn't always  
21 work quite so simply, I think.

22 Also, issues regarding the long-

1 term incorporating into equipment margin for  
2 interference protection that right now most  
3 groups like to design to meet the exact  
4 requirement that they have, and yet  
5 ultimately, to squeeze more things in the  
6 spectrum, we may have to look in another  
7 direction.

8           Some -- I think we need to look  
9 more broadly at some of the unwanted emissions  
10 spectrum policies that we've had, and the  
11 limits that we've set before. These didn't,  
12 once again, kind of bubble up to the heat of  
13 discussion, I think, on this issue.

14           So it may be just items that we  
15 need to continue the discussion. I'm not sure  
16 whether the plan was that this group would end  
17 after having done this report, or there would  
18 be continued work on those.

19           But we've kind of put up a list of  
20 more detailed technical types of things that  
21 we think are worthy of discussion.

22           MR. TRAMONT: I guess I would

1 recommend sort of a two-pronged approach, to  
2 the extent that we have editorial privileges,  
3 that we'll help finalize David's report, and  
4 we should do that.

5           And then the second piece is that  
6 the work that Gerry and Gary are doing built  
7 on a lot of the things that are in this  
8 report. And there may well be ways that we  
9 can sort of build it through their sub-  
10 committees, would -- Karl, does that make  
11 sense?

12           HON. OBUCHOWSKI: I just wanted to  
13 close this discussion, at least from my point  
14 of view, to thank the Committee, and  
15 especially David, because an awful lot of work  
16 went into this report.

17           And on some level, I think aspects  
18 of it are cutting-edge in that sharing's going  
19 to be a very big issue going forward, and I  
20 think the analysis was good. And people from  
21 very different points of view did sit on this  
22 Committee.

1                   And then, the second observation I  
2 wanted to make to Karl's point, we had  
3 excellent technical support from some of the  
4 companies. I think, in the spirit of an  
5 advisory committee, people brought a lot of  
6 resources to the table.

7                   So I, for one, do support some  
8 venue or some Committee continuing to address  
9 those points. I think people were ready,  
10 willing, and able to roll up their sleeves.

11                   But, you know, 66 pages already  
12 was kind of getting to the limits of round 1.

13                   MR. TRAMONT: Great, Janice.

14 Thank you.

15                   Yes, Michael?

16                   MR. CALABRESE: Yes, I just wanted  
17 -- you know, in terms of adopting it now, yes,  
18 I think that would be -- well, one thing, I  
19 just wanted to respond, that I certainly did  
20 not mean to say that the Committee should be  
21 bound by what other agencies are doing.

22                   But I thought it was a very good

1 touch point for recognizing that this isn't  
2 necessarily the way it has to be done, when in  
3 fact, it's being done entirely differently  
4 elsewhere.

5 So I just wanted to raise that I  
6 think we should be free to recommend, you  
7 know, whatever we think is best.

8 As far as adopting this subject to  
9 change, if we're -- I guess if we're in  
10 agreement on the sort of points that Larry and  
11 Kevin and I have raised, that we could add  
12 more conditional language later, you know, so  
13 that this shows that depending on the band and  
14 circumstances, then that would be, I suppose,  
15 you know, possible.

16 MR. TRAMONT: Yes, I think that's  
17 the idea. And then if irreconcilable  
18 differences or some larger issue emerges, then  
19 we would need to bring it back. And if that's  
20 necessary, then we'll do that to get to the  
21 right answer.

22 So, with that, if we can call the

1 question, all those in favor of adopting the  
2 report with editorial privileges subject to  
3 the conversations had here this morning,  
4 signify by saying aye.

5 COMMITTEE MEMBERS: Aye.

6 MR. TRAMONT: Opposed?

7 Very good. The ayes have it.

8 Congratulations, David. And thank  
9 you for you and the Committee's great work in  
10 producing the report.

11 MR. DONOVAN: Thank you to the  
12 Committee. They did terrific work here.

13 DR. HATFIELD: Yes, I was just  
14 going to say here with my students -- there  
15 are students over here on the right. There's  
16 a lot of good stuff in that report for the  
17 students, too.

18 MR. TRAMONT: So, you know, some  
19 Friday night, when you're sitting at home --  
20 72 pages of David Donovan. That's what I'm  
21 thinking right there.

22 (Laughter)

1 PARTICIPANT: It goes down better  
2 with a glass of Scotch.

3 (Laughter)

4 MR. TRAMONT: That's an important  
5 lesson as far as spectrum management courses  
6 go.

7 Well, going forward, with that,  
8 status report on the Incentives Subcommittee.

9 Michael?

10 Frying pan into the fire, right  
11 here.

12 MR. CALABRESE: Yes. No doubt,  
13 that report is incredibly informative.

14 Okay, so Incentives Subcommittee,  
15 we've continued to meet several times since  
16 the last general meeting, and have actually --  
17 you know, I think made substantial progress,  
18 though less than we were hoping to make.

19 I think particularly folks who  
20 were on the Committee prior to last year  
21 realized that this has been a difficult set of  
22 issues to work through.

1                   We spent most of the -- I would  
2                   say the lion's share of the time on the issue,  
3                   and we still have no consensus on, which is  
4                   spectrum fees.

5                   We got the furthest I think on the  
6                   notion that there could be a low, flat fee on  
7                   all spectrum use. And some held the view that  
8                   at least that would provide some tangible  
9                   opportunity that would raise awareness, and  
10                  that actually you could start at a low, flat  
11                  fee. And then if that proved reasonable,  
12                  transition over a long period of time, 10  
13                  years or more, perhaps, to more market-based  
14                  rates.

15                  But then there were others who  
16                  believed that really considering the  
17                  administrative costs, it might not be worth  
18                  putting a kind of a token fee, that you need  
19                  something closer to market rates to have any  
20                  kind of behavioral impact.

21                  And then there were other members  
22                  of the Committee -- and I'm grossly over

1 simplifying all the nuances that we argued --  
2 but other members of the Committee that argue  
3 that spectrum fees, at least, particularly on  
4 the federal side, would have little or no  
5 impact on behavior, since the mission would  
6 always be put first, and the people who make  
7 those decisions about spectrum management  
8 would not be involved in that overall  
9 budgeting, and that it may also -- that fees  
10 may also be inappropriate considering the  
11 societal importance of the federal missions,  
12 and the fact that very often, in fact, in most  
13 cases, probably the most sensitive missions in  
14 terms of national security, health and safety,  
15 have the largest amount of spectrum, so  
16 anything approaching market rates would be --  
17 could be quite punishing.

18 So, we are going to revisit the  
19 question one more time and see if there is any  
20 consensus to be had. Otherwise, we can  
21 discuss how to handle it, perhaps in terms of  
22 pros and cons.

1                   Where we made a lot more progress  
2                   and are fairly excited about a recommendation  
3                   concerning strengthening the OMB circular All  
4                   process, and I think as most people know,  
5                   that's -- circular All seeks to integrate  
6                   spectrum resources into the procurement and  
7                   management process.

8                   So OMB has stated in there that  
9                   spectrum should not be considered a free  
10                  resource, and should be included to the extent  
11                  practical in economic analysis of procurement  
12                  and alternative systems.

13                  However, it's quite vague in  
14                  general, and it's not clear to what extent  
15                  that sort of cost benefit analysis is done at  
16                  all, or done in a very rigorous way, or  
17                  reported in any detail to NTIA.

18                  And so we have a consensus that  
19                  circular should be rewritten to do a number of  
20                  things which are on my short report, just five  
21                  bullets there.

22                  For example, to indicate whether

1 in the procurement process, RFPs included  
2 requirements to address spectrum efficiency  
3 factors, to indicate whether the bidders or  
4 the agency chose the spectrum, the most  
5 spectrum-efficient solution, or had good  
6 reasons not to, to indicate whether the system  
7 was shared spectrum, and whether that was  
8 considered, to indicate improvements in  
9 spectrum efficiency and effectiveness compared  
10 to the prior system that's being replaced, and  
11 if not, why not, and to certify consideration  
12 of non-spectrum- dependent or commercial  
13 alternatives that could be effective.

14 So we're in agreement on that, and  
15 we're going to next consider whether and how  
16 to put more teeth into this process.

17 For example, one thing to  
18 consider, but we haven't really gotten really  
19 far into discussing, is that as part of  
20 circular A11, the NTIA currently is required  
21 to -- well, agencies must obtain a  
22 certification from NTIA that the frequencies

1 that they propose to use are actually  
2 available and appropriate.

3 And that could, perhaps, be  
4 expanded into something of a cross-benefit  
5 analysis that certifies that OMB, in fact,  
6 that all of this required information, had  
7 been provided and made sense. That's one  
8 option, but we're open to other ideas.

9 The other area where we have -- I  
10 guess, some consensus, although not complete,  
11 relates very much to what Karl discussed in  
12 both of his presentations, and that is this  
13 question of up-front costs that agencies face  
14 for research modeling and testing evaluation,  
15 and beginning, in terms of, if they want to  
16 expand spectrum sharing or improve spectrum  
17 efficiency in general, there's little in terms  
18 of resources made available for these  
19 activities.

20 And so, what we've talked quite a  
21 bit about is a spectrum -- something we're now  
22 calling a spectrum innovation fund that would

1 be a separate pot of money that NTIA could use  
2 to grant out funds to agencies upon  
3 application, probably on a merit or cost-  
4 benefit basis, for research modeling, testing,  
5 evaluation, and planning.

6 And then we're going to move on to  
7 talk about whether -- and for that purpose, we  
8 were just -- it's almost like throwing darts,  
9 saying, well, would something in the 10 to 50  
10 million dollar range have an impact, would  
11 that make sense.

12 But then we'll move on to also  
13 explore the potential uses of such a fund to  
14 provide resources for agencies to actually  
15 implement modifications of systems, to upgrade  
16 particularly existing systems to be more  
17 spectrum efficient or to facilitate sharing.  
18 Perhaps that's buying filters to improve  
19 sharing, or whatever.

20 The one thing that the Committee  
21 had a consensus was that we have to be careful  
22 that this doesn't become an end run-around the

1 traditional procurement process, that you're  
2 not getting the next generation of system kind  
3 of through this process rather than the way it  
4 should go through the regular cycle.

5 So, that's about where we are, and  
6 we'll also be looking at several other issues  
7 before we finish.

8 MR. TRAMONT: And what's the time  
9 frame for the next step? Or what do you hope  
10 to have done by the September or October  
11 session?

12 MR. CALABRESE: So, what we hope  
13 is to have a draft, at least a rough draft,  
14 report recommendations on the full scope.

15 MR. TRAMONT: Great. Any  
16 questions for Michael? Comments?

17 MR. DONOVAN: Just one quick  
18 question, Michael. There was an economic  
19 analysis done by, I believe, Coleman, Bazelon,  
20 and Moore back in the late '90s on spectrum  
21 fees, when they would CBO.

22 Has that been put into the

1 Subcommittee record?

2 MR. CALABRESE: No, not that I  
3 know of. I'd have to look that. It was  
4 Bazelon and --

5 MR. DONOVAN: Yes, it was Coleman,  
6 Bazelon, and David Moore. And the bottom line  
7 is they took the position that spectrum fees  
8 are not appropriate or an efficient way to  
9 manage spectrum. And so it may be something  
10 that you might want to consider, because he  
11 did it at the time when he was at CBO.

12 MR. CALABRESE: Okay. Thank you.

13 MR. TRAMONT: Anything else for  
14 Michael?

15 Very good. Moving on, the status  
16 report of the Sharing Subcommittee.

17 Gary?

18 MR. EPSTEIN: Thank you, Bryan.  
19 This period was -- we're one of the two new  
20 subcommittees, and this was our formation and  
21 discussion period.

22 We had a conference call, a series

1 of other calls, and a lot of email traffic  
2 back and forth. And we quickly decided that  
3 the topic is so broad and so omnipresent, and  
4 you've heard that today and virtually every  
5 discussion we've had, that our first, and  
6 probably our biggest task was to figure out  
7 what would be useful for us to provide to the  
8 subcommittee.

9 And we're getting there, but I  
10 don't think we're there yet. And this meeting  
11 today, by the way, I had hoped and already is  
12 been immensely helpful, I think, in helping  
13 our future deliberations.

14 Karl's presentations were  
15 particularly good, because there was a lot of  
16 discussion about sharing in those  
17 presentations, and I think that will help us.

18 What we did was, we did not want  
19 to do what had been done before. So we have  
20 already briefly reviewed some of the CSMAC, or  
21 as Bryan keeps trying to make us say, "siz-  
22 mac", work, which has done in the past. So we

1 don't do a lot of duplication.

2 And we were also smart enough to  
3 recognize the relevance of the Presidential  
4 Memorandum. And so we've discussed that in  
5 our deliberations.

6 And where that led us is to  
7 attempt to narrow the topic of sharing, and to  
8 provide something really useful. And the  
9 first thing, I think, we decided, was that  
10 we're really going to confine our work to  
11 sharing between the Federal Government,  
12 commercial entities, for broadband.

13 You know, there's a lot more we  
14 can write about, a lot more we can do, and  
15 many other things that we can provide opinion  
16 and discussion on. But that seems to be the  
17 most relevant and the most important.

18 So, at least for now, and again,  
19 our tentative conclusion, and we'd like to  
20 hear the committees -- the full committees,  
21 and other people's views, is that we're really  
22 not going to explore government sharing with

1 public safety, and we're not going to look at  
2 narrow band. And we're really going to focus  
3 on areas where there is potentially broadband.

4 Marty Cooper made a couple of, I  
5 think, excellent comments at the start on a  
6 very helpful, up-front piece for what our  
7 deliberations and our work will be, which is  
8 really to define our terms.

9 What are we going to talk about,  
10 what do we mean by sharing in this context?  
11 And I think that will be an important part of  
12 our work.

13 And then what we said, and here's  
14 where we're continuing to struggle, are we  
15 going to try to reach general conclusions, or  
16 are we going to try to look at some specific  
17 bands, and will that -- what will be the most  
18 helpful, and what will be the most relevant  
19 for our recommendations?

20 One of the things that immediately  
21 jumps to mind, and Karl discussed it, was the  
22 AWS3 pairing. Would it be helpful for us to

1 make recommendations in that area, or maybe  
2 the train has already left, and whatever we  
3 decide, you know, we'll be too far in the  
4 past.

5 We haven't figured that out, and I  
6 think we're going to have some more discussion  
7 on that. As I say, I learned a lot from the  
8 discussion already that we've had.

9 So we then talked about, okay, so,  
10 we're going to make some recommendations. It  
11 probably would be better if we were specific  
12 rather than if we were general. And then what  
13 would we do?

14 And one thing that we thought  
15 would potentially be worthwhile was to come up  
16 with some best practices, some ways to look at  
17 what US Government and commercial sharing  
18 would look like, and what are some fairly  
19 specific best practice recommendations that we  
20 could make.

21 And maybe there's some sort of  
22 model document that we could produce.

1           There were some other -- you know,  
2           some particularly specific questions that we  
3           talked about. We talked about the test bed  
4           and where that was, in the matter of sharing.  
5           But again, we now have the right points of  
6           contact to be able to figure out where,  
7           exactly, that is, and how that will finish up  
8           in our report.

9           And so what I think we need to do  
10          is we need to -- again, this is one of the two  
11          new subcommittees. We need to step up the  
12          pace of our action. We need to come to some  
13          fairly definitive conclusions about really  
14          what the scope is going to be.

15          And any input that people here  
16          have, either at this meeting, or whether  
17          you're not on the subcommittee, any  
18          recommendations, feel free to email me, let me  
19          know.

20          And by the time we come back next  
21          time, I think we want to have a pretty  
22          detailed outline of what our report is going

1 to look like, with some maybe potentially some  
2 tentative conclusions.

3 MR. TRAMONT: great. Comments on  
4 Gary's draft, other than urging rapid action?

5 Karl?

6 MR. NEBBIA: Yes, just a couple of  
7 things I wanted to mention -- that we know  
8 other groups are looking particularly at  
9 cognitive technologies, and therefore, we  
10 really don't want Gary to have to kind of  
11 rehash the same information.

12 But for instance, we historically  
13 have shared some bands with the Commission,  
14 where essentially, in the allocation table,  
15 they look like shared bands, and then when you  
16 get into the actual band, they have these  
17 channels, we have these channels, they have  
18 these channels, and so on.

19 And that may be a scheme that  
20 works in general for sharing. But I think  
21 we're looking to what approaches can be taken  
22 in the future that are a little bit more

1 creative and really get -- make better use.

2 But I still think answering some  
3 of the tough questions like, for instance, is  
4 a geographic arrangement with licensed-type  
5 operations where you end up with kind of a  
6 Swiss cheese geographic setup, is that  
7 something that industry would really find  
8 appealing?

9 I think it's a way that we can --  
10 in fact, we have certain bands where there are  
11 fixed location radars, where that kind of  
12 Swiss cheese geography may be doable.

13 But we always get back to the  
14 question, is industry going to be happy with  
15 that kind of sharing arrangement?

16 And a good example right now is,  
17 we have done a lot of relocation of 1710 to  
18 1755 band. But part of the original agreement  
19 is that there were two specific areas which  
20 the Marine Corps was not going to have to move  
21 out, and they were Yuma and Cherry Point,  
22 North Carolina. And that was all part of the

1 arrangement.

2 And now as we're moving on, of  
3 course, the industry wants to expand, the  
4 service has been successful, and all of a  
5 sudden, now we're getting questions about Yuma  
6 and Cherry Point as to, well, do they really  
7 have to stay there?

8 So, there's certainly -- this is  
9 the kind of thing I think we need to ask  
10 ourselves as we devise sharing schemes. Are  
11 they really something that industry wants to  
12 use? And ultimately, what becomes kind of the  
13 proof mechanisms that it's going to work on  
14 the other side, so that people are confident  
15 that we're making proposals that make sense?

16 MR. TRAMONT: Great, Karl. Other  
17 comments for Gary as they move forward for the  
18 Committee?

19 MR. GURSS: This is Bob Gurss. I  
20 just wanted to note, unfortunately, I was not  
21 able to be on Gary's call. It was scheduled  
22 at a time I had a conflict, and I just want to

1 note that it certainly would have been my  
2 preference that we do look at public safety  
3 sharing of federal spectrum. However, I  
4 certainly understand the need to narrow the  
5 scope because it is potentially so broad, and  
6 to focus on what people thought was going to  
7 be most useful to work on. But I just wanted  
8 to make that point.

9 MR. TRAMONT: Thank you, Bob.

10 Other comments for Gary?

11 MR. RAY: Bryan, this is Neville,  
12 real quickly again, from -- on the phone here.  
13 Can you hear me?

14 MR. TRAMONT: We can. But  
15 actually, for everyone on the phone, speaking  
16 up is helpful, because you're on a microphone  
17 muddled up by a speaker phone, which is  
18 somewhat attenuated. So the louder you can  
19 be, the better. Thank you.

20 MR. RAY: Yes. So, sorry.

21 And Gary, thank you for the  
22 overview.

1                   Just to add on some additional  
2           comments on sharing and with my, you know, T-  
3           Mobile hat on briefly, I think if you look at  
4           the -- you know, the ambition here that's --  
5           was it Karl mentioned, said by the White House  
6           originally in the first presentation, I think  
7           geographic sharing, you know, even time-domain  
8           sharing are all things that we need to, you  
9           know, aggressively consider on a go-forward  
10          basis.

11                   And I think that there's no way to  
12          reach some of the objectives that we need to  
13          meet to promote, you know, the rapid growth of  
14          broadband wireless services, unless we  
15          aggressively take on some of those sharing  
16          opportunities. And the geographic domain, I  
17          think, is one which I believe there's  
18          certainly some rich opportunities there that  
19          we all need to consider.

20                   And representing T-Mobile is, from  
21          a commercial perspective, it's certainly  
22          something that we're very interested in and

1 very focused on.

2 MR. TRAMONT: Thank you, Neville.

3 Jennifer?

4 MS. WARREN: I just wanted to pick  
5 up on Karl's point, because I thought it was  
6 really interesting about the update.

7 And I guess I would ask whether  
8 Gary's group could also -- and I'll volunteer  
9 to join, since I'm asking this -- could also  
10 take on, then, how do you create a sharing  
11 environment that is actually enforceable, or  
12 more importantly, sustainable?

13 Because all this does is create  
14 questions about sustainability of sharing if  
15 parties want to change the terms of the  
16 agreements after the fact, which we all know  
17 goes on in the commercial world. But there  
18 are penalties in the commercial world for  
19 that, contractual breaches and the like.

20 So, what is it that would be  
21 appropriate in the context where agreements  
22 are struck between government and commercial,

1 and to ensure adherence to them, at least --  
2 I'll stop there.

3 MR. EPSTEIN: You know, while I  
4 would never turn down an offer of help from  
5 Jennifer -- in fact, I already accept it --  
6 I'm not sure that the enforceability issue  
7 isn't something that another -- that we  
8 haven't looked at in another context.

9 Have we, or not?

10 MS. WARREN: I think the  
11 enforcement of -- I'm sorry, Bryan.

12 I think the enforcement issue of  
13 actual sharing regimes in terms of sticking to  
14 the power levels and that, but not in terms of  
15 going back and correcting interference, but  
16 not in terms of revisiting the overarching  
17 agreements, for example, 3G.

18 DR. HATFIELD: Oh, basically, how  
19 strong is the right that you got. That's what  
20 it comes down to for my students. Isn't that  
21 what we're talking about -- how strong is that  
22 right? We're not talking about property

1 rights here, but it's basically negotiation,  
2 yes.

3 MR. TRAMONT: Right. I think Gary  
4 did -- although it's right that the other  
5 subcommittees have addressed enforcement, I  
6 think, in discussing sharing, some treatment  
7 of enforceability seems important, in  
8 particular in light of the few things that  
9 Karl just flagged about if the Federal  
10 Government makes available spectrum nation-  
11 wide except for these two zones, and then, the  
12 immediate instinct is, well, now that we've  
13 got it subject to those two zones, how can we  
14 get those two zones? That is a problematic  
15 outcome that probably needs to be assessed --

16 DR. KAHN: I think using the other  
17 word that Jennifer used, sustainability, or  
18 some word like that --

19 MR. TRAMONT: Yes.

20 DR. KAHN: -- is probably better  
21 to distinguish it. Because it's not so much  
22 enforcement. I mean, you're not allowed to do

1 it there.

2 It's really this issue of camel's  
3 nose under the tent, right? So you've agreed  
4 on something that sounded pretty good, but now  
5 you're starting to use the political process  
6 after the fact to kind of continue to leverage  
7 it, which will discourage -- legitimately will  
8 discourage agencies from being willing to do  
9 the first instance of sharing, if that happens  
10 a lot.

11 MR. TRAMONT: And on the other  
12 hand, if you have a commercially reasonable  
13 way to get -- that those two zones no longer  
14 need to be occupied, that you wouldn't want to  
15 be just static.

16 DR. KAHN: Right. So I mean, so,  
17 I mean, that's the issue.

18 DR. HATFIELD: Yes, because you  
19 have new information.

20 MR. TRAMONT: Right.

21 DR. HATFIELD: How do you not  
22 realize this wasn't just something, some wild

1 thought? It actually does work, there's a  
2 commercial demand for it.

3 MR. EPSTEIN: Yes, I think, I  
4 think that's --

5 DR. HATFIELD: The conditions do  
6 change.

7 MR. EPSTEIN: We will look at it,  
8 and I think it's correct, and you know, one,  
9 circumstances change, and number two, the law  
10 actually requires you, if circumstances  
11 change, and somebody comes in for a waiver, to  
12 give it a fresh look. It's actually a  
13 requirement that I -- Jennifer is hereby the  
14 chair of the sub-sub Sustainability Committee  
15 of the Sharing Committee.

16 (Laughter)

17 MR. TRAMONT: Get those business  
18 cards made now, Jennifer.

19 (Laughter)

20 All right, anything else for Gary?

21 MS. OBUCHOWSKI: You know, I just  
22 want to say -- I kicked myself off this call,

1 I guess, and just wanted to make a point on  
2 sharing.

3 I think one of the things that has  
4 concerned me most in my career is not so much  
5 the fact that people revisit deals going  
6 through the legal process. I've seen  
7 interference used as a competitive advantage.

8 You know, in a limited number of  
9 shared bands, or even where people are in  
10 adjacent bands, people -- it's not unknown  
11 that people somewhat deliberately push the  
12 envelope.

13 And I think that is what  
14 diminishes people's confidence in sharing as  
15 a possibility. And to my mind, the only way  
16 one kind of meaningfully addresses that is to  
17 ensure some form of enforcement.

18 It's not simply a matter of  
19 conditions changing. It's the fact that, you  
20 know, spectrum's always been a bit of a  
21 jungle.

22 And it's not unknown even in the

1 unlicensed bands, where I've heard it said  
2 that, you know, certain unlicensed players,  
3 for example, the WISPs had a very hard time  
4 sharing with folks that were also in the band  
5 that just really felt it was not desirable to  
6 engage in protocols.

7 Those are the kinds of issues I  
8 think that make sharing a much nubbier issue  
9 than simple administrative process, and what  
10 mandates some form of enforcement.

11 MR. TRAMONT: Great. Thank you,  
12 Janice.

13 I'm getting a little feedback  
14 here.

15 So, with that, Gary, anything  
16 else? Any closing comments before we go to --  
17 okay, great.

18 With that, Mr. Salemme, on the  
19 Unlicensed Subcommittee's work to date.

20 MR. SALEMME: Thank you. And the  
21 Unlicensed is the second new subcommittee, and  
22 arguably, off to a slower start.

1                   And we really looked in soliciting  
2                   the aid of many of the new members to see if  
3                   we can get more participation in moving  
4                   forward with this group.

5                   And I know there's been a lot of  
6                   activity in David's group, so hopefully, as  
7                   that peters out, we'll have some refocus of  
8                   some of those participants in Unlicensed.

9                   And, we have circulated a work  
10                  plan, and Chairman Hatfield has made a  
11                  recommendation on a way to narrow the focus so  
12                  that we probably can have a product that is  
13                  able to be accomplished within the time frame  
14                  that we have.

15                  And the recommendation is that we  
16                  really assess the Government's view on how  
17                  they are looking at the value of unlicensed.

18                  How do you begin to take the  
19                  elements in from a practical standpoint of  
20                  determining why and how government should make  
21                  spectrum available for unlicensed? What is  
22                  that process?

1                   So, we're going to begin to  
2                   examine, you know, from a very practical  
3                   standpoint, the economic, technical, and  
4                   policy applications around unlicensed.

5                   So, it will look at, what are the  
6                   unlicensed service offerings that are  
7                   currently available and on the horizon?

8                   Do they complement or do they  
9                   supplement the licensed service offerings that  
10                  are currently in the marketplace today?

11                  Do they serve in -- or do they  
12                  target unserved or under served groups that  
13                  are not basically being met appropriately by  
14                  licensed spectrum?

15                  Do they add to a public good or  
16                  public benefit that is also not, you know,  
17                  generally available to unlicensed?

18                  And are we going to be able to  
19                  find a way in which we can see that there are  
20                  productivity or other economic benefits that  
21                  are able to be recognized in having spectrum  
22                  available for unlicensed?

1                   Then look at some of the quick  
2                   technical aspects on what are the RF  
3                   propagation characteristics for unlicensed.

4                   For instance, as we just heard  
5                   about the sharing techniques, and Karl  
6                   mentioning that maybe sharing, you know, could  
7                   be done on a geographic basis.

8                   Unlicensed that may not need a  
9                   full geographic licensed nationwide, and can  
10                  be more targeted, may be a very good candidate  
11                  for some of these Swiss cheese type geographic  
12                  areas.

13                  So if a full licensed nationwide  
14                  broadband provider may not be able to succeed  
15                  with the geographic Swiss cheese, unlicensed  
16                  applications may be very applicable for that  
17                  type of thing.

18                  So, it's one of the things that  
19                  you can look at to see how we can come  
20                  together and work kind of across disciplines  
21                  with Gary's group and others on that type of  
22                  an arrangement.

1                   We also want to look at, you know,  
2                   what are the real kind of, you know,  
3                   propagation characteristics? But also, what  
4                   are the ways in which we can have loading  
5                   factors?

6                   You know, how many consumers, how  
7                   many people are really able to utilize  
8                   spectrum that's unlicensed? Is it something  
9                   that you can get more spectral efficiency out  
10                  of an unlicensed band because you could  
11                  actually be getting more users than you may be  
12                  able to get from a licensed?

13                  And then the last thing are the  
14                  public policy elements. I know that we've  
15                  heard a lot about the white space proceeding  
16                  going forward in the FCC and there in the NTIA  
17                  applications on sharing and others. So we're  
18                  going to examine those and make sure that we  
19                  kind of pull that together.

20                  But again, we're at the early  
21                  stage. We've had feedback, but we're really  
22                  looking for more. We'll start in earnest next

1 week with the Subcommittee meetings and look  
2 forward to everyone's comments and  
3 participation from the broad group.

4 MR. TRAMONT: Great. Comments on  
5 Gerry's presentation?

6 Karl?

7 MR. NEBBIA: Just a couple things.  
8 First, one of the items that the Commission  
9 raised in the National Broadband Plan for the  
10 first time, I think, in the U.S., was the idea  
11 of having specific spectrum for unlicensed.

12 In the U.S., our policy right now  
13 traditionally has been that there's only a few  
14 bands that can't go in, but they're at very  
15 low power. There's a few bands where they've  
16 been given some special -- made some special  
17 arrangements.

18 But, for instance, at the 902  
19 band, that has essentially made that band  
20 unusable for federal operations other than  
21 things off the coastline. There are other  
22 even licensed users who are now having trouble

1 getting access to that band.

2 So I think that it's time for us  
3 to at least ask the question about whether, as  
4 we look at unlicensed, there isn't some  
5 benefit of some finding -- finding some  
6 commons, so to speak, that's outside of the  
7 space where there's other licensed operations.

8 So, if you could, you know,  
9 consider that.

10 And then, although the enforcement  
11 aspect comes up on -- we talked about  
12 technologies, or we talked about specific  
13 sharing arrangements, with unlicensed, the  
14 enforcement component is one that I think is  
15 essential for us to look at, because  
16 certainly, one of my parents would not  
17 understand if somebody came to their door and  
18 said, your device that you bought at K-Mart is  
19 interfering and we're going to have to shut it  
20 off.

21 They also don't understand being  
22 interfered with by a licensed operation. On

1 the other hand, that's their status, that type  
2 of thing.

3 So I think we do need to look  
4 specifically on unlicensed. If they start  
5 causing interference, how do you find them?  
6 How do you determine who's doing it?

7 So that sort of thing, as  
8 specifically linked to the unlicensed thing.

9 MR. TRAMONT: And just related to  
10 your parents, there's also no one -- there  
11 aren't enough people to knock on their doors,  
12 right?

13 (Laughter)

14 Even if we could figure all this  
15 out, there's a sort of a institutional  
16 difficulty of the width there's no real  
17 process.

18 MR. NEBBIA: If we could get up to  
19 six vans, then we could get around, do all the  
20 knocking.

21 (Laughter)

22 MR. TRAMONT: I think deputizing

1 the CSMAC, actually. We could all just do  
2 this ourselves.

3 MR. SALEMME: I was just going to  
4 say, I was going to suggest that, that we  
5 could all be knocking on doors to help with  
6 that enforcement.

7 Karl, I think that is helpful.  
8 And as we're looking at it, I -- you will see  
9 that there are many areas where even some of  
10 the basic, you know, WiFi services are already  
11 interfering and loaded. So I do think it's a  
12 very important point for the subcommittee to  
13 examine and try to address.

14 DR. HATFIELD: And yet, we see the  
15 commercial operators trying to offload some of  
16 their heavy traffic volume onto unlicensed to  
17 further exacerbate the problem.

18 MR. SALEMME: Right. Without  
19 having any spectrum actually designated for  
20 unlicensed, which is, you know, back to the  
21 original point, you know, we all have a  
22 process issue.

1                   How should the government be  
2                   examining the import of unlicensed and, at  
3                   that, should spectrum actually be specifically  
4                   designated for it?

5                   MR. TRAMONT: Other comments on  
6                   Gerry's report?

7                   Jennifer?

8                   MS. WARREN: Could I just -- could  
9                   I just add to the point that you said you were  
10                  going to take off from Karl's, which is, as  
11                  you look at the dedicated concept, also look  
12                  at the international ramifications of that,  
13                  and whether or not it would be meaningful or  
14                  more or less meaningful from the international  
15                  organization perspective. Just to look at,  
16                  I'm not sure what the conclusion might be.

17                  MR. TRAMONT: Okay. Karl?

18                  MR. NEBBIA: Just one other thing  
19                  I forgot to mention. And that is, as, for  
20                  instance, we're doing the inventory right now,  
21                  one of the questions that's going to come up  
22                  is, is there some way to reflect where all the

1 various types of unlicensed users are? For  
2 instance, we know where WiFi is.

3 MR. TRAMONT: Right.

4 MR. NEBBIA: That's not a problem.  
5 But, for instance, it did come as somewhat of  
6 a surprise when DOD started hammering the  
7 garage door openers.

8 And I've mentioned to people that  
9 the garage door openers are in the government  
10 band that is primarily used by DOD.

11 And people said, well, how did  
12 they get in there?

13 Well, they're allowed by our rules  
14 to be in there. Car key-fobs, and other types  
15 of things that are not part of broadband,  
16 they're not part of this greater perspective,  
17 but they're still part of the unlicensed  
18 world.

19 And I think if there was some way  
20 that we could at least, in a frequency sense,  
21 get a sense of where all these different  
22 products are, so we would have a better sense

1 of dealing with spectrum issues.

2 MR. TRAMONT: Great. Marty?

3 MR. COOPER: Well, Gerry, I wonder  
4 if part of your assignment, and I'm afraid to  
5 ask this, because I may end up being asked to  
6 do this.

7 (Laughter)

8 If we define what it is that you  
9 can do and what discriminates between  
10 unlicensed and licensed in the sense of what  
11 kind of services can be offered, and what I'm  
12 getting at is, I think we all know that you  
13 don't do services that require infrastructure  
14 in unlicensed bands because nobody will invest  
15 in that.

16 That's a huge constraint, and I  
17 don't know if that makes any sense.

18 DR. KAHN: Except some of the  
19 WISPs actually do.

20 MR. COOPER: Yes, I was going to  
21 say, they have. Yes. May not, perhaps,  
22 wisely, but they sure --

1 (Laughter)

2 MR. SALEMME: I think it's a bet  
3 on the likelihood that the infrastructure  
4 investment will be at risk. So that's why the  
5 WISPs out in the rural areas.

6 MR. COOPER: Well, that's exactly  
7 right.

8 MR. TRAMONT: But it's fair to  
9 assert that that there has not been as  
10 widespread infrastructure investment in  
11 unlicensed as there has been in licensed, I  
12 think Marty's factoring there.

13 MR. SALEMME: That's fair. It's  
14 just not quite a rule.

15 MR. COOPER: Are there differences  
16 between the kinds of services that could be  
17 unlicensed compared with licensed?

18 MR. SALEMME: I think that's very  
19 appropriate, and we would love to have you  
20 join.

21 MR. TRAMONT: They're recruiting  
22 continuously.

1 Other comments for Gerry?

2 All right, with that -- and what,  
3 for our next meeting, can we hope for,  
4 perhaps, a draft?

5 MR. SALEMME: I think a draft with  
6 some recommendations would be appropriate.

7 MR. TRAMONT: Terrific. Okay,  
8 we'll look forward to that.

9 With that, does the subcommittee  
10 reports -- any other comments from members of  
11 the Committee on other topics of interest?  
12 Dr. Cooper, perhaps?

13 MR. COOPER: Well, I do have a --  
14 Bryan and I were trying to figure out where my  
15 comment would fit in, and it turns out it  
16 doesn't fit.

17 (Laughter)

18 It may be that I should be  
19 discussing this with Larry. But Karl gave a  
20 report on the Presidential Memo, and I have to  
21 tell you, I was very disappointed, not in your  
22 presentation, Karl, that was superb.

1                   But there was a severe omission,  
2                   and the omission is, what technologies exist  
3                   today that should be used that could improve  
4                   use of the spectrum?

5                   And I just want to, if you'll bear  
6                   with me, give you a couple of examples,  
7                   because finally, I'm going to end up with a  
8                   recommendation.

9                   First of all, we talk about 500  
10                  megahertz. I don't think there are a lot of  
11                  people here who think we're really going to  
12                  find 500 megahertz.

13                  But if we do find 500 megahertz,  
14                  it's totally inadequate. If you look at the  
15                  projections for what the requirements just in  
16                  land mobile are for the next four or five  
17                  years, they are many times more than 500  
18                  megahertz.

19                  So, clearly something else has to  
20                  be done. And here we are kind of working  
21                  around the fringes on tiny amounts. And of  
22                  course, the answer to that is, it's got to be

1 technology.

2 And if you look around the world  
3 today, it turns out that this country is way,  
4 way behind, and the standards are way behind.  
5 Because there are, in countries like China and  
6 Japan, and maybe 15 other countries, the  
7 technologies that are using land mobile  
8 spectrum, the order of three to five times  
9 more effectively than we're using it today.

10 So, somehow, whatever methods we  
11 have to encourage people to use the spectrum  
12 more efficiently are not working.

13 And I just want to give you one  
14 more example, and that is -- and I hope that,  
15 I think there's somebody from T-Mobile in here  
16 --

17 PARTICIPANT: On the phone.

18 MR. COOPER: Well, this is not  
19 public information, but I'm not under non-  
20 disclosure with it.

21 T-Mobile ran a test some years ago  
22 using a multiple antenna technology system,

1 smart antennas, with 29 sectors. It's a very  
2 expensive and large test. But their objective  
3 was to demonstrate that smart antennas can  
4 triple the capacity of the spectrum. Triple.

5 They failed. They only did two  
6 and a half times.

7 Now, why isn't that technology  
8 being used today? Well, T-Mobile has to  
9 answer that question.

10 But I only point out to you that  
11 there was a demonstration, and it was  
12 successful.

13 And I have to tell you, Dale,  
14 since you commented the last time I did my  
15 little lecture, that if smart antennas work at  
16 60 miles per hour, and yes, they fail at about  
17 100 miles per hour.

18 But we have done some studies  
19 about how many people are communicating at 100  
20 miles per hour. And it turns out that's not  
21 a severe problem.

22 PARTICIPANT: Mostly in Wyoming.

1                   MR. COOPER: And I have to add,  
2                   the smart antenna technology is lower in cost.  
3                   Just think about it. If you can serve two and  
4                   a half times more people with the same number  
5                   of base stations.

6                   So, what's the recommendation?  
7                   Somebody should do an inventory. Not of where  
8                   the spectrum's being used, but what  
9                   technologies are available, when they are  
10                  available, what their capabilities are, and  
11                  this somebody should be somebody objective.

12                  Because I know every time I start  
13                  talking, people say, oh, there's Marty again,  
14                  trying to sell smart antennas. And Mark Henry  
15                  (phonetic) is trying to spell dynamic spectrum  
16                  access. And it occurs to me that there are  
17                  objective people around.

18                  And I'm only making this as a  
19                  suggestion. I guess I may be talking back to  
20                  Larry again. How about the National Academy  
21                  of Engineering? This is an objective  
22                  organization that does think on a -- but

1 somebody ought to be doing that inventory.

2 I suggested that we do that as  
3 part of Gerry's Committee as a starter, but  
4 that is my recommendation.

5 MR. TRAMONT: Thank you.

6 Any other comments from the  
7 balance of the Committee?

8 MR. RAY: Yes, so it's Neville  
9 again. So, somebody, I have to come in  
10 obviously as I am the T-Mobile guy, and I am  
11 on the phone, apologies.

12 But, so, you know, just commercial  
13 industry perspective, obviously, we  
14 aggressively, you know, look to evaluate new  
15 technologies.

16 And if you look at what the  
17 industry's doing, moving from 2G to 3G and now  
18 into 4G, we are finding massive improvements  
19 in the utilization of spectrum, and we look at  
20 all aspects of technology to provide that.

21 That said, I do have to challenge  
22 your comment that spectrum is somewhat is not

1       necessary. It absolutely is.

2                   In Europe, in Germany, for  
3       example, they've just recently auctioned 360  
4       megahertz of spectrum to meet the broadband  
5       growth needs in that country, a very  
6       successful auction. And we're still here in  
7       the U.S. talking about 500 megahertz in ten  
8       years, a decade away.

9                   So -- and believe me, technology  
10       is being looked at and applied in every  
11       possible means and measures available to us  
12       that they're commercially appropriate, and  
13       supporting.

14                   And we believe we deployed that  
15       technology when we believe it's technically  
16       ready for us to support commercial services.

17                   So, I think in summary, you know,  
18       we have to work all these aspects. But I  
19       don't think it's appropriate to leave a  
20       comment on the table that just says, we  
21       somewhat don't need spectrum, we can fix this  
22       from a technical perspective alone.

1                   And, yes, we could, but it would  
2                   take us many, many more years, and billions of  
3                   dollars investment to do that.

4                   So, the industry is working very  
5                   aggressively to better utilize the spectrum  
6                   assets available to it today. There is a  
7                   clear need for more, and much more spectrum,  
8                   to be provided to support commercial growth in  
9                   the U.S. and in other parts of the world.

10                  MR. TRAMONT: Great. Thank you,  
11                  Neville.

12                  Any other comments? Jennifer?

13                  MS. WARREN: Just a question, a  
14                  process one.

15                  When a member makes a  
16                  recommendation like Marty made to recommend  
17                  that an inventory be done of technology,  
18                  irrespective of the context that that was done  
19                  in, how do we treat that, and what do we do --  
20                  do we adopt it? Do we vote on it? I mean,  
21                  what --

22                  MR. TRAMONT: That is an excellent

1 question. I don't think this has come up  
2 before. I mean, I think we could -- there are  
3 a number of different approaches. Obviously,  
4 it is now a public recommendation, Larry can  
5 do with it what he will.

6 It certainly could become  
7 something that is part of the scope of work  
8 for a new subcommittee, for example, the next  
9 cycle. Or it could be folded into existing  
10 work.

11 So I don't think there's any sort  
12 of absolute way to have us proceed.

13 But if it was the sort of thing  
14 that required study, or that the Committee and  
15 NTIA determined was sort of a deep enough  
16 question that we needed to have a full  
17 subcommittee work on it, we could proceed in  
18 that fashion if people decide that's the right  
19 approach.

20 Anything else?

21 MR. BARKER: I was just going to  
22 comment. Karl mentioned earlier about the DSA

1 dimension, and we have already started some  
2 surveillance of the technologies, under the  
3 banner of DSA. We made it DSA to make it more  
4 encompassing of various technologies.

5 One of the things we're doing with  
6 the Presidential Initiative, we had one of the  
7 working groups to invest innovative spectrum  
8 sharing technologies, to help facilitate and  
9 implement the broadening of research  
10 development.

11 One of the first things out that  
12 we have to looked at is, what do we mean by  
13 that? What is the scope, what technologies  
14 fall into that category?

15 It's something I think would be  
16 possibly for this Committee, kind of help us,  
17 guide us on what that could be. What does  
18 that encompass?

19 Because part of what we want to do  
20 is investigate inventory, just like Dr. Cooper  
21 was saying. And then we want to assess them,  
22 where is it in its maturation and its

1       readiness? And so, and then, where we could  
2       help determine, is there further investment  
3       that needs to go into that technology to help  
4       bring that further, or is it at a point where  
5       it can actually be implemented. Where does  
6       that go?

7                        So that's part of what we're  
8       thinking about with that one objective there

9                        MR. TRAMONT: For the court  
10       reporter, can you identify your name and  
11       affiliation, and for the phone folks?

12                       MR. BARKER: It's Byron Barker.

13                       MR. TRAMONT: Yes, thank you.

14       Just so we know from whence that voice from  
15       afar came.

16                       So that's a great point. And as  
17       we were forming future subcommittees, that may  
18       well form the basis of additional work, and  
19       also helps inform Marty's recommendation.

20                       Anything else from the Committee  
21       before we move to some administrative matters?

22                       Okay, hearing one, Mr. Gattuso?

1 MR. GATTUSO: Let's see which one  
2 of these is on.

3 I came up here because there's  
4 more space, as much as I like to be informal,  
5 I'll talk with my hands and hit whoever I'm  
6 sitting next to. So let's see if I can talk  
7 on my feet.

8 I put myself on the agenda for the  
9 last few minutes. I know we're running just  
10 a little bit behind, so I'll try to speak  
11 quickly but clearly, if I can.

12 There have been some interest,  
13 both by members of the Committee, and also  
14 from the public, on some of the things that we  
15 do and how we proceed with our meetings, how  
16 we make our information available, how  
17 transparent we are.

18 And I thought I'd run through some  
19 of the procedures, especially since some of  
20 our members are new and haven't worked with  
21 this group that's been going on for how long,  
22 three years? Since 2006.

1                   Just for starting, how we set the  
2 meetings. The meetings come up -- we shop the  
3 date first with the co-chairs. The co-chairs  
4 may suggest a date.

5                   It has to do with where the work  
6 flow is, also has -- an important factor is  
7 when people are available, particularly our  
8 co-chairs and Mr. Strickling, if he's going to  
9 attend the meeting.

10                  Sometimes, we're able to set the  
11 meeting at the previous meeting, largely  
12 because Bryan will ask me to set the date.  
13 And I think, for example, we didn't do it for  
14 this meeting.

15                  If the Committee wanted to set a  
16 schedule in advance, that would be fine. It's  
17 totally up to the Committee how they would  
18 like to proceed.

19                  Once we have the date, I do like  
20 to check for conflicts and with the members.  
21 When we set it, we have an obligation to  
22 publish the notice in the federal register.

1 By law, it has to be in 15 days before the  
2 meeting. We try to do it sooner.

3 I try to do it sooner, especially  
4 after I discovered that that's the hook for  
5 putting out the notice on the website, that  
6 the Public Affairs Office likes to have that  
7 notice.

8 We get the notice of the meeting  
9 out in other ways, too. It's on the website.  
10 We have a Facebook account. We have a twitter  
11 account. We have an RSS feed.

12 One thing we don't do is we don't  
13 maintain a mailing list. Listserv that we  
14 maintain is for the Committee's business, and  
15 that's available for subscription by the  
16 Committee members and people who are  
17 supporting the Committee members and their  
18 firms, their administrative support, their  
19 policy support.

20 That is for us, and as a matter of  
21 fact, I encourage members to use that. You're  
22 all subscribed. Just please tell me when you

1 change your address, and please make sure I  
2 have changed the address, because I have lost  
3 some folks if they change their addresses.

4 So that's how we get the meeting  
5 information out.

6 Some questions have come up with  
7 respect to the transcripts. Our transcript  
8 posting policy that I'm responsible for has  
9 evolved, let's say, over time.

10 I chose early on in the Committee,  
11 although we were obtaining transcripts from  
12 every meeting, not to post them.

13 One of the reasons I didn't want  
14 to post them was that the quality tends to be  
15 not so good. Even with the best court  
16 reporters, it's difficult with so many people.

17 I found that the transcripts were  
18 useful in terms of being able to go back, make  
19 the minutes. I am not very good at taking  
20 notes here during the meetings. I'm often  
21 outside the room. Make the minutes from the  
22 transcript, have those as a working document.

1                   At the beginning of this  
2                   administration, we started posting the  
3                   transcript following the meetings.

4                   There's two reasons. One is  
5                   transparency, to be more transparent with our  
6                   information.

7                   More practically, we post them  
8                   because it's a 508 requirement, along with our  
9                   webcasts. When we have the webcasts, we just  
10                  either have the webcast captioned -- close-  
11                  captioning I think is not the technical term,  
12                  but we caption them, or we put a transcript up  
13                  when this goes up on the website.

14                  We have to do one or the other.  
15                  For certain procurement issues, we ran into a  
16                  certain wall that I won't get into last fall.  
17                  NTIA was not able to procure captioning  
18                  services, so we went the transcript route. We  
19                  put the transcripts up for that reason mainly.

20                  At the same time that happened, we  
21                  ran into technical problems with the webcasts.  
22                  One thing that several people have pointed out

1 is that, to this day, some of the webcasts  
2 archives are not posted.

3 We're checking into that, and hope  
4 to see if the files exist, and if so, we will  
5 post them.

6 Right now, all the transcripts of  
7 the previous meetings are up. The webcasts  
8 are not all up. We're looking into that.

9 Going forward on the issue of  
10 quality, even though not all transcripts are  
11 perfect, we did find some quality control  
12 issues with the company that we'd been using  
13 regularly, and back in February, we started  
14 using a different company, and we will  
15 continue to consider different companies for  
16 both quality and price.

17 I haven't stopped completely using  
18 the first company, and we may use them again,  
19 and particularly because there's another twist  
20 in that that's the only company that I've  
21 found that will provide both the transcript  
22 and captioning service for one price. So, we

1 might go back to them if we're in the position  
2 of needing them for that.

3 But the transcripts, that's why  
4 the quality and the posting goes together.

5 The minutes are all up to date,  
6 I'm happy to tell you, up through -- the  
7 previous meeting has not been posted. As a  
8 matter of fact, the FACA law gives us 90 days  
9 to complete the minutes.

10 They must be certified. I ask  
11 Bryan and Dale to certify those minutes before  
12 they're posted. So I want to actually catch  
13 them for the May minutes. As soon as they're  
14 okay with them, we'll post those as well.

15 The discussion documents is also  
16 something that has evolved. Up until last  
17 year, I only posted final reports. I looked  
18 back in the records, I may have been a little  
19 bit inconsistent. If we had a PowerPoint or  
20 something, I think I posted it under the term  
21 discussion document.

22 Starting I think two meetings ago,

1 I started posting the documents that were  
2 discussed on the web following the meeting, at  
3 whatever time we got to that.

4 I felt that was a little bit  
5 confusing still. For example, at the last  
6 meeting, we had the Adjacent Band Interference  
7 Report in draft, but it wasn't the final  
8 version, and it seemed funny to post that with  
9 the final report coming, although it hadn't  
10 come -- quite soon, same with the other  
11 reports.

12 For this meeting, because we were  
13 traveling in particular, and also because of  
14 interested people outside of Washington, I  
15 asked that all the documents for this meeting  
16 be posted before the meeting.

17 And going forward, we can continue  
18 to do that, or we can go back to posting them  
19 after the meeting. But I think we will  
20 continue to post the discussion documents, and  
21 just clearly mark them as discussion  
22 documents.

1                   They are documents that, under  
2                   FACA, are available to the public, and must  
3                   remain available to the public. It's just a  
4                   matter of whether they're available online or  
5                   by request.

6                   The teleconference, I have a  
7                   similar question how we proceed. We have  
8                   always had the teleconference bridge available  
9                   for members to participate.

10                  For today's meeting, we opened it  
11                  to the public, and as you noticed earlier in  
12                  the meeting, our members can speak. The  
13                  public can only speak when we say okay, which  
14                  we'll do in a couple minutes for the public  
15                  comment period.

16                  If there's interest and if that's  
17                  valuable, we can do that for future meetings  
18                  as well.

19                  I might also mention -- Karl  
20                  mentioned the GSA reporting. GSA has a FACA -  
21                  - Federal Advisory Committee Act -- a FACA  
22                  website called fido.gov, where all basic

1 information on all advisory committees is  
2 posted online. That is something that must be  
3 kept up to date. That's my responsibility.

4 We also have a fiscal year  
5 responsibility. It's actually more or less in  
6 real time, but at the end of every fiscal  
7 year, we close out a report on what the  
8 Committee did, how much it cost for the year.

9 And this is what Karl was  
10 referring to. We must say that the total  
11 number of recommendations given over the life  
12 of the Committee and the percentage of those  
13 recommendations that are implemented or not.

14 This goes back to -- this the  
15 bureaucrat's part of the practical part of why  
16 we've been emphasizing clear, concise  
17 recommendations to us. Because we both want  
18 to carry them out, and understand them, and I  
19 also want to have a percentage at the end of  
20 the year. So we have that as well.

21 Finally, I did want to mention  
22 that, it might seem that that was very quick,

1 but each of you has a two-year term.

2 Many of you, I think 17, your term  
3 will be expiring in January, so very soon,  
4 NTIA will start the process of announcing that  
5 we have openings for new positions.

6 We will decide at NTIA whether  
7 existing members need to reapply, or, as we  
8 did last time, simply, unless you say no, we  
9 will consider your application in.

10 We will also decide whether we  
11 will make the applications process, because  
12 we've had a request to make people's  
13 application process, we would not post any  
14 personally identifiable -- I mean, the  
15 personal information, but we might go that  
16 route. We haven't decided yet. We need to do  
17 that in the coming year.

18 And don't forget, every year, I'm  
19 after you to do your ethics forms. I think we  
20 just closed up that process again just a  
21 couple of days ago for some folks. This is an  
22 annual obligation.

1                   The reason being, just as a  
2                   reminder, as many of you know, you've had the  
3                   briefing, this Committee is a committee of  
4                   experts, not representatives.

5                   As experts, you're brought in as  
6                   special government employees. Special  
7                   government employees must file the financial  
8                   disclosure forms. So we will start that again  
9                   sometime near the end of the year.

10                  So I think that's the types of  
11                  questions I received. If there's anything  
12                  else that I overlooked, please feel free to  
13                  ask.

14                  MR. TRAMONT: Any questions for  
15                  Joe?

16                  (Laughter)

17                  MR. GATTUSO: What's your name  
18                  again, sir?

19                  MR. STRICKLING: So Joe, a couple  
20                  of months ago, one of the members of the  
21                  public, I think Jim Snider, raised a number of  
22                  questions and concerns about what we had

1 posted and how transparent we were being.

2 Have you responded to every one of  
3 his issues at this point?

4 MR. GATTUSO: I believe so. I  
5 have a copy of that section of the transcript  
6 with me, and I don't know if Mr. Snider is  
7 listening and can tell me if I've missed  
8 anything by the phone, but he listed several  
9 things.

10 He listed that the video, the  
11 transcript, the minutes, public notice -- I'm  
12 trying to read the last one, I don't see five.  
13 But the public notice.

14 One thing I didn't address, this  
15 Mr. Snider pointed out that one of our notices  
16 was incorrect at the start of the meeting.  
17 And I'm very sorry this happened. I hope to  
18 never see this happen.

19 I'm glad to say that at the  
20 meeting that happened at, I don't know of  
21 anybody who missed the meeting because of it.  
22 We do try to have one starting time for all

1 the meetings, and if anybody did miss the  
2 meeting, I'm sorry, and we hope to keep that  
3 up.

4 But I do think that addresses  
5 everything he raised.

6 MR. TRAMONT: Karl?

7 MR. GATTUSO: It's all NTIA.

8 MR. NEBBIA: We never see each  
9 other.

10 MR. TRAMONT: I was going to say,  
11 can you guys do that --

12 MR. NEBBIA: The other thing that  
13 I think came up for the first time today here  
14 is the reference to members putting on their  
15 company hats. Is that a problem in the  
16 discussion here?

17 Once again, there's a relationship  
18 with being a government person, essentially,  
19 while you're in here, and the fact that  
20 there's supposed to be personal expertise and  
21 not company inputs.

22 MR. GATTUSO: Well, having worked

1 with the Advisory Committee Act for a while,  
2 and not being -- by the way, I'm an attorney,  
3 but not an attorney for the government. I'll  
4 give you my informal answer.

5 I think it's okay. And the reason  
6 I think it's okay is, while you are experts,  
7 you are chosen not to represent your company.  
8 You are not here to represent your sector.

9 Nevertheless, we are operating  
10 under the requirement that there be a balance  
11 of viewpoints, a diversity of viewpoints on  
12 the Committee.

13 A major part of how we choose  
14 people for the Committee is what they bring to  
15 the table. And what you bring is where you  
16 work.

17 And we have that in mind when  
18 you're appointed. We also have the filings --  
19 there's an assumption that you have a conflict  
20 of interest with your employer, because you  
21 will bring your employer's interests. People  
22 understand that.

1                   So, when somebody says, I have my  
2                   company hat on, I think it's okay, because  
3                   you're basically disclosing something. You're  
4                   reminding people of something we already know,  
5                   which is, you are here because you bring that  
6                   viewpoint that might be consistent with your  
7                   company.

8                   And if you're telling us again,  
9                   it's probably healthy to remind us.

10                  MR. TRAMONT: Other questions for  
11                  Joe?

12                  Thank you, Joe. Appreciate it.

13                  So now we're up to the opportunity  
14                  for public comments. So with that, I'll ask  
15                  for the operator to open up the public comment  
16                  period, and obviously, anyone here in the room  
17                  who has comments.

18                  Yes, probably up there at the  
19                  microphone, and speak to everyone.

20                  MR. MARCUS: How much time?

21                  OPERATOR: This is the conference  
22                  coordinator.

1 MR. TRAMONT: One second. Okay.

2 OPERATOR: Hi.

3 DR. HATFIELD: Hi, operator.

4 OPERATOR: Yes.

5 DR. HATFIELD: We're going to go  
6 into a public comment period first. Our first  
7 comment will be from somebody in the room.

8 OPERATOR: Okay, I wanted to let  
9 you know, I opened Mr. Snider's line, so he  
10 can speak. I heard you mention his name, so  
11 he has an open line now.

12 But I'll introduce him on how to  
13 do that. I'll have to join you in first,  
14 though.

15 DR. HATFIELD: Okay. We're going  
16 to take a comment from the room first.

17 OPERATOR: Okay.

18 MR. TRAMONT: If we can start with  
19 three minutes, if we can, and go from there.

20 MR. MARCUS: Okay, great. Let me  
21 go back to the charter of this Committee. It  
22 deals with licensing radio frequencies as a

1 way to maximize public benefits and keeping  
2 wireless networks as open to innovation as  
3 practical, comes from the charter.

4 MR. TRAMONT: I'm sorry, yes.  
5 Could you identify yourself for the court  
6 reporter?

7 MR. MARCUS: My name is Mike  
8 Marcus of Marcus Spectrum Solutions.

9 My concern with the interference  
10 report that was presented today and approved  
11 subject to revisions is that it doesn't seem  
12 to strike the balance that those two parts of  
13 the charter address, and mainly in the context  
14 of things that are just missing from the  
15 report.

16 For example, the issue of what is  
17 harmful interference is evaded on page four of  
18 the report.

19 Harmful interference is not an  
20 abstract concept. It's a phrase which is used  
21 in Title 3 of the Communications Act in at  
22 least five different places, and which depends

1 on a 25-word ITU definition.

2 The FCC has raised the point, with  
3 this community may or may not agree with, that  
4 that definition is not practical. And in  
5 resolving cases of that, the time duration  
6 involved discourages innovation.

7 I think the Committee should  
8 address those issues.

9 Another thing which I think the  
10 Committee ought to address is an ongoing  
11 controversy of whether worst-case or minimum  
12 coupling loss should always be the criteria in  
13 considering interference, or is probabilistic  
14 modeling in some cases appropriate.

15 There is an anecdotal viewpoint  
16 that NTIA, in protecting government uses,  
17 always wants minimum coupling loss. Is this  
18 a good policy, when should minimum coupling  
19 loss be used, when should probabilistic  
20 analysis be used, is a reasonable question.

21 The issue of filters is key in all  
22 interference except co-channel interference.

1 Filters often get involved in a chicken and  
2 egg effect with spectrum policy.

3 If the spectrum policy community  
4 does not seek state of the art filter  
5 performance, the manufacturers will not  
6 produce it in production, affordable  
7 components. And I think that better dialogue  
8 is needed with the filter community to achieve  
9 that.

10 And, finally, Chris Marshall  
11 (phonetic) who most people in this room know,  
12 has repeatedly pointed out that while  
13 cognitive radios can be used to find vacant  
14 frequencies, in cases of which a new band is  
15 next to an incumbent band there are vacant  
16 frequencies that will cause interference and  
17 there are vacant frequencies that will not  
18 cause interference through the other-than-  
19 flow-channel interference mechanisms. And  
20 Chris has repeatedly pointed out that in some  
21 cases cognitive radios are an alternative to  
22 guard bands.

1                   And this concept is never  
2 mentioned in the report. The report focuses  
3 on guard bands, or indeed focuses on guard  
4 bands coming from the new person not the  
5 incumbent, presumably because the incumbent is  
6 using every hertz of his spectrum and I hope  
7 in the editorial process for that report that  
8 these points be considered. These were points  
9 -- this document comes from John Muleta, my  
10 former FCC colleague although I must have been  
11 there for the first draft of this. Thank you.

12                   MR. TRAMONT: So, that's the  
13 document that you did reference earlier,  
14 correct? Okay, good. So that has been  
15 submitted in the record? Anything else?  
16 Thank you very much for your comments.

17                   Additional public comment on the  
18 phone or here in the room?

19                   Jim are you ready?

20                   Okay, is there anyone else on the  
21 phone who has a public comment?

22                   OPERATOR: Okay, for the people on

1 the phone, if you'd like to ask a question,  
2 please press star one and record your name.

3 That'll take just a moment.

4 MR. TRAMONT: Anyone else in the  
5 room while we -- any students that would like  
6 to hold forth on their favorite topics?

7 All right, I want to give a  
8 reasonable amount of time for people to  
9 activate their comments. Is there any folks  
10 on the phone?

11 Operator, do we have anyone?

12 OPERATOR: And I have no questions  
13 at this time.

14 MR. TRAMONT: Great, thank you.

15 Very good. With that, the next  
16 items of business, we will be in touch with  
17 future meeting dates. I think we aspire to  
18 getting something done in the late  
19 September/early October category, but we'll  
20 obviously be coordinating with the Assistant  
21 Secretary and the Committee on future dates  
22 for our next Washington meeting.

1                   Anything else for the good of the  
2           order?

3                   Excellent. Thank you all very  
4           much.

5                   Thank you to our hosts here in  
6           Boulder for having us, and hosting an  
7           excellent meeting. Enjoy ISART and have a  
8           great rest of your day.

9                   (Whereupon, the above-entitled  
10          matter was concluded at 11:59 p.m.)

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