

U.S. DEPARTMENT OF COMMERCE
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COMMERCE SPECTRUM MANAGEMENT ADVISORY
COMMITTEE (CSMAC)

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MEETING

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FRIDAY,
DECEMBER 13, 2013

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The Committee met at the U.S. Department of
Commerce, Herbert C. Hoover Building, Room 4830, 1401
Constitution Avenue, N.W., Washington, D.C., at 1:00 p.m.,
Brian Fontes and Gregory Rosston, Co-Chairs, presiding.

PRESENT:

BRIAN FONTES, Co-Chair
GREGORY ROSSTON, Co-Chair
LARRY ALDER, Member
MICHAEL CALABRESE, Member
MARK E. CROSBY, Member
THOMAS S. DOMBROWSKY, JR., Member
DAVID L. DONOVAN, Member
HAROLD FURCHTGOTT-ROTH, Member
H. MARK GIBSON, Member
DALE N. HATFIELD, Member
KEVIN C. KAHN, Member (by phone)
MARK A. MCHENRY, Member
JANICE OBUCHOWSKI, Member
ROBERT PEPPER, Member (by phone)

PRESENT: (cont'd)

CARL POVELITES, Member

RICHARD (RICK) REASER, JR., Member (by phone)

DENNIS A. ROBERSON, Member

BRYAN N. TRAMONT, ESQ., Member

JENNIFER WARREN, Member

ALSO PRESENT:

LAWRENCE E. STRICKLING, Assistant Secretary
of Commerce for Communications and
Information

KARL B. NEBBIA

JIM SNYDER (by phone)

PETER TENHULA

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

2 (1:01 p.m.)

3 CO-CHAIR ROSSTON: Welcome.

4 We'll get started with the roll call I guess
5 while we're waiting for Larry to come. So
6 we'll go -- I guess Larry Alder -- I'm going
7 to go through this so that people on the
8 phone can hear, and then we'll try and get
9 the people on the phone.

10 So we have Larry Alder here,
11 Michael Calabrese is here, Mark Crosby --
12 yes, there you are, okay -- Tom Dombrowsky,
13 David Donovan, Brian Fontes, Harold
14 Furchtgott-Roth, Mark Gibson, Dale Hatfield,
15 Mark McHenry. You're hiding behind there; I
16 can't see you. Janice, okay. Pepper. No
17 Pepper. Call --

18 MEMBER PEPPER: I'm on the --

19 CO-CHAIR ROSSTON: Oh, Pepper's
20 on the phone. Oh, I see, it says yes, by
21 phone. I just can't read.

22 (Laughter.)

1 CO-CHAIR ROSSTON: Carl? There
2 you are. Dennis is here. I'm here.
3 Jennifer Warren.

4 On the phone, now let's see if I
5 can read by phone -- Kevin Kahn.

6 MEMBER KAHN: Yes, I'm on.

7 CO-CHAIR ROSSTON: Oh. Bryan
8 Tramont I did not say, because it doesn't say
9 yes or in person. I was just looking for
10 that. Bryan Tramont is here. Pepper has
11 already said he's here. Rick Reaser?

12 MEMBER REASER: Yes.

13 CO-CHAIR ROSSTON: Okay. Did I
14 miss anybody around the table or on the
15 phone?

16 (No response.)

17 CO-CHAIR ROSSTON: Great.

18 MR. MCGINNIS: Doug McGinnis is
19 here as well.

20 CO-CHAIR ROSSTON: Okay. Just
21 for the members of the CSMAC. Oh. I'm
22 sorry. Who was that? Oh, Doug McGinnis.

1 Okay. I didn't hear. I'm sorry. I blanked
2 there on the response. Okay. We're still
3 waiting for Larry.

4 CO-CHAIR FONTES: Do you have any
5 opening comments?

6 CO-CHAIR ROSSTON: I do not. Do
7 you?

8 CO-CHAIR FONTES: I have no
9 opening comments, in order to save time for
10 the meeting.

11 (Off the record comments.)

12 CO-CHAIR FONTES: I don't know if
13 you want to maybe go to your spectrum update,
14 and then we can -- if Larry comes in, we can
15 stop. Oh, is he walking down right now?

16 MR. NEBBIA: Okay. So why don't
17 I go ahead and do that, and then Mr.
18 Strickling -- sorry. So let me give you a
19 quick update on where we are in a number of
20 different activities.

21 First of all, the 1695-1710 band,
22 of course you know, is in play in the AWS3

1 rulemaking. The working group -- one, folks
2 who supported our CSMAC efforts are
3 continuing some outside discussions led by
4 Steve Sharkey and Ivan Navarro, continuing
5 their perfecting of the arrangements in terms
6 of what kind of monitoring might be done,
7 experimentation might be done, testing in
8 advance, and so on. So those discussions are
9 continuing.

10 On the 1755-1850 portion, of
11 course, you know we submitted our letter to
12 the Commission a few weeks ago indicating our
13 support for the DoD proposed path forward,
14 which included access to the 2025-2110 band
15 as a way to provide them greater flexibility
16 as they yielded up most of the access to the
17 1755-1780.

18 There are still going to be some
19 operations, the satellite operations, EW type
20 of work, and possibly a couple other things
21 that would still be operating in there. But,
22 nonetheless, we put forward our support for

1 that approach. We provided the Commission a
2 draft allocation footnote proposal for the
3 2025 band, and we forwarded the reports from
4 the CSMAC on to them with our support for
5 them, and we also had a document that we
6 attached related to some NASA feedback on
7 industry comments that had already gone into
8 the process on the 29 -- well, actually, the
9 whole 2025-2110 analysis, but of course
10 industry had specifically cited the upper
11 portion of the band. So they were the things
12 that we provided to the Commission.

13 I must say, in all my years of
14 working in the government, I don't think I've
15 ever gotten anything with such a positive
16 response as we received about this
17 arrangement being worked out. So I think
18 everybody involved was very happy with it,
19 and we're excited to move it forward. The
20 agencies now are working diligently on their
21 transition plans, preparing those for the
22 January timeframe. A lot of work to be done,

1 particularly on the DoD side, but they are
2 moving forward on that area.

3 3.5 gigahertz, of course, that we
4 had put on the table somewhat earlier, the
5 next steps with that, as far as I know over
6 at the Commission, is they are going to hold
7 a workshop on January 14th to talk about the
8 various approaches that are being suggested
9 there, and certainly the idea of this
10 spectrum access system concept -- in that
11 case, it's a multi-tiered arrangement, and so
12 on. But there's a lot of discussions going
13 on related to how the government information
14 would be covered in there, so it links very
15 closely with what we're discussing here in
16 CSMAC.

17 One of the other things that came
18 out of the road map or path forward on 1755
19 was a conclusion within DoD that they would
20 not pursue the 5150-5250 band for additional
21 airborne activities -- it was primarily
22 telemetry activities -- which opens up the

1 possibility for that band heading toward
2 outdoor operations, and so on. Right now
3 there are limits as to the levels in that
4 band. So that really opens up, I think in a
5 much broader way, 100 megahertz of, you know,
6 fully accessible spectrum.

7 Now, we're continuing on with the
8 work in 5350-5470. The analytical work is
9 still going back and forth within the ITU-R
10 prep activities. That's where that
11 discussion is actually taking place. I know
12 there's been a lot of work, like we did here
13 in CSMAC, talking about how you model
14 densities of equipment and how the radars,
15 and so on, in that band would respond to
16 those things. So we have some real
17 challenges there. We have airborne and
18 satellite-borne systems in that band that
19 we've not dealt with before in the DFS
20 arrangements at five gigahertz, so we've got
21 some additional challenges.

22 But I think the work is still

1 going on. I know you have received some
2 feedback from our initial analysis, and some
3 additional runs of the analysis are being
4 made. So we're at least getting closer, I
5 think, to a positive solution, though I can't
6 say -- can't say that we're there yet.

7 5850-5925, the discussions
8 related to that band are for the most part,
9 if not in total, going on within an IEEE
10 group, where both of those activities are
11 represented. And we're seeing some dialogue
12 between the two sides related to how those
13 technologies might work together as opposed
14 to just being two opposing or interfering
15 signals in the air, but how they might
16 actually try to take advantage of the
17 structure of the signals on each side and
18 solve some problems there.

19 So we're seeing a lot of work
20 going forward and progress toward the goals
21 that we're, you know, reaching for. So I
22 think people are doing good work, and we're

1 excited about the outcome. That's it.

2 CO-CHAIR ROSSTON: Are there
3 questions for Karl on his report?

4 CO-CHAIR FONTES: For those on
5 the call, we should recognize that Larry
6 Strickling has joined us in the meeting here.

7 MEMBER GIBSON: I have a quick
8 question. On IEEE, if you're working it
9 through the 5850-5925 --

10 MR. NEBBIA: I could get you the
11 specific name or designator for it, but it's
12 I think primarily the one that was set up --
13 set up by the auto -- to deal with the auto
14 industry technology and -- that's right. So
15 they've invited the other folks in to, you
16 know, move that conversation forward.

17 CO-CHAIR FONTES: Other comments?

18 (No response.)

19 MR. NEBBIA: I got off easy.

20 (Laughter.)

21 MR NEBBIA: Oh, can I mention --
22 I should mention also that we are continuing

1 our work under the second President Obama
2 memorandum, so we're going to be, in the not-
3 too-distant future, putting out as part of
4 our annual plan -- or, excuse me, as part of
5 our annual report on these activities, we'll
6 be talking about our plan for quantifying
7 federal spectrum use and how we're going to
8 try to add some clarity to how much the feds
9 actually use the spectrum that they're in,
10 which from our standpoint is primarily a case
11 of taking known assignments and
12 characteristics and so on, and adding a time
13 of use component to it to try to give some
14 sense of whether one percent of the time it's
15 being used, or 100 percent of the time, so
16 you get some grade of the availability.

17 You still need to do more work to
18 engage directly, to understand how specific
19 systems operate, and so on, to move toward
20 shared use environment. But it will give you
21 a sense I think of how much a piece of
22 spectrum is used and whether geographic

1 approaches or time-oriented approaches might
2 be a good solution.

3 MEMBER GIBSON: So it is a time-
4 space, not just time.

5 MR. NEBBIA: Yeah. Well, the
6 assignments right now, we have space
7 information. I mean, we know where the
8 assignments are. We know the characteristics
9 that create some sort of contour or whatever
10 around them.

11 The question's how much is that
12 used? Some of them are -- admittedly, there
13 are some nationwide assignments for which the
14 space aspect doesn't -- isn't that meaningful
15 on a moment-by-moment basis. But in the end,
16 we are trying to link -- the time of use, for
17 instance, on an air traffic control radar is
18 24 hours a day, seven days a week. That will
19 be able to tell you in linking that to, you
20 know, some sort of metric involving
21 population and coverage, and that sort of
22 thing.

1 Once again, we still have real
2 challenges in providing information that gets
3 made public, giving specific location and
4 frequency information. So it's going to
5 result more in a metrics evaluation of, you
6 know, how much of this band in terms of
7 population and bandwidth, and so on, is
8 occupied, and how much of the time.

9 MEMBER GIBSON: But you could say
10 percent of the country or some metric like
11 that.

12 MR. NEBBIA: Sure.

13 MEMBER GIBSON: Then you wouldn't
14 identify a specific location, but you would
15 put the spatial --

16 MR. NEBBIA: Right. And our idea
17 of percent of the country is a population-
18 oriented metric as opposed to square miles.

19 MEMBER ALDER: What is that?

20 MR. NEBBIA: The plan itself is
21 part of our annual report, and that's gone
22 through an interagency review process. So

1 we're going to walk through that, so, you
2 know, we're working on, you know, getting it
3 out now. So we'll see when it comes out.

4 CO-CHAIR FONTES: Okay. Any
5 other questions? Any other updates?

6 (No response.)

7 CO-CHAIR FONTES: Okay. We'll go
8 next -- now, this part of the agenda, we're
9 actually moving into the reports from the
10 work of the subcommittees -- oh. Did you
11 want to --

12 (Laughter.)

13 CO-CHAIR FONTES: I thought, I'm
14 sorry. I thought you didn't want to -- all
15 right.

16 (Laughter.)

17 ASST. SEC. STRICKLING: So I take
18 note of the fact we are already 10 minutes
19 ahead of schedule, and I don't want to do
20 anything to disturb that.

21 (Laughter.)

22 ASST. SEC. STRICKLING: So I will

1 be very, very brief. I just -- hello. I'm
2 sorry I'm late. I thank you all for your
3 service.

4 We had a great discussion this
5 morning, all of you who were able to
6 participate in the lessons learned session,
7 so a lot came out of that.

8 I'm looking forward to hearing
9 about the new work that we are going to try
10 to get across the finish line before the
11 charter for this group runs out next spring.

12 So with that, let's keep going.

13 CO-CHAIR FONTES: Thank you,
14 Larry. Sorry for that oversight.

15 Next, we're actually getting into
16 the reports, and the first one on our agenda
17 today is the Enforcement Working Group. And,
18 Mark, are you giving the --

19 MEMBER CROSBY: I'm happy to.
20 Dale, do you want me to lead off, and you can
21 add color commentary?

22 Okay. Well, you have a document.

1 It's an activity report. We haven't been
2 quite as diligent at meeting as often as
3 Janice's group, who I hear has met 15 times.

4 (Laughter.)

5 MEMBER CROSBY: Just this week.

6 (Laughter.)

7 MEMBER CROSBY: We -- recognizing
8 that people are busy, we've had like one and
9 a half meetings. And the first meeting was
10 sort of an unofficial get-together to share
11 ideas. And the first -- that unofficial
12 first meeting we sort of said, you know what
13 would be more, I think, productive for CSMAC
14 purposes, and for purposes of our working
15 group, would be perhaps to focus on the bands
16 that are imminently in front of us for
17 sharing for purposes of enforcement policies,
18 because it would be more perhaps productive.
19 And Karl and others, during a call recently,
20 agreed with that.

21 I don't want to spend too much
22 time on this, although I do want to

1 absolutely -- as you know, the work of --
2 this working group has -- I mean, we have
3 great people, and Mark McHenry and Collin
4 Alberts is involved, and Tom Dombrowsky. And
5 I can't do it without David Donovan, or the
6 committee can't function without input from
7 David and Jennifer and Mark and Steve Sharkey
8 and everything. So, as you know, to work
9 well, these are collaborative efforts and
10 that certainly holds true for the enforcement
11 group.

12 So we sort of weighed in. So we
13 have our purpose and mission that was
14 provided us, you know, initially, and then we
15 looked at the initial objectives. And these
16 are just illustrative kind of questions that
17 we think that the working group should look
18 at and help, but by no stretch of the
19 imagination is this an exhaustive list.
20 Probably with the great minds of this table,
21 enforcement to me is one of the legs on the
22 stool for spectrum management.

1 There's probably another 150
2 questions, so we're happy to have them,
3 receive them, and input from everybody is
4 absolutely solicited and welcome.

5 I want to also make it abundantly
6 clear that this is -- I was looking at an
7 icon on my -- for like a skull and crossbones
8 that really would like indicate that this is
9 a very early preliminary draft, right? But I
10 think, Dale, a preliminary draft serves its
11 purpose. We have a lot more work to do.
12 This is just a first shot at the effort.

13 So we had, earlier in the week, a
14 very good meeting and had very good
15 attendance, and we had some initial
16 observations. I wouldn't necessarily call
17 them recommendations at this point, but
18 observations, and that being we thought we'd
19 focus on 1695-1710 and 3.5.

20 I think we also agreed that
21 interference detection, measurement,
22 cooperation among people that identify that

1 they are causing interference or receiving
2 interference, and all those things that go
3 towards resolution of the interference, is
4 not enforcement.

5 Enforcement is an activity where
6 professionals and people that, you know, know
7 the stakes and are cooperative and are
8 responsible, they can work it out.
9 Enforcement is when you have irresponsible or
10 other folks that enter the spectrum
11 management thing, have all good intentions,
12 and potentially can corrupt the objectives of
13 the spectrum use. That is where you need
14 enforcement, and that's -- so that's what
15 we're working on.

16 And of course with the work with
17 the TAC and what we've wrestled with, coming
18 up with a definition of what really tips it
19 to being harmful interference, as opposed to
20 nuisance, is very difficult, very, very, very
21 difficult, and it was agreed that perhaps the
22 enforcement working group would meet --

1 right, Dale -- with the TAC. That is, we'd
2 get together and share ideas or get the
3 benefit, because in some bands interference -
4 - harmful interference might be one thing,
5 but in another band it is totally different.
6 And so we need to work on those type of
7 things in the working group to perhaps help,
8 and we need to spend more time with the TAC,
9 and so we agree we needed to do that.

10 And then I think the working
11 group, perhaps the most substantive type of
12 recommendation/observations that we came up
13 with, is like in bands that are licensed --
14 for example, there's going to be a license
15 1695-1710, and you have national carriers,
16 and they know where they have -- they know
17 where they have their service, they know
18 where they have their sites, they know where
19 they use -- I mean, they just have it in the
20 federal agencies, and they know where their
21 users are, they know where the coordination
22 zones are, and the databases are sort of in

1 place. Everybody knows one another.

2 In those type of instances, the
3 enforcement function, if you will, probably
4 could be worked out through some sort of
5 agreement between the national carriers and
6 the federal agencies. You don't need to
7 necessarily create another body or entity or
8 fund something else, because the likelihood
9 of the risks associated with federal agencies
10 and a national carrier who is licensed --
11 they are professionals, they know. They can
12 fix -- they do it now. They do it today --
13 resolve instances of interference and things.

14 So that's -- we sort of called
15 that -- this was David's term, which I
16 thought was great, Track 1, you know. So
17 when you have everybody behaving, and you
18 know everybody's going to behave, and you
19 know that there's going to be interference,
20 but you know you can solve it among
21 yourselves and stuff, that's sort of Track 1.

22 And then, we just took it a step

1 further. You may not need agreements between
2 the carriers and the federal agencies. But
3 it might not be a bad idea to have, just in
4 case, just in case, to have some sort of an
5 agreement or collaborative effort or
6 committee or something, whatever you want to
7 call it, between NTIA and FCC, because we
8 know that the FCC can't go to a federal
9 agency and go, fix this.

10 Right, I don't think that will
11 work, Karl, and I don't think that a federal
12 agency could go to Verizon or AT&T or Sprint
13 or T-Mobile, or whatever, and go, fix this,
14 right? So there's probably -- when it gets
15 to that level, maybe they can. Maybe. But
16 if it gets to that level, it might not be a
17 bad idea to have some sort of structure
18 between NTIA and FCC in the event they need
19 some assistance to resolve certain issues and
20 certain things.

21 And then we have Track 2, and
22 Track 2 is when it's not necessarily licensed

1 spectrum. And the risks for -- we actually -
2 - we had other terms for the bad actors and
3 we edited all of that out. But the potential
4 for rogue operators to corrupt the intent on
5 some of the -- perhaps some of the bands that
6 will be more aggressively shared, and the
7 opportunity for devices to enter the country
8 that are not type-accepted, where somebody as
9 smart as Tom Dombrowsky can open it up, fix
10 it, and remove all of the do not enter zones
11 and the coordination zones and things.

12 So we can manipulate the
13 equipment, or whatever. So those are much
14 more difficult. Those are enforcement
15 issues, and we sort of called that Track 2
16 enforcement, if you will, and we need to
17 spend a little more time on that, and we need
18 to study it a little bit more. We need to
19 meet with the TAC. We need to discuss the
20 claims-harm thresholds and things. So I
21 guess that's a long-winded way of saying we
22 have more work to do, and I think we are

1 going to probably start spending a little
2 more time on definitions of harmful
3 interference, harm-claims thresholds, and
4 Track 2 enforcement initiatives, in our next
5 couple meetings.

6 So that's a summary. David,
7 Dale, Collin, Mark, everybody that's been --
8 Tom, that's been active in the thing, please
9 comment further. Thank you very much.

10 MEMBER KAHN: A quick question
11 from Kevin on the phone. In Track 2, as you
12 just called it, would it be worth trying to
13 maybe subdivide that into kind of what I call
14 organized and kind of individual, because,
15 you know, there's only a sort of one-off
16 hobbyist who does the kind of thing you're
17 describing where, in all likelihood, that's
18 not what you're talking about, I mean,
19 because that -- it's not -- I mean, if it is
20 a big source, then do something special to
21 track them down, but I think what you really
22 should worry about is the more organized

1 effort to, you know, modify or, you know,
2 alter to non-compliant a decent-sized
3 collection of devices. And it just might be
4 worth kind of distinguishing those two cases.

5 If a Radio Shack hobbyist -- you
6 know, he is always going to be out there and
7 isn't probably what you want to spend energy
8 on.

9 MEMBER HATFIELD: And you can
10 also distinguish between malicious and non-
11 malicious, too. I mean, it's a person who is
12 deliberately doing something, but they think
13 they're doing something that's good, and then
14 versus the person who is doing it for bad
15 reasons and wants bad things to happen.

16 MEMBER GIBSON: I thought that
17 was where we sort of had Track 2A and B,
18 basically.

19 MEMBER CROSBY: That's a great
20 idea. Go ahead, David.

21 MEMBER DONOVAN: Yes, I think
22 certainly we could do that. One of the

1 reasons -- and, Kevin, I think you're right.
2 I don't think the issue is to go after the --
3 you know, the Radio Shack hobbyist. But this
4 experience actually was born, frankly, from
5 the FM radio band in New York City, and which
6 it is not a one-off. Today, I may have more
7 illegal radio operators in New York City than
8 I have licensed legal ones. It is a business
9 making a lot of money.

10 The scary part of course is that
11 these guys are sitting and interfering to
12 stations that are a fundamental part of the
13 EAS system in New York. But to really get at
14 it is incredibly complex. You can take the
15 FCC truck and find the illegal operator, but
16 that's just the first step. That's the easy
17 part. You find the transmitting antenna, now
18 you've got to go find the actual illegal
19 operator.

20 And that's not easily done, and
21 the FCC's enforcement powers in terms of
22 having to go to the U.S. Attorneys' Office,

1 having to get warrants, there is a lot of
2 stuff behind that that as a result overall
3 lends to a lack of enforcement.

4 So why do we care about that in
5 this band? And I think that's a fair
6 question. It seems that the more we open up
7 bands for sharing with federal systems and
8 commercial systems, and the more those
9 commercial systems become popular, either
10 with receivers or what have you, the greater
11 the probability that we actually may have bad
12 actors. And the current enforcement scheme
13 at the FCC was really designed to take care
14 of folks who want to play by the rules, and
15 maybe an occasional kind of bad guy, but not
16 someone who truly wants to get into this.

17 And so I think, you know,
18 particularly because of the concern with
19 federal systems here that it is worth a look
20 to see what recommendations we can make to
21 try to facilitate the ability of the FCC or,
22 you know, federal government, however we work

1 that out, to move and move quickly.

2 I think earlier, for example,
3 Janice, you -- like a shot clock or something
4 of things to -- because, you know, we're
5 moving towards -- everyone knows we're moving
6 to a spectrum-based economy here and -- but
7 the FCC's enforcement -- spectrum enforcement
8 approach is -- I don't think has really
9 anticipated what is going to happen in the
10 future.

11 And it's no fault of the FCC.
12 This is a resource issue. The folks over
13 there do a phenomenal job. They work very,
14 very hard. But if you saw what they have to
15 do on a day-to-day basis -- for example, to
16 go after one unauthorized operator -- the New
17 York office needed six armed New York City
18 policemen.

19 I think we want to at least be
20 prepared, as we begin to open up these bands
21 for greater and greater commercial use, to
22 have a system in place that can move and move

1 that in an expedited fashion.

2 So I think that's what was --

3 MEMBER KAHN: I'm good with that.

4 That would go into my first category,
5 although you're right, the termination of
6 one-off then is probably wrong, because there
7 you have a one-off who is doing systematic
8 damage. Probably if you guys think about it,
9 you can find some better terminology or maybe
10 there's three categories.

11 I just think, you know, for
12 discussion purposes separating out, you know,
13 kind of the categories of user in this second
14 track will be helpful.

15 MEMBER CROSBY: Sure. But at the
16 end of the day, if they cause interference to
17 federal agency operations, they're all bad,
18 right. No matter how -- well, I didn't mean
19 it. It's still an issue. And vice versa.

20 MEMBER DONOVAN: I think, Kevin,
21 a lot of those issues, whether they meant it
22 or didn't mean it, get into sort of the

1 Scienta requirements of various aspects of
2 the law. But I agree with you; we do need
3 categories.

4 You know, a high school kid,
5 working at home and figuring something out
6 that happens to interfere, we don't want to
7 waste time going after him. But if you've
8 got, you know, hundreds of folks who are
9 doing a one-off, and it has become sort of a
10 system unto itself, then I think we have an
11 issue.

12 CO-CHAIR FONTES: Can I just
13 remind everybody to identify themselves when
14 they're speaking? Both for the screen there
15 and also for those on the call.

16 MEMBER DONOVAN: But, Kevin let's
17 talk -- this is Donovan. Let's talk more on
18 that, because if you have some ideas and
19 categories, yes, let's do it.

20 CO-CHAIR FONTES: Janice? Oh,
21 I'm sorry.

22 MEMBER OBUCHOWSKI: I thought the

1 overarching point of view here that most
2 people want to do right, and we expect them
3 to want to do right, is exactly the way to
4 go, because, frankly, you know, it's going to
5 be increasingly complex, and we can hope that
6 government gets all the right tools to do
7 complex analyses and enforcement, but we
8 can't predict it.

9 So, you know, number one, that
10 ought to be the priority. I am a little --
11 you know, each of these questions sort of
12 precipitate a taxonomy. How do we break out
13 the various, you know, issues? And with
14 enforcement, I think the goal there remains a
15 tough gray area between the good guys and the
16 flat-out bad actors.

17 Look, I'm not saying that Nextel
18 was a bad guy, but you look at the whole re-
19 banding thing that happened between public
20 safety and Nextel, and the fact that this
21 dragged on and cost lots of money. And, you
22 know, the point becomes, okay, they weren't

1 doing anything wrong, but they were maxing
2 out their utilization of those bands, and,
3 frankly, it was not in their own enlightened
4 interest to back off. And ultimately they
5 got a preferred result, better spectrum by
6 pushing matters to the limit, and then the
7 government says, well gee, it's not wrong,
8 but it's painful, it's difficult for public
9 safety. Why don't we re-band? And, you
10 know, it worked out to be a nice little
11 windfall for Nextel and a headache for the
12 government.

13 Now, that's just a case. But,
14 you know, I saw that in, you know, Part 68,
15 that band, you know, among our licensed.
16 Most people are mature, most users are
17 mature, want to experiment. But some people
18 max it out. It's in their interest not to
19 have expensive equipment that is very
20 refined. And I don't know what we do about
21 that gray area, but I believe it exists and I
22 believe it is going to become perhaps even

1 more of an issue because spectrum is
2 extraordinarily valuable, as we all know.
3 And in a sharing environment, if you get a
4 leg up, you know, you're in good shape.

5 CO-CHAIR FONTES: That was Janice
6 Obuchowski. Bryan Tramont?

7 MEMBER TRAMONT: Thanks, Brian.
8 I just want to respond to Janice's point. I
9 do think all of this enforcement -- effective
10 enforcement is predicated on well-defined
11 property rights. That's fundamental. If you
12 don't have well-defined rights and rules,
13 there's nothing to enforce.

14 And so I do think undergirding
15 any conversation about 3.5 or these other
16 issues is clearly-defined rules by the
17 agency, so that there's something to enforce.
18 And only then can the resources that David
19 talked about, and other things, you know,
20 truly and effectively be deployed. I just
21 think it's fundamental to any effective
22 enforcement regime.

1 CO-CHAIR FONTES: Dale? Dale
2 Hatfield?

3 MEMBER HATFIELD: I could -- I
4 could talk way too long about this topic,
5 because it's essentially what I've been
6 thinking almost exclusively about. But let
7 me say a couple of things.

8 One is the importance of
9 automation. And I was looking at the flow
10 diagram the database working group has here,
11 and what I'd really love to have is another
12 box over here that's associated with
13 enforcement. So that how does the people who
14 are doing spectrum monitoring and finding bad
15 stuff, how does it feed into the SAS system,
16 or whatever you call it, to be able to shut
17 things off, and so forth. And I think in the
18 future we probably need to -- I think this
19 has been discussed before -- we need to do
20 that quickly. If you're getting some
21 interference with an important national
22 defense stuff, we need to do it fast, that

1 calls for automation. And so we need to
2 flesh out these diagrams and show the
3 interfaces into the enforcement process.

4 The other thing is in -- with so
5 much pressure on budgets here in Washington,
6 even in that case where people are going to
7 work things out voluntarily, it may require
8 resources of going out of the kind that Mark
9 -- going out and actually doing some
10 measurements, and so forth, and that's
11 expensive. And I just was riding around in
12 one of the FCC vans day before yesterday,
13 and, you know -- and it's really kind of
14 state of the art. It's sort of neat stuff,
15 but it's not made for a dynamic spectrum sort
16 of thing where you have these complex digital
17 signals, and so forth.

18 So realistically, if we're going
19 to be able to trace down, find the sources of
20 this, we're going to have to have more
21 sophisticated equipment. And, quite frankly,
22 the training of the people driving the cars

1 around, trying to do this, it's an entirely
2 different situation than in the old days.
3 And I'm an old man, if you put the earphones
4 on, you could listen to this stuff, you know.
5 It was AM or FM. It was pretty easy to do.
6 Now you've got these complex digital signals,
7 and so forth, and it's a much different
8 environment.

9 It's a long-winded way of saying
10 that -- you know, who's going to pay - who's
11 going to pay for that troubleshooting?
12 There's no bad guys. We're just trying to
13 figure out, something's gone wrong, let's try
14 to figure it out together. And that has
15 implications for the type of equipment.
16 There's implications for what you do, Karl,
17 on your side in terms of what you can do in
18 monitoring and so forth, and what the FCC is
19 doing in terms of monitoring, and how is that
20 coordinated across these different -- I
21 promised I wouldn't talk too long, so I'll
22 leave it at that.

1 But this is an area that we
2 really, I think, need to spend some time, and
3 there is a lot of need for coordination
4 between this group and the FCC and the TAC,
5 and so forth, what's going on there.

6 CO-CHAIR FONTES: Dennis?

7 MEMBER ROBERSON: And I guess I'd
8 just add on -- Dennis Roberson here. Just
9 add on a little bit to what Dale put at the
10 very end. That's why I flipped up my card
11 and then flipped it back down, because this
12 coordination issue is one that we have gone
13 back and forth on quite a bit.

14 As we start to share these bands,
15 especially -- and we're going to get into
16 this with the SAS kind of system -- with the
17 mix and match in a spectrum -- government,
18 commercial, unlicensed, licensed -- it gets
19 to be very messy. So just another dimension
20 to what we have already been talking about.

21 And who has what responsibility
22 in that regime is really, really tricky. So

1 the work between NTIA and FCC in sorting this
2 all out is going to be really, really
3 important. And Karl's nodding his head
4 knowingly, because --

5 MR. NEBBIA: Karl Nebbia. I can
6 speak for myself.

7 MEMBER ROBERSON: I'm glad.

8 (Laughter.)

9 MR. NEBBIA: A couple areas that
10 I think it's probably worth your considering
11 and me being clear in the response. We're
12 now moving into this environment where we're
13 going to be creating potentially a lot of new
14 kind of sharing arrangements, and part of the
15 question that comes up is, is enforcement all
16 about fixing or correcting interference
17 issues? Or are there going to be pieces of,
18 you know, people stepping up and saying,
19 well, I'm not getting interference yet, but
20 so-and-so is not going by the agreement that
21 was reached. We know they're operating in
22 this area. The Commission said no, they

1 weren't supposed to be. So I think we're --
2 or ultimately is it always going to be driven
3 by, if I don't get interference, I don't
4 complain, and so on. So I think that's
5 something to -- because we're going to get
6 more and more of these complex arrangements.

7 For instance, 2025-2110, we are
8 going to end up with an MOU between DoD and
9 people from various components of the
10 broadcast community or cable community, and
11 so on. The question gets to be, is there
12 going to be some -- certainly, the Commission
13 or NTIA going to be called in to resolving
14 differences that were to come up. Hopefully
15 not. Hopefully it's something that's self-
16 working, and so on. But this whole new area
17 I think, you know, raises questions.

18 With respect to certainly, as we
19 have seen in some of the radar bands, all it
20 takes is one operation out of whack in some
21 area, put strobes on the radar, you go out
22 there particularly in a dynamic environment

1 where they may be sensing one another, and
2 you take -- you get the Commission to go out
3 and correct that case. What we've seen, at
4 least happen at five gigahertz, is that the
5 other devices now see that as open spectrum
6 again, after we have eliminated the
7 interferer, and we find their devices
8 responding by entering right back into the
9 same space we just chased somebody out of.

10 And that's kind of a very fluid
11 environment that we've got to work with. But
12 even one person, one device that's not
13 operating properly, can in fact cause, in the
14 case of five gigahertz, the FAA to decertify
15 a wind shear radar, because they couldn't get
16 rid of the strobing that kept popping up in
17 the area. It wasn't always from the same
18 person, but it was there.

19 And the last thing I wanted to
20 mention -- this idea of enforcing through
21 automation. I think in the 1695 band,
22 monitoring is going to be part of what --

1 well, certainly part of what they've been
2 talking about. So the question that I wonder
3 is, do the monitoring devices, that sort of
4 thing, get tied into the automation in a way
5 that by what they are seeing they are
6 automatically telling people you've got to --
7 you have to stop doing this or that or
8 shutting down certain signals, and so on. Or
9 is the monitoring just the trigger for us to
10 call the FCC and have people run out there
11 and chase folks down again? So can we
12 realistically set up an automated way of kind
13 of enforcing the rules to keep ourselves out
14 of trouble?

15 CO-CHAIR FONTES: Okay. Dale had
16 his card up and down and up and down. It's
17 up now. And then we'll go from Dale to
18 Michael.

19 MEMBER HATFIELD: I'll just make
20 a really quick -- somebody said, much
21 brighter than me, that a lot of the
22 enforcement now is complaint-driven. It's

1 like going to the emergency room of the
2 hospital. And what's not being done enough,
3 perhaps, is -- and the reason I hesitated to
4 say this is I can't pronounce the word --
5 epidemiologist. You know, you get 100 people
6 show up at the hospital, and you treat each
7 one, and you then -- who picks out the
8 patterns and says, hey, there's something
9 bigger wrong?

10 I think, Karl, that goes a little bit to what
11 you're saying. We need to do some of those
12 type of studies, which may indicate, hey,
13 there is something -- it hasn't caused major
14 problems yet, but you can see it in the
15 aggregate that it eventually may do so. I
16 think there is that aspect that is an
17 important part as well.

18 CO-CHAIR FONTES: Okay. Michael?

19 MEMBER CALABRESE: Yeah. I would
20 just echo I think that same sentiment as I
21 think Karl was suggesting. You know, a major
22 contribution of this committee could be to

1 think about certain ways we can I guess you
2 might call it do pre-enforcement. In other
3 words, do enforcement that heads off the need
4 for complaint-driven enforcement.

5 And so thinking about -- for
6 example, Karl mentioned the terminal Doppler,
7 you know, weather radars, you know, the thing
8 that happened there. Well, sure there is --
9 in some cases they were a bad apple. You
10 know, some of these are trying to, you know,
11 turn it up too high.

12 But also, there is equipment
13 being certified that has maybe a simple
14 switch that allows it to operate in an
15 unlawful way in this country. And so maybe
16 equipment should not be certified for sale in
17 this country that is so easily used
18 incorrectly. And so I think device
19 certification needs to be, you know, a real
20 enforcement issue.

21 MEMBER CROSBY: Mark Crosby. We
22 agree. But, again, I want to make sure that

1 I don't blur what the objectives are of our
2 working group. Finding interference is one
3 thing. To me, that's not enforcement, unless
4 you all tell me we want this working group to
5 work on methodologies, to find interference,
6 and to resolve interference. That's not
7 enforcement to me.

8 You know, enforcement is when you
9 have all of that in place, and you have
10 procedures and processes and automation, and
11 all this kind of stuff to make sure that
12 everybody cooperates, that's great.
13 Enforcement comes in when somebody goes on to
14 care about all of that, and they purposely
15 and maliciously agree, and then you need an
16 enforcement arm.

17 Maybe I'm oversimplifying it, I
18 don't know. Maybe not.

19 CO-CHAIR FONTES: Go ahead.
20 David Donovan?

21 MEMBER DONOVAN: Yeah. I think
22 both thoughts are right. I mean, that's

1 exactly what enforcement is. I think the one
2 area where we have to -- may have to begin to
3 look at enforcement is in the device area. I
4 mean, what happens when you have an entity,
5 whether it's offshore or what have you, who
6 continues to intentionally sell equipment
7 knowing that it's not type accepted or --
8 that's a bad apple.

9 So our -- I mean, to Michael's
10 point, at some point we are going to have to
11 deal with that as an enforcement issue, and
12 that is sort of kind of a new area I think in
13 terms of, you know, following through and how
14 we deal with that, because that becomes a
15 resource question again. So I think both
16 points are valid.

17 CO-CHAIR FONTES: Okay. Harold?

18 MEMBER FURCHTGOTT-ROTH: Just
19 quickly on the difficulty of defining what is
20 malicious in the enforcement area. There are
21 a lot of times there are real disputes that
22 involve real enforcement that don't

1 necessarily involve malicious activities.
2 And I think the most pronounced one, which we
3 haven't discussed today, was the LightSquared
4 episode over the past few years where -- this
5 gets really to Brian's point about defining
6 the property rights very precisely. You wind
7 up with a great mess. I don't know that
8 there is any malice on the part of any
9 parties there, but it certainly is, in my
10 view, certainly an enforcement issue.

11 CO-CHAIR FONTES: Okay. Janice?

12 MEMBER OBUCHOWSKI: Janice
13 Obuchowski. Just a quick comment on Mark's
14 enforcement point. I generally agree that we
15 want to try to narrow this, but, you know,
16 enforcement gets me back to sort of
17 parenting. You have --

18 (Laughter.)

19 -- which I haven't been wholly
20 successful at.

21 (Laughter.)

22 But what I have learned along the

1 way is that if I define up front the
2 expectations, and I cite the consequences
3 which can potentially be painful, enforcement
4 becomes less of an issue, because this
5 duality that you have set up here doesn't --
6 getting back to my original point about where
7 there is very big money on the table,
8 opportunities to take a lead to the market,
9 people may not be, you know, bad actors.
10 They are not the rogue broadcasters in New
11 York, but they are people that understand
12 that if they push things pretty hard they may
13 just get a leg up. It has been known to
14 happen, you know.

15 And so I would at least make a
16 little pitch for a linkage with very
17 committed initial expectations.

18 CO-CHAIR FONTES: We are going to
19 have to move on. And there is one other
20 little footnote to add into this enforcement
21 activity or enforcement working group, is
22 that if there is ever a need to rely upon

1 state, county, or local enforcement agencies
2 to help in the process, you may soon find out
3 that all of your well laid plans is perhaps
4 fiftieth on their list of top 10 things that
5 they want to engage in.

6 And so just FYI on that one.

7 CO-CHAIR FONTES: Okay. So we'd
8 like to move on.

9 CO-CHAIR ROSSTON: So moving on
10 to transitional sharing, Mark is putting on
11 his glasses and getting -- are you taking
12 charge?

13 MEMBER GIBSON: Yes. Well,
14 "taking charge" is a strong word, but I will
15 give the brief.

16 CO-CHAIR ROSSTON: Okay.

17 MEMBER GIBSON: I think if I use
18 Mark Crosby's definition of "meeting," we
19 have met --

20 (Laughter.)

21 -- we've met one and a half times
22 as well. Tom and I and some others had a

1 discussion as to getting the group kicked
2 off, and then we did have a call a couple of
3 weeks ago. I will say that, you know,
4 picking up from a bit of a discussion we had
5 this morning, we suffered a little bit from
6 CSMAC fatigue getting this one going. And,
7 you know, the bottom line is it sort of
8 transitions from the work we had been doing
9 before, hence the name transitional sharing.

10 So there is a bit of inertia and
11 momentum that we have sort of picked up and
12 are moving on with, and so that is what you
13 are going to see here. And what I'm going to
14 do is sort of describe what we're doing and
15 our plans of action, and we are continuing to
16 work it.

17 One of the things that we thought
18 was important was to have a common taxonomy,
19 definitions, and it occurs to me that we
20 don't have a definition of transitional
21 sharing, because I think as we learned from
22 the previous CSMAC work, you know, different

1 entities can have different understandings of
2 what transitional sharing might mean.

3 But what we do have is --
4 actually, we have it there. I don't even
5 know what I've got in my own brief. So we
6 have a definition of transitional sharing.

7 (Laughter.)

8 It has been a long day. But we
9 also need to define these zones.

10 In the previous CSMAC work, we
11 had protection zone, we had exclusion zone,
12 we had sharing zone, and we all agree that we
13 need to be more precise as we do this work,
14 and so we need to define both of these
15 definitions, and any more that we think we
16 need to do.

17 What we did do is define their
18 areas of study. These are the things that
19 we're working on to try to get some
20 definitions and work around. And, again, a
21 lot of this picks up from the work we did
22 previously in previous working groups. But

1 when we say about how to define -- so here is
2 the list, and it's -- this is actually boiled
3 down out of a set of questions that I think
4 were -- kind of came from NTIA, we added to,
5 but rather than put the specific questions
6 here, we just thought we'd define them as
7 areas of study.

8 So the first thing is, you know,
9 how do we define the protection zones. The
10 reason that's important is because the
11 protection zones begin to define, if not
12 define totally, when you have transition
13 sharing versus when you don't. In other
14 words, if you're operating outside of a
15 protection zone, you don't have transitional
16 sharing, where in fact if you're operating
17 inside a protection zone, and the system is
18 going to be relocating, that is kind of the
19 definition that we might agree as
20 transitional sharing. So we need to agree on
21 how we define protection zones.

22 The other thing we need to agree

1 on and study is how we effectuate the
2 coordination. We have a lot of lessons
3 learned from AWS1, and then just general,
4 those of us that do frequency coordination
5 can apply. But it may be different in this
6 instance as we apply it to AWS3 and other
7 areas where there will be sharing,
8 transitional sharing. And there is a flow
9 diagram at the end that is -- again, begins
10 to set it up.

11 We also -- that kind of goes with
12 the first bullet -- how do we develop the
13 analysis methodologies and tools? We kind of
14 got hung up in the previously CSMAC work on
15 how we do that, and so this group wants to
16 take a little more deeper dive on those
17 specifics, the methodologies and tools.

18 So, for example, what might be in
19 methodology is, do you do a Monte Carlo
20 simulation as opposed to just a point-to-
21 point type of analysis? And what are the
22 merits and benefits of each? And how do you

1 do that? What tools do you have at your
2 disposal? Do you use MATLAB? Do you use
3 commercial products? You know, those types
4 of things.

5 The DoD portal is kind of -- it's
6 in the center of this, and that is sort of an
7 abstract concept right now because the DoD
8 portal was used primarily for the DoD but not
9 exclusively for the DoD. In the AWS1,
10 Justice used it as well, but they didn't use
11 all the aspects of it. And so the concept of
12 a portal for information-sharing is important
13 to this, and so we are going to use the DoD
14 portal as an example and we are going to try
15 to expand on that for the rest of the work.

16 Again, we talked about this this
17 morning -- obtaining data. How do we get
18 data on these systems? How do carriers share
19 data on their systems? How can we be assured
20 that these data are shared -- you know,
21 protected? How can we just be comfortable
22 that we are sharing data openly? And this

1 isn't necessarily data on systems; they is
2 also data on interference parameters,
3 operational, all that stuff.

4 Market prioritization kind of
5 begins to define where we start and maybe
6 where we end up. So the idea -- again, this
7 is taken from what we did in the previous
8 CSMAC -- is if you have a whole mélange of
9 activities, how do you begin to prioritize it
10 in terms of the carrier's primary interests?

11 How is this resourced? You know,
12 we ran into this as well. We heard from DoD
13 through the previous CSMAC work that they did
14 a lot of this work taking it out of Hyde, I
15 think we heard from Fred. So we need to talk
16 about how this is resourced and how we make
17 sure it's done with appropriate resources.

18 You know, for example, the Act
19 talks about -- Spectrum Act talks about how
20 work can be accomplished to support
21 transition plans before the auctions occur.
22 What if this falls under that? So we need to

1 talk about that.

2 And, finally, we need to talk
3 about the roles of every actor within the
4 whole effort. So that's what we're studying.

5 The approach, you know, is before
6 you; you can see it. There is a lot of
7 lessons learned from previous work. AWS1 I
8 mentioned. There is a lot of work done from
9 the voluminous work that was done from the
10 previous CSMAC work that was filed on the
11 record. So we are going to go back and look
12 at a lot of that.

13 There was a whole lot of sharing
14 work that has been done in other areas, and
15 so I think we can take that on as well,
16 again, from AWS1, but in other areas when
17 there is transitional sharing.

18 Take, for example, the PCS days
19 where there was transitional sharing before
20 the microwaves were relocated. And on the
21 other side of the AWS1, in a 2.1 gig band,
22 there was all kinds of transitional sharing.

1 And then there is lessons learned from there.

2 In the context of sharing
3 information, the whole concept of trusted
4 agent really needs to be investigated. I'm
5 not sure we'll fully understand it, but what
6 we will do is we will try to surface key
7 issues and key points that need to be
8 identified, you know, for transitional
9 sharing. Larry is going to talk about that,
10 and the database work as well.

11 And then, finally, you know,
12 again, this kind of could dovetail with
13 enforcement, but measurements to review
14 techniques and results. It is great to have
15 sharing methodologies, technologies, data,
16 but it really can be substantiated by
17 measurements. And we learned that a lot in
18 the previous CSMAC work, that there were a
19 lot of measurements that were done that could
20 support the effort.

21 Finally, the last page is sort of
22 a diagram that we used, Comsearch used, in

1 the days of AWS1. So this sort of begins to
2 set up sort of a taxonomy of process, if that
3 even means anything, for how transitional
4 sharing worked in AWS1. And we can use this
5 as sort of a road map to pull it apart for
6 this effort.

7 And we're not just studying AWS3
8 here. We may be studying, well, other bands,
9 five gig, 3.5, and others. But at least it
10 begins to lay down what has to be done in the
11 concept of transitional sharing.

12 And so that's a quick brief on
13 transitional sharing. You know, we will plan
14 to meet more in the new year, and we will
15 have more work for the next effort.

16 And I -- some of my co-workers --
17 co-members are here, Tom and others, and
18 Karl. Any comments, guys? I guess not.

19 CO-CHAIR ROSSTON: Are you guys
20 going to meet one and a half more times?

21 (Laughter.)

22 MEMBER GIBSON: That would be

1 three total.

2 CO-CHAIR ROSSTON: Are there
3 other --

4 MEMBER GIBSON: Karl has got --

5 MR. NEBBIA: Karl Nebbia. I just
6 wanted to ask a couple questions. First of
7 all, as I recall in AWS1, we essentially had
8 no -- other than there were some designated
9 permanently staying sites that you guys had
10 to work around, or the community moving in
11 had to work around, there was no other
12 designated protection zones, right? I mean,
13 all of the other operations, fixed lengths,
14 all that kind of stuff, there were no
15 protection zones laid out there.

16 So as we talk about transition
17 sharing as a general concept, there may in
18 fact be protection areas and there may --
19 there is a very good chance that it is never
20 brought up. It is just, as you begin to do
21 what became known as early entry, when of
22 course to those who are entering early they

1 thought it was entering on time, and
2 everybody else was moving more slowly, you
3 know, so -- so that certainly was I think a
4 place where the federal agencies had to
5 change their mind-set, that when they laid
6 down that they were transitioning out in
7 three years or five years, or whatever, it
8 wasn't they had three years or five years to
9 -- nobody was going to bother them. It was
10 going to start right away, and so on.

11 So transitional sharing may in
12 fact be supported, and I guess part of the
13 question here is, should it, in general, be
14 supported by protection areas that lessened
15 the amount of that day-to-day interaction
16 that has to go on as people are moving in.
17 Is it just better for everybody to have, you
18 know, laid out protection areas that maybe
19 ultimately become part of the transition
20 plans, that they are protected in this area
21 for a certain period of time where they are
22 going to be left alone in that area, or what?

1 So I think it would be certainly
2 helpful to get a sense of whether -- you
3 know, of whether that is useful or not. And
4 I think another aspect is, as we develop a
5 portal, which we may end up doing again, is
6 it absolutely critical that everybody
7 understand the analytical methods are used in
8 those -- in that device? Because I think
9 that was a point of controversy last time,
10 that people didn't believe or didn't
11 understand the outcomes that DoD was giving
12 them.

13 And then the last part, I would
14 appreciate -- and I think this -- your
15 diagram here maybe begins to help people
16 understand the resource requirements of this
17 kind of sharing, because at least as I saw
18 it, this type of analysis that was looking
19 essentially cell by cell, base station by
20 base station, was being presented to the
21 agencies for their feedback. So they might
22 be given a map where there are 100 or 200

1 locations on it around a major city, and they
2 are asked to come back with, which of these
3 points would we make green, and which are
4 going to stay red, and tell us when they
5 should be turned to green.

6 So it was a very complex
7 interaction. It was not a simple yes or no.
8 It was very complex. And I think anything
9 that you can say in that about the kinds of
10 resources that are necessary would -- you
11 know, I realize in this current transition
12 planning it may be too late for that, but
13 ultimately agencies need to be able to look
14 at, what is it going to take for us to
15 actually walk through this when people start
16 moving in and calling us and asking for these
17 kinds of analysis.

18 MEMBER GIBSON: Let me just make
19 a few comments. This is Mark Gibson again.
20 On whether we need protection zones, we can
21 talk about that. I think the general feeling
22 of the group -- and I don't mean to speak for

1 the group, because you haven't gotten into
2 much, but I will speak for the group.

3 (Laughter.)

4 And the members of the group can
5 speak for themselves. You know, the concept
6 of protection zone sort of begins to define
7 the rules of engagement, or at least the
8 areas of engagement, you know. You may be
9 able to have transitional sharing without it,
10 of course, but, you know, the concept of
11 protection zones came out of the analyses
12 that were done around several of the equities
13 that -- several of the equities from the
14 feasibility analysis.

15 You know, for example, take
16 microwave. If you have a microwave system
17 that may be relocating in a period of time
18 that would require sharing, you know, you may
19 not need a protection zone, but what you're
20 going to need is a coordination zone. And so
21 we need to kind of define our taxonomy, so
22 that it is broad enough to accommodate that,

1 because we need to know when you broach the
2 whole concept of transitional sharing.

3 And it's -- in a situation where,
4 for example, you -- and we ran into this with
5 AWS1, if you have classified information,
6 everything was transitional sharing. You
7 know, you sent the data, and, as you said,
8 you run the analysis, you get back red and
9 green. And red is too many, so we go back
10 and, you know, there was all this
11 interaction.

12 So does that define transitional
13 sharing? Is that long-term sharing?

14 So there needs to be something
15 sort of a priori that defines what it is you
16 are doing. So that is either a protection
17 zone or it's something that defines rules of
18 engagement.

19 Now, with respect to transition
20 plans, I thought that something like area of
21 operation or something like that was part of
22 it, and so that might end up being what it

1 is. So that's on the protection zone.

2 On the DoD portal, I think we
3 would agree that the methods behind the scene
4 on the DoD portal need to be understood, and
5 that is part of what we are trying to do is
6 to create an approach where there is mutual
7 understanding that when you begin to do the
8 coordination you have some assurance -- not
9 assurance, but some understanding that on the
10 other side this is what's happening. So that
11 you are sort of trying to obviate the back
12 and forth that it takes to get from red to
13 green.

14 So, for example, if you submit
15 PCNs, or coordination notifications, and
16 there is an understanding that -- of how the
17 process worked, that when the answer comes
18 back no one is guaranteeing that everybody is
19 going to like it, but at least there is
20 better understanding of how it -- how that
21 happens. That really didn't occur in AWS1.

22 And, finally, I think everything

1 we are talking about will affect resourcing
2 as well, and so I think we will take what you
3 mentioned about resourcing and mention -- see
4 that in the context of the diagram.

5 CO-CHAIR ROSSTON: Tom?

6 MEMBER DOMBROWSKY: Yeah. I just
7 wanted to sort of react to the lack of
8 protection zones the last time. And I think
9 that worked better last time, primarily
10 because we were primarily talking about
11 terrestrial services for the feds. This time
12 we are talking about aeronautical, and I
13 think that makes this much more complicated.

14 And, frankly, you know, based on
15 the preliminary efforts that we did in the
16 Working Group 5, for example, protection
17 zones we're talking about there are enormous.
18 So if we actually map that out and it
19 actually shows the whole U.S. is a protection
20 zone, that actually does help to some extent
21 to tell people ahead of the auction, hey,
22 until these guys move, you're not using this

1 spectrum.

2 So I think with this aeronautical
3 wrinkle, if you will, with the use here at
4 1755 to 1780, the need for protections are at
5 least to explore. And, frankly, from Working
6 Group 5, I think we got to the first step of
7 figuring out what the protection zones are.
8 I don't think we actually finished. And one
9 of the hopes I think we had was that we would
10 continue that work to sort of drive to
11 something that, you know, the government
12 agrees to as well as the industry agrees to,
13 that sort of says, if we're in here, in this
14 area here, we've got to be talking. If we're
15 outside that area, maybe we're okay.

16 CO-CHAIR ROSSTON: Are there
17 comments or thoughts? Anyone from the phone?

18 (No response.)

19 Okay.

20 CO-CHAIR FONTES: Okay. Next on
21 the agenda is the short titled working group,
22 General Occupancy Measurement/Qualifications

1 of Federal Spectrum Use.

2 MEMBER CROSBY: Quantification.

3 CO-CHAIR FONTES: Did I say --
4 what did I say, qualification? I meant
5 quantification. Thank you, Mark, for that
6 clarification.

7 Okay. So --

8 MEMBER GIBSON: I think that's
9 mine as well.

10 CO-CHAIR FONTES: Yes, I think it
11 is.

12 MEMBER GIBSON: Again, using
13 Mark's definition of "meetings," we haven't
14 met.

15 (Laughter.)

16 Even with Mark's definition we
17 haven't met.

18 (Laughter.)

19 The issue has been, again, I
20 think there is a little CSMAC fatigue going
21 on. The other thing I think -- and I have
22 talked to Mark, the other Mark -- well, there

1 is actually five Marks around this table I
2 think -- Mark McHenry. What we are going to
3 do is commit to getting activity done in the
4 new year.

5 There is -- one of the things we
6 wanted to wait on was the comments on the
7 notice of inquiry and to see what that
8 indicated. And then, we just kind of need to
9 get focused on it. So we will have met, you
10 know, at least one time in the new year. So
11 I apologize. Like I said, we had CSMAC
12 fatigue I think.

13 CO-CHAIR FONTES: Okay.

14 MEMBER GIBSON: Any comments?

15 MEMBER ROBERSON: Dennis
16 Roberson. Something that I'll make you aware
17 of, I am part of your group, but --

18 (Laughter.)

19 -- that hasn't met. But there is
20 a forum that is being set up in the context
21 of DISPAN. Are you aware of that?

22 MEMBER GIBSON: I am.

1 MEMBER ROBERSON: Okay. So
2 WIZARD is providing a focus in this very
3 area, so we will have to keep track of that.
4 And I discovered -- or was given the
5 opportunity to chair that particular group,
6 so we'll have to make sure to pull that in.

7 MEMBER GIBSON: We will meet. I
8 can commit to that.

9 (Laughter.)

10 CO-CHAIR FONTES: And that was
11 Mark. That was the other Mark.

12 (Laughter.)

13 CO-CHAIR ROSSTON: Larry, are you
14 Spectrum Management via Databases?

15 MEMBER ALDER: Sure. Yes. And
16 we actually did meet, and we actually met
17 multiple times. We kind of got off to a fast
18 start, took a little bit of a break, and then
19 got back together. I want to thank the -- it
20 was a pretty active membership -- David
21 Borth, Janice. We had three Marks -- Mark
22 Gibson, Mark McHenry, and Mark Crosby -- Rick

1 Reaser and Michael Calabrese were all
2 contributing pretty actively to the
3 discussion.

4 So the topic that is on the table
5 is, how can sensitive and government
6 classified operations and information be
7 included and protected using a database
8 driven approach, especially when the database
9 might be doing things in real time.

10 So to set the context for
11 everyone here in the room, the idea is
12 generally you have common government systems,
13 you have commercial systems, and the
14 commercial systems want to know when they
15 operate. They query some kind of system,
16 sometimes called a database or now an SAS
17 system. That gives them information about
18 what frequencies and what times they can
19 work, the challenges, well, how do we do that
20 if that information is in fact classified or
21 sensitive.

22 We did prepare -- well, as we

1 started, we decided to take this topic on in
2 two contexts, one in general, but also the
3 group agreed that it would be productive to
4 look at a specific case, and we agreed that
5 the 3.5 gigahertz band was probably a
6 fruitful area.

7 So the progress to date is we did
8 some level setting, and the first level
9 setting thing we did is we kind of created a
10 diagram which is included in your materials,
11 just to get everyone on the same page as to,
12 what do we mean by spectrum management with a
13 database, who the players are and what the
14 entities are. I'm not going to really go
15 over that diagram today, but if you have
16 questions you can see me and we can talk
17 about it.

18 We also discussed a little bit --
19 and Rick Reaser led this -- how is sensitive
20 and classified information handled today,
21 even though it might be a manual process?
22 And this is something that I think we still

1 need more work to deal with.

2 The group agreed that our charter
3 is not to determine what information should
4 be sensitive and classified, but to determine
5 how to deal with it. But the problem is, if
6 you don't actually know what information is
7 sensitive and classified, it's hard to design
8 something. I think the classic example had
9 been in the 3.5 gigahertz band ships in the
10 port.

11 Well, you can see the ship is in
12 the port, but we have heard some people say
13 that that is sensitive information, and we
14 couldn't -- you know, therefore, might not be
15 able to include that information in such a
16 database system.

17 So those types of details get
18 sticky, right? We don't want to tell you
19 that that shouldn't be classified
20 information, but the working group kind of
21 needs to go deeper there, and understand what
22 is the boundaries of sensitive and classified

1 information. And what we kind of came to --
2 a conclusion -- is one of the best ways to
3 handle that would be a case study.

4 So we are coming back with kind
5 of an ask here, which is to have some help
6 from the NTIA to engage in a case study,
7 perhaps in the 3.5 gigahertz band, perhaps
8 looking at the SPY radars that are on the
9 ships, engage with the DoD, so that is kind
10 of the ask that the working group is coming
11 back -- instead of trying to gauge it in
12 general, we just felt that that might be
13 intractable, and so that -- we'll put that on
14 the table.

15 We also looked at some other
16 bands, similar problems that occurred. Mark
17 Gibson took us through the 70 to 90 gigahertz
18 band where they used kind of a trusted agent
19 model for dealing with sensitive classified
20 information. The idea there is the request
21 comes in, some black box agency returns kind
22 of a yes/no answer, so that's a tool in the

1 toolkit.

2 And we have developed kind of a
3 preliminary document with some ideas on how
4 to do this and that generated some insights.
5 I will walk you through a few of the insights
6 that the group has done. And none of these
7 insights I think are revolutionary, but it is
8 good just to share with everyone.

9 The first insight is really that
10 the information required to protect the
11 federal primary users is probably
12 substantially less the information that needs
13 to be shared in order to protect the new
14 incumbent users. For example, to protect the
15 federal primary users, you probably only have
16 to share receiver characteristics. You don't
17 have to share transmitter characteristics.

18 In the case of sensing, sensors
19 need to know the transmitter characteristics.
20 But in the case of a database approach, the
21 transmitter characteristics become less
22 relevant, and the only thing that is really

1 relevant is the receiver characteristics,
2 because the database tells you what region.
3 But in order for the database to define that
4 region or that time, it needs to know
5 receiver characteristics.

6 So there is the potential for a
7 lot less information to perhaps need to be
8 shared than, let's say, in the case of the
9 DFS bands and radar signatures, and things
10 like that.

11 The second is information needed
12 for effective sharing and how to handle it
13 will be more difficult in some cases than
14 others, and this gets back to the case study.
15 There is going to be some cases where the
16 information is just so classified and
17 sensitive that there is no way there is going
18 to be an ability to share in that scenario.

19 So that is something that keeps
20 getting thrown out as a roadblock, and we
21 just think that, hey, let's just deal with
22 the cases where the problem is solvable first

1 and not deal with the cases -- and I think we
2 cited here in the 1755 megahertz Working
3 Group 2, you know, video surveillance is a
4 particularly tough case where we don't think
5 that there is probably a sharable solution.

6 So very simple conclusion. Let's
7 focus on the solvable cases.

8 The third insight is, for many
9 cases, the protection can really be achieved
10 without sharing the detailed technical
11 parameters of the systems. We don't
12 necessarily need to know modulation and how
13 the receiver works. There is abstractions
14 that can be useful in doing the sharing, such
15 as, okay, tell me -- set up like a geo-fence,
16 an amount of spectrum flux that could pass
17 across a geo-fence or something like that, so
18 you can abstract the information.

19 And, again, the details are to be
20 worked out, but we do think there is a lot of
21 opportunity for effective sharing using that.
22 So the areas of study that we have based on

1 those insights are we really want to focus on
2 these black box protection models.

3 We want to focus on two aspects
4 of it. One, what is the minimum essential
5 information that is needed to have any
6 sharing? If you don't -- if you can't share
7 anything and there is no effective sharing,
8 you haven't met the minimal bar. So we want
9 to focus on that.

10 But then there is also the more
11 efficient -- if you could share more
12 information, then you could pack denser and
13 tighter, have smaller zones, so we also want
14 to look at, what is the desirable
15 information? So kind of separating the
16 minimum needed from the desirable.

17 A couple of the ideas that are on
18 the table right now is to protect in-band as
19 this power flux idea, the idea that you
20 protect things by saying, what is the total
21 radiated energy? I think Dale uses a
22 different term -- the harm thresholds across

1 geo-fences, that these devices need to get
2 protected.

3 We have talked about filter
4 responses, and we have talked about trusted
5 third parties. So the next steps that we are
6 coming forward with is, again, this idea of
7 an NTIA interaction on the 3.5 gigahertz
8 radar, shipborne radar.

9 We also -- the group -- and I'll
10 let the other members of the group talk about
11 this, because it's not area of expertise --
12 but the group felt it might be good to
13 interact with the OSTP.

14 And I think the idea is there is
15 always going to be a balance between -- this
16 gets into the balance between the information
17 needed to share and the quality of the
18 sharing, and what is the escalation, how does
19 -- the OSTP can help in this tradeoff. So
20 the group felt like that interaction with the
21 OSTP might be appropriate.

22 And then we really want to refine

1 the work. We have some documents. The group
2 felt they weren't ready to share prime time
3 yet. But we have some documents that we want
4 to distill down into some actual
5 recommendations.

6 So with that, I will turn it over
7 first to the rest of the members of the
8 group, and then for general comments.

9 CO-CHAIR ROSSTON: Does anyone --

10 MEMBER ALDER: Other members?

11 (No response.)

12 I guess general comments.

13 CO-CHAIR FONTES: Dennis, and
14 then Karl.

15 MEMBER ROBERSON: Yeah. I just
16 have a question first. I'm not sure what the
17 role of OSTP might be. But good people --
18 Tom, we love Tom -- but what did you envision
19 OSTP doing in this context?

20 MEMBER ALDER: If one of the
21 other group members wants to take that, I
22 would love it. Otherwise, I'll try and best

1 distill it from my memory.

2 MEMBER GIBSON: Well, let me take
3 a stab at it. This is Mark Gibson. It wasn't
4 my suggestion, so I will disclaim any
5 responsibility.

6 (Laughter.)

7 CO-CHAIR ROSSTON: Everybody is
8 backing away from this one.

9 MEMBER GIBSON: What it said was
10 that, you know, this is under the concept of
11 the Presidential memo, trying to find more
12 spectrum, and the White House needing to have
13 some role in ensuring that all actors act
14 responsibly. I think that's more the context
15 of it. I forget whose suggestion it was.

16 MEMBER ROBERSON: I think OSTP is
17 lead on the -- getting the answer to the
18 question of how to handle the confidential
19 information in the second order.

20 MR. NEBBIA: Right. It wasn't --
21 I'm sorry. This is Karl Nebbia. It wasn't
22 specifically asked in the context of

1 operating an accessible database, but in
2 general they are looking at that.

3 MEMBER CALABRESE: Yeah. This is
4 Michael Calabrese. I had actually suggested
5 it.

6 MR. NEBBIA: Oh, okay. Sorry.

7 MEMBER CALABRESE: In terms of
8 certainly an impression that -- you know, in
9 following the PCAST recommendations, and in
10 line with the President's executive
11 memorandum in June, that OSTP has taken now a
12 new and significant role in meeting the
13 spectrum management team at the executive
14 level.

15 And so somebody else is going to
16 have to referee. You know, ultimately
17 Commerce Department is, you know, I guess a
18 department of equal, you know, at best with
19 some other users of the spectrum. But the
20 White House is going to have to -- at some
21 point these are to some degree decisions that
22 need to -- you know, we need to understand

1 better when they would come into play and try
2 to, you know, resolve some of these conflicts
3 that could arise.

4 MEMBER ALDER: I will comment.
5 This is Larry again. Larry Alder. That this
6 -- I think of our requests and
7 recommendations. Meet with the OSTP is
8 definitely there, but the real consensus of
9 the group was it would be great to engage
10 this case study, and that was, of the two,
11 really where our focus was.

12 CO-CHAIR ROSSTON: Okay.
13 Jennifer Warren.

14 MEMBER WARREN: Yes. Jennifer
15 Warren. So I want to -- I had an original
16 comment to make, but I want to just talk
17 about this OSTP thing a minute, because it
18 seems to me if we're talking about wanting to
19 actually further work rather than politicize
20 the discussion in a case study, it might
21 actually be useful to talk to the DoD CIO's
22 office since it is the Navy radar you want to

1 look at it.

2 MEMBER ALDER: That's not the
3 OSTP. OSTP is informational; the case study
4 is separate.

5 MEMBER WARREN: Okay. Because it
6 looks like next steps are all kind of
7 building together.

8 MEMBER ALDER: No, no. The case
9 study is separate.

10 MEMBER WARREN: Okay.

11 MEMBER ALDER: It has nothing to
12 do with OSTP.

13 MEMBER WARREN: Okay. So, I
14 mean, anybody who is not here and just looks
15 at the charts will think the increment is the
16 case -- did it go to OSTP, and then refine
17 and develop recommendations. So I would --
18 and I will participate in the group
19 discussions going forward. I would recommend
20 DoD CIO as a next step, not just NTIA, since
21 you're talking about a SPY radar, and you're
22 wanting to learn more about that. So that

1 would just be something off the cuff here.

2 I wanted to ask a question on the
3 database itself. And as I said, I didn't
4 participate in your meetings yet. Who or
5 whose devices would be accessing this? And
6 I'm building on from the question I raised in
7 our lessons learned discussion, because if
8 you're hosting data that is classified or
9 sensitive, there may be different
10 restrictions on who can access it, not just,
11 again, the U.S. side, but from overseas, you
12 know, companies that own the devices, or non-
13 U.S. citizens. And I'm just trying to figure
14 out, are you factoring that into the work
15 process yet? Or work discussion?

16 MEMBER ALDER: We haven't really
17 specifically discussed that in great detail.
18 We did -- if you look at the diagram, it does
19 kind of talk about -- and I won't go into it
20 -- it's too small for me to see here in this
21 printout. But we did talk about basically
22 entities that would be using spectrum would

1 access the database or the SAS system. That
2 system may access another kind of black box
3 system.

4 So the entities such as carriers
5 or end users might not be directly getting to
6 the classified information. So I think we
7 show that in one of the boxes in the small
8 corner. But that is the general idea.

9 And for these database systems,
10 we have not divided -- we have speculated
11 that there could be all kinds of things. We
12 could speculate these are carriers with their
13 NMS type of systems, back offices talking
14 directly to the SAS system, or these could be
15 individually owned access points. We haven't
16 really made any discussion about that, so we
17 have assumed all comers.

18 MEMBER GIBSON: Let me just add
19 to that. This is Mark. Think about that in
20 the context of a trusted agent, because that
21 is why we have that in there is to await --
22 whether it's -- the trusted agent is the big

1 idea. It's not -- but it's the way to
2 safeguard the data that you are talking
3 about. So we're aware of that.

4 MEMBER WARREN: Can I just ask a
5 real quick followup question? I guess,
6 though, I'm talking about from the protection
7 of the network that accesses that -- you
8 know, that black box. The level of
9 protection for that versus the database may
10 have to be different because of the different
11 levels of information on it, not just who the
12 trusted agent is.

13 And I just wanted to flag that
14 because that is another cost feature, that is
15 another security element, et cetera, to
16 address when you are talking about
17 safeguarding, you know, information access
18 from a classified or sensitive --

19 MEMBER GIBSON: Welcome to the
20 group.

21 MEMBER WARREN: Thank you.

22 CO-CHAIR ROSSTON: Karl and then

1 -- Karl.

2 MR. NEBBIA: Karl Nebbia. I
3 guess one of the things that this brings up
4 is that, is there, for instance, an
5 opportunity to use databases where there is
6 still an error gapping between the access and
7 the database itself? Or is kind of real-time
8 information absolutely critical to where we
9 are heading in the future? That's one
10 component here, because, once again, if you -
11 - you can create that error gap. You really
12 separate yourself from a lot of the problems
13 in, you know, linking to the data.

14 The second thing is, when we look
15 at these database approaches, then, are we
16 primarily committing ourselves down a path of
17 using them where the incumbent users are the
18 ones who are most concerned about our fixed
19 location? Are we really thinking of applying
20 to systems that are mobile?

21 I mean, in the case of 3.5, we
22 are dealing with mobile ship radars, that we

1 could in fact create the database you're
2 talking about from the beginning by
3 implementing the results of the fast track
4 report and creating a zone along the edge of
5 the country that your devices then know they
6 have to stop operating. But that doesn't
7 solve -- that really doesn't solve the
8 problem.

9 The Commission could solve that
10 just through licensing, where they don't
11 license in those areas. So if we are going
12 to use the database, are we going to apply it
13 in places that are mobile? In that case, we
14 are dealing with some shipborne systems
15 versus DoD was saying in our discussion
16 earlier any time they put their stamp on the
17 data it becomes true. If it's reported in
18 The Washington Post, it's not necessarily.
19 You know, that kind of -- we hear that. Not
20 that I have anything against The Washington
21 Post.

22 But so one of the things --

1 questions that comes up is, could you put --
2 could industry put monitoring systems along
3 the coastline that are used then to turn
4 their equipment on and off? Once again, it
5 is not directly DoD stating we are doing this
6 or that, but it's something that you could
7 say, well, if we are only monitoring as far
8 as the eye can see, we could post people
9 along there saying the ships are coming, the
10 ships are coming, and so on. But you could
11 do it with spectrum monitoring capability.

12 So I think those things are worth
13 asking in terms of how you feed yourself this
14 data. Does it have to be a direct connection
15 with DoD or in a database?

16 MEMBER ALDER: I'll just respond
17 to that. So, first of all, we are hopeful to
18 do some of the mobile aspects, and I think
19 your suggestion is right on. And that gets
20 into, what is the actual sensitive
21 information? Is it the fact that the DoD
22 says it, but if we could sense it or visually

1 see it and collect it, and industry could
2 collect it and make use of it, maybe that's
3 an acceptable solution. So definitely a good
4 suggestion.

5 Timing -- you talked about the
6 error gap. I wasn't exactly sure if you were
7 talking about the error gap meaning the
8 devices going through an intermediate to a
9 trusted agency are actually timed.

10 MR. NEBBIA: Yeah. Well, I
11 think, in essence, there usually is time
12 associated with any gap you create. In fact,
13 with the portal in 1710, the arrangement DoD
14 had was that you put your data in, they would
15 take it back, do their analysis, and up the
16 30 days or something later they would come
17 back and give you an answer.

18 And, once again, in our
19 traditional environment, getting an answer
20 within 30 days and you could put your system
21 up was probably plenty soon. Today, are we
22 looking for something significantly different

1 than that? I think --

2 MEMBER ALDER: I think 30
3 milliseconds is fine.

4 MR. NEBBIA: Thirty milliseconds?
5 That's enough time for one guy to turn and go
6 to the other side of the desk.

7 MEMBER ALDER: We did -- the
8 group -- this is Larry Alder again. We did
9 spend some time talking about how quick the
10 databases themselves could react to
11 information that came in in terms of shutdown
12 information, so we spent some time as a group
13 on that topic and developed some material.

14 So we have been considering the
15 timing thing. So there is kind of two sides
16 of it. There is the industry side. How
17 quickly could industry react? And then there
18 is the sensitive information side -- how long
19 to take this information to get cleared? So
20 both are important.

21 CO-CHAIR FONTES: David Donovan?

22 MEMBER DONOVAN: Yeah. Larry,

1 just a question, and it lends towards the
2 enforcement issue as well. As I understand
3 this, if I'm reading this right, the dynamic
4 database manager could be multiple managers,
5 and they could very well -- they would --
6 predominately private sector entities,
7 correct, at this point?

8 MEMBER ALDER: Yeah. I mean, we
9 haven't discussed that in a group, but --

10 MEMBER DONOVAN: I guess, you
11 know, when the FCC is done -- this is very
12 clear because the FCC has a direct
13 responsibility over the database manager, and
14 then the relationship between the database
15 manager and the devices is contractual.
16 There are services that are being provided.

17 If I'm mixing sensitive
18 government data with commercial, is the
19 database manager going to be responsible to
20 the Commission, or to NTIA, or both?

21 MEMBER ALDER: So, again, that's
22 something that we haven't discussed as a team

1 yet. So those are some open questions.

2 MEMBER DONOVAN: Yeah. And that
3 really is a question I just --

4 MEMBER ALDER: Yeah. I have my
5 personal responses, but I think that's not
6 relevant here.

7 MEMBER DONOVAN: Okay.

8 MEMBER ALDER: So we'll take that
9 up as a team.

10 MEMBER DONOVAN: And to follow
11 up, then, the issue again says government
12 information. The relationship, then, between
13 the database manager and the devices is
14 usually -- you know, it's contractual. I'm
15 selling a service, and these are the devices,
16 and what have you.

17 Again, if government information
18 is flowing through, is that one that you can
19 have adequate protections vis-à-vis the
20 contractual relationships as opposed to some
21 form of -- and I'm not arguing for this at
22 all. It really is a question. Is there

1 direct oversight responsibility from the
2 government, whether it's NTIA or others, to
3 the devices themselves?

4 And I only raise it because we
5 are mixing federal systems with commercial
6 systems here. And I don't know whether that
7 changes things or not.

8 MEMBER ALDER: I think those are
9 good questions. We are trying to stay
10 focused on -- the question at hand is, how to
11 deal with the sensitive and classified.
12 There's a lot of questions around database
13 systems, and we could get bogged down.
14 That's why we want to stay focused.

15 MEMBER GIBSON: I don't mean to
16 speak out of turn, but this Mark Gibson. One
17 of those points, though, might get back to
18 enforcement. So you might have to meet more
19 often, but --

20 MEMBER DONOVAN: It does. I'm
21 trying to figure out, yes, if we're dealing
22 with enforcement, I want to make sure that

1 we're dealing with the system that you guys
2 envisioned, I guess is what it comes down to.

3 MEMBER ALDER: We'll talk about
4 it.

5 CO-CHAIR FONTES: Dennis?

6 MEMBER ROBERSON: Dennis
7 Roberson. I just wanted to really quick
8 reinforce Jennifer Warren's point that going
9 to DISA is going to be really valuable
10 because, as you might imagine, this is a very
11 important question for DISA, and they
12 actually have done a great deal of work in
13 this area.

14 MEMBER ALDER: Yes. So I think
15 we are all in violent agreement on that
16 point, and it's -- and the reason we bring it
17 to this forum is to go to the DoD formally.
18 I think it's best to go through the right
19 channels.

20 CO-CHAIR FONTES: Okay. Go
21 ahead. The other Mark. Mark, do you want to
22 identify yourself?

1 MEMBER MCHENRY: They can tell a
2 ship position and the frequency using where
3 the beam is pointing. You might get 10
4 spectrum, so how would that balance get -- we
5 would decide, oh well, where the beam
6 pointing is much too sensitive, but the
7 frequency -- how is that all going to be
8 decided?

9 MEMBER OBUCHOWSKI: I think
10 that's one of the questions that perhaps we
11 should have some of the perspectives on that
12 from the case study. I mean, I don't think -
13 - it would be good to see how this all works,
14 and then you could draw at least some
15 conclusions. I would submit that, you know,
16 at a high level it's a policy call. You
17 can't walk away from the fact that NTIA and
18 FCC are the ultimate arbiter of this kind of
19 thing.

20 MEMBER MCHENRY: You have to have
21 a value for sharing together versus the cost
22 to DoD. We're going to say no to everything.

1 So --

2 CO-CHAIR FONTES: Those who are
3 speaking, could you please identify
4 yourselves?

5 MEMBER MCHENRY: Mark McHenry.

6 CO-CHAIR FONTES: Thank you,
7 Mark.

8 MEMBER MCHENRY: So I think that
9 was the purpose of this thing is trying to
10 understand the balance. And people make the
11 decision -- how will they make the decision,
12 what analysis would need to be done to make -
13 - help people make decisions? We look at
14 both sides of the thing, not just DoD that it
15 says no. What is the up sides?

16 MEMBER ALDER: Are there other
17 comments or -- any other comments or
18 questions or responses?

19 (No response.)

20 Okay.

21 CO-CHAIR FONTES: Okay. The next
22 one that we have to report on is Federal

1 Access to Non-Federal Bands. Janice,
2 Jennifer?

3 MEMBER OBUCHOWSKI: Yes.
4 Jennifer and I co-led this group. But we had
5 a very good and active participation. I
6 don't know why we have overcome our CSMAC
7 fatigue, but I have to specifically call out
8 Carl Povelites, who has a lot of durability
9 because he --

10 (Laughter.)

11 He just, I mean, really came
12 through with a very good outline addressing
13 his sub-issue, and then I'd also want to call
14 out others, including Bryan Tramont and Steve
15 Sharkey, and from my team Mary Gretchen, who
16 helped with the taxonomy issue.

17 So, you know, we have had five
18 meetings. And despite our relative activity,
19 I wouldn't say we are close to the finish
20 line yet. What happens, it seems, in every
21 one of these working groups is that when you
22 get down into it you automatically kind of

1 get into this taxonomy question, because the
2 question of how to access commercial bands by
3 federal users has a lot of possible answers.

4 I mean, Carl raised the question
5 of cellular resale. I mean, of course that
6 is more than the access -- the spectrum, but
7 in fact that is probably going to be one of
8 the viable ways that government players will
9 access spectrum that is commercial.

10 There are obviously other ways --
11 and it depends on whether the government has
12 a co-primary, has no -- you know, no status.
13 I mean, a lot of that will be defined by
14 status. And then, you know, another element
15 of the taxonomy across all of this is, you
16 know, would the government be looking to
17 share a somewhat compatible technology such
18 as government LTE in a band being used for
19 commercial LTE, or are we talking about, you
20 know, satellite LTE sharing?

21 It will depend. I mean, the
22 answers depend on what kind of government

1 uses you're looking at. And, you know, the
2 question then sort of veers off to duration.
3 If it's a short-term, sporadic use, and a
4 band that is not particularly utilized by the
5 commercial folks, that is a relatively easy
6 case, and, indeed, that is already happening.

7 I was thanking somebody at the
8 FCC eighth floor for letting some like this
9 happen, and they were utterly mystified
10 because NTIA and, you know, OET had done a
11 fine job with STAs making this happen. So,
12 you know, duration is a big factor here.

13 Duration, though, is frankly a
14 hang-up, because one of the sort of detours
15 we made -- but it wasn't a detour, it just
16 sort of emerged, is this whole issue of
17 optionality. From a commercial player's
18 perspective, you know, even if they are not
19 using the spectrum, particularly if they --
20 you know, with spectrum bought at auction,
21 they are thinking about, you know, yes, okay,
22 I'm not using it right now, but I want the

1 optional to have pretty wide open use
2 going forward. And I also want the
3 optional to sell these licenses at some
4 point if they're not working out for me.

5 And so, you know, that impacts
6 commercial players' willingness to share
7 even, you know, bands that they are currently
8 not using, but that they have a license to.
9 You know, another question about optional
10 is a two-way street, though. I mean, from
11 the DoD or any large federal user
12 perspective, great, if it's short-term
13 episodic -- say they are doing exercises and
14 once every four months they are going to
15 bring in LTE-based technology. Fine. Okay.
16 People work that through.

17 But if you're going to make a
18 wholesale investment, and you are a big
19 federal player, given federal budget cycles
20 which are getting more and more painful, they
21 are not getting easier, the short-term isn't
22 going to be the only issue. They are going

1 to need something more definite than that.

2 So the whole topic of optionality
3 really just came right out on the table
4 whenever you talk about particularly
5 something that is a little more than, you
6 know, short term or episodic.

7 So, anyway, we have had good
8 progress. Question 1, I think I have covered
9 that. There were a variety of options for
10 how to approach this. Question 2, would
11 federal users be expected to pay for
12 temporary spectrum access? Well, again, the
13 answer is, it depends. You know, everyone
14 around the table could think of areas where
15 it would be perfectly reasonable for the
16 government to pay.

17 Should the government be expected
18 to pay? Should they become a profit center?
19 I mean, if it's not being used by the
20 commercial guys, and the federal government
21 wants to use this for, you know, field
22 exercises, or whatever, you know, is that --

1 is that really what we're talking about here?
2 I would say probably not. But, anyway,
3 should -- the payment issue of course
4 surfaces.

5 Question 3, would such access
6 only be available if the non-federal licensee
7 does not have an immediate short-term or
8 long-term need to operate in the spectrum and
9 location? Again, this gets back to the whole
10 topic of optionality. And I think there is a
11 difference of opinion across our committee
12 about, you know, the topic of duration.

13 The more carrier-centric your
14 focus tends to be, you know, optionality
15 becomes a larger issue on the table. I think
16 feds, as they look particularly at the band
17 that is most on the table now -- 1755 to 1780
18 -- they say, wow, that's pretty painful. You
19 know, it was our band, we've turned it over,
20 and now we're expected to pay even if the
21 other guy doesn't have any rapid deployment,
22 particularly in rural areas.

1 So, again, you know, God is in
2 the details, and we haven't -- despite being
3 active and engaged -- answered all of those
4 questions. But we propose that we will
5 answer them, at least in a somewhat coherent
6 way, for the January meeting, and we will
7 have a report, you know, in a timely fashion.
8 And it may not be a general consensus report
9 just because this isn't an easy answer.

10 We got guidance on last week's
11 call from Dr. Nebbia that we were straying a
12 bit far, and that we needed to focus a little
13 more closely on the bands that are, you know,
14 immediately on the table for auctions. The
15 answer to this question has at least some
16 marginal impact on revenues. So we are going
17 to need to focus in a little more tightly.

18 We also asked the government
19 essentially for I guess I'd say one briefing
20 or dialogue. We believe that it would be
21 very helpful to us if the thought leaders at
22 NTIA and FCC in this whole area of sharing,

1 and how sharing could happen, would be
2 willing -- I'm not even saying to bring,
3 because I don't think they have concluded on
4 the answers.

5 This is very -- but if they would
6 be willing to, you know, share with us, you
7 know, their thoughts of how some of this
8 could work, what are some of their
9 preliminary views, what tools they think they
10 would need to do more fulsome sharing by
11 federal users of commercial bands.

12 So we have asked for that
13 briefing, Karl. And, you know, probably the
14 next call we will schedule around perhaps
15 somebody at FCC and somebody at NTIA's
16 schedule.

17 So that basically summarizes
18 where we have been and where we are heading.
19 Jennifer or team members, any comments?

20 (No response.)

21 So good. Thank you so much.

22 MR. NEBBIA: Sorry, Janice. This

1 is Karl Nebbia. I'm not going to let you off
2 the hook.

3 MEMBER OBUCHOWSKI: You are going
4 to --

5 MR. NEBBIA: One of the things
6 certainly we have seen in the information
7 that has been provided to us before, there
8 are certain locations around the country
9 where the wireless industry has almost not
10 deployed at all, regardless of the maps that
11 we see, and so on.

12 And those areas oftentimes are
13 directly, you know, in line with the really
14 major training areas that the Defense
15 Department uses, both training and
16 experimentation centers, and so on. A lot of
17 them out in vast areas of the west, where I
18 know at least for a time before units went
19 overseas they were always sent to those areas
20 to do major training practices, and so on.

21 As we look ahead to, for
22 instance, the next auction, is there any

1 reason to believe that there is sufficient
2 value drawn from the wireless industry for
3 those areas to counter the obvious value to
4 the Defense Department for their training
5 purposes? Is there not sufficient reason to
6 say, "Well, when we do the auctions, we are
7 just not going to include those EAs"? Then,
8 DoD gets to continue to operate in those few
9 EAs that are unlikely to produce any income,
10 and unlikely to see any deployment.

11 MEMBER POVELITES: This is Carl.
12 I don't know the answer to that -- Carl
13 Povelites. I don't know the answer to that,
14 but one of the things we do have to take into
15 consideration is the fact that sometimes a
16 base or military -- military base is not
17 covered is because they are not able to get
18 facilities in that base. And so we don't
19 want to, through our activities here, to
20 incent the government, in denying
21 applications to actually serve in those
22 areas, so that then they can get access to

1 that spectrum. If that makes sense.

2 So I think that the high
3 likelihood is is that there is an opportunity
4 to -- it would come out -- the ability to use
5 that spectrum in a base will be reflected in
6 the auction revenues. And, you know, if
7 there is protection zones, or if there is
8 other restrictions and ability to use it,
9 then the value of the spectrum will be less,
10 and that may provide some other opportunities
11 to, you know, not provide service there, but
12 at the same time I hate to say that, yeah,
13 there is a definitive answer there, if in
14 fact maybe you do want to serve that area,
15 you're just not able to because the
16 government is not giving you access to land
17 and everything else to build facilities.
18 Does that make --

19 MR. NEBBIA: I think that makes
20 sense. I think the question is still worth
21 asking. Are certain areas not at a market
22 value? Are they not worth enough that it

1 wouldn't be better off just keeping the
2 government operating and getting them to do
3 their training without -- you know, I just
4 think it's a question that's worth --

5 MEMBER OBUCHOWSKI: I think in
6 that you may find that our committee is not
7 going to come up with the perfect --

8 (Laughter.)

9 But, you know, listen, I think
10 that's fine. That's why Carl is paid what
11 he's paid, and that's why, you know, we have
12 --

13 (Laughter.)

14 That's why we have, you know --
15 you know, that's -- I am sure that the topic
16 of optionality is seen very differently by
17 carriers, but I can't help but editorialize
18 that these were the people that asked that
19 coverage of these places be removed from the
20 ratios of coverage in the last, you know,
21 major auction. So nonetheless, if you're
22 sitting there, you're going to say, "Well,

1 you never know what the world is going to
2 deliver."

3 So I would make the case, because
4 I'll be on the side of people that say go for
5 some more, you know, sharing in the interest
6 of this approach, I would make the case,
7 having suffered badly as a bidder in the
8 front line era, that simply removing or
9 stating a preference for clarity, not across
10 the whole band but in certain geographic
11 areas, would actually potentially enhance
12 revenues vis-à-vis saying, well, we may want
13 to share, and we'll talk about how we do that
14 later, because, you know, what we heard back
15 in the front line era from, you know,
16 everybody who is looking to invest in a
17 public-private we'll-negotiate-it-further
18 partnership is one thing Wall Street cannot
19 handle is open-ended risk.

20 So, you know, I think we are
21 going to argue that, and I will be -- I can't
22 speak for Jennifer and the rest of the team,

1 but I would be comfortable putting forth
2 points of view that won't be antagonistic,
3 because I think frankly we all recognize the
4 value of optionality, but that will be
5 nuanced in their approach and somewhat
6 different.

7 CO-CHAIR FONTES: Thank you.
8 We'll go to Dennis, and then Harold, and then
9 move on. Oh, Tramont, sorry. Didn't see
10 you. That card is just --

11 MEMBER ROBERSON: This is Dennis
12 Roberson from Illinois Institute of
13 Technology, and I say that not just to be
14 compliant with Brian and Greg in providing my
15 name and identification. But being at
16 Illinois Institute of Technology, therefore,
17 a university, is a really neat position for
18 me to be in, and particularly since in my
19 company role, Roberson and Associates, we
20 consult both for the DoD as well as for
21 commercial carriers and others in the
22 commercial space.

1 So it puts me in this really neat
2 neutral zone, and I have come to really get
3 excited about this concept, because when I
4 look at what Carl has described, looked at
5 the map and looked at where our major -- not
6 all, but many of our major military
7 installations, they are in places where there
8 are very, very few opportunities and very few
9 instances of Carl's cell towers, because
10 there just isn't the opportunity out there.
11 There isn't the need for all of the coverage
12 that you would have in a major metropolitan
13 area like Washington, D.C.

14 So this bilateral sharing
15 opportunity is really a terrific opportunity
16 when you're in it, as a university person,
17 for the penultimate utilization of the
18 spectrum, the spectrum efficiency. So I
19 think that this is a gold mine area for us to
20 really mine and figure out exactly how to do
21 this and not restrict it just to the bans of
22 interest, though we certainly should put

1 early focus on that.

2 But even some of the existent
3 bands that are not being utilized -- and,
4 again, this is a study that I have undertaken
5 on behalf of somebody looking location by
6 location around the world, and finding all of
7 the places where there are spectrum licenses
8 that have been there for five and 10 years
9 that have never been deployed, and, you know,
10 this really does provide great opportunity.
11 So go for it. I am really tempted to join
12 the group because --

13 MEMBER OBUCHOWSKI: Carl
14 Povelites, you have met your match.

15 (Laughter.)

16 CO-CHAIR FONTES: If we can move
17 on. Harold?

18 MEMBER FURCHTGOTT-ROTH: Thank
19 you. This is Harold Furchtgott-Roth. I
20 think some of this goes back to the point
21 that Brian was making earlier about the
22 importance of defining property rights very

1 clearly. There is a lot of not heavily used
2 spectrum in many rural parts of the country,
3 including areas that cover military
4 facilities. Those are obviously
5 opportunities for commercial transactions
6 between the government to go to not just one
7 but any number of carriers that have spectrum
8 covering those geographic areas to think
9 about ways that could be mutually beneficial.

10 I think to move this away from
11 clear definition of property rights to a
12 situation where there is a defined sharing
13 arrangement in part of the country layered on
14 top of clear property rights in other parts
15 of the country, it is a slippery slope, and I
16 think there would then be a lot of pressure
17 on the FCC to sort of say, well, let's move
18 it from rural Nevada to more densely
19 populated areas. And at the end of the day
20 you wind up with just a patchwork quilt of
21 licenses.

22 And that might work, but I think

1 it would substantially degrade the value of
2 the licenses themselves, and ultimately make
3 it less possible for the carriers to engage
4 in commercial relationships either with the
5 federal government or with any of number of
6 other potential commercial users in those
7 areas.

8 CO-CHAIR FONTES: Okay. Brian?

9 MEMBER TRAMONT: And I was just -
10 - I agree with what both Harold and Dennis
11 have said, because I feel like the basis
12 really presented an opportunity for what the
13 working group is all about, which is the
14 commercial sector and the government sector
15 working together. And if you carve out EAs,
16 you are basically providing that from
17 happening.

18 What should happen is that there
19 -- and I think there are good examples of
20 this, of commercial carriers reaching
21 agreements with the federal government for
22 spectrum use, and then a tailoring -- you

1 know, people work on military bases who use
2 commercial wireless services. When they work
3 together and they get a lease, maybe we can
4 continue to provide enhanced services to
5 those consumers that are on those bases as
6 well as serve the military needs.

7 And if you carve out, you just
8 eliminate opportunity to do that. And the
9 low value of spectrum in some of these rural
10 areas provides real opportunity for us to
11 test bed some of these concepts and hopefully
12 prove them -- prove out that the federal
13 government can work cooperatively with the
14 commercial sector.

15 But by carving out vast sections
16 or even -- sections of property rights, you
17 eliminate that and it is -- I think that's
18 the thinking we are trying to move away from.

19 CO-CHAIR FONTES: Thank you.
20 Dennis?

21 MEMBER OBUCHOWSKI: We have two
22 points of view on that coming out of the

1 committee I think.

2 CO-CHAIR FONTES: Dennis?

3 MEMBER OBUCHOWSKI: And they
4 won't be totally antithetical, but, you know,
5 that will be an important perspective.

6 CO-CHAIR FONTES: Now we will go
7 to Dennis.

8 MEMBER ROBERSON: No. Just very
9 quickly, when we did the PCAST report, one of
10 the key things we built in was this three-
11 tier structure, and there has been a lot of
12 discussion about the military going back and
13 securing a deal with the commercial carriers
14 that would own the spectrum.

15 The notion in my mind would be to
16 move towards this multi-tier structure where
17 in fact the DoD would secure perhaps the
18 second tier license, but it would be a
19 license that they would own, they would --
20 whatever the arrangement is to secure that
21 ownership, but there wouldn't be any further
22 expenditure. So that creates a lot more

1 certainty for DoD's side, and actually it
2 also puts the position on the cellular side
3 as well. So that would certainly be my
4 recommendation for pursuing that.

5 CO-CHAIR FONTES: Okay. Last
6 comment, Jennifer?

7 MEMBER WARREN: Jennifer Warren.
8 I just wanted to respond I think mainly to
9 what Brian and a couple of the others said
10 about the distorted effect of carving out a
11 base from the EA. And, really, to me it just
12 shifts when that negotiation takes place.
13 Instead of it being the carrier's presumptive
14 right to negotiate -- a particular carrier's
15 presumptive right to negotiate with the
16 military, it would seem that if the military
17 retained that area then it could maybe,
18 subject to statutory changes, then engage
19 with a carrier, and that would actually be
20 more efficient, rather than creating this
21 alternative.

22 And, you know, we have certainly

1 made legislative changes suggestions in the
2 past, and that would be something I think we
3 would need to look at it.

4 MEMBER TRAMONT: It only works if
5 -- if there are incentives, that might work.

6 CO-CHAIR FONTES: Great. Thanks,
7 everyone, for your comments on this report.

8 CO-CHAIR ROSSTON: I think we are
9 going to have a lot more debate about this
10 issue as the committee comes forward and we
11 talk about it.

12 Michael, do you have a report for
13 the Spectrum Sharing Cost Recovery
14 Alternatives?

15 MEMBER CALABRESE: Yes.

16 CO-CHAIR ROSSTON: Great.

17 MEMBER CALABRESE: So --

18 CO-CHAIR ROSSTON: Michael
19 Calabrese.

20 MEMBER CALABRESE: Right. And,
21 yeah, we have met twice and there were like I
22 think at least six members active -- Harold

1 Furchtgott-Roth, Bryan Tramont, Jennifer
2 Warren, Larry Alder, Janice Obuchowski, and
3 if I'm missing anyone speak up.

4 And essentially
5 our charge was to look at how to pay for the
6 cost of spectrum sharing when there is no
7 auction. So, specifically, the NTIA question
8 was, how should federal agencies be resourced
9 to develop and implement sharing with non-
10 auctioned licensees or services such as
11 unlicensed devices? And we also recognized
12 this could be relevant as well, not only for
13 a band that might be entirely open for
14 opportunistic or unlicensed, but a band like
15 the 3.5 gigahertz band as it is -- you know,
16 the proposed citizens broadband service, for
17 example, which is a hybrid of priority access
18 and opportunistic access that will still be
19 issued if the federal users have costs, about
20 how you can reimburse that.

21 And, you know, the fundamental
22 need for this goes back to limits on the --

1 limits in the Commercial Spectrum Enhancement
2 Act of 2006 and the spectrum relocation fund
3 that it created, because the spectrum
4 relocation fund limits the reimbursement of
5 costs. They have to be related to the
6 relocation of bands that are actually
7 auctioned. So it won't -- you know, it
8 simply doesn't come into play if the agency
9 is simply taking, you know, steps to
10 facilitate sharing without actually
11 relocating.

12 There have already been
13 improvements in the -- to the CSEA. The 2012
14 Spectrum Reform Act expanded some of the
15 costs that are recoverable on those auction
16 bands, allowing more upfront planning and
17 research costs, and that's good.

18 And then I'm sure most of you are
19 aware just on Wednesday of this week the
20 House Commerce Committee approved the Federal
21 Spectrum Incentive Act of 2013, which, you
22 know, makes some further -- further

1 expansions in the concept of the spectrum
2 relocation fund.

3 So what, you know, I guess got
4 the headlines, at least in the trade press,
5 was that it establishes -- it would
6 establish, if it passes, a separate federal
7 spectrum incentive fund that would receive
8 one percent of auction revenues and can
9 transfer that for two purposes, either to --
10 you know, to agencies that relocate, either
11 to offset sequestration cuts or to offset the
12 costs of an incumbent federal user in a
13 different band they will now be sharing with
14 the relocated federal user.

15 So, you know, again, you know,
16 that could improve things, but it is -- you
17 know, it doesn't really answer the question
18 that the NTIA put to us about bands where,
19 you know, there is no auction at all. And
20 yet there is great potential for harnessing
21 underutilized spectrum.

22 The PCAST didn't solve this

1 problem for us. They did recommend a
2 spectrum efficiency fund -- in other words,
3 an expansion of the spectrum relocation fund
4 that would be a revolving fund to reimburse
5 agencies for the costs of not only
6 facilitating commercial access, private
7 sector access, but even for becoming more
8 spectrum efficient, sharing with other
9 federal entities, and so on. But there was
10 no operational detail really in the report.

11 And so our committee has decided
12 that -- you know, that we could add the most
13 value by fleshing out what the implementation
14 of a spectrum efficiency fund would look
15 like, what it would take. And we did rack
16 our brains for a half-hour or so about, well,
17 what about other, you know, sources of --
18 what about other resources that could be
19 brought to bear other than a fund of this
20 type that might collect either some share of
21 whether it's auction revenues or device
22 certification fees or user fees of some

1 nature, and so far we haven't thought of any
2 other independent sources. But if anybody
3 has any, we would be happy to look at them.

4 With respect to fleshing out a
5 spectrum efficiency fund, we have identified
6 five issues that need, you know, further
7 discussion. One is, should it be a revolving
8 fund, you know, that would be ongoing, or a
9 band-by-band fund which is, you know, maybe a
10 more traditional approach? Even if it's not
11 a band-by-band approach, should there be more
12 than one fund?

13 So, for example, there may be a
14 fund for the very -- for the upfront costs,
15 which are more, you know, minor costs, and a
16 separate fund for, you know, what could be
17 very, you know, substantial costs if you're
18 talking about equipment upgrades for federal
19 agencies.

20 A third issue is potential
21 revenue sources for such a fund, and we
22 talked, you know, very briefly about a couple

1 -- you know, we want to look into some
2 analogous examples. Certainly in the telecom
3 field there has been the telecommunications
4 development fund that was in the '96 Act that
5 collects interest -- the interest earned on
6 deposited auction revenues and uses them for
7 various purposes. That has not been a very
8 big fund.

9 There is also -- UTAM is another
10 model used to pay some costs of clearing the
11 PCS band. So we will look more at that.

12 A fourth issue is categories of
13 costs that could or should be covered,
14 because, you know, you could get to the point
15 where if you're going to buy, you know,
16 entirely new systems for somebody, that could
17 be in the multi billions of dollars which may
18 be impractical. So we probably want to talk
19 about what sort of cost recovery should be
20 prioritized.

21 And then, fifth is the
22 administration and approval process for the

1 fund, including how applications for
2 reimbursement are reviewed and approved. So,
3 for example, even if OMB is going to house
4 and ultimately make a final decision on
5 disbursements, you know, is there some expert
6 committee to make recommendations to OMB on
7 the merits? That would be an example.

8 So we have not reached any
9 preliminary recommendations after a little
10 less than two hours of talk, but we have
11 decided a way forward in terms of a work plan
12 and timeline. And we realize that we really
13 can't go very much further on some of these
14 questions without understanding much better
15 how the existing mechanisms work. So roughly
16 January will be an investigative phase.

17 What we, you know, are trying to
18 do is set up a briefing from OMB on how the
19 spectrum relocation fund, you know, actually
20 works and what its restrictions are from FCC
21 in terms of their authority to -- with
22 respect to fees. And, you know, whether it's

1 device certification or other types of fees,
2 how that works with respect to the TV white
3 spaces, for example, where the database
4 administrators will be compensated, although
5 indirectly. That could be an end run to
6 certain limitations. So we need to look at
7 that.

8 I think we want to learn more
9 about these other analogous mechanisms, and
10 if others could suggest other examples, other
11 than the telecommunications development fund
12 or UTAM, that we should, you know, take a
13 look at, there may be some in the resource
14 area, for example, I would think there would
15 be.

16 And then before the next -- after
17 that, then before the next CSMAC meeting, we
18 would try to work through these five issues
19 and reach preliminary recommendations.

20 CO-CHAIR ROSSTON: Great. Thank
21 you. Are there comments or questions on
22 Michael's --

1 MEMBER CALABRESE: Yes. Or
2 anyone from the committee, things I have
3 missed or --

4 CO-CHAIR ROSSTON: Anyone on the
5 phone want to -- I heard some grumbling on
6 the phone, but maybe that is just someone
7 scratching.

8 MEMBER CALABRESE: Just
9 grumbling.

10 (Laughter.)

11 CO-CHAIR ROSSTON: Shuffling.
12 That's a better way of putting it.

13 Okay. This is great. And I
14 think we are sort of recovering from CSMAC
15 fatigue, hopefully. And Brian and I were
16 talking at lunch, and we want to make sure
17 that we keep -- I wish it was scratching I
18 guess --

19 (Laughter.)

20 So we are going to try and make
21 sure that we have regular phone calls with
22 the committee chair to report and to make

1 sure that we are -- everyone is keeping on
2 track and moving forward. So we'll try and
3 organize that.

4 If you're on the phone, please
5 hit mute if you're not talking to the group.

6 Okay. Now we're going to move on
7 to the lessons learned with Peter Tenhula
8 going to talk and lead this part of the
9 discussion.

10 MR. TENHULA: Okay. Thank you.
11 I think I can be fairly quick, since most of
12 -- this is Peter Tenhula with NTIA. I think
13 it can be fairly quick, since a lot of CSMAC
14 members were at our session this morning,
15 where we talked about lessons learned from
16 the working group process that just -- that
17 concluded earlier this year regarding the
18 1695 and the 1755 bands.

19 So we had a great session this
20 morning with about -- good participation,
21 about 18 folks here in this room, and 12 --
22 at least 12, probably a lot more, on the

1 phone. Some didn't identify themselves --
2 included a lot of the co-chairs that were the
3 leaders of the working groups, the CSMAC
4 members that serve as liaisons, and other --
5 the active participants, as well as the NTIA
6 and FCC staff that were involved in those
7 working groups.

8 And I think although we were not
9 -- it was not -- it was about getting
10 individual input from the folks there, it was
11 not about reaching consensus. I think just
12 to sum up from the session this morning, I
13 think that we heard about the benefits that
14 did come out of it, and also learned a lot of
15 lessons about how to improve the process
16 going forward in light of the fact that the
17 President recognized that this -- in his June
18 memo that this was unprecedented.

19 The information exchanged is a
20 collaboration that was going on between
21 federal and non-federal and is there -- you
22 know, and then also directing NTIA to

1 consider, you know, other bands for sharing
2 and other avenues for this kind of
3 collaboration.

4 So if we have time to open it up
5 for discussion on the next steps, in that
6 regard, you know, that would be kind of how I
7 would conclude. But just to summarize
8 quickly what we talked about this morning,
9 first, we talked about kind of how it all got
10 started with the May 2012 framework document
11 as kind of the marching orders, the terms of
12 reference, the charter for the working
13 groups.

14 We heard about the need for
15 potential flexibility in that, and it was I
16 think -- I'll dub that Dennis' "Do the Right
17 Things" clause that would be included in such
18 a charter, basically so we don't get stuck,
19 you know, mired in the mandate that is in
20 that document.

21 Also, thoughts of certainty, you
22 know, especially regarding how much time is

1 this going to take, how much resources it is
2 going to take, and also clarity. You know,
3 what exactly do we expect, what are the
4 expectations there. So that was kind of the
5 -- some of the input on how to craft a good
6 framework document, you know, kind of going
7 forward.

8 We also did -- I should mention
9 we did receive contributions in writing from
10 a few parties this week. Janice couldn't be
11 here this morning -- contributed, T-Mobile,
12 DoD, and NASA as well. So it was not just
13 the meeting.

14 And, again, we are open to other
15 suggestions, inputs, you know, as we go
16 forward, in how we implement the next steps.
17 You know, whether it's another band, whether
18 it's maybe in support of these current
19 committees, this is kind of what we're
20 talking about. We're going to try to
21 incorporate, institutionalize this as far as
22 our overall NTIA strategic plan goes as well,

1 so that will be worked on in the future.

2 So we've got -- and we've got a
3 lot of good input. And I think the
4 observation that I made, I guess from the
5 positive standpoint, was that there were two
6 types of outputs from these working groups.
7 There were the formal reports, the tangible
8 things that did come out, including the
9 recommendations, but I think there was a lot
10 of informal outputs or the intangibles,
11 including the roadmap that came out of
12 industry, the DoD proposal, which were not,
13 you know, necessarily -- you know, came
14 officially out of this but did come out of
15 it.

16 Relationships and trust that was
17 built or at least started, fostered, you
18 know, among federal/non-federal participants.
19 And also, you know, the lessons learned about
20 governance oversight by NTIA, by the chairs,
21 we are going to take back and see if we can
22 institute them the next time.

1 And of course the big issue, the
2 elephant in the room that we got up on in the
3 middle of the circus, was the information
4 access and management and sharing and about
5 transparency, and the potential conflict
6 between doing these kinds of things in a
7 Federal Advisory Committee Act environment
8 and the transparency required there,
9 typically required there -- there are
10 exceptions, of course -- and the need to
11 protect very sensitive information, both on
12 the government side and the industry side.

13 So, obviously, lots of ideas have
14 been discussed here as well, you know, about
15 trusted agents, NDA approaches, or bilateral
16 discussions kind of on the side, I would call
17 them "in the hallway" type discussions or
18 over lunch. Those are all ways to exchange
19 information that we are going to explore
20 further and try to figure out more efficient
21 ways to share information.

22 So that is kind of the initial

1 lessons learned. Again, I would just open it
2 up for discussion on next steps and any other
3 -- the folks that weren't there, or the folks
4 that were there, would like to echo in, in
5 whatever time we have left.

6 Thank you.

7 CO-CHAIR ROSSTON: Comments?
8 Thoughts? Dennis?

9 MEMBER ROBERSON: I seem to be
10 overly commentative today, if that's a word.
11 But I actually would like to applaud Peter
12 and the team for having the session that we
13 had this morning, because very often we go
14 through these processes and don't ever go
15 back and do the after action review to see
16 what we could do better -- when we've got
17 something really as important as the tasks
18 that we undertook this time, to not do this
19 would have been a shame, but to do it is, you
20 know, strong kudos to you, Peter, and to the
21 team for pursuing it. And I think there is
22 great opportunity to do it the next time

1 easier, more efficiently, and reduce the
2 fatigue and --

3 CO-CHAIR ROSSTON: Thank you.

4 Other thoughts? Comments?

5 (No response.)

6 Okay. I think it's now time for
7 public comment. Is there anyone in the room
8 who would like to make a comment? Anyone on
9 the telephone?

10 MR. SNYDER: Yes. I have a
11 comment. It's Jim Snyder. And there was a
12 discrepancy between today's two CSMAC
13 meetings and how they were noticed and made
14 publicly accessible. The second meeting
15 received much better notice and was webcast
16 with presumably an online record accessible
17 after the meeting.

18 CO-CHAIR ROSSTON: Jim?

19 MR. SNYDER: The first meeting
20 was poorly noticed and was not webcast. The
21 discrepancy is potentially related. Poor
22 advance notice is much less of a problem if

1 there is an accessible record of the meeting.
2 To the extent that that is not the case, the
3 lack of notice reinforces the lack of a
4 record.

5 So here is my question. Will
6 there be a transcript of the morning meeting?
7 I'd like to note that going back and
8 approving notice of the meeting -- morning
9 meeting on your website after the fact is not
10 going to improve public access to the public.
11 It would even mislead the public if there is
12 no transcript of the meeting.

13 Lastly, I would like to request
14 once again to be placed on your email list
15 for meeting notices. Mr. Washington, on
16 behalf of the committee, provides some non-
17 CSMAC members, including some members of the
18 press, with email notice of your meetings,
19 but your committee has consistently refused
20 to provide me with that notice. I hope you
21 will reconsider that policy.

22 But my main question right now is

1 will there be a transcript of the morning
2 meeting? That is --

3 CO-CHAIR ROSSTON: Jim?

4 MR. SNYDER: -- was not webcast
5 or --

6 CO-CHAIR ROSSTON: Jim, thank
7 you.

8 MR. SNYDER: -- available
9 publicly.

10 CO-CHAIR ROSSTON: Thank you for
11 your comment. Just a point of clarification,
12 first of all, this is an opportunity for
13 public comment, not questioning. But to be
14 clear, this morning's meeting was not a CSMAC
15 meeting. So it was not part of CSMAC.

16 But the other point that your
17 question is, I believe -- and they will find
18 out and you will find out more -- that there
19 will be a transcript available of the
20 meeting. So those -- I think those should
21 answer both your questions.

22 Is there anyone else with public

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comment?

(No response.)

All right. Thank you very much.

And I think we stand adjourned.

(Whereupon, at 3:09 p.m., the
proceedings in the foregoing
matter were adjourned.)

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Court Reporter

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