

NATIONAL TELECOMMUNICATIONS &
 INFORMATION ADMINISTRATION
 OFFICE OF SPECTRUM MANAGEMENT

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COMMERCE SPECTRUM MANAGEMENT
 ADVISORY COMMITTEE (CSMAC)

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MEETING

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WEDNESDAY
 FEBRUARY 18, 2015

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The Advisory Committee met in the 15th
 Floor Conference Room, Raytheon Company, 1100
 Wilson Boulevard, Rosslyn, Virginia, at 1:00
 p.m., Larry Alder and H. Mark Gibson, Co-Chairs,
 presiding.

PRESENT

LARRY ALDER, Co-Chair
 H. MARK GIBSON, Co-Chair
 MICHAEL A. CALABRESE, Member
 MICHAEL S. CHARTIER, Member
 MARK E. CROSBY, Member
 THOMAS S. DOMBROWSKY, JR., Member
 DAVID L. DONOVAN, Member (by telephone)
 HAROLD FELD, Member
 HAROLD FURCHTGOTT-ROTH, Member
 DALE N. HATFIELD, Member
 PAUL KOLODZY, Member
 ROBERT KUBIK, Member
 GIULIA MCHENRY, Member (by telephone)
 MARK A. MCHENRY, Member
 JANICE OBUCHOWSKI, Member (by telephone)

CARL POVELITES, Member
CHARLA RATH, Member
RICHARD L. REASER, JR., Member
JEFFREY H. REED, Member
DENNIS A. ROBERSON, Member
KURT SCHAUBACH, Member
BRYAN TRAMONT, Member (by telephone)
JENNIFER WARREN, Member

ALSO PRESENT

LARRY STRICKLING, Assistant Secretary for
Communications and Information and
Administrator, National Telecommunications
and Information Administration, U.S.
Department of Commerce
PAIGE ATKINS, Deputy Associate Administrator for
Spectrum Planning and Policy, National
Telecommunications and Information
Administration, U.S. Department of
Commerce
MATTHEW HUSSEY, Associate Chief of Policy,
Office of Engineering and Technology,
Federal Communications Commission
GLENN REYNOLDS, Chief of Staff, Office of the
Assistant Secretary, National
Telecommunications and Information
Administration, U.S. Department of
Commerce

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

2 1:00 p.m.

3 CO-CHAIR GIBSON: All right. Welcome
4 to the February CSMAC meeting -- the Commerce
5 Spectrum Management Advisory Committee meeting.

6 I'm Mark Gibson, and Larry Alder --
7 we're co-chairs. We have a lot to cover today so
8 we are going to be pernicious about time keeping.
9 With that, I'll turn it to Larry Strickling - ask
10 him to make some opening remarks.

11 ASST. SEC. STRICKLING: Thank you,
12 Mark, and thanks to all of you who have joined us
13 here in person and those of you who are on the
14 phone, and we're in a different location today
15 and I want to personally thank Rick Reaser and
16 Raytheon for making their space available to us
17 today here in Arlington, Virginia.

18 So I appreciate that very much. I
19 hope everybody feels a little energized with the
20 change in surroundings and we'll have a
21 productive meeting.

22 Today, of course, is our first

1 official meeting of the Paige Atkins era. Paige
2 is --

3 (Applause)

4 Paige has now been officially named as
5 the head of our Office of Spectrum Management,
6 replacing that other guy who was here for 30
7 years. No, that's unfair. Karl Nebbia, and Karl
8 did a great job but we expect Paige to eclipse
9 that in no time.

10 I also wanted to announce that she has
11 a new permanent deputy. Peter Tenhula, formerly
12 my spectrum advisor in the front office, has
13 moved over to become the deputy associate
14 administrator for spectrum management and he'll
15 be also heading up the -- serving as the chair of
16 the IRAC, which is, of course, our regular
17 meeting of all the federal agencies involved in
18 spectrum.

19 And I just also wanted to acknowledge
20 Dale Hatfield is rejoining NTIA temporarily as a
21 consultant to help us as we continue to think
22 about how we use our assets out in Boulder,

1 Colorado.

2 I think we've talked to Peter before
3 about our Center for Advanced Communications out
4 there that's in effect a virtual joint venture
5 between us and NIST, and as we get that off the
6 ground we wanted to turn to some expert advice
7 and Dale has agreed to help us out out there on a
8 part time basis. But I did want to mention that
9 and thank Dale for his willingness to give us a
10 hand out there.

11 Now, since we were last here in
12 October -- last met in October we have, of
13 course, had the AWS-3 auction and I think
14 everyone is just astonished at the financial
15 results of that auction -- about \$45 billion of
16 bids that came in for that, and I know some of
17 you sitting around the table your pockets are a
18 little emptier today as a result of your bidding
19 in that auction.

20 But thank you very much and, more
21 importantly -- but more importantly, I want to
22 take the opportunity to again recognize the great

1 work of the CSMAC in helping to set the stage for
2 that successful auction.

3 That work that was done under the
4 auspices of CSMAC a couple of years ago as we
5 took the opportunity to have industry work
6 directly with the federal agencies to understand
7 all of those systems in the 1695 band and in the
8 1755 band. There's no doubt in my mind that that
9 contributed to the results that we saw
10 financially from that auction.

11 So you all deserve a tremendous amount
12 of credit for the hard work that everyone engaged
13 in during that auction and you should feel some
14 personal sense of pride for the work that CSMAC
15 did.

16 And, again, our challenge now is how
17 do we capture that and institutionalize those
18 sorts of consultations so that they become the
19 regular course of affairs as opposed to the one-
20 time experiment we did a couple of years ago.

21 So today I know we want to get right
22 into hearing the recommendations from each of the

1 subgroups. I'm looking forward to hearing that
2 and getting the chance to get some good
3 actionable recommendations that we can take on
4 inside of NTIA and continue to do the work we're
5 doing to try to find more spectrum for commercial
6 broadband as well as to continue to meet the
7 needs of our federal agencies.

8 So I think the only other thing I want
9 to mention is that on the calendar for this year
10 we've got the work coming up in -- towards the
11 end of the year and I think everyone probably has
12 heard that Decker Anstrom will be reprising his
13 role as delegation head and I think he may
14 already have started work.

15 I haven't caught up with him yet but
16 I'm sure I will shortly. He did a wonderful job
17 at the last work and I think everyone is looking
18 forward and I personally am looking forward to
19 working with him again on this one.

20 And then beyond that, I think our next
21 meeting for the CSMAC is scheduled in Boulder in
22 May in connection with the ISART meeting, and

1 Paige will have more details on ISART.

2 But we hope that you're able all to
3 make the trip to Boulder and to spend some time
4 at ISART in addition to the time at our CSMAC
5 meeting in May.

6 So with that, I'll turn it back to our
7 chairs and we're off and running. Thank you very
8 much.

9 CO-CHAIR GIBSON: Thanks, Larry. This
10 is Mark Gibson again. So just a few brief
11 comments. One is that we're going to try to
12 really move this along.

13 We have seven groups to brief. Some
14 have more to say than others. We should be able
15 to sunset some of these we hope at the end of the
16 day.

17 I know the one I'm been working on,
18 Transitional Sharing with Tom Dombrowsky, should
19 be pretty finished notwithstanding some comments
20 that have come across.

21 So we're going to try to push ahead
22 and get some things done today and by next

1 meeting -- by March 13th which I think is a
2 Friday -- Friday the 13th in March -- we'll want
3 to have another scheduled for the upcoming ISART,
4 as Larry said -- or upcoming meeting of the ISART
5 -- CSMAC meeting at the ISART in May.

6 The date for that is on the back of
7 your agenda. For those who don't know, it's May
8 12th from 1:30 to 4:30.

9 So as far as future work is concerned,
10 we still want to entertain questions, new
11 subcommittee suggestions or additional questions
12 within some of the existing subcommittees so we
13 can have some discussion about that and hopefully
14 we can talk about that in the March time frame.
15 Anything more you want to say?

16 CO-CHAIR ALDER: I do want to say that
17 -- so what we're going to try to do today to
18 expedite as we go through the seven
19 subcommittees, we're going to give the
20 subcommittee co-chair kind of some uninterrupted
21 time to kind of make their presentation and once
22 the presentation is finished then we'll have some

1 time for questions and discussion.

2 So we'll kind of do it in modulars to
3 try and make it a little bit more efficient than
4 it was last time.

5 CO-CHAIR GIBSON: Great. Thanks,
6 Larry. Okay. So that's it for the comments.
7 What we'd like to do is then go around the room
8 and do the roll call. Is that right, Bruce -- do
9 the roll call? Okay.

10 Let's start with Kurt and we'll go
11 this way, obviously.

12 MEMBER SCHAUBACH: Kurt Schaubach,
13 Federated Wireless.

14 MEMBER KUBIK: Rob Kubik, Samsung.

15 MEMBER RATH: Charla Rath, Verizon.

16 MEMBER CALABRESE: Michael Calabrese,
17 New America.

18 MEMBER M. MCHENRY: Mark McHenry with
19 Shared Spectrum Company.

20 MEMBER DOMBROWSKY: Tom Dombrowsky,
21 Wiley Rein.

22 MEMBER REASER: Rick Reaser with

1 Raytheon. Just a couple housekeeping things.
2 The restrooms are just outside the door so you
3 should be able to find them very easily.

4 In case of a fire emergency, there are
5 stairways at the end of both hallways. The ones
6 down towards that direction -- those are to the
7 kitchen, so then go across the street in case of
8 an emergency. And welcome, everybody, to
9 Raytheon.

10 MS. ATKINS: Paige Atkins, NTIA.

11 CO-CHAIR ALDER: Larry Alder, Google.

12 CO-CHAIR GIBSON: Mark Gibson,
13 Comsearch.

14 ASST. SEC. STRICKLING: I'm Larry
15 Strickling.

16 MEMBER WARREN: Jennifer Warren,
17 Lockheed Martin.

18 MEMBER CHARTIER: Mike Chartier,
19 Intel.

20 MEMBER HATFIELD: Dale Hatfield. I
21 guess I'll say NTIA now and the University of
22 Colorado.

1 MEMBER ROBERSON: Dennis Roberson,
2 Illinois Institute of Technology.

3 MEMBER KOLODZY: Paul Kolodzy,
4 independent consultant.

5 MEMBER CROSBY: Mark Crosby,
6 Enterprise Wireless Alliance.

7 MEMBER POVELITES: Carl Povelites,
8 AT&T.

9 MEMBER FURCHTGOTT-ROTH: Harold
10 Furchtgott-Roth, Furchtgott-Roth Economics.

11 MEMBER FELD: Harold Feld, Public
12 Knowledge.

13 CO-CHAIR GIBSON: Great, and that's
14 everybody in the room. Could the CSMAC members
15 on the phone please ring in?

16 MEMBER OBUCHOWSKI: Hi. Janice
17 Obuchowski with apologies for not being there and
18 noting that Jennifer Warren may be doing our
19 report and has my proxy. Thank you.

20 CO-CHAIR GIBSON: Thanks, Janice.

21 MEMBER TRAMONT: Bryan Tramont from
22 Wilkinson with some more apologies, on the phone.

1 CO-CHAIR GIBSON: Hi, Bryan.

2 MEMBER REED: And this is Jeff Reed,
3 Virginia Tech snowed in here waiting for the
4 thunder snow to occur.

5 CO-CHAIR GIBSON: Who was that?

6 MEMBER DONOVAN: David Donovan with
7 the New York Broadcasters. Plane is cancelled.
8 Sled dogs all tied up in Albany.

9 CO-CHAIR GIBSON: You have our undying

10 --

11 MEMBER DONOVAN: And Jennifer has my
12 proxy and will be giving the report on Question
13 Two.

14 CO-CHAIR GIBSON: Jennifer's got the
15 power. Okay. Anybody else on the phone?

16 MEMBER G. MCHENRY: And this is Giulia
17 McHenry from the Brattle Group. I am on the way
18 to pick up my daughter who's stuck at daycare.
19 So I saw some of you and now I'm not there
20 anymore.

21 CO-CHAIR GIBSON: Wow. Okay. She was
22 here and then she wasn't. Okay. Anybody else on

1 the phone?

2 MEMBER G. MCHENRY: Sorry about that.

3 CO-CHAIR GIBSON: Marty, are you on
4 the call? And Pepper?

5 MEMBER G. MCHENRY: Sorry?

6 CO-CHAIR GIBSON: That's okay. We're
7 looking for Marty Cooper and Bob Pepper. Okay.
8 I think that's everybody.

9 One thing I'd like to just say again
10 on behalf of CSMAC thank you very much to Rick
11 Reaser and Raytheon for hosting the meeting and
12 the nice eats.

13 It's always nice to have food. I say
14 that because I like to eat. So thanks again very
15 much and thanks for the guidance and everything.

16 There's another visitor I'd like to
17 recognize is Matthew Hussey. Hey Matt, do you
18 have any comments or things you'd like to say?

19 MR. HUSSEY: Not at this time.

20 CO-CHAIR GIBSON: Not at this time.
21 Okay. Great. Any other visitors we should
22 recognize at this point? Very good. Okay. We

1 are moving on time.

2 The first thing then we -- now we're
3 into the reports. The first report is the
4 Industry and Government in Collaboration and I
5 believe that's Tom Dombrowsky.

6 MEMBER DOMBROWSKY: Yes.

7 CO-CHAIR GIBSON: Go, Tom.

8 MEMBER DOMBROWSKY: It's Government
9 and Industry Collaboration so you got to get that
10 order proper, too. Sorry. Everybody should have
11 the --

12 CO-CHAIR GIBSON: All right.
13 Correction. Government and Industry.

14 MEMBER DOMBROWSKY: -- slide deck that
15 we put together. It's just a few slides. I'm
16 going to spend, I hope, under five minutes going
17 through those slides to leave some time for
18 conversation.

19 If we turn to slide two, we've listed
20 the subcommittee members that were participating
21 in this group. In slide three, we go through the
22 questions that were presented to the

1 subcommittee. I'll go through each of those.

2 What type of spectrum issues do you
3 recommend NTIA prioritize for enhanced
4 collaboration to include those requiring
5 sensitive classified information exchange -- how
6 can we most effectively leverage existing or
7 emerging entities to include CSMAC, PPSG, NAS,
8 CTN and CIC -- to streamline efforts and minimize
9 the burden on participating organizations and,
10 finally, how would you modify the draft framework
11 to most efficiently and effectively achieve the
12 desired collaboration.

13 So if we move to slide four, what the
14 subcommittee spent most of its time on was
15 Question Three and we're actually fairly active.
16 I would say we had in the neighborhood of five to
17 six calls and discussions as well as some other
18 discussions with NTIA trying to get to the bottom
19 of how can we modify the framework that NTIA
20 provided to the subcommittee to meet both NTIA's
21 needs, the government's needs and commercial
22 industry's needs.

1 And we drafted a revised framework but
2 as we got further and further along in the path
3 we realized that there was a giant collision
4 between the requirements of FACA process and what
5 industry really would like to have.

6 So with that, and I'll talk through
7 the draft recommendations where we fell out on
8 that, we then went back to focus on all three of
9 the questions that were presented to the
10 subcommittee with the hopes of getting something
11 we could present here at this meeting to move
12 forward on.

13 So slide five, the first draft
14 recommendation is -- from the subcommittee is
15 NTIA, in collaboration with the FCC, should
16 initiate non-decision making discussions with
17 affected stakeholders on spectrum issues.

18 The first point is that the
19 subcommittee does believe the FCC should be a
20 participant in those discussions along with the
21 NTIA.

22 It should be a fact-finding dialogue

1 which is what we found we needed to have, rather
2 than a decision making dialogue in order to avoid
3 any issues associated with compliance with FACA.

4 And then we tried to broaden the
5 affected stakeholders group because the
6 subcommittee was very concerned that it was a
7 little too narrow. So expanding from the federal
8 government side as well as the industry side to
9 encompass as many stakeholders that could have
10 their interest in this collaboration effort.

11 So that's Recommendation Number One.
12 Onto slide six -- NTIA should seek to leverage
13 existing expert advisory groups to target
14 particular spectrum policy areas for further
15 study.

16 So the subcommittee thinks that CSMAC
17 and TAC and the other sort of FACAs that are out
18 there, including potentially PPSG, although
19 that's not a FACA, could play an important role
20 in sort of furthering these discussions.

21 They are already there. They are
22 already in place, and duplicating those efforts

1 didn't seem to be in the best interest of
2 anybody.

3 But we still have continued concerns
4 about how do we get to the classified security
5 information under these sort of auspices and as
6 you'll see when we get to the end that's sort of
7 our follow-on question of how are we going to
8 sort of address that to get to decision making
9 discussions where we still have classified
10 information that really would be beneficial for
11 everybody to understand.

12 So on to slide seven, which is our
13 final recommendation and it's a bit broad at
14 best, which is NTIA should prioritize on
15 identifying additional spectrum bands below 6
16 gigahertz for enhanced collaboration.

17 So in addition to the 3.5 and 5
18 gigahertz bands that we're already having some
19 collaboration efforts on, the thought of the
20 subcommittee was to continue that going forward,
21 and given the fact that we had the anti-collusion
22 period going on with the AWS-3 auction getting

1 into specifics was outside of the ability of the
2 subcommittee, at least on the industry side,
3 because no one was able to really discuss
4 particular spectrum bands at this point.

5 So which leads to slide eight and our
6 follow-on question. The thing that sort of fell
7 apart in our discussions where we tried to draft
8 revised framework was how can we get the
9 government and industry to effectively work in
10 small groups without having FACA compliance
11 issues come up and we really did not get to a
12 really final place there.

13 I think industry is very interested in
14 getting there but they also did not want to stand
15 in the way of actually having this collaboration
16 start.

17 So the first recommendation was let's
18 just at least start this process and maybe as a
19 follow-on question we can keep sort of
20 investigating ways to make the small-group
21 process work a little better than it did last
22 time.

1 I think there was some consensus that
2 the small groups that came out of CSMAC for 1755
3 to 1780 were successful but that there were
4 things that could be modified going forward, and
5 I'll give you an example.

6 When we say they were small groups we
7 had one working group that Jennifer and I were
8 involved in -- 180 people. To me, 180 people is
9 not a small group. I mean, maybe I have a bad
10 definition about small. But 180 seems --

11 MEMBER ROBERSON: Relative to the
12 population.

13 MEMBER DOMBROWSKY: Yes, to -- I mean,
14 depending on your statistics, right, we can prove
15 anything. But I think one of the things were if
16 we're going to have small groups let's see if
17 there's a way we can make them small while still
18 being inclusive enough to have all affected
19 stakeholders at the table.

20 How do we sort of make it very
21 comfortable for those federal agencies that have
22 security classified information comfortable in

1 that process that it's not an open phone.

2 It's not non-US citizens participating
3 and on the industry side making sure if there
4 does need to be non-US citizens how do we move
5 that forward.

6 So I don't think we got to final
7 resting place on that issue. So that's our
8 follow-on question, unfortunately. But I think
9 -- on the bright side I think we were very open
10 to the idea of moving forward with some
11 collaboration right away, at least a
12 recommendation to the full group, and if
13 everybody is okay with that maybe we can move
14 forward, at least closing that part out as -- at
15 that.

16 So with that, just a quick run-through
17 and happy to go through questions.

18 CO-CHAIR GIBSON: That was a very
19 quick run-through. Any questions for Tom?

20 CO-CHAIR ALDER: Again, raise your
21 things.

22 CO-CHAIR GIBSON: Raise your things,

1 yes. I mean -- comments or questions. Yes,
2 Michael Calabrese.

3 MEMBER CALABRESE: Yes, Michael
4 Calabrese. One quick question which is so, you
5 know, as Larry mentioned at the outset we used
6 the CSMAC for AWS-3 and then, you know, you
7 talked a lot about FACA concerns.

8 What are the FACA concerns that you
9 would want to get around that we didn't have --
10 that we didn't get around in the AWS-3 process?

11 MEMBER DOMBROWSKY: Yes, and I don't
12 think it's really a getting around issue. It's
13 really that what -- the way it ended up being
14 formed is the first thing I mentioned, which was
15 small groups are 180 people.

16 There was concern about from the DoD
17 side and those that have classified information,
18 you know, managing that process to some extent.
19 Plus, DoD didn't have a seat at the table, if you
20 will, in that process.

21 So there was concerns from their side
22 in terms of they'd like to be involved not just

1 sort of participating in the small groups than it
2 being handed off to somebody else to finally
3 resolve.

4 So it's -- the idea was trying to get
5 the small groups -- the thing that we really
6 looked at was the small groups could actually be
7 deliberative and reach decisions and then you
8 have all the agency stakeholders, all the
9 industry stakeholders sitting at a table reaching
10 some decisions and that's where the compliance
11 with the FACA came in.

12 So we really didn't find a way that we
13 could actually have that. So the thought was can
14 we adjust what we did last time so that it met
15 with what the DoD and the federal agencies needed
16 as well as the industry needed moving forward.

17 MEMBER CALABRESE: So the FACA at
18 CSMAC might be useful for, like, airing a lot of
19 concerns like your first recommendation. But if
20 the idea is to get to specific recommendations,
21 then something else may be needed?

22 MEMBER DOMBROWSKY: I would direct it

1 in a different way. So take a CSMAC initiating
2 the small groups, having those small discussions.
3 Then that would have to come back to CSMAC or
4 some other FACA-related organization before a
5 decision was made.

6 So the small groups couldn't be the
7 ones making the decision. And I'm not the lawyer
8 but that's what the lawyers tell me is the
9 requirement of the FACA process.

10 MEMBER CALABRESE: Right.

11 CO-CHAIR GIBSON: All right. Thanks,
12 Michael. We'll do Jennifer, Dennis, Harold, Rick
13 and then Larry. Jennifer?

14 MEMBER WARREN: Thank you. Jennifer
15 Warren.

16 First, I want to thank Tom for kind of
17 managing a process that I know was filled with
18 lots of different views and comments and a lot of
19 back and forth. So the patience was much
20 appreciated.

21 I have two comments. One, I think
22 that when we look at the FACA process and how it

1 worked for AWS-3 band, I mean, we were dealing
2 with the first-time novelty factor of that,
3 learning to understand who needed to be there,
4 who didn't, et cetera.

5 So I bet next time around it'll maybe
6 be only a hundred, smaller than the U.S.
7 delegation at WRC.

8 But the second point, more seriously,
9 is even with the first recommendation, the
10 difference between policy and band-specific
11 technical issues, to me, is a big difference in
12 what should be done in a small closed group and
13 this is a comment that I know I've made
14 previously.

15 And so I worry about general policy
16 issues or policy issues being done outside of a
17 FACA process or the normal engagements that one
18 has with the regulators and other government
19 agencies.

20 First is very technical band-specific
21 issues that require, you know, classified
22 information being exchanged. To me, that's very

1 ripe for that kind of discussion. I fear and
2 have concerns with blending those two in any
3 recommendation for small working groups that are
4 closed. Thank you.

5 CO-CHAIR GIBSON: Okay, Jennifer.

6 Dennis?

7 MEMBER ROBERSON: Dennis Roberson from
8 Illinois Institute of Technology.

9 My concern about the presentation --
10 I know this is -- this is really an enormous
11 challenge is that I didn't see the responses as
12 really working very well with the questions, and
13 I'll particularly highlight the second one which
14 is a how question -- how can we most effectively
15 leverage?

16 And it says the -- the answer
17 recommendation is that the FCC and the NTIA
18 should work together using the relevant groups
19 that are -- that are there --- the TAC and this
20 body.

21 But it doesn't really get at the how
22 -- how can we most effectively leverage? It just

1 says we should work with the two groups. I don't
2 know whether you have any further thoughts on the
3 how question.

4 MEMBER DOMBROWSKY: Well, I think we
5 do. I think what the issue was that we had spent
6 so much time on the framework that we got down to
7 the end here and was really trying to get
8 something that everybody could agree to quickly.

9 I think there are some ideas and I
10 sort of voice them here briefly -- orally, but we
11 need to sort of go back to the full subcommittee
12 and make sure all parties are sort of okay with
13 moving forward.

14 And what we really ran into as we did
15 do detail drill downs is when we started getting
16 off the path and not getting to consensus. So
17 that's why these are fairly high level at this
18 point, to be very honest.

19 MEMBER ROBERSON: Maybe as a follow-up
20 question the two bodies, since Dale and I both
21 sit on both of them and maybe there's others, but
22 I think we would definitely agree that it's a

1 good idea to have more synergy between the two
2 organizations and we have taken the step of
3 having representatives that are crossed now,
4 Matthew here and our ---

5 MEMBER DOMBROWSKY: Rangam.

6 MEMBER ROBERSON: Yes. No, we have
7 our --

8 MEMBER DOMBROWSKY: Rangam. Okay.

9 MEMBER ROBERSON: But Rangam is
10 sitting on the FCC TAC representing NTIA. So we
11 have made that cross coupling with Rangam and
12 Matthew but it seems like there's much more that
13 could be done and we have done some other joint
14 efforts on enforcement we've looked at this.

15 But I think in the how state -- that
16 leveraging that further seems like a really
17 significant opportunity.

18 MEMBER DOMBROWSKY: Yes, and I think
19 that's where the subcommittee was coming at this
20 as well is it seemed like there were sort of
21 parallel efforts going -- answering somewhat
22 different questions but enough overlap that it

1 made more sense to sort of -- and from the
2 industry perspective, you know, participating in
3 both of those efforts you look at it and go why
4 aren't these, you know, managed together a little
5 bit better and have one effort -- each equity
6 sort of embodied in the effort but having one
7 effort --

8 MEMBER ROBERSON: Yes, and I think --
9 I think there's sort of the -- there are areas
10 where there is absolute overlap and then there
11 are areas where there is not.

12 MEMBER DOMBROWSKY: Right.

13 MEMBER ROBERSON: But where the areas
14 -- identifying the areas where there is overlap
15 and then doing joint -- more joint activities I
16 think really is part of the how that maybe we can
17 explore further.

18 CO-CHAIR GIBSON: All right, Dennis.
19 Thanks.

20 MEMBER ROBERSON: Thank you.

21 CO-CHAIR GIBSON: I need to move us
22 along. Harold? And just, by the way, we've got

1 about six more minutes on the topic so --

2 MEMBER FELD: Two quick things. One
3 is if I could ask if you would accept a friendly
4 amendment to draft Recommendation Number One to
5 include consumer interests in the examples of
6 broadly representative of industry in the
7 affected stakeholder should include federal
8 agencies and should be broadly representative of
9 industry since consumers are equally stakeholders
10 in the spectrum management process.

11 I know there was an intent to leave
12 that out but just if that could be included I
13 think that would be helpful.

14 MEMBER ROBERSON: All of them except
15 public knowledge, you're suggesting?

16 MEMBER FELD: No. Oddly enough, there
17 are others besides public knowledge at OTI who
18 have an interest in these things as well. But my
19 other point is just sort of on a going forward
20 basis.

21 I'm curious if there was any
22 discussion of how to leverage existing FCC and

1 NTIA processes. I'm thinking specifically of
2 two. One, although it doesn't address the below
3 60 gigahertz, the open NOI with regard to the
4 upper frequency -- using utilization of the upper
5 frequency.

6 Is there an opportunity for these
7 joint workshops that would address some of the
8 FACA concerns but to have smaller groups managed
9 specifically in the context of an open FCC docket
10 on the issue?

11 And similarly, NTIA has an application
12 process for commercial sharing of federal
13 spectrum under its existing regulations, although
14 that's usually designated on an individualized
15 basis.

16 Is there some way to utilize that
17 docket if there seems to be or that process if
18 the desire is to have smaller group discussions
19 that would lead to more concrete decisions in a
20 way which would not necessarily trigger the
21 openness -- you know, the broader openness
22 concerns of the FACA that work against that kind

1 of smaller collaborative process.

2 MEMBER DOMBROWSKY: Yes, I don't think
3 we really talked it through on that level. I
4 think it was more that -- the discussion was
5 really about NTIA and FCC collaboration and
6 ensuring that they were talking to each other and
7 that we didn't have the FCC doing one thing and
8 NTIA doing another thing more so than how to move
9 forward and, frankly, again, the anti-collusion
10 period really stifled sort of more specifics.

11 I have to be honest and I had to read
12 the anti-collusion declaration and as a non-
13 lawyer I was bothered by that a little bit but it
14 was good to at least get that on the table. So I
15 think -- you know, I don't think that issue was
16 fully addressed under the subcommittee at this
17 point.

18 MEMBER FELD: So I would just --
19 because maybe one of the things to discuss for
20 the future as a subcommittee might be if either
21 CSMAC or the Wharton Group feels that there are
22 particular places where it would be useful for

1 the commission or NTIA to begin a separate
2 proceeding which would then allow them to screen
3 for those with security clearance or to otherwise
4 have some sort of consultation process which
5 would not necessarily be a full rulemaking but
6 which would allow the agencies to act outside the
7 restrictions of the FACA process. That might be
8 a useful thing to consider.

9 CO-CHAIR GIBSON: Okay. Thanks,
10 Harold. We're going to run out of time if we're
11 not careful so I got four people that want to
12 talk.

13 So I ask you to please make it brief.
14 Rick, you're next. And asking Rick to be brief
15 is going to --

16 MEMBER REASER: Rick Reaser with
17 Raytheon. I just have a few suggestions. There
18 -- you might consider if you haven't done so
19 already that there's people at the GSA that
20 really understand this FACA process.

21 I'm involved with another FACA and if
22 you laid out some things you want to do, talking

1 to them you might get some insight that -- if you
2 talk to the people who run the FACA process at
3 GSA.

4 Second thing, on this access to
5 classified information and that sort, I would
6 also recommend you talk to the ISU. We're going
7 to talk about that a little bit in our group.

8 But there are mechanisms to allow
9 private sector and contractor access to
10 classified, which are fairly well defined. I
11 spoke with the person who actually did this for
12 the previous system when the colonel came and
13 talked to him.

14 But I -- you might find that
15 instructive because there are -- there are things
16 that can be done, things that can't be done and
17 things that can't be done, you know, always can
18 be adjusted. So I would recommend talking to the
19 ISU and also to GSA.

20 CO-CHAIR GIBSON: My god, that was
21 less than a minute, Rick. Good job. Thank you.
22 Larry?

1 CO-CHAIR ALDER: Yes. This is good
2 work. I appreciate the effort that's gone in to
3 try and write the framework but then finding that
4 it was really difficult.

5 So I know that was a lot of work. My
6 question is really, and I should apologize for
7 not getting you this before the meeting, in
8 Recommendation One to me it's not clear actually
9 what you're recommending.

10 It goes to Janice's point where we're
11 recommending a group to work on spectrum issues.
12 So is this just a generic group or should this
13 group be focused on a particular spectrum issue?

14 As it's written here, it looks like
15 it's very generic and I think it might have
16 trouble engendering a lot of interest. It might
17 have trouble being overlapped with other things.
18 So I would encourage us to find a modifier on
19 that gives some specifics. That's --

20 MEMBER DOMBROWSKY: Yes. And, again,
21 I think the anti-collusion period sort of stopped
22 us from getting very specific. So --

1 CO-CHAIR ALDER: So then do you want
2 to try and get this approved today or is this
3 something you want to go back to the committee
4 and --

5 MEMBER DOMBROWSKY: Yes. I mean, I'm
6 happy to drill down more now that we've gotten
7 past that period. So that's nothing -- I'd defer
8 to the larger CSMAC on whether they think us
9 continuing down this path is useful or not.

10 CO-CHAIR GIBSON: Well, let's --

11 CO-CHAIR ALDER: I think it would be.

12 CO-CHAIR GIBSON: I would tend to
13 agree. Let's see what Mike says. Oh, by the
14 way, Larry meant Jennifer, not Janice. Mike,
15 please be brief. Be brief. If you can be as
16 brief as Rick I'll give you a cookie.

17 MEMBER CHARTIER: Briefer. To
18 associate with Harold's comment about the
19 millimeter wave band certainly below 60 gigahertz
20 is important and we should continue to look
21 there. But I think the 5 G bands are very
22 important also.

1 CO-CHAIR GIBSON: That was good. He
2 beat you. All right. Paige?

3 MS. ATKINS: Okay. Thank you very
4 much for the input. A couple of thoughts as you
5 further refine the recommendations.

6 I would encourage you to go back to
7 the original questions, in particular Question
8 Number One in terms of what are the topics that
9 we would have these forms address because I think
10 that's an important scene setter for how you
11 would address them.

12 I also -- in the first draft
13 recommendation -- I'm going to carry Larry's
14 thought a little bit further -- in terms of in
15 our thought process we had a multi-tiered layered
16 approach which included an information exchange
17 similar to your draft Recommendation Number One.
18 But, again, how would you do that?

19 For instance, would you leverage the
20 industry association's CTIA or others to pull in
21 industry as part of that framework to make it a
22 little easier for us to gather that input and

1 have that dialogue?

2 So I ask you to think about the
3 mechanics of what it might look like to make it
4 more efficient and effective. I would also
5 clarify on your draft Recommendation Number Two
6 that though CSMAC and the TAC offer
7 recommendations and make decisions on what
8 recommendations go for, they don't truly -- they
9 are not truly decision making bodies in that
10 regard. So that's providing recommendations back
11 to us to make the final decision so that's a
12 nuance.

13 And I agree that if we could better
14 define how to leverage the bodies -- the existing
15 bodies -- that would be helpful. And the last I
16 would echo that as we look at the items that we
17 would want to address, thinking about the policy
18 versus very detailed technical problems that
19 we're trying to solve is a good distinction as we
20 determine what processes we might use to address
21 them. But thank you very much for the feedback.

22 CO-CHAIR GIBSON: All right. Thanks,

1 Paige.

2 So what I'm hearing is you're probably
3 not ready for a vote on this yet. There's a
4 little more work that needs to be done.

5 So for the March meeting it would be
6 good, and you would probably will be able to do
7 this between now and then, to focus on what we'll
8 be doing for brief -- the March call, the co-
9 chair call. And then -- it's March 13th, Friday.
10 Okay. So that's it for Government and Industry
11 Collaboration. Larry on Spectrum Management via
12 Databases. This is Larry Alder.

13 CO-CHAIR ALDER: Yes. So I'm going to
14 present the work of the Subcommittee on Spectrum
15 Management via Databases.

16 A number of people were contributing
17 -- Michael Calabrese, Mike Chartier, Tom
18 Dombrowsky, Mark Gibson, Mark McHenry, Janice
19 Obuchowski, Rick Reaser and Jeff Reed were
20 contributing to this.

21 Last time we came to this committee we
22 essentially had three recommendations and

1 Recommendations One and Two are largely
2 unchanged. I'll review them here really briefly
3 just so that -- just for completeness.

4 So the question that was put before
5 the committee is how can sensitive and government
6 classified operations be included and protected
7 using a database-driven sharing approach,
8 particularly one that strives towards real-time
9 responses.

10 So Recommendation One, in a nutshell,
11 was that we should start sharing now using
12 information that's not sensitive. So we kind of
13 -- you know, the committee has looked at this
14 question and said this shouldn't be a barrier to
15 getting started.

16 There's enough nonsensitive
17 information that can make some level of sharing
18 practical that we should begin now. So there's a
19 number of sub recommendations in there such as
20 the NCA should leverage characteristics of
21 federal systems that are sufficient to permit
22 sharing while not compromising the sensitive

1 characteristics.

2 The NTIA should work band by band and
3 not seek to find a global solution. The NTIA
4 should implement the SAS in the 3.5 gigahertz
5 band promptly -- we suggested 36 months -- and
6 the NTIA should go ahead and monitor the research
7 that's being carried out in other groups. So
8 that's Recommendation One really in a nutshell.
9 Get started now -- don't let the sensitive and
10 classified information be a barrier.

11 There's an acknowledgment that you
12 won't be optimally efficient under that. If you
13 want to be more optimally efficient that gets to
14 Recommendation Two, which is the NTIA should
15 begin a path towards implementing a federal SAS
16 or black box technique to address federal data
17 sharing concerns as a parallel track to starting
18 now but it should not be a constraint to getting
19 started with sharing now.

20 So the idea with the federal SAS or
21 the black box, this is a type of system where
22 requests are made to the system. The internals

1 of it aren't necessarily known by the requester
2 but an answer comes back and this is something
3 that's been used in the 70 to 90 gigahertz
4 although it's not been real time in that. It's
5 been more over a period of days you get an
6 answer.

7 Another subset of black box is data
8 obfuscation. This is where you kind of blur
9 things and get varying answers so you can obscure
10 what's going on and not reverse engineer if there
11 is sensitive information. So that's another
12 thing that the NTIA -- we think another tool that
13 they should look at.

14 The NTIA should monitor the
15 development of the commercial SAS in the 3.5
16 gigahertz again, and then we kind of listed some
17 pros and cons to these black box and obfuscation
18 techniques.

19 Obviously, there's a number of pros
20 and it protects the sensitive information and it
21 promotes sharing and it increases efficiency.
22 But the con is really the lack of transparency.

1 So the conclusion is we think these
2 are good. They should be investigated but
3 they're not a panacea. They're not something
4 that we should use in all cases.

5 So Recommendation Three is where we
6 ran into trouble at the last gathering of the
7 full CSMAC. So Recommendation Three -- let me
8 give the background first.

9 So I think what we've seen here is the
10 issue of data classification has really been
11 identified as one of the most significant
12 barriers to spectrum sharing.

13 You know, obviously proper
14 classification is important to national security
15 and it's critical across the board. We
16 definitely see there's a lot of designations
17 beyond classified, things like for office use --
18 for Official Use Only, unclassified special
19 handling, Controlled Unclassified Information.

20 Documents are easily marked by that
21 and there's a perception, and I'm not going to
22 say whether it's true or not, that that's perhaps

1 overused and has become a barrier.

2 We thought that the NTIA has a unique
3 role in this because the NTIA -- while the NTIA
4 is responsible for enforcement of spectrum
5 management and data classification, it is also
6 responsible to ensure spectrum is used
7 efficiently.

8 And we think because of that NTIA is
9 in a unique position to facilitate spectrum
10 sharing and be an advocate for the appropriate
11 and non-excessive classification of information.
12 So that's the background. That's the motivation
13 here.

14 Number one, we just feel that this is
15 the -- one of the most important issues in
16 efficient spectrum sharing, and two, we feel like
17 the NTIA is uniquely positioned to help
18 facilitate a dialogue.

19 So with that, we recommended that the
20 NTIA should establish itself as an intermediary
21 between industry and federal government to
22 facilitate dialogue and if necessary seek

1 authority to ensure data is not over classified
2 and not a barrier to spectrum sharing.

3 And then under that broad
4 recommendation there was a couple of specifics,
5 and I'll read them here and Rick Reaser was
6 really very helpful in generating these so a lot
7 of the detailed questions might need to go to
8 him.

9 First, we said the NTIA should engage
10 in -- engage the Information and Security
11 Oversight Office of the National Archives and
12 Research Administration to help reconcile this
13 matter and potentially obtain additional
14 authority if necessary, possibly under these
15 statutes and regulations that are listed there.

16 The NTIA should also take a formal
17 position on the state of data classification and
18 its impact on the ability to facilitate efficient
19 spectrum sharing and update that position
20 periodically.

21 The NTIA should study data
22 classification procedures to determine whether

1 these procedures should be revised in light of
2 new approaches to sharing such as the SAS and the
3 NTIA should engage the Committee on National
4 Security Systems -- CNSS -- for policy and
5 technical advice on developing spectrum access
6 systems that protect properly classified
7 information.

8 And then those were the basic
9 subrecommendations of this. So last time there
10 was some thought that the group wanted to come
11 back with recommendations that were within the
12 charter and the scope of the NTIA.

13 We didn't want to overstep the NTIA's
14 authority so there was definitely some thought
15 that went into that. We've tried to thread the
16 needle to have a fairly aggressive
17 recommendation, put some onus on the NTIA for
18 action. But with that, I think I'll throw it
19 open for discussion.

20 CO-CHAIR GIBSON: All right. Thanks,
21 Larry. We'll have about ten minutes of
22 discussion, if it takes that long. So any

1 comments or questions? Paul, you're the first
2 and then --

3 MEMBER KOLODZY: And Larry,
4 understanding where the technology is today this
5 is just fine. Asking a question as you move
6 forward into Big Data issues and Internet of
7 Things and being able to collect data across the
8 board, how does the committee, how does your
9 subgroup think about how that technology might
10 impact what you're thinking about doing here?

11 CO-CHAIR ALDER: I don't know if I can
12 rightly say that the committee had discussion on
13 that level of big data and so forth.

14 We were really more focused on the
15 kind of proceedings that were practical, things
16 like the 3.5 gigahertz, dealing with that type of
17 classified information. Yes.

18 CO-CHAIR GIBSON: But that's why the
19 first one needs to start now, or the second one
20 maybe.

21 CO-CHAIR ALDER: That's the first one.

22 CO-CHAIR GIBSON: First one, yes.

1 Dennis?

2 MEMBER ROBERSON: I guess I would just
3 like to follow up on Paul's comment and first
4 applaud the group in the effort here to try to
5 put the big spotlight on some of the security
6 issues, and particularly with you being the
7 speaker, Larry, and with your connection to
8 Google it's often said that Google knows more
9 about everybody than the federal government knows
10 about everybody.

11 And the point behind that is that
12 looking at all of these classifications which are
13 often applied to information that is readily
14 available using your search engine seems very
15 ludicrous.

16 So going at this in a way that we can
17 take the things that are generally available and
18 remove the stigma associated with something that
19 might be a boilerplate on a letter would be
20 enormously helpful. So just basically an
21 applause for what you're doing.

22 CO-CHAIR ALDER: Thank you, Dennis.

1 CO-CHAIR GIBSON: Thanks. Janice? I
2 mean Jennifer.

3 MEMBER WARREN: I've never been so
4 flattered.

5 CO-CHAIR GIBSON: We were talking
6 about Janice. So I wasn't sure if you were
7 representing yourself or her. So --

8 MEMBER WARREN: This is the greatest
9 compliment.

10 CO-CHAIR GIBSON: Okay. Good.

11 MEMBER WARREN: Let me just see --
12 Janice, are you on? Because I have a comment.

13 MEMBER OBUCHOWSKI: Yes, I am. But I
14 think, Jennifer, you better speak for me because
15 I --

16 MEMBER WARREN: Let me reflect. I
17 have my comments from Janice to reflect Janice.
18 So I am speaking for Janice and I probably will
19 associate myself with all of this.

20 In the context of this, I think this
21 goes back to maybe two CSMACs or last CSMAC.
22 There seems to be, again, this concept that NTIA

1 -- well, first, that data is classified relating
2 to spectrum because of spectrum.

3 It has nothing to do with spectrum as
4 a general matter. It has to do with the system,
5 the mission, et cetera. It's not classified
6 because a particular frequency is being used.

7 And therefore, NTIA, since it has
8 nothing to do with spectrum has absolutely,
9 excuse me, no authority over this. They're not
10 in a data classifier.

11 They have no original primary
12 responsibility and a number of these -- and I
13 would argue I'm not sure that the competency in
14 the sense of authority is there either. And so I
15 think these, we, think these recommendations are
16 concerning in terms they may -- they exceed
17 existing authority.

18 They seem to suggest that data
19 classification, putting aside whether you use the
20 term overused, excessive, et cetera, kind of
21 diminish the role.

22 The fact that something is available

1 on the Google search engine doesn't mean it's
2 confirmed as accurate, as we all know. Not
3 everything on the Internet is right. That's what
4 I've been told.

5 So I think there are a number of
6 things that I believe Janice, who participated in
7 this group, and I did not so this is coming to
8 me, you know, having read it just now, as a bit
9 of a concern in terms of scope.

10 And I certainly couldn't support --
11 and this is me specifically -- couldn't support
12 anything that says that NTIA should overturn in
13 essence primary data classification decisions or
14 seek authority to overturn primary data
15 classifications, which is if you read this
16 closely that's what it's suggesting and, again,
17 for this very simple reason that is not why data
18 is classified.

19 CO-CHAIR ALDER: Okay. So let me --
20 let me respond.

21 So first of all, I thank you for your
22 points. We worked on this very carefully so we

1 did not ask or assume that the NTIA would be a
2 data classification authority.

3 It's clear that they're not. And
4 there is no implication that they should become
5 one. So but the NTIA is involved, and we
6 consulted with a number of people on this, in
7 being an advocate.

8 When NTIA releases reports they go
9 through this process all the time of discussing
10 what information should be appropriately in these
11 various different markings, not so much the
12 classified.

13 It's the -- for official use only and
14 so forth. So we were pretty comfortable, and
15 other committee members can speak to, that we
16 were not asking the NTIA to be a data
17 classification authority.

18 That is not the intent of this. If
19 there is some language that needs to be clarified
20 I'd welcome those edits but that is not the
21 intent here.

22 CO-CHAIR GIBSON: Let me, like, get

1 Jennifer to continue the discussion. Then we'll
2 go to Dennis.

3 MEMBER WARREN: Trying to stick within
4 time frames.

5 CO-CHAIR GIBSON: Thank you.

6 MEMBER WARREN: I think the challenge
7 here is also a lot of the language, talking about
8 excessive use. If you want to -- you know,
9 appropriate might be something.

10 But I also want to say all of the
11 things that you just mentioned when you said
12 you're not talking about classified data, all
13 those other are classifications.

14 It's not just classified that's a
15 classifications -- FOUO, et cetera, those are all
16 classifications and there are reasons for them
17 and they're not because of spectrum.

18 So I don't have a challenge with the
19 NTIA making sure that the agencies have thought
20 through whether it makes sense to treat that
21 limited spectrum data in a different fashion than
22 the larger -- you know, larger.

1 But seeking changes in EOs that I
2 misunderstood perhaps to be authority focused for
3 NTIA, et cetera, just is a little confusing to me
4 then in light of what, Larry, how you portrayed
5 it. So thank you.

6 CO-CHAIR ALDER: So I'm interested in
7 trying to close this out so I'm going to push on
8 this. So I propose two edits and I'd like to
9 hear from Paige.

10 But in the recommendation itself if
11 necessary seek to ensure the data is not an undue
12 barrier to spectrum, remove the word over
13 classified and just say the data is not an undue
14 barrier to spectrum, and then also under the
15 background just strike the and not excessive. So
16 just say advocate for the appropriate
17 classification of information.

18 So those would be two proposed edits
19 that I would put forward to maybe address your
20 comments.

21 MEMBER WARREN: Could you restate
22 that, please?

1 CO-CHAIR ALDER: So under the main
2 bolded section where it currently says and if
3 necessary seek authority to ensure data is not
4 over classified and not a barrier to spectrum
5 sharing replace that with if necessary seek
6 authority to ensure data is not an undue barrier
7 to spectrum sharing.

8 MEMBER WARREN: Again, I don't
9 understand what authority you're suggesting NTIA
10 should seek that we give them the ability to over
11 -- to change classified data. I think there's a
12 challenge there that's not consistent with the
13 conversation we're having.

14 CO-CHAIR ALDER: Well, the first part
15 of the recommendation is to establish up as an
16 intermediary and facilitate dialogue, and if
17 necessary seek authority.

18 We're not specific on what the
19 authority is. But if that's not sufficient it
20 should -- this is the -- we think it's an
21 important enough issue that they should seek what
22 the authority is and I'm not an expert here.

1 I'd have to turn to the committee
2 members about what authority exists today and
3 what potential extensions are.

4 CO-CHAIR GIBSON: All right. Hold on.
5 Rick -- can Rick go or do you want to go, Dennis?

6 MEMBER REASER: I just want to answer
7 the question.

8 CO-CHAIR GIBSON: Okay.

9 MEMBER REASER: NTIA today actually
10 has existing authority to challenge
11 classification today under existing executive
12 order. There may be additional things like that
13 and that's why we suggest they go talk to the
14 experts about this to see what authorities they
15 do and don't have and sort of vet all that.

16 So I think that would be a useful
17 dialogue to have in that regard. NTIA does have
18 original classification authority today through
19 the Department of Commerce and then the Secretary
20 of Commerce as an OCA. There's a report
21 available on what classification decisions are
22 made.

1 NTIA actually does classify spectrum
2 information. There's a class guide that we're
3 trying to get a copy of through the NTIA rep that
4 basically aggregated data is classified at a
5 certain level.

6 So what I'm suggesting is we ought to
7 go talk to the experts, find out exactly what is
8 and what is not and go from there, and I think
9 that would be very useful set of conversations to
10 have with the ISU and with the CNSS and find out
11 exactly where this stuff stands.

12 We talk a lot -- we talk around in
13 circles about this and really you have to go talk
14 to the real experts. That's one of the
15 suggestions.

16 CO-CHAIR GIBSON: All right. Hang on.
17 Let - Dennis has been waiting patiently.

18 MEMBER ROBERSON: Yes. Just a very
19 quick -- really, amplification of my earlier
20 comments relative to what Jennifer/Janice put in
21 and so on.

22 I think the key here is to actually

1 strengthen this classification of things that
2 really belong under a classified umbrella because
3 right now, and I think this was the sense of what
4 you put forth, which I applauded earlier, there
5 are too many things that are included as
6 classification because it's convenient -- well,
7 maybe this is going to be sensitive so we'll put
8 a classification on top of it -- when they really
9 are not classified, and if we can move that and
10 seeking NTIA as an advocate to ensure that things
11 that are classified are indeed classified and
12 things that are not should not be classified are
13 not under that umbrella will strengthen the
14 classified information -- the protection of
15 classified information, and that's really
16 important.

17 CO-CHAIR GIBSON: And I think that
18 that's the gist of what the committee is
19 suggesting is not that the NTIA will unclassify
20 data that has been heretofore classified.

21 It is that they will try to match that
22 to the classification guidelines and ensure that

1 the classification is appropriate and if not go
2 back to the agency that did the classification.
3 That's what we were hoping. Paul? Are you done,
4 Dennis?

5 MEMBER ROBERSON: Yeah, I'm done.

6 CO-CHAIR GIBSON: All right. Paul?

7 MEMBER KOLODZY: I have a suggestion.

8 Maybe you might want to use to get around all
9 this is another edit to your edit, Larry, as a
10 suggestion is as when you say facilitating
11 dialogue and investigate the mechanisms to ensure
12 data is not an undue barrier for spectrum costs -
13 to spectrum sharing.

14 So we're all talking about
15 investigating going off and talking to folks and
16 whatever. Why don't just make it explicit? We
17 don't know what the mechanisms are.

18 We're going to go suggest that NTIA
19 investigate those mechanisms and come back and
20 say hey, this is the kind of way we can look at
21 this.

22 CO-CHAIR GIBSON: Thanks, Paul.

1 Jennifer?

2 MEMBER WARREN: As I've been reminded,
3 this is a deliberative body, not a rubber stamp.
4 So I hope you allow it for being that -

5 CO-CHAIR ALDER: No, this is good.

6 MEMBER WARREN: - and discussion. I
7 would just add I think Paul's comment was very
8 good and I think I could agree with that. I will
9 just simply say is not over - my one amendment is
10 not overly or not over classified would be just
11 is appropriately classified.

12 CO-CHAIR GIBSON: All right. Then
13 Paige.

14 MEMBER WARREN: Thank you.

15 CO-CHAIR ALDER: Just to say - so it
16 would read "and investigate mechanisms to ensure
17 data is appropriately classified and not a
18 barrier to spectrum sharing."

19 CO-CHAIR GIBSON: But data are. We're
20 not going there. All right. Thank you. Paige?

21 MS. ATKINS: Okay. Well, some of my
22 issues have been resolved so that's a good thing.

1 First of all, Recommendation One we fully agree
2 that's what we're doing today. So we're moving
3 forward in that regard.

4 Recommendation Two, I would - I would
5 challenge the way it's worded that you have
6 predetermined that a black box is absolutely
7 necessary and in terms of asking us to begin
8 implementation, and I'm not sure that we've made
9 that determination at this time. So it may be in
10 terms of investigating.

11 CO-CHAIR GIBSON: Okay.

12 MS. ATKINS: And then for the last
13 item I agree what's been said. I'm good with the
14 changes - the aggregate changes that have been
15 mentioned here.

16 I would say in terms of the details we
17 want to be very clear that the distinction
18 between classified in terms of confidential and
19 above versus a controlled unclassified
20 information because they're very different
21 entities and we need to ensure that NTIA is not
22 going to challenge a specific classification from

1 a program or agency when we do not have the
2 expertise or knowledge to do that.

3 But in terms of looking at aggregation
4 issues and things of that nature and
5 investigating and talking with the agencies and
6 others, I think is appropriate.

7 CO-CHAIR GIBSON: Okay. Thanks. So
8 with those changes, Larry, do you feel
9 comfortable moving forward with a vote on this?

10 CO-CHAIR ALDER: I would love to
11 accept a motion to do that.

12 CO-CHAIR GIBSON: All right. So is
13 there a motion to accept the recommendations as
14 amended? And I hope you all remember what the
15 amendments are. And Larry can read them back if
16 we need to. So any motion?

17 MEMBER KOLODZY: I'll motion.

18 CO-CHAIR GIBSON: Paul is motioning.
19 Any second? Mark is second. Any discussion?
20 All right. Call to question?

21 MEMBER CALABRESE: There's one
22 extraneous two on Page 3, the third word in.

1 CO-CHAIR GIBSON: Too many twos.

2 Okay.

3 MEMBER REASER: It says two two.

4 MEMBER CALABRESE: Two four.

5 CO-CHAIR ALDER: Get rid of the two.

6 MEMBER CALABRESE: Okay.

7 CO-CHAIR ALDER: But that's timing.

8 CO-CHAIR GIBSON: Okay . Thank you.

9 That's it? All right. All in - say again.

10 We'll call a - we'll call abstention. So all in

11 favor raise your hands and say aye.

12 (Chorus of ayes.)

13 All those opposed, by like sign.

14 Any abstentions? Dale Hatfield.

15 Thank you very much. Okay. So the next one then

16 is Federal Access to Non-Federal -

17 MALE PARTICIPANT: Any on the phone?

18 CO-CHAIR GIBSON: Say again. Any -

19 I'm sorry. On the phone any votes yea or nay?

20 (Chorus of ayes.)

21 Any nays?

22 Thank you for reminding me. Okay.

1 Good. Federal Access to Non-Federal Bands - I
2 think that's you, Jennifer.

3 MEMBER WARREN: And Janice.

4 CO-CHAIR GIBSON: And Janice. Change
5 your name to Janiceffer.

6 MEMBER WARREN: Thanks. Okay. So you
7 have before you for the third time maybe the Bi-
8 Directional Sharing working group report.

9 There are no major - there are really
10 no substantive changes but there are a lot of
11 clarifications that came through the fresh eyes
12 of new CSMAC members that came on when we - when
13 we were rechartered.

14 And so I think you'll find that this
15 document is clearer, stronger and perhaps a
16 little better organized than it was before. So
17 those who have read it a few times hopefully you
18 read it one more time.

19 But we - just to remind people I did
20 not redo the presentation from last time but I'll
21 just walk you through the main changes which are
22 when you - we have called out in each question

1 the recommendations most clear - more clearly,
2 labeled them as such.

3 We have clarified what temporary means
4 and cross referenced throughout the document so
5 that it is very clear that we are all - that we
6 are using the same definitions.

7 We have - I think those are really the
8 main changes. I mean, I'm happy to walk through
9 it substantively if folks want.

10 I think there were no changes even to
11 the annex which is the - was an agreement to
12 include the annex but there is not a consensus
13 and there never has been on how those - the use
14 of those three approaches in there about a joint
15 statement, modifications to NTIA or FCC rules
16 facilitate sharing or implementation of sharing
17 principles being put into open proceedings - how
18 those would apply to specific bands and
19 situations.

20 Those remain a very open issue but we
21 just teed it up. But again, the school consensus
22 on this as I recall, given the email discussion,

1 so at least from the committee - subcommittee
2 perspective we are comfortable here.

3 As before, we had not answered
4 Question Four as we felt that that was overly
5 broad and we couldn't - and we had kicked that
6 back to NTIA for further consideration in a time
7 in the future.

8 We have also cross referenced some of
9 the ongoing work in other committees with respect
10 to the Subcommittee on Measurement and
11 Quantification, how that might be cross
12 referenced and used when we're talking about
13 unused spectrum.

14 So we've done a lot more cross
15 referencing of the work in other groups and so it
16 ties together the CSMAC as a whole rather than
17 kind of a stand-alone piece.

18 CO-CHAIR GIBSON: Okay. Thanks. Just
19 a point of clarification, when you refer to the
20 annex what is the annex?

21 MEMBER WARREN: Sorry. The annex is
22 Pages 7 and 8.

1 CO-CHAIR GIBSON: Okay. That's what
2 I thought.

3 MEMBER WARREN: It's the - it's really
4 the carryover as you'll see there, while it notes
5 that this is not full consensus among all of the
6 subcommittee members.

7 CO-CHAIR GIBSON: Okay. So it's
8 everything after the conclusions?

9 MEMBER WARREN: Yes.

10 CO-CHAIR GIBSON: Okay. Cool. Thank
11 you.

12 MEMBER WARREN: Sorry about that.

13 CO-CHAIR GIBSON: All right. So Larry
14 - Larry Alder.

15 CO-CHAIR ALDER: So my question here
16 was this is like a really good - it has a lot of
17 information in it. I couldn't find necessarily
18 was there any, like, specific action that - or
19 recommendation? This was just a list of kind of
20 possibilities?

21 MEMBER WARREN: So we made specific
22 recommendations. For example, when we were asked

1 we recommended that NTIA review the manuals to
2 see how they could better facilitate sharing.

3 We suggested they work with the FCC in
4 both cases how to expand upon secondary market
5 access.

6 We recommended legislative or
7 regulatory options to be found to allow federal
8 users to obtain use rights that are coextensive
9 with the licensed users that they would be
10 expected to share with.

11 We also recommended that in the
12 context of Question Two that there not be - let
13 me read question two before - would federal users
14 be expected to pay for temporary spectrum access.

15 Again, keeping in mind the definition
16 of temporary, we made recommendations there under
17 the conditions under which no financial payments
18 - we tried our best to highlight the
19 recommendations for folks.

20 CO-CHAIR GIBSON: Okay. Thanks.

21 MEMBER WARREN: So yes, there were
22 recommendations.

1 CO-CHAIR GIBSON: Okay. Any other
2 comments?

3 MEMBER REASER: Yes.

4 CO-CHAIR GIBSON: Rick?

5 MEMBER REASER: Just a real quick one.

6 I hope we don't get ourselves, Jennifer, on the
7 infamous A-109 - or whatever committee - I hope
8 we don't get ourselves into trouble recommending,
9 you know, seeking legislative things like we did
10 last time and, you know, because that's one of
11 the things you're recommending is looking for
12 additional authority about changing laws to allow
13 for the sharing to happen so -

14 MEMBER WARREN: We suggested that NTIA
15 consider whether that's necessary.

16 MEMBER REASER: Understand. No, I
17 understand. That was what we suggested last
18 time. But just want to caution that.

19 CO-CHAIR GIBSON: All right. Thanks,
20 Rick. Any other comments? I have been
21 forgetting people on the phone. Anybody on the
22 phone have comments?

1 Okay. I had a question. On Section
2 Two or Number Two, whatever, where you refer to
3 NTIA should review its own manual do you mean the
4 red book or -

5 MEMBER WARREN: Yes.

6 CO-CHAIR GIBSON: Okay. Okay. That's
7 why it's capitalized, right? Okay. Thank you.
8 Paige?

9 MS. ATKINS: Okay. Thank you, and I
10 appreciate you underlining and highlighting the
11 actual recommendations because those are the
12 things that we'll really respond to. So I
13 appreciate that.

14 I'm wondering, for instance, for the
15 first recommendation around the manual did you
16 come up with some specific ideas on what may need
17 to be changed?

18 MEMBER WARREN: No. Jennifer Warren.
19 No. When you go back to what I referred to as
20 the annex, we noted that there were certain
21 provisions in the NTIA manual, for example, that
22 seemed to allow - it outlined certain

1 circumstances in which military services may
2 employ frequencies in non-federal bands.

3 But it wasn't clear that that extended
4 beyond military for - you know, what about non-
5 military federal agency uses.

6 So we didn't come up with specifics
7 drilled down to a different level. But we found
8 like that was an opening but we did not go
9 through the entire manual to look for where there
10 might be other openings like that.

11 MS. ATKINS: Okay. Just for future
12 reference for a question like this and a
13 recommendation like that, if you have specific
14 ideas I think that would be helpful as part of
15 the recommendation.

16 I also would like to summarize, based
17 on reading the paper, for the questions on would
18 federal users have to pay as well as would they
19 have access - let me see - would such access only
20 be available if the non-federal licensee does not
21 have an immediate short-term or long-term need,
22 how I read both of these compilation of

1 recommendations it sounds like as long as there
2 is no significant impact to the non-federal
3 incumbent then there would not be cost or
4 limitations on access.

5 But if there is any significant impact
6 to the incumbent there would either be costs or
7 perhaps no access. Is that a correct summary?

8 MEMBER WARREN: I don't think - and I
9 will open it up to the committee members but I
10 don't think we used the word significant. I
11 think impact was more because we differentiated
12 no impact and potential impact.

13 We didn't really get to the threshold
14 of significant impact. Significant impact, I
15 think, the carriers would say there would be a
16 requirement for payment.

17 But the potential impact that depended
18 on a number of different things whether a
19 secondary market arrangement was available or
20 other - you know, how temporary was temporary,
21 truly, et cetera - geography. If others would
22 like to comment.

1 MEMBER RATH: No, that - I just - this
2 is Charla Rath. I agree with what you were
3 saying, Jennifer.

4 CO-CHAIR GIBSON: Okay. Anymore,
5 Paige? Okay. We - do you want to vote on this?
6 I think we could vote on this. Yes, Janice?
7 Jennifer. Janiceffer. Any other comments?
8 Yeah, Harold.

9 MEMBER FURCHTGOTT-ROTH: Yes. Can I
10 get some clarification just on this last point
11 about the circumstances and terms and conditions
12 under which there would be use of licensed
13 spectrum by federal users, independent of whether
14 it's - the adjectives that were used before
15 about, you know, just how do you envision this
16 actually happening. If you'd just walk through
17 that I'd be grateful.

18 MEMBER WARREN: That's a different
19 question. I mean, there are a number of
20 different questions here, if you look at One, Two
21 and Three. The first question, which was what
22 methods - there was no single recommendation for

1 what methods.

2 One thing that was recommended was
3 that NTIA work with the FCC to actually expand
4 that federal users can do - participate in
5 secondary markets.

6 Others where there would be sharing
7 arrangements. Others were leases. There is a
8 number of different ways and then the last was
9 involuntary access for federal agencies to
10 incumbent spectrum - again, remembering that we
11 are talking about temporal.

12 There's a temporary aspect to this
13 which is very important and was a very
14 significant part of our discussion in the last
15 several meetings that we had was to make very
16 clear we're asking questions about temporary use.

17 This is not about consistent long-term
18 use at this point in time. In fact, we teed up
19 to NTIA that if they would like to look at what
20 would be something other than intermittent
21 temporary use as defined in this document that
22 that would require further work because we took a

1 small bite and the small bite was with that, I
2 think, very significant qualifier of temporary.

3 And when you look at the definition of
4 temporary I think you'll see it's not - that
5 doesn't leave much to the imagination.

6 CO-CHAIR GIBSON: Does that answer
7 your question, Harold?

8 MEMBER FURCHTGOTT-ROTH: Yes. Thank
9 you very much.

10 CO-CHAIR GIBSON: Okay. Any other
11 questions or comments? Okay. So is there a
12 motion to approve the recommendations as
13 presented?

14 MEMBER RATH: Charla Rath - I move.

15 CO-CHAIR GIBSON: Charla. Is there a
16 motion to second?

17 MALE PARTICIPANT: Second.

18 CO-CHAIR GIBSON: Okay, two seconds.
19 Any further discussion?

20 MS. ATKINS: Just to qualify - the
21 actual recommendations are what's underlying the
22 highlighted -

1 CO-CHAIR GIBSON: Yes, the - yeah.

2 MS. ATKINS: - and the other elements
3 are for additional consideration of content.

4 CO-CHAIR GIBSON: Okay. Thank you.
5 Okay. All those in favor vote by saying aye.

6 (Chorus of ayes.)

7 Any abstentions? Dale.

8 Thank you very much. Okay. I think
9 the - now Spectrum Occupancy Measurements. Is
10 that you, Mark? Okay. Good. Thank you. Let
11 her rip.

12 MEMBER M. MCHENRY: We were given two
13 questions and these were the same questions that
14 we presented at the last CSMAC meeting. In fact,
15 our charts today are almost exactly the same.

16 MEMBER REASER: Why don't you move
17 closer to the microphone?

18 MEMBER M. MCHENRY: Is that better?

19 MEMBER REASER: I think that's what
20 the echo is.

21 MEMBER M. MCHENRY: So I don't know
22 that we need to go through all these charts word

1 for word but the first question was how will they
2 use spectrum measurements to figure out what to
3 do next with the bands, to reallocate and so
4 forth.

5 CO-CHAIR GIBSON: Can you - not to
6 interrupt - can you just address any changes from
7 the last time that you want to highlight? Okay.

8 MEMBER M. MCHENRY: Yeah. What
9 happened is I took a lot of notes -

10 CO-CHAIR GIBSON: Okay.

11 MEMBER M. MCHENRY: - and we had one
12 telecon after the fact and I think we got -
13 Question Two that was the most -

14 CO-CHAIR GIBSON: Okay. All right.

15 MEMBER M. MCHENRY: I'll highlight
16 them as we go through them.

17 CO-CHAIR GIBSON: Go ahead. Thank
18 you.

19 MEMBER M. MCHENRY: So Question One
20 was how do you use measurements and usually most
21 of the discussion in the last CSMAC was
22 measurements aren't our panacea.

1 They have shortfalls and we've already
2 had a bunch of words in here in the response what
3 some of the shortfalls of measurements are, and
4 the one thing that we did add new is in the next
5 chart is a flow diagram of - on the different
6 levels of questions and measurements that would
7 support them.

8 So this flow diagram is all new but
9 really it takes the same ideas that were
10 discussed that were in the other parts of the
11 view graphs.

12 So the next chart just talks in words
13 what the level zero measurements are in level one
14 and so forth. So really nothing has changed.

15 In fact, we should have voted on it
16 the last time because I went through my notes and
17 there was no disagreements from when I - I went
18 through my notes.

19 CO-CHAIR GIBSON: Okay.

20 MEMBER M. MCHENRY: So the second
21 question is NTIA is already doing some analysis
22 in, I guess, how would measurements help their

1 analysis and then I think - I don't know who
2 brought it up.

3 Someone in NTIA said - and they called
4 out a certain footnote, a certain study they were
5 doing and we didn't know about that. So we went
6 back and looked it up.

7 This is this Fourth Interim Progress
8 Report. It's kind of the footnote on the bottom
9 answer. We looked that up and what NTIA wants to
10 do is send out questionnaires to people and ask
11 them more things that are in the frequency
12 assignment so they can do this type of
13 calculation so they can estimate occupancy.

14 So our recommendation really didn't
15 change at all - all the issues that we brought up
16 in the recommendation. You know, people make
17 mistakes when they give you the data or they
18 don't have the right data.

19 I mean, everything we said in the last
20 answer or the last recommendation is still the
21 same.

22 CO-CHAIR GIBSON: Okay.

1 MEMBER M. MCHENRY: So the next chart
2 is the subcommittee members. So then I turned in
3 some other view graphs. This is the end of the -

4 CO-CHAIR GIBSON: Let's hold off there
5 if we could -

6 MEMBER M. MCHENRY: Yeah, let's hold.

7 CO-CHAIR GIBSON: - and have any
8 comments and questions on the recommendations and
9 then we can talk about next questions. Any -
10 Jennifer?

11 MEMBER WARREN: I am speaking for
12 Janice and actually just Janice here. She had a
13 couple of questions, Mark, that I'm going to put
14 forward, if I could.

15 I think one of the questions was does
16 - it seems like NTIA is being put or being asked
17 to be put in the position of prejudging or
18 predicting what an agency's mission needs are
19 going to be without assessing kind of the - you
20 know, the existing acquisition, what's in the
21 pipeline - the acquisition pipeline as opposed to
22 just what might actually be there now and able to

1 be measured.

2 So I think her suggestion would be
3 that that's - perhaps there's a high risk to this
4 in using occupancy data to kind of extrapolate as
5 to what the real world environment would be when
6 and if it were to be shared. So I flagged that
7 and passed that -

8 MEMBER M. MCHENRY: That was mentioned
9 someplace, David and Mark. They would mark it up
10 and they would say next year the system will be
11 going in or out of production and they would
12 annotate the charts.

13 MEMBER WARREN: Perhaps we just need
14 to - perhaps it would help Janice if it were - I
15 think her point - if she - perhaps it would be
16 just easier if it were more clearly stated, from
17 what I understand.

18 I think that's the main point is just
19 that it seems to need to be - have more in there
20 about being able to be informed by what's
21 actually coming and not just a snapshot, and I
22 think your report definitely dealt with the

1 snapshot because of the multiple times that it
2 would be measured.

3 But it just needs to take into effect
4 or into account what's coming.

5 CO-CHAIR GIBSON: All right. And
6 you're good with that, Mark?

7 MEMBER M. MCHENRY: Well, there's - I
8 think it's already in there. There's a whole
9 section about -

10 CO-CHAIR GIBSON: Okay.

11 MEMBER M. MCHENRY: - you know, they
12 would mark it future systems are coming and so
13 the -

14 CO-CHAIR GIBSON: Okay.

15 MEMBER M. MCHENRY: - discard the -
16 not to discard - but you figure that in when you
17 look at the measurements. I think the intent is
18 in there.

19 MEMBER WARREN: I do too. I just
20 think that perhaps what we've learned is that
21 it's not explicit enough.

22 CO-CHAIR GIBSON: Okay. We need to -

1 okay. Paul?

2 MEMBER KOLODZY: Yeah, I've been able
3 to follow along with a little bit of that. If
4 you - Mark, if you look at some of the wording
5 you're having - being very explicit, for
6 instance, by saying the measurements should
7 determine the incumbent and/or in trying to
8 receive power level distribution function set at
9 a specific location. It's one of the variables
10 that is used in the development, not the only
11 variable that is used.

12 So I don't know how we just word that
13 just to make it like you should just use these
14 measurements and that's how you should determine
15 this value.

16 MEMBER M. MCHENRY: I agree with you.
17 The measurement is just one part of it.

18 MEMBER KOLODZY: Right. Exactly. I
19 mean, I don't mind the spirit. I just - the
20 wording needs to be just a little tightened.

21 MEMBER M. MCHENRY: Well, I'd like to
22 vote today. So what exactly, what word and

1 where?

2 MEMBER KOLODZY: Okay. Well, should
3 determine versus it should be one of the
4 variables used to determine.

5 MEMBER M. MCHENRY: Where are you
6 reading from?

7 MEMBER KOLODZY: I'm reading your -
8 I'm reading Question Two, your draft response.

9 MEMBER M. MCHENRY: Two.

10 MEMBER KOLODZY: Next to the last
11 line.

12 MEMBER M. MCHENRY: Yeah. You should
13 put some weasel words in there. Yeah, it should
14 be part of the - your intent wasn't to be that -

15 MEMBER KOLODZY: I know it wasn't. I
16 just was trying to clean up the language to make
17 sure.

18 CO-CHAIR GIBSON: You are good with
19 that, Mark?

20 MEMBER M. MCHENRY: Yeah.

21 CO-CHAIR GIBSON: Okay.

22 MALE PARTICIPANT: What's the other?

1 MEMBER M. MCHENRY: He didn't say
2 what.

3 CO-CHAIR GIBSON: Say again. He wants
4 to segue? Is that what he -

5 MEMBER M. MCHENRY: He didn't - he
6 didn't suggest something specific.

7 MEMBER KOLODZY: Yes, I did.

8 MEMBER M. MCHENRY: What was - what
9 was the edit suggestion?

10 MEMBER KOLODZY: I said - yeah, should
11 be one variable in determining -

12 MEMBER M. MCHENRY: Yeah, that's a
13 good edit.

14 MEMBER KOLODZY: Or one element or one
15 -

16 CO-CHAIR GIBSON: Okay. Thanks, Paul.
17 Any other comments and questions on this one? On
18 any of this with measurements? Okay. Paige?

19 MS. ATKINS: I appreciate the work on
20 this one. I honestly had a bit of a hard time
21 extracting the key recommendation out of the
22 written response.

1 It seems like you have several things
2 embedded. To me, the key recommendation is the
3 tiered approach for measurement coupled with some
4 other assessment or analysis for additional
5 systems that aren't out there yet. But this -
6 you've got this tiered approach.

7 You've got some mention of
8 releasability of data, some mention of the need
9 to not rely on measurements alone. So it's just
10 not clear to me explicitly what the key
11 recommendation is. So it would be nice to be
12 able to crisp that up.

13 CO-CHAIR GIBSON: Okay.

14 MS. ATKINS: And the releaseability of
15 information I'm not sure exactly where you were
16 going with that from a recommendation standpoint.

17 I also am still somewhat hazy on the
18 second recommendation in terms of with or without
19 these measurements - how do we quantify the
20 spectrum use for federal systems.

21 Could you walk me through the
22 validation of the models in a - as a method for

1 quantifying federal spectrum use?

2 MEMBER M. MCHENRY: Well, the models
3 will be able to predict - at this point we
4 predict this occupancy. We go measure the
5 occupancy. I think you're going to do some
6 selective point checks.

7 I mean, you pick ten places in the
8 country or 20 and you would use your model for
9 making your decision but you would spot check the
10 model with the measurements.

11 MS. ATKINS: So the model will tell us
12 where federal systems are, how often they're
13 being used, what they're - what they look like?

14 MEMBER M. MCHENRY: Well, your -
15 that's your reports - that you talk about how to
16 do that. You were going to send out this
17 additional questionnaire and get trends of duty
18 cycle -

19 MS. ATKINS: The quantification
20 assessment?

21 MEMBER M. MCHENRY: - and where you
22 were going to get them. Ask enough questions so

1 you could actually predict spectrum use.

2 That's what the NTIA report said that
3 you were going to do. So from that day you
4 should be able to predict the spectrum and it
5 would be calculation.

6 MS. ATKINS: The tie to the current
7 quantification assessment didn't seem to come out
8 in this discussion. It just talked about
9 propagation measurements and other things to
10 validate models.

11 So I'm just trying to get an explicit
12 tie back to the ability to use that information
13 for characterizing and quantifying spectrum use.
14 And I just may be missing it. It may be very
15 clear to everybody else. So I am just asking the
16 question.

17 CO-CHAIR GIBSON: Okay. Thanks. Do
18 you have anything more?

19 MS. ATKINS: No.

20 CO-CHAIR GIBSON: Is that you, Paul?
21 Your tent?

22 MEMBER M. MCHENRY: I'm sorry. No.

1 CO-CHAIR GIBSON: Okay. Yeah, please
2 put them down after you've spoken. Okay. So
3 what do we feel about a vote on this? Is this -
4 let me ask for a motion. Can we have a motion to
5 vote on this?

6 CO-CHAIR ALDER: It sounded to me like
7 -

8 CO-CHAIR GIBSON: It seems like it is
9 a little too vague, Mark. I think you're going
10 to have to refine it a little bit. I think you
11 got clear direction on what needs to -

12 MEMBER M. MCHENRY: Mine's okay. Is
13 Question Two is vague or -

14 MS. ATKINS: Question One has a lot of
15 different elements in it and it's not really
16 clear what the key recommendation is out of it
17 other than this tiered model. Again, to me it's
18 a tiered model coupled with analysis or projected
19 systems.

20 MEMBER M. MCHENRY: You could
21 recommend that they can't make them using this -
22 this idea. What else - that's the next step is

1 who's going to - are you going to make the
2 measurements - who's going to do it.

3 CO-CHAIR GIBSON: For me, just one
4 concern I've got is that all we have is just the
5 view graphs and so there's - I think there needs
6 to be a little bit more substantiation for this
7 is some of what I'm hearing because I think Paige
8 is struggling with some of what the direction is
9 for NTIA and whatnot.

10 Is that a safe statement? Yes. Were
11 you going to say something, Larry?

12 CO-CHAIR ALDER: I was just going to
13 say what I'm hearing is that and reading the
14 sentences that start with the NTIA should or we
15 recommend.

16 CO-CHAIR GIBSON: Yeah.

17 CO-CHAIR ALDER: It's putting it in
18 that format. It feels like - and my read is
19 there's a lot of really good content here about
20 what should be done. It's just, I think, putting
21 it in a format where they can separate the
22 background from what the recommendation is.

1 CO-CHAIR GIBSON: So most of the
2 committee members are here so I should think you
3 should be able to take the feedback here and
4 craft this into a little bit more crisp
5 recommendation.

6 So let's move on to the question. The
7 next question is - do we want to go to the next
8 questions.

9 MEMBER M. MCHENRY: Well, I threw out
10 four possible questions for the subcommittee to
11 address. The first question is trying to use
12 dynamics, and I won't read the whole the question
13 but trying to - you know, there's a big tidal
14 wave of using database to make frequency
15 selection decisions in all these sharing schemes
16 and the use of sensing has kind of been put on
17 the wayside even though DFS, one of the first
18 approaches, was sensing based.

19 So this question is what are the
20 strengths and weaknesses of sensing - what are
21 the issues - what would you have to prove.

22 A lot of people say it's too hard.

1 But, again, it's the one approach that's approved
2 by now, which is DFS. So that's the first
3 question.

4 The second question is a lot of these
5 sharing schemes rely on, especially database
6 ones, on models that use a bunch of worst case
7 assumptions.

8 So there's a thing called ducting,
9 which creates huge increases in propagation
10 distances. If you don't have to have a
11 measurement, some way to dynamically estimate it,
12 you're going to be using these worst case numbers
13 all the time.

14 So the question is how would you
15 remove these uncertainties in the database
16 approach using some limited measurements.

17 (Dog barking in background.)

18 CO-CHAIR GIBSON: Dog doesn't get a
19 vote.

20 MEMBER M. MCHENRY: Doesn't like that
21 one, does he? The third kind of group of
22 questions is I sat there in that working group

1 two or one meeting and just huge arguments over
2 propagation models and you would think after all
3 the years there would be propagation models.

4 So I think the CSMAC could look at
5 what models are needed, what are the shortfalls
6 of the models and a lot of interference
7 calculations are very long-range calculations and
8 there's no need in the industry for those other
9 than interference. So I don't think there's many
10 models out there.

11 CO-CHAIR GIBSON: Yeah. I'm with you.

12 MEMBER M. MCHENRY: And it's a huge
13 issue on spectrum sharing. And then the
14 enforcement question - I noticed in the
15 enforcement group they talked about, you know,
16 how would you use measurements to enforce.

17 Right now, the FCC - if you called
18 them on the phone and nagged them they'll drive
19 and do something. There is no - there was talk
20 about putting a monitoring system up.

21 So I guess the question here is how
22 would you do enforcement or how would you do

1 measurements. Is it a fixed network?

2 Is it a partial network around some
3 people or is it just what we have now, which is
4 driving and go when you get a call. What's the
5 right way to - for the country to go?

6 CO-CHAIR GIBSON: Okay. Okay, great.
7 Thanks. Any comments on the questions? Any
8 questions on the questions? Anybody on the
9 phone, other than the dog? Okay. All right.
10 Thanks, Mark. Larry?

11 CO-CHAIR ALDER: Yeah, I just want to
12 again remind you what we're going to do with
13 these is collect the suggested questions. The
14 NTIA is doing some - also thinking on this topic
15 and then in March we'll come up with the next
16 questions for the groups.

17 CO-CHAIR GIBSON: Do you want to start
18 now.

19 CO-CHAIR ALDER: Yeah. So I guess
20 we'll - I have the unenviable task of chairing
21 the meeting for the enforcement section. They
22 want to bring in the heavy hitters here so where

1 is Mark? He's hiding over there. Mark, why
2 don't you take it away?

3 MEMBER M. MCHENRY: Yeah, but you
4 remember I worked very closely with my co-chair
5 Dale Hatfield. So if I misspeak, Dale, please
6 correct me.

7 Well, first, I want to thank the
8 members of the subcommittee - Audrey Allison,
9 Marty Cooper, Tom Dombrowsky with a Y - you're
10 welcome - David Donovan, Harold Feld, Dale
11 Hatfield, Paul Kolodzy, Mark McHenry, Janice
12 Obuchowski, Dennis Roberson, Mariam Sorond, Steve
13 Sharkey, Bryan Tramont and Jennifer Warren.

14 The answers to Questions One, Three,
15 Four and Five I believe were presented to the
16 full CSMAC last time we met. There's no
17 substantive or material changes to those
18 questions.

19 So but we did spend - oh, by the way,
20 the committee - subcommittee met I lost track how
21 many times and we even had one meeting with the
22 FCC's Enforcement Bureau, which was quite

1 informative at the FCC's offices, which helped in
2 our deliberations.

3 What is new is answers to Question Two
4 and that was David Donovan and Jennifer Warren.
5 David's on the phone but we have two slides and
6 Jennifer will be presenting that material. Thank
7 you.

8 MEMBER WARREN: Okay. So to just kind
9 of walk through this question, which is how would
10 negotiated coordination agreements or other
11 sharing arrangements be enforced and by whom, and
12 before I get into this I want to say that Dave
13 Donovan did an amazing job of researching and
14 really approaching this from a pure legal level
15 as well as a policy level.

16 So I want to give kudos to him and,
17 obviously, the committee. The subcommittee
18 worked very hard on this but he was the pen and a
19 lot of the brainpower behind this. So thank you,
20 David.

21 So we started off with looking and
22 accepting as a fact that the NTIA and FCC do have

1 jurisdictional limits in terms of the reach to
2 spectrum users, each to their own constituency,
3 if you like, and that there is more coordination
4 and more cross engagement that's needed in a
5 dynamic sharing environment.

6 So that led to a decision or a
7 recommendation that there should be a two-tiered
8 MOU approach and it's really governing - let me
9 step back.

10 There's an existing MOU between the
11 two agencies but that's really the allocation and
12 licensing side of things. It's not the post-
13 licensing.

14 It doesn't cover really the post-
15 licensing environment so the recommendation is
16 that there be this two-tiered MOU approach. The
17 first MOU would be between the - at the agency
18 level and it would provide a framework by which
19 and a set of tools, if you like, that the
20 agencies can draw from to actually enforce
21 sharing arrangements and we have given in this -
22 in the document and then in the charts the

1 enforcement processes that can and could be
2 followed.

3 So, one, setting out mutually
4 enforceable rights and rules so that both of the
5 agencies are approaching their users similarly.
6 The second is uniformity of enforcement
7 procedures.

8 The third is a possible arbitration
9 panel where the users would be able to
10 incorporate an arbitration as a preliminary step
11 in case of enforcement needs rather than having
12 to go to a regulator or to court. We'll come
13 back to that.

14 An interference shot clock process
15 that would establish a time frame for
16 interference reports to be resolved - to be
17 addressed and they would - the shot clock might
18 vary according to the type of interference that's
19 being and the impact of the interference that's
20 being received.

21 Temporary interference restraining
22 order - a TIRO I believe we're pronouncing it -

1 and just like what it sounds like - it would be a
2 temporary to - until the issue is understood how
3 to resolve for the long term.

4 And then similar but not identical
5 penalties for the different users and the reason
6 that it says similar is because the impacts
7 wouldn't be necessarily felt the same.

8 A financial penalty might not be felt
9 the same way by a government agency as by a
10 commercial entity and, you know, having to find a
11 tailored incentive or tailored penalty for the -
12 for the user that is the egregious party is what
13 we would be recommending that needed to be
14 developed.

15 The second tier would be an MOU
16 between the sharing users so between the federal
17 and non-federal users.

18 That's where there would - they would
19 be able to draw from the tools and the framework
20 agreement between NTIA and the FCC and that would
21 vary depending upon, again, who the users are,
22 the type of sharing and but it would need to be

1 consistent with the framework MOU.

2 There were some issues that we thought
3 needed further exploration but not necessarily by
4 the CSMAC but, rather, by legal counsels in
5 either contracting offices of federal agencies,
6 NTIA and the general counsel's office or even,
7 though I speak on my own behalf here, perhaps OMB
8 from the management side how to address some of
9 these other questions.

10 I'm going to skip to questions - the
11 issues two and three and come back to the first
12 one. Immunity questions - federal government
13 immunity for damages - how would that get
14 addressed if the contract is between the federal
15 and non-federal users, and then also some
16 questions about federal court jurisdiction which
17 may not be waiveable when damages exceed a
18 certain level.

19 You'd have to go to federal court -
20 how would that get addressed from a contractual
21 and we're talking about a contractual
22 relationship between the federal government and

1 commercial users, again, at a contractual
2 relationship commercial contract level.

3 The issue that we had down first is
4 sharing agreements or contracts with unlicensed
5 entities. How that would be implemented, who
6 would be responsible - that is a question that
7 needs further discussion or at least internal
8 discussion, I think, within the government
9 agencies.

10 It could be something that if of
11 interest that you sent back to the CSMAC but how
12 you would enforce it, whether it would be a - the
13 frequency manager that might be managing a
14 database or database manager that would have
15 responsibility.

16 There's all sorts of questions in
17 terms of legal authorities, and I'm going to ask
18 Dave if he'd like to comment on all the gaps that
19 I left in that presentation.

20 MEMBER DONOVAN: Jennifer, I think you
21 covered it quite well. I think that -

22 CO-CHAIR ALDER: Dave, speak up if you

1 can.

2 MEMBER DONOVAN: Is that - is that
3 better?

4 MEMBER WARREN: Yes.

5 MEMBER DONOVAN: Okay. I think the
6 question regarding unlicensed entities really is
7 that as we go forward with sharing, obviously,
8 depending on the sharing scenario you will have
9 different contractual arrangements.

10 But easier to do or at least when
11 you're looking at entities that one or two are
12 licensed when you get into either blanket
13 licensing or unlicensed the question of a sharing
14 agreement which was presupposed in the question
15 the issue of a sharing agreement may raise, you
16 know, issues of privity of contract.

17 If I'm a federal entity and I'm
18 sharing with an unlicensed entity and let's say
19 we're using a database approach, does the federal
20 entity negotiate and cut an arrangement with the
21 database administrator?

22 Does it apply to service providers

1 that are using that database? If you have
2 service providers that fall outside the scope of
3 the Federal Communications Commission do you
4 enter into a contract which by reason of contract
5 would allow them to be - to deal with the
6 enforcement issues?

7 It just creates another set of -
8 another level of detail which it's not -
9 certainly not impossible at all but I think, at
10 least, needs to be spelled out to the extent we
11 want to go forward with a contractual arrangement
12 in the context of federal sharing.

13 As for the immunity and enforcement
14 questions, obviously, there's government
15 contracts and you're liable under the contract.
16 There are other claims that could arise outside
17 of the contract under the Federal Tort Claims
18 Act.

19 Enforcement in federal court
20 jurisdiction raises some, I think, important
21 issues. Most claims against the federal
22 government can be brought in U.S. federal court,

1 particularly if you're looking for injunctive
2 relief. But if you're filing a contract claim I
3 think in the amount of \$10,000 or more you may be
4 in the U.S. federal court of claims.

5 So I think those are things that the
6 legal guys really need to dig out or dig into.

7 They may vary, depending on the
8 sharing arrangement, and I think what's most
9 important is the process that is used by the two
10 sharing entities, federal and non-federal users,
11 can be governed by the contract itself -
12 arbitration provisions and things of that nature.

13 I think in the end what we were trying
14 to do here is to create a toolbox that both the
15 FCC and NTIA would use that would provide some
16 transparency so that as sharing goes forward
17 folks will know what the enforcement landscape
18 will look like.

19 MEMBER WARREN: Thanks, Dave. I guess
20 the final take away would be that when we look at
21 this particularly at Tier One level, and it's not
22 just the FCC that would need to have the ability

1 to do the monitoring and engagements.

2 It's also NTIA. So the resources on
3 this side, and I'm not sure how deep the bench is
4 right now from the what we'll call the
5 enforcement side.

6 But that may need to be, going
7 forward, an environment of sharing with a tool
8 kit like this more prevalent and I think,
9 personally, I would suggest that enforcement is a
10 significant barrier to sharing as much as some of
11 the other issues that have been highlighted here.

12 Thank you.

13 CO-CHAIR ALDER: Mark, did you have
14 anything that you wanted to add and the rest of
15 this or should we open it up for discussion?

16 MEMBER CROSBY: I think we're waiting
17 to open it up for questions.

18 CO-CHAIR ALDER: All right. Paige,
19 did you want to jump -

20 MS. ATKINS: Last.

21 CO-CHAIR ALDER: You wanted to jump in
22 last. Okay. Who do we got for questions?

1 Harold?

2 MEMBER FELD: I do want to make one
3 clarifying point and then I'm going to put out
4 one suggestion because I'm not sure where else to
5 put it.

6 But one is there are certain issues
7 that were not within the scope of this report
8 that it's important I think to note that we're
9 not particularly, you know, with regard to things
10 like competition, policy, with regard to sharing
11 and other things that when we're talking about
12 these contractual approaches nothing in this
13 report, because it was outside the scope of the
14 report - the report was addressing only
15 interference enforcement - and I do feel I just
16 want to clarify that questions that might also be
17 raised with a contractual approach like, you
18 know, how would the FCC consider that with regard
19 to its spectrum screen and whether there might be
20 other limitations that are raised through a
21 contractual approach were simply outside the
22 scope of this enforcement committee.

1 So I do just want to note that there
2 might be other issues that fell outside of the
3 scope of this committee that might need to be
4 considered with regard to its recommendations.

5 The other point though which is
6 somewhat similar which is where I'd actually like
7 to recommend and I'm not sure where to do it but
8 I do want to at least suggest at this point a
9 potential working group that goes that is
10 referenced to some degree in the report with
11 regard to its final recommendation that privacy
12 concerns are of significance, particularly with
13 regard to access to the database, and privacy
14 concerns were raised by Paul Kolodzy earlier with
15 regard to a different recommendation - the
16 potential internet of things - and so I'm not
17 otherwise sure where to flag this but I would
18 suggest that a future working group, preferably
19 one not as a subcommittee of the enforcement
20 group but more of an overarching working group,
21 would be a question with regard to the privacy
22 issues that are potentially raised and to try to

1 spot these in advance for the benefit of the
2 NTIA.

3 CO-CHAIR ALDER: Thanks, Harold.
4 Paul?

5 MEMBER KOLODZY: Yeah. Jennifer, I
6 was wondering when I see the words or the letters
7 MOU, I have worked within the federal government
8 and on - inside the federal government and as a
9 consultant.

10 MOUs are generally just nice little
11 papers that go back and forth saying yeah, we
12 understand each other that you may do this and I
13 may do that.

14 It's usually an MOA, an agreement.
15 Now, I'm not a lawyer so I'm not going to say all
16 the contracts laws and all this stuff within the
17 federal government. But it's usually an MOA that
18 I've always used in that case.

19 These mean very different things
20 internalized in the sense of how they're actually
21 signed off, how they're actually accomplished,
22 what the teeth are, and I actually don't even

1 know how MOAs go across - I know how they work
2 within a department.

3 I don't know how they do across
4 departments and you're actually looking at an
5 independent agency having an agreement with an
6 executive branch and so I don't know. I'm not
7 the lawyer here.

8 There's enough, I think, in the room
9 that would probably take that case but I wonder
10 if anybody's investigated those particular issues
11 and nuances.

12 MEMBER DONOVAN: Paul, I think I - I
13 think I can address that.

14 MEMBER KOLODZY: Thanks, David.

15 MEMBER DONOVAN: It's my understanding
16 they're both - they're both contracts. They're
17 both agreements. Whether one is styled a
18 memorandum of understanding, which I believe
19 that's exactly what's styled right now between
20 NTIA and the FCC, and I know at least in looking
21 at - and again, we're at the early stages of this
22 - I know that there is a memorandum of

1 understanding that was signed in 2009 between the
2 Department of Defense and broadcasters regarding
3 sharing as well.

4 So I don't believe there's any
5 necessary legal significance between using the
6 word memorandum of understanding versus
7 memorandum of agreement.

8 We simply could use the word contract.
9 Those terms are used interchangeably.

10 CO-CHAIR ALDER: All right. Thanks,
11 David. Any other questions?

12 MEMBER REASER: I'll just say that
13 I've studied this a lot and I've signed a lot of
14 these things and there really is no difference
15 and we do interagency ones. Beau is back there
16 and Jeff. I could pull out the ones between NASA
17 and all these people on the Mojave Coordination
18 Group, which I just went to. That's a memorandum
19 of understanding. It's between, you know,
20 cabinet secretaries.

21 So I don't think it means any
22 difference. I thought it did a long time. It

1 turns out it didn't when I went -

2 MEMBER CROSBY: Add a footnote at the
3 bottom that MOU and MOA can - may be used for
4 purposes of the response interchangeably or
5 whatever you want to call it. I mean -

6 CO-CHAIR ALDER: Paige, you're up.

7 MS. ATKINS: Thank you. So
8 enforcement - this one is so complex and so
9 important yet it's really somewhat difficult to
10 go through the report and pull out all the
11 recommendations and in particular there is -- the
12 recommendations are so complex and have so many
13 different layers to them.

14 I'm going to ask a question in terms
15 of whether there's a way we could decompose and
16 perhaps decouple some of the embedded
17 recommendations so we can make better decisions
18 on how we move forward in terms of priorities and
19 time lines. Any response?

20 MEMBER WARREN: This is across all
21 five questions, not just Question Two.

22 MS. ATKINS: In my lush response this

1 is really across the entire set of questions.

2 MEMBER WARREN: Mark?

3 MEMBER CROSBY: I'm happy to take a
4 shot at condensing the responses. I know there's
5 a lot of detail in some of the responses.

6 I can take a shot but I'm going to
7 submit it to the principal authors to make sure
8 that they agree that I've condensed it properly
9 for purposes of their hard work, if that would be
10 okay.

11 MS. ATKINS: I think that's perfect,
12 and if there are particular elements that you can
13 break out and highlight in terms of priorities
14 and actions that NTIA could take in the nearer
15 term that would be helpful as well because this
16 is such a complex issue it's going to take time
17 to address all of the interrelated components.

18 CO-CHAIR ALDER: Understood.

19 MEMBER ROBERSON: It is to make sure
20 that there is clarity - this is Dennis Roberson,
21 Illinois Institute of Technology - what you're
22 really looking for is a bullet or spreadsheet

1 version of the document because there is a lot of
2 text which could be condensed out. I'm trying to
3 ease the job.

4 MS. ATKINS: Yeah. I'm looking for
5 something that I can take action on and right now
6 when I look at the complexity of the
7 recommendations I'm not sure I can take clear
8 action.

9 And so I'm looking for elements that
10 we can tackle nearer term that would be priority,
11 perhaps elements of an MOA, MOU, whatever that
12 document may look like or elements of some of the
13 components of the other recommendations. So -

14 MEMBER ROBERSON: So you're looking
15 for a short term, long term - or medium term,
16 long term?

17 MS. ATKINS: If there's an ability to
18 prioritize them in that way that would be helpful
19 and, again, if some of these - a lot of these are
20 bundled recommendations and there may be an
21 opportunity to break apart some of the elements
22 so we can get moving quicker than later. Does

1 that make sense?

2 MEMBER CROSBY: It does, and I'm just
3 sensitive to the pride of authorship, if you
4 will, of the principal authors of some of these
5 responses. I mean, they put a lot of time in
6 them and I - it's a risky venture.

7 It's a risky venture for me to try to
8 do some of these things to condense them and but
9 I'm happy to take a shot and we - I think all the
10 authors understand. I mean, Tom was one of the
11 four - Question Four.

12 MEMBER DOMBROWSKY: I was going to say
13 - Tom Dombrowsky -

14 MEMBER DONOVAN: This is David. I
15 think we can do that and it's certainly at the -
16 in describing the basic elements of a Tier - of
17 what an MOU should look like between the FCC and
18 the NTIA.

19 And we can look at the basic elements
20 for an agreement that would exist between a
21 federal and non-federal user with one caution.
22 Those agreements are really going to depend on

1 the - very much so on the sharing rule that is
2 adopted by the FCC or what have you.

3 So the basic provisions of those
4 contracts I assume would vary considerably.

5 CO-CHAIR ALDER: Hey, David?

6 MEMBER DONOVAN: Yes.

7 CO-CHAIR ALDER: I don't think we're
8 into the actual substance here. It's just the
9 actual distilling what it is.

10 MEMBER DONOVAN: Okay.

11 MS. ATKINS: Yeah, and this -

12 MEMBER DONOVAN: That can be done very
13 easily.

14 MS. ATKINS: And for Question Two, for
15 instance, the recommendation in my mind for
16 Question Two is a two-tiered MOU/MOA process with
17 the FCC, NTIA and those agencies where there are
18 constituents, for lack of a better description,
19 and then the background information is in there
20 that the components that you recommend are
21 included.

22 In some of the other recommendations

1 there are substantial pieces of recommendations
2 embedded in the broader recommendation and in
3 those cases they may be able to be decoupled in
4 some way that allows us to focus and prioritize
5 so we can take action.

6 MEMBER ROBERSON: And create a
7 checklist.

8 MEMBER DONOVAN: Okay.

9 MEMBER DOMBROWSKY: Yeah, I was just
10 going to say - this is Tom Dombrowsky - I was
11 going to say Mark, I'm happy to help, number one,
12 because I know you're - you've lost a co-chair
13 here so I'm happy to help there.

14 But I think, to Paige's question, what
15 I think, having read all this and one of the
16 authors of this, I think what - I think the
17 committee should do is try and put together a
18 bullet list of all the recommendations as a top
19 level document and we have a discussion among the
20 subcommittee to sort of prioritize which ones
21 are, you know, according to the committee by
22 consensus should be at the top because,

1 obviously, everybody will have a different view
2 as to what's most important.

3 But I think -- I think there's a way
4 to prioritize this in terms of highest priority
5 and then to the near-term, mid-term, long-term.
6 So it's a -- we'll make it a little more simpler
7 -- and it won't be a multi-tiered array, but
8 we'll see what we can do.

9 MS. ATKINS: And I do want to say the
10 work is phenomenal. I mean, this is such a tough
11 issue. So I really appreciate everything that
12 everybody has done including Dale and Alan, his
13 honorary hat. So it is terrific work. It's just
14 having the ability to better digest what we need
15 to do next.

16 MEMBER CROSBY: We'll do everything we
17 can.

18 CO-CHAIR ALDER: All right. So it
19 sounds like we have the action. I want to second
20 to what was just said by Paige. I thought the
21 work here, the materials here is just a
22 distillation and prioritization; it's really

1 great stuff.

2 All right. With that, Jennifer, did
3 you have a last comment?

4 MEMBER WARREN: I have comments that
5 I've been asked to provide on behalf of our
6 distant member. So you may call me Janice today.
7 I'm Janice now. Envision me blonde.

8 And in -- with response to Question
9 One and there's an underlying assumption that has
10 drawn some concern, that it seems perhaps
11 unintentionally but to create a limit around the
12 technology enhancement capabilities or rights of
13 the federal users, which would be at odds with
14 the pressure that is currently on federal
15 agencies to refresh and adopt more spectrally
16 efficient technologies.

17 So it seems like it could be a fairly
18 static approach and not allow for kind of
19 technology evolution, technology enhancement and
20 that that ought to be addressed in this.

21 In Question Three, there's -- since we
22 took these as bulk -- in Question Three there's a

1 concern that there's a lack of addressing
2 specific tools about enforcement claims against
3 mobile unregistered Part 15 devices that are hard
4 or impossible to trace.

5 Not everything may be in a SAS so how
6 do you -- how do you deal with the non-SAS
7 unlicensed devices? And then in Question Four,
8 and this one I particularly can identify with
9 from past CSMAC work, is it seems to be
10 suggesting a one-size-fits-all approach to
11 harmful interference and at least that's the
12 read, and so just as we acknowledged in prior
13 CSMAC that there's not one-size-fits-all to
14 efficiency and there's not one-size-fits-all to
15 harmful interference, and perhaps we could
16 acknowledge that.

17 And last but not least, Question Five
18 is a question about the -- perhaps some of the
19 assumptions underlining this.

20 I'm not sure that there's a proposal
21 here how to fix this but at least to document in
22 the minutes that there seems to be assumptions

1 that the spectrum managers will be doing a lot of
2 real-time monitoring that are the actual users --
3 the operational guys are going to be doing a lot
4 of real-time spectrum monitoring.

5 Unclear where funding for that would
6 come from, et cetera. So there's a lot of
7 assumptions about resources needed to support the
8 recommendations that are in here and we haven't,
9 like, dropped a footnote even on that, and so
10 that might be a suggested way forward too -- to
11 recognize that there are some challenges and lack
12 of funding issues to be addressed. Thank you,
13 for Janice.

14 MEMBER CROSBY: Will NTIA, if they
15 wish us to address those questions, say we need
16 an answer to those when we come back to you?

17 CO-CHAIR ALDER: Go ahead.

18 MEMBER CROSBY: Because those are --
19 those are -- those are important questions.

20 MS. ATKINS: Yeah. I think we'll
21 clarify. My gut reaction, especially with some
22 of the comments, you know, we are looking for,

1 again, actionable, practical recommendations and
2 understanding what those assumptions are into the
3 recommendations to -- for issues like funding,
4 real-time monitoring can be very expensive
5 depending on how you implement it, and if it's an
6 impractical recommendation that really doesn't
7 help us in terms of how we move forward.

8 MEMBER REASER: Let me ask a question
9 about this funding thing again -- Rick Reaser.

10 CO-CHAIR ALDER: Thirty seconds.

11 MEMBER REASER: Okay. Right now, the
12 operators actually do the -- we monitor it at our
13 company all the time, report interference, and it
14 isn't really not a funding issue.

15 We had somebody take one of our mobile
16 radios and FCC had to come in and confiscate the
17 guy. But the points on, like, radar we actually
18 monitor and report all that as just a matter of
19 course, and real-time spectrum monitoring is not
20 necessarily required for that.

21 If you wanted to go do something that
22 would be hugely expensive but right now we kind

1 of do that and report that ourselves anyway. So
2 if you want to do something beyond that then that
3 might cost money.

4 But right now when we get interfered
5 on the test we'll let somebody know and I have a
6 whole system set up and they're reported to me or
7 to the other spectrum managers in the - at
8 Raytheon. So --

9 CO-CHAIR ALDER: All right. Thanks,
10 Rick. I think we're going to close out this
11 session. So maybe you could forward those
12 comments to Mark. Mark will then work with the
13 subcommittee to distill these recommendations.

14 So with that, let's move forward to
15 the transitional sharing group, which I think
16 Mark Gibson is going to present.

17 CO-CHAIR GIBSON: Okay. Thanks,
18 Larry. I'm going to try to make this really
19 quick, and I'm actually going to be Janice here
20 as well because I have Janice's comments.

21 So there were -- there's nothing new
22 here that hasn't been submitted -- or not

1 submitted but discussed in front of this august
2 body many times.

3 This group came out of the former
4 CSMAC work a couple years ago that preceded the
5 AWS auction, and so what we wanted to try to do
6 was to kind of get this thing over the finish
7 line.

8 And so there's a report that I put
9 together that kind of memorialized the
10 recommendations.

11 I'll walk through the recommendations
12 real quickly and then I'll try to address some of
13 the concerns that Janice raised on the
14 recommendations.

15 She had some higher-level concerns
16 that I think were with respect to the questions
17 that if -- you know, if we need to get into them
18 I'm happy to but let me try and see if I can go
19 through the recommendations.

20 So the first recommendation was that
21 the NTIA develop a single portal to support
22 several requirements, primarily to support the

1 exchange of data, and in the recommendation there
2 is a sort of a framework of what the portal would
3 look like.

4 The idea is it would facilitate the
5 exchange of data. It would facilitate the
6 sharing of interference information kind of like
7 what is the current DoD -- or not the current,
8 the former and soon to be existing DoD portal
9 will do.

10 Janice's concerns along those lines
11 were how would it be paid for, and her concern
12 was more if this is going to be out of auction
13 moneys, how can NTIA stand this up?

14 What we understood, and I'll say this
15 I understood that at least in the spectrum SRF --
16 the Spectrum Resource Fund -- Relocation fund,
17 there was moneys that would be made available
18 pre-auction.

19 I'm not sure NTIA made themselves
20 available to those moneys, but they were moneys
21 that were supposed to be made available in the
22 AWS-3 auction pre-auction. So presumably those

1 moneys could be made available for this type of
2 effort. So I hope that addresses Janice's
3 concerns.

4 Nonetheless, you know, the committee
5 feels that there should be some work done on
6 doing this and we believe there was some at least
7 initial work done on that. But I'll leave that
8 for another time.

9 The second recommendation was involve
10 the commercial users in the definition and
11 requirements of the portal.

12 This is so that ultimately if the
13 commercial users or public interest users or non-
14 government users are going to be interfacing with
15 the portal it would be helpful to have their
16 interaction or their requirements before the
17 portal is developed so that it can mesh with
18 their business practices, their deployment
19 practices and what not, and it seems to make good
20 sense. There were no comments on that.

21 Third was to support a series of
22 coordination symposia. The idea behind this was

1 much like what was done in AWS-1. I think the
2 commercial carriers under CTIA took this on.

3 But the idea is that when we know that
4 an auction is imminent, before the auction is
5 actually happening so we're not in a quiet
6 period, to allow an open exchange of ideas and
7 processes on how the band could be shared through
8 coordination or whatever, and that's what the
9 Number Three is all about.

10 Four was to include trusted agents in
11 the early distribution of transition plans.
12 Janice's question was what does early mean.
13 That's a very good question.

14 I don't think we have an answer to
15 early. I think early means before they're put on
16 the - put on the NTIA's website or not.

17 The idea behind the recommendation is
18 that stakeholders in the auction, whomever they
19 may be, would want to get access to these to
20 perhaps interface with the -- with the agencies
21 before they're actually clamped down.

22 And finally, hold regular meetings

1 with commercial licenses and this is what
2 actually the Government and Industry
3 Collaboration Committee took over, and so that's
4 basically it.

5 So for the most part, the work of this
6 subcommittee had been overtaken by events. You
7 know, Janice's questions are well considered, but
8 she's asking more along the lines of: How would
9 some of this stuff be done?

10 I think those are good questions. But
11 like I said, some of this stuff had been OBE and
12 some of it really, because this has been going on
13 so long, there were some suggestions about
14 pulling this under NSTN and some other approaches
15 and, you know, those are all well and good but
16 that's kind of, you know, where we've left it.

17 So that's it for this -- for this
18 committee. We're kind of hesitant to do any more
19 work on it only because what's been done has been
20 done, and so I'll leave it at that.

21 CO-CHAIR ALDER: Questions? Jennifer.

22 CO-CHAIR GIBSON: Are you Jennifer or

1 --

2 MEMBER WARREN: I'm Jennifer. Thank
3 you for portraying Janice. I have a question on
4 Recommendation Three.

5 You indicated I think from maybe Three
6 and Five that that had been overtaken by the
7 Government and Industry Collaboration effort.

8 CO-CHAIR GIBSON: Three wasn't
9 overtaken.

10 MEMBER WARREN: Three was not? Okay.
11 So then --

12 CO-CHAIR GIBSON: Five is.

13 MEMBER WARREN: -- still a valid
14 question. So you talked about this in the
15 context of an auction is imminent and you'd bring
16 together the potential AWS licensees.

17 So the surface rules have been adopted
18 because it's actually a band that's been decided
19 for relocation or sharing or what have you. So
20 all of that is established. I didn't understand
21 --

22 CO-CHAIR GIBSON: That's a good

1 question. Actually, that was Janice's question
2 is are we putting the cart before the horse and
3 so we maybe needed to flesh that out a little
4 bit.

5 But the idea is to have the -- have
6 the engagement when service rules are there so in
7 that sort of finite period between the service
8 rules that happen and the auction is imminent or
9 the auction has happened. So clarify.

10 MEMBER WARREN: I -- just to follow
11 up, I think that would be very helpful because
12 when you say discuss sharing, relocation and
13 coordination I think it'll be helpful if we put
14 this all after service rules.

15 CO-CHAIR GIBSON: Okay.

16 MEMBER WARREN: So thank you very
17 much.

18 CO-CHAIR ALDER: So did you get the
19 edit on that?

20 CO-CHAIR GIBSON: I did, yes.

21 CO-CHAIR ALDER: What's the edit?

22 CO-CHAIR GIBSON: The edit is have it

1 happen after service rules.

2 CO-CHAIR ALDER: Okay. Other comments
3 besides -

4 MEMBER DOMBROWSKY: This is Tom
5 Dombrowsky. Just add after service rules and
6 prior to auction applications being filed.

7 CO-CHAIR GIBSON: Yeah. Yeah.

8 MEMBER DOMBROWSKY: So we have the --

9 CO-CHAIR GIBSON: So we are not
10 inclined to -- yeah.

11 MEMBER DOMBROWSKY: Specify here,
12 yeah.

13 CO-CHAIR ALDER: Other comments before
14 we get to Paige? All right, Paige.

15 MS. ATKINS: I actually promised Larry
16 and Mark that I wouldn't say something with every
17 topic but unfortunately -- so I think one thing
18 that would be good to clarify in this case the
19 original focus was on AWS-3. But in some cases
20 these recommendations could be applicable for
21 future auctions as well as ongoing AWS-3
22 requirements.

1 And so the things that are OBE may
2 still be applicable in some way to future, like a
3 single portal.

4 CO-CHAIR GIBSON: Okay.

5 MS. ATKINS: And there are many
6 elements that we move forward with. There is
7 pre-auction funds for some of the portal work.
8 We are going to instantiate some discussions --
9 regular discussions with industry. So many of
10 these things we will be taking action on.

11 CO-CHAIR GIBSON: Okay.

12 MS. ATKINS: I would also just say in
13 terms of any recommendation regarding trusted
14 agents in the early distribution of plans,
15 depending on when that is, you have to keep in
16 mind that it needs to be fair and equitable
17 across any potential bidder or all of the
18 licensees.

19 So we just need to be careful within
20 related recommendation. Thank you.

21 CO-CHAIR GIBSON: Thanks.

22 CO-CHAIR ALDER: Paige, in the

1 interest I know this group would like to close
2 out, is -- would you want us to edit any of
3 these? What would your recommendations to Mark
4 here today be?

5 MS. ATKINS: Yeah. I think in --

6 CO-CHAIR GIBSON: And Tom.

7 MS. ATKINS: -- in a large sense this
8 subcommittee is OBE in and of itself. So I
9 wouldn't spend too much time in modifying these,
10 perhaps taking elements that we may want to
11 address in the future and highlighting those for
12 future assessment.

13 But in terms of actually editing the
14 specific recommendations not sure that that is
15 fruitful at this point.

16 CO-CHAIR GIBSON: Okay.

17 MS. ATKINS: But that's just for the
18 committee to consider.

19 CO-CHAIR ALDER: Okay. Mark, one of
20 my suggestions might be to change Five to say,
21 you know, this work has been forwarded to the
22 collaboration subcommittee and then just see if

1 we can approve the other four and --

2 CO-CHAIR GIBSON: I'm down with that.
3 I mean, it's - there will be no more work on this
4 group. I can --

5 CO-CHAIR ALDER: That's the point.

6 CO-CHAIR GIBSON: Whether there's any
7 recommendations accepted this is sunset. So this
8 was like trying to put a -- well, nevermind.
9 Yeah.

10 CO-CHAIR ALDER: So for your
11 suggestion I'd say we take Five off and just say
12 --

13 CO-CHAIR GIBSON: Okay. We'll take
14 Five off.

15 CO-CHAIR ALDER: -- take Five off and
16 just note that it's the - it's being forwarded to
17 the collaboration subcommittee and then perhaps
18 there's a motion to adopt the previous four
19 recommendations.

20 Accepting a motion. Mark is moving.
21 Is there a second? Okay. A second from Robert.
22 All those in favor say aye.

1 (Chorus of ayes)

2 Abstentions, Dale.

3 CO-CHAIR GIBSON: Okay.

4 CO-CHAIR ALDER: All right. Thank
5 you.

6 CO-CHAIR GIBSON: Thank you.

7 MEMBER ROBERSON: We do need to just
8 make this last note, though, that Paige provided
9 that even though there's no more work that
10 somebody's going to write up the --

11 CO-CHAIR GIBSON: I got that. Yeah.
12 Thanks.

13 CO-CHAIR ALDER: Okay. So now we're
14 on to our last subcommittee, the Spectrum Sharing
15 Cost Recovery. Michael Calabrese, and Michael,
16 where are you? There you are. And we did leave
17 you a limited time since we knew you didn't have
18 a detailed report today.

19 MEMBER CALABRESE: Okay. Yeah, we may
20 actually come in under the time wire thanks to
21 that, and Charla Rath has worked with me by my
22 side to fill in as the other co-chair.

1 So this is the Spectrum Sharing Cost
2 Recovery Group and the NTIA question was: How
3 should federal agencies be resourced to develop
4 and implement sharing with non-auction licensees
5 or services such as unlicensed devices, since, of
6 course, many cases where you don't -- the band
7 does not fall under the Commercial Spectrum
8 Enhancement Act or the Spectrum Relocation Fund.

9 So we do not have recommendations yet.
10 We will for May. We are currently still in a
11 research and fact finding stage. The goal,
12 again, and this is probably implied by the
13 question, but our goal is to identify revenue
14 sources to reimburse agencies to facilitate
15 spectrum sharing and use by non-auction licensees
16 or services. So sources other than auction
17 revenue.

18 And our initial focus is: What's
19 possible within current law? You know, we'd love
20 to be able to find a way to satisfy some of this,
21 you know, without further legislative changes,
22 which were always a wild card in terms of how

1 long it might take.

2 And so our next step is to finish
3 initial research, first, into the underlying, you
4 know, laws that are kind of bounding us here.
5 One is Commercial Spectrum Enhancement Act, CSEA,
6 which was modified to some degree in 2012 in the
7 spectrum -- in the Incentive Option Act but not
8 sufficiently, and the Miscellaneous Receipts Act
9 is another that puts constraints.

10 Then there are also some potential
11 precedents and models that we've already, you
12 know, talked about and done some work on -- for
13 example, UTAM and the White Space Database fees
14 come to mind.

15 There are some others, and actually as
16 I say this I'm hoping that the full committee
17 will think about some other, you know, any
18 insights that you have in terms of examples,
19 precedents, not necessarily from even telecom.
20 There might even be other federal processes that
21 we can look at.

22 And then we're also in the process of

1 getting meetings set up with experts at -- you
2 know, within NTIA, OMB, FCC, DoD and other
3 outside experts on the current needs and
4 constraints and particularly legal authority
5 since that was one of the big questions is what
6 are really the outer limits of what can be done
7 here.

8 And as I said, we'll prepare -- our
9 goal is to have recommendations for the next
10 CSMAC, the May meeting, including possible tweaks
11 to CSEA itself, since we're not sure that we'll
12 find any golden eggs outside the legislative
13 process and if we -- and whether or not we do, we
14 may have some alternatives but it would also -
15 there may also be changes to CSEA itself that
16 would be, you know, worth considering next time
17 something -- a vehicle goes forward. I don't
18 know, Charla, if you have anything to add or --

19 MEMBER RATH: No, just that we
20 actually are in the process of setting up
21 meetings and, you know, again, I think it sounds
22 like a mantra here, but we did have some issues

1 related to, you know, the auction and not being
2 able to go forward with some of the meetings.

3 But I think we're -- I think we're
4 good, and we'll have a recommendation by the May
5 meeting.

6 CO-CHAIR ALDER: All right. We'll
7 throw it open to questions. Thanks, Michael.
8 Mark?

9 MEMBER CROSBY: Mark Crosby. Real
10 quick question, Michael. So during your
11 deliberations you're considering unlicensed
12 operations for sharing.

13 Are there other segments of wireless
14 users that you would also consider like, perhaps
15 -- I'll just throw this out here -- business
16 enterprises and public safety and type of things?

17 Is it -- I mean, could you deliberate
18 -- would it include those types of wireless
19 people that are your -- to access spectrum as
20 well?

21 MEMBER CALABRESE: Oh, it would
22 definitely. I mean, for one thing, anyone

1 including federal agencies can use unlicensed
2 spectrum.

3 So they're all potential users to the
4 extent -- so to the extent that there may be
5 something on the nature of -- on the order of
6 user fees, you know, it's why I mentioned, for
7 example, the TV White Space Database.

8 The commission authorized those
9 database providers to charge fees, for example,
10 which potentially could be paid by anyone. But
11 yeah, we're open to - I think we're wide open at
12 this point.

13 MEMBER CROSBY: Like lease fees
14 there's all kinds of alternatives.

15 MEMBER CALABRESE: Right. Right.

16 CO-CHAIR ALDER: All right. Thank
17 you. Dennis?

18 MEMBER ROBERSON: Dennis Roberson from
19 Illinois Institute of Technology. I would just
20 note that in the FCC TAC for the coming year
21 we'll be focusing on unlicensed spectrum as one
22 of the seven working groups that we're

1 undertaking on that side and part of the
2 background for that is that the use of unlicensed
3 is dramatically changing and we're all aware of
4 that.

5 Unlicensed spectrum used to be go to
6 Best Buy and procure a device and put it in your
7 home and away you go, whereas now things in the
8 unlicensed realm are becoming very highly managed
9 and are becoming quite commercialized.

10 So as the that change occurs, and it's
11 changing before our very eyes, that affords some
12 opportunity to look for other places wherein
13 revenues might be flowing in to companies and
14 therefore opportunities for the fees needed to
15 cover the spectrum transition could be something
16 that would be useful to consider.

17 So there may be some in light of the
18 first of our working group efforts. This might
19 be something where collaboration between the FCC
20 TAC and CSMAC might be beneficial.

21 MEMBER CALABRESE: That would be
22 terrific, and that's a very good point. It --

1 definitely is changing. I mean, I won't name
2 industries, but maybe most of them are moving
3 into it in a big way. And if we can take
4 advantage of that somehow to extend the virtuous
5 cycle, that would be great.

6 CO-CHAIR ALDER: All right. We'll
7 take the last two questions on this and then
8 we'll -- Mark and then --

9 CO-CHAIR GIBSON: And Harold. All
10 right. Thanks. It's good work. And, you know,
11 I had to -- I had to just chime in with UTAM and
12 White Space because we were involved with both of
13 them.

14 But they're very different and the one
15 difference with White Space that I recognize and
16 the commission has done this is it's got
17 regulatory oversight.

18 Now, they don't set the fees, but the
19 regulator gives themselves the facility to act as
20 the adult supervision or the traffic cop if the
21 fees are too much and that tends to be a little
22 bit -- well, it's something to think about.

1 It also is indicative of other models
2 where you have the regulator that specifies a
3 requirement and thereby, by virtue of that, has
4 fee oversight.

5 It's -- you're seeing it in the SAS
6 and 3.5 gig and in other areas and bands, WMTS
7 and even with some of the coordination that's
8 going on.

9 So that might -- it certainly is an
10 example. But I think from a commercial
11 perspective it's a little -- it might be somewhat
12 concerning.

13 The UTAM one, though, is very
14 interesting because -- and I know you all have
15 done a lot of work on that because I saw some
16 original work on that -- and because that's a per
17 device fee that was set by UTAM themselves with
18 feedback from all of the device manufacturers.

19 And so that allows -- seemingly allows
20 a little bit more market influence on the fees as
21 opposed to a regulatory influence and that's a
22 big -- I think a big bright line. So just

1 something to think about. Thanks.

2 CO-CHAIR ALDER: All right. Harold?

3 MEMBER FELD: I just did want to
4 inject a word of caution on that point that
5 Dennis made, particularly with regard to the fact
6 that things are changing but new uses are being
7 added.

8 It is not the case that we have any
9 fewer small providers who would find the payment
10 of fees difficult and that, you know, if this is
11 -- if there is going to be direction in this
12 area, I would just caution against two things.

13 One, I suspect that anything that
14 could in any way be characterized as a Wi-Fi tax
15 is not only a nonstarter but a bad thing to even
16 think about, and if there is some exploration --
17 given popular reaction, given the approaches to
18 this if there is going to be any sort of
19 consideration of that there needs to be very
20 careful consideration of not providing -- not
21 making this look like it is some kind of Wi-Fi
22 fee.

1 The other factor is that, obviously,
2 the whole thing about the Part 15 space is that
3 it is a very diverse ecology, and therefore
4 anything with regard to expansion of that space
5 needs to create the same level of opportunity not
6 simply for the larger companies that are now
7 recognizing the potential in the space but to the
8 traditional smaller providers as well.

9 CO-CHAIR ALDER: All right. Thank
10 you, Harold. All right.

11 MEMBER CALABRESE: Mention real quick
12 a response, just that that -- thanks, Harold.
13 That came up a little bit in our discussions and
14 just to add on is one thing that's probably
15 equally important is transaction costs because a
16 fee -- a user fee is one thing but then burdening
17 access with higher transaction costs or friction
18 than is necessary is something else we're going
19 to take into account.

20 CO-CHAIR ALDER: All right. So sounds
21 like lots of interesting discussion to
22 participate in the subcommittee on, and we'll

1 look forward to then something at the next
2 meeting.

3 So this is Paige's opportunity not to
4 comment on one of the -- one of the groups. I
5 want to thank everyone.

6 We managed to get through seven groups
7 in a reasonable amount of time so thanks,
8 everyone, for their productive reports and
9 comments. I think this was good session.

10 With that, we're going to turn it over
11 to Paige to actually give us the NTIA spectrum
12 update.

13 MS. ATKINS: Thank you, Larry.

14 Well, today we've moved toward closure
15 on many of our subcommittee recommendations. So
16 thank you very much for all of the hard work.

17 And I had mentioned this at the last
18 meeting but we not only depend on the collective
19 wisdom of this group to give us those practical
20 and actionable recommendations but also to make
21 sure that we're focused on the right questions to
22 begin with.

1 So at our next meeting I will not only
2 be providing some feedback on how NTIA will act
3 or not upon the recommendations we received, but
4 also we'll be focused on the next steps, the next
5 set of key questions that we want to prioritize
6 for the CSMAC to handle.

7 And our challenges to ensure that we
8 stay focused not only on the most challenging
9 problems but those that will yield the greatest
10 benefit with reasonable NTIA action, and I'm
11 going to ask for this next set of questions and
12 problems.

13 We're going to shoot for closing those
14 out at the end of the current members' terms,
15 which would be June 2016, which I think gives us
16 plenty of time to address the next set of
17 questions, and I know many of you will probably
18 be on subsequent appointments.

19 But we found that this last transition
20 it was better to close out if possible, and so
21 we're going to try to do that.

22 So as we think about next steps I'm

1 going to give you a relatively quick update on
2 some of the major activities since our last
3 meeting in October, and I'm going to start with a
4 biannual meeting that NTIA and FCC held shortly
5 after the AWS-3 auction commenced, and this is a
6 biannual meeting with Chairman Wheeler and
7 Assistant Secretary Strickling, and though the
8 details are not publically releasable, there was
9 a joint statement that was released after that
10 stressed the collaborative efforts to make the
11 AWS-3 spectrum available for auction and this was
12 after -- a week after the auction began, they
13 clarified that there seemed to be considerable
14 commercial interest in the auction, and I would
15 clarify that's cautious optimism.

16 We also discussed the continued
17 collaboration while protecting government
18 missions of making additional spectrum available,
19 particularly in the 3.5, 5 gigahertz bands and
20 also an emphasis on investigating continued
21 sharing between federal and non-federal users.

22 And the bottom line is that our

1 leadership and our organizations between NTIA and
2 FCC have a strong collaborative relationship. We
3 have aligned goals, and we're making a lot of
4 progress and continue to do so, and hopefully
5 you'll hear that as a common theme as I give you
6 this update.

7 Of course, during our last meeting,
8 you know, really none of us could have predicted
9 how it was going to end up and where we are
10 today, and I can't emphasize enough the positive
11 impact that early collaboration had between NTIA,
12 FCC, the agencies and industry and the
13 unprecedented level of information that was
14 available to the potential bidders. All of those
15 had, in my mind, a great positive impact to the
16 outcome.

17 We successfully applied lessons
18 learned from AWS-1 and we continue to learn
19 lessons. But I think we would all agree that we
20 have made tremendous progress over the last few
21 years.

22 And now we have shifted our focus at

1 NTIA to post-auction activities to ensure that
2 the transition is successful, working again
3 closely with FCC, OMB, the agencies and now once
4 again industry as we have emerged from the quiet
5 period.

6 And I can't stress enough that the
7 continued communication and collaboration will be
8 critical as we move into this next phase. We've
9 made significant progress through the
10 collaborative efforts.

11 Again, NTIA, DoD, FCC and industry
12 working the framework for 3.5 gigahertz to
13 include applying new analytical methods and tools
14 to reduce the exclusions from the fast track
15 report.

16 We expect collectively in RNO out from
17 FCC over the next several months and look forward
18 to moving forward and demonstrating these new
19 sharing approaches.

20 Also, these new statistically-based
21 methods will potentially pave the way for
22 improved sharing, not just in 3.5 gigahertz but

1 in other bands as well, and we think that is an
2 important step forward.

3 As I mentioned, during our last CSMAC
4 meeting, NTIA and ITS Boulder in particular has
5 deployed an initial spectrum monitoring pilot in
6 3.5 gigahertz and we'll be extending that pilot
7 by four sensors during this fiscal year.

8 ITS is also working with the federal
9 agencies to leverage existing government
10 locations and facilities to host these sensors
11 and potentially extend their coverage to other
12 bands, and in general finding installations to
13 host the sensors has been somewhat challenging,
14 particularly related to certain requirements at
15 3.5 to include, for instance, a 180-degree view
16 of the body of water that they are trying to
17 measure across and we welcome any inputs and
18 ideas for potential sensor sites.

19 However, it's ultimately all about the
20 data and ITS, in collaboration with NIST, is
21 developing a measured spectrum occupancy database
22 to make this sensor data available in the future

1 on a near real-time basis to support policy,
2 planning, engineering and potentially some time
3 in the future to support dynamic spectrum
4 coordination and enforcement functions.

5 But I must caveat saying we're really
6 in the early stages and we're still quantifying
7 the benefits of this kind of monitoring and we
8 look forward to integrating what we learn from
9 this activity with the recommendations from the
10 CSMAC as we move forward.

11 We also continue to examine the
12 potential of sharing at 5 gigahertz and I'll
13 qualify 5350 to 5470 and 5850 to 5925 megahertz
14 between federal systems and unlicensed devices,
15 particularly Unlicensed National Information
16 Infrastructure -- U-NII devices.

17 And we are once again working
18 collaboratively with the federal agencies, FCC
19 and industry, on the lower band to assess options
20 for potential U-NII implementation and co-
21 existence as well as supporting a U.S.-proposed
22 World Radio Conference 2019 item to tee that band

1 up for international acceptance for international
2 mobile telecommunications if the studies prove
3 out.

4 A U-NII 5 gigahertz test plan,
5 developed by NTIA, has been coordinated with
6 industry, and we are holding monthly federal and
7 industry meetings. And that really clearly
8 demonstrates the importance that both NTIA and
9 FCC have placed on this topic and trying to find
10 potential solutions for coexistence in sharing.

11 We expect the first step of our test
12 plan, which will be initial testing to baseline
13 current equipment, that that will be completed
14 around June 2015.

15 So we're moving forward. And also
16 earlier this month the House and Senate
17 reintroduced the Wi-Fi Innovation Act, further
18 emphasizing the continued bipartisan interest to
19 assess potential spectrum -- additional spectrum
20 for unlicensed services, and that's particular to
21 the upper 5 gigahertz band. So a lot going on.

22 And while we're busily working all of

1 these items domestically, we can't forget we're
2 in the full throes of the World Radio Conference
3 2015 activities, and I know some of you in this
4 room will be headed to CteL, our regional meeting
5 next week, as well as in the conference
6 preparatory meeting in a few weeks and then a
7 series of other activities as we get to the
8 conference in November of 2015.

9 Sometimes we get so focused on the
10 domestic spectrum issues that we forget about the
11 international implications and interdependencies.
12 But I know with this group that all of those
13 interdependencies are being folded into our
14 recommendations here. So I appreciate that.

15 Now, in our future world of spectrum
16 sharing, I believe our ultimate success will
17 hinge on building the confidence and trust not
18 only in the technology but also the policy, the
19 process and the people.

20 We are excited about the concept of a
21 model city and using that to demonstrate and
22 evaluate advanced spectrum sharing approaches and

1 technologies are very aligned with the PCAST
2 recommendation on an urban test city, and as you
3 know, which we mentioned at the last meeting, we
4 did published a joint public notice last year and
5 received 14 public responses as well as feedback
6 from several of the agencies.

7 Last month, NTIA and FCC co-hosted a
8 round table discussion with those that responded
9 to the joint public notice to discuss the
10 content, framework and format for a model city
11 public workshop that we plan to host tentatively
12 the 15 and 16th of April at FCC.

13 Our staffs are using the round table
14 feedback to craft the agenda for this workshop,
15 which will include a wider set of model city
16 stakeholders, industry, government agencies and
17 academia to further engage, explore and develop
18 the model city framework to support spectrum
19 innovation, technology development and
20 demonstration, technology transition and national
21 collaboration, and you'll see more coming out on
22 the workshop here hopefully relatively soon.

1 I also wanted to highlight an upcoming
2 workshop that's being held by the Wireless
3 Spectrum R&D, or WSRD Steering Group, on March
4 19th at Stevens Institute of Technology in
5 Hoboken, New Jersey, and this workshop will
6 explore market-based or other approaches that
7 would incentivize both federal and commercial
8 users to cooperate in spectrum sharing, and when
9 we talk about bi-directional sharing we're
10 talking bi-directional federal sharing spectrum
11 with non-federal -- non-federal sharing spectrum
12 with federal.

13 And, ultimately, for that two-way
14 sharing you have to address incentives on both
15 sides of the equation. In this topic, you get
16 very interesting multi-disciplinary research
17 questions, and we're hoping that this workshop
18 will help us to find where we need to head in
19 terms of research in this multidimensional space.

20 And there are many different factors -
21 - we've talked about different approaches --
22 federal, non-federal. There are different

1 options, different opportunities and different
2 incentives that will be of benefit to each.

3 So we have to understand those
4 dynamics, including lessons learned, in order to
5 identify incentives that will work.

6 Information that will be gathered from
7 the workshop will be instrumental in helping the
8 WSRD develop recommendations for research, and
9 those recommendations actually go back to OSTP
10 for integration into, I'll call it loosely, a
11 research agenda from a spectrum standpoint.

12 Now, as Larry mentioned earlier, we
13 will be hosting the next CSMAC -- sorry, Larry
14 Strickling earlier -- we will be hosting the next
15 CSMAC meeting in Boulder, coincident with ISART
16 and that's May 12th through the 14th, and the
17 CSMAC meeting will be on the 12th.

18 And this year's ISART is sponsored by
19 the new Center for Advanced Communications, which
20 is a joint effort which I hope most of you have
21 heard about between NTIA and NIST and it
22 continues the focus on spectrum sharing that was

1 started in ISART 2010. So, again, this will be
2 focused on spectrum sharing, which is, obviously,
3 of key interest to this group.

4 We have a great line-up of keynotes,
5 panels and tutorials offering a great opportunity
6 for folks to explore all different aspects of
7 spectrum sharing to include measurements,
8 modeling and simulation, technologies and
9 regulatory approaches and I think some of you may
10 be participating on some of those panels as well.

11 So I encourage all of us to take full
12 advantage of our next CSMAC location, not just
13 related to ISART. There will also be a WSRD
14 monthly meeting and the best part it's going to
15 be Boulder in May. I don't think you can beat
16 that.

17 So that's a quick update, and I will
18 open it up to questions if anybody has any.

19 CO-CHAIR ALDER: I have a question.

20 MS. ATKINS: No. Yes, Larry.

21 CO-CHAIR ALDER: The four sensors --
22 where are they going to be? Have you determined

1 that?

2 MS. ATKINS: I believe we do have the
3 locations, but I didn't bring them with me. So
4 we can get that information out. Any other?

5 CO-CHAIR ALDER: You're letting her
6 off too easily. There we go.

7 MEMBER WARREN: So the -- to follow up
8 on -- I'm sorry. Jennifer Warren. So to follow
9 up on your comments on the model city, do you
10 expect to have more on that at the ISART as well,
11 given the topics you said that ISART is going to
12 cover? And that would be a month after the
13 workshop.

14 MS. ATKINS: That is a good question.
15 I don't think we've thought that far ahead in
16 terms of how to potentially integrate some of the
17 content that we get from the public workshop into
18 the ISART discussion.

19 I would say that that on the surface
20 makes sense. But we are still formulating the
21 details of the content. So we'll take a look at
22 that.

1 MEMBER WARREN: Okay. Thank you.

2 CO-CHAIR GIBSON: I have a question,
3 too. Go ahead, Michael.

4 CO-CHAIR ALDER: Michael Calabrese.

5 MEMBER CALABRESE: Yeah, Michael
6 Calabrese. I would just -- I missed this because
7 I know you were mentioning U-NII 5, which I'm not
8 that familiar with, but is there NTIA activity on
9 U-NII 4 right now, the upper 5 gigahertz?

10 MS. ATKINS: Yeah. So I mentioned U-
11 NII 5 gigahertz, which I lumped the lower number
12 bands together. So there's a lot of activity on
13 the lower band.

14 There is some activity on the upper
15 band as well working with FCC again and
16 particularly DOT, and then there's been this IEEE
17 Tiger Team also, which has agreed to disagree, so
18 to speak, and they have two proposals on the
19 table that they have not been able to converge
20 down to a recommendation. So we are doing some
21 work on the upper band not quite as fast as the
22 lower band at this present time.

1 MEMBER CALABRESE: Okay. Thanks.

2 Mark?

3 CO-CHAIR GIBSON: It's Mark Gibson.

4 Just a quick question back on 3.5. So you said

5 you were collaborating with ITS to -- with the

6 sensory network. That was Larry's question.

7 Are you doing any more measurements

8 like what you did either last year or the year

9 before on interference parameters between LTE and

10 radar, specifically the radars that are in the

11 3.5 gig band?

12 MS. ATKINS: I believe we have done

13 some additional measurements but I can't talk to

14 the details, and I'm looking to see if anybody

15 would be around that can and I do not see

16 anybody.

17 CO-CHAIR GIBSON: That's coming out of

18 ITS, though?

19 MS. ATKINS: Yeah.

20 CO-CHAIR GIBSON: Okay. I can ask

21 them.

22 MS. ATKINS: We are working with them

1 but ITS is the one doing the measurements.

2 CO-CHAIR GIBSON: And how would you
3 like to get feedback on the sensor network? Is
4 it - is it formal or just call you up and say you
5 should go here and here?

6 MS. ATKINS: I would -- for now use me
7 --

8 CO-CHAIR GIBSON: Okay. Good.

9 MS. ATKINS: -- and then we'll get you
10 to the right place.

11 CO-CHAIR GIBSON: Great.

12 CO-CHAIR ALDER: Dennis?

13 MEMBER ROBERSON: There's an activity
14 going on with the National Research Council to do
15 a review. I don't know whether this is
16 appropriate time for you to make any comments
17 about that.

18 MS. ATKINS: Actually, I will turn to
19 maybe Glenn, if you want to make any comments.
20 I'm not sure we can make any comments at this
21 time on the review.

22 MR. REYNOLDS: I think we can only say

1 is that --

2 MS. ATKINS: And this is Glenn
3 Reynolds, our chief of staff.

4 MR. REYNOLDS: The schedule is
5 ongoing. We started the process -- the
6 engagement with the NAS. They will be doing a
7 site visit out at our ITS in late April, and the
8 report is currently scheduled to be done in the
9 May or June time frame. But that is probably
10 going to be pushed back a month or two.

11 MEMBER ROBERSON: I was more
12 questioning the background for why such an
13 activity is being undertaken.

14 MR. REYNOLDS: Well, as I understand
15 it, this started before my time but the genesis
16 was actually an inquiry dealing with one of the
17 congressional reports that asked us to take a
18 look at what the equities are and what the
19 capabilities are within ITS.

20 There's a separate ongoing analysis
21 over at the NIST labs as well, which we are in
22 some respects coordinating with because the same

1 expert group will be doing both of those analyses
2 in conjunction with each other.

3 ASST. SEC. STRICKLING: So Dennis, the
4 original impetus for this was to first get an
5 assessment of the state of expertise at our
6 Boulder lab compared to, you know, what's
7 available in the rest of the market and to start
8 identifying what the market really might be for
9 the types of services that Boulder could provide
10 to companies because they have the ability to do
11 that work over and above work that they can do
12 for federal agencies. So we wanted to assess,
13 you know, where the sweet spot might be for the
14 folks at Boulder in terms of identifying market
15 opportunities to try to expand and grow.

16 CO-CHAIR ALDER: Last questions? All
17 right. Thank you, Paige.

18 So now we've reached the point in the
19 agenda where there's the opportunity for public
20 comment. So is there any members of the public
21 in the room that would like to comment?

22 Seeing none, is there any members of

1 the public on the phone that would like to
2 comment? All right.

3 Hearing none, I think we'll close the
4 public comment period. So now is the opportunity
5 for the co-chairs to make closing remarks. I'll
6 make a couple and then I will have Mark finish
7 that out.

8 Again, so we closed out a number of
9 the subcommittees today. We're asking for the
10 co-chairs of the committees to prepare what they
11 think the future work of their committee should
12 be, the questions that they would address, if
13 any, and get them to us -- that includes Paige
14 and other members of the NTIA -- by March 13th.

15 You don't have to wait until the last
16 day; you can get them in advance. And then we'll
17 take that, with the NTIA doing their own
18 deliberations about what they think might be the
19 important questions, and we're going to have a
20 co-chair call. What was the date on the co-chair
21 call? I forgot.

22 CO-CHAIR GIBSON: It's the 13th, right?

1 CO-CHAIR ALDER: What? No, it's the
2 next week. It's the 18th.

3 CO-CHAIR GIBSON: Eighteenth. Okay.

4 CO-CHAIR ALDER: I think it's the
5 18th. So we'll have a week in there to digest
6 that information -- of course, more than a week
7 if people get the information in early.

8 But then on the 18th we'll have a call
9 and hopefully we'll come up with something at
10 that time, and that will be our plan for
11 addressing and figuring out what the future work
12 is and, of course, we'll run it by the whole
13 committee after that.

14 So that was my closing remarks. Mark,
15 did you have any?

16 CO-CHAIR GIBSON: All I would say is
17 thanks to everybody for all the hard work. This
18 is probably some of the most substantive work I
19 think we've run into for some time. So I realize
20 it's pretty pithy but thank everybody and thanks
21 for everything you've done and thanks for coming
22 today.

1 CO-CHAIR ALDER: Larry, would you have
2 any closing remarks?

3 ASST. SEC. STRICKLING: Thank you and
4 good night.

5 CO-CHAIR ALDER: Wait. One last --

6 MEMBER REASER: I want to thank
7 everybody for coming. We have lots of stuff left
8 over there, so I am not going to put that in the
9 overhead going back to L.A.

10 So please walk out the door and take
11 some things with you to -- all right?

12 CO-CHAIR GIBSON: Thank you.

13 CO-CHAIR ALDER: Thank you, everyone.
14 Meeting adjourned.

15 (Whereupon, the above-entitled matter
16 concluded at 3:28 p.m.)

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C E R T I F I C A T E

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