

UNITED STATES OF AMERICA
DEPARTMENT OF COMMERCE

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COMMERCE SPECTRUM MANAGEMENT
ADVISORY COMMITTEE (CSMAC)

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MEETING

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TUESDAY, JULY 24, 2012

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The Advisory Committee met in Conference Room 1107, Building 1, at the Institute for Telecommunications Sciences, 325 Broadway, Boulder, CO, at 1:30 p.m. Brian Fontes and Gregory Rosston, Co-Chairs, presiding.

MEMBERS PRESENT

DR. BRIAN FONTES, Chief Executive Officer,
National Emergency Number Association,
Co-Chair

DR. GREGORY ROSSTON, Deputy Director of the
Stanford Institute for Economic Policy
Research and Deputy Director of the
Public Policy program at Stanford

University, Co-Chair

LARRY ALDER, Google, Business Operations
Project Manager

DR. DAVID E. BORTH, Independent Consultant*

MICHAEL C. CALABRESE, Vice President and
Director, Wireless Future Program, The
New America Foundation

MARTIN COOPER, Chairman and Co-Founder of
DYNA, LLC, and Co-Founder of ArrayComm,
LLC

MARK E. CROSBY, President/CEO of the
Enterprise Wireless Alliance (EWA)*

THOMAS S. DOMBROWSKY, JR., Engineering
Consultant, Wiley Rein, LLP

DAVID L. DONOVAN, President, Association for
Maximum Service Television, Inc.*

MARGARET (MOLLY) FELDMAN, Vice President of
Business Development, Verizon Wireless

DR. HAROLD FURCHTGOTT-ROTH, President
Furchtgott-Roth Enterprises*

H. MARK GIBSON, Director, Business
Development, Comsearch

DALE N. HATFIELD, Executive Director,
Center for Law Technology and
Entrepreneurship, University of
Colorado

DR. KEVIN C. KAHN, Technology Policy
Consultant, Intel

DOUG MCGINNIS, IT Manager of Communication
Infrastructure Strategy, Exelon
Corporation

DR. MARK A. MCHENRY, President, Shared
Spectrum Company

JANICE OBUCHOWSKI, Founder and President,
Freedom Technologies, Inc.

DR. ROBERT PEPPER, Senior Managing Director
of Global Advanced Technology Policy

at Cisco Systems Inc.

CARL POVELITES, Assistant Vice President of
Public Policy, AT&T

RICHARD (RICK) REASER, JR., Head, Spectrum
Management Department, Raytheon Space
& Airborne Systems

DENNIS A. ROBERSON, Illinois Institute of

Technology

DR. DANIEL DEAN STANCIL, Head, Department
of Electrical and Computer Engineering,
North Carolina State University*

BRYAN TRAMONT, ESQ., Managing Partner,
Wilkinson Barker Knauer, LLP

JENNIFER WARREN, Vice President, Technology

Policy & Regulation, Lockheed Martin
Corporation*

ALSO PRESENT

KARL NEBBIA, Associate Administrator for
the Office of Spectrum Management

TOM POWER, White House Office of Science
and Technology Policy

LAWRENCE (LARRY) STRICKLING, Assistant
Secretary of Commerce for Communications
and Information

PETER TENHULA, Vice President and General Counsel
for Shared Spectrum Company

BRUCE M. WASHINGTON, Designated Federal
Officer

* Present via telephone

C-O-N-T-E-N-T-S

Welcome and Opening Remarks5

Opening Comments from Co-Chairs6

Spectrum Management Improvements. 12

Subcommittee's Report

Unlicensed Spectrum Subcommittee's Report . . 48

Spectrum Sharing Subcommittee's Report. . . .113

Progress Report - CSMAC Working Groups. . . .134

NTIA Evaluation of CSMAC Recommendations. . .149

Regarding Interference and Dynamic

Access Subcommittee

Office of Spectrum Management Hot Topics. . .157

Committee Questions and Discussion.167

Opportunity for Public Comment.172

Schedule of Next Meetings;

Miscellaneous Items179

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

2 (1:30 p.m.)

3 ASST. SEC. STRICKLING: Good

4 afternoon. Welcome to Boulder for those who
5 are just getting here. Once again, just a few
6 admin notes, we have a few visitors and that's
7 always good, but a few things, if you have a
8 cell phone, please silence your cell phone.
9 We're currently webcasting and we're on a
10 telephone bridge. For those who are on the
11 bridge, please be reminded the bridge is for
12 the CSMAC members who are not present. So you
13 do not need to acknowledge that you're on the
14 bridge unless you're a CSMAC member.

15 We do have Wi-Fi passwords we use
16 on these are for the members. Anyone who
17 needs one, please raise your hand and we'll
18 make our way to you. Okay. We're going to
19 attempt to get one of the documents we believe
20 that is missing. I think we've covered most.
21 So we're up on the webcast and we're up on the
22 bridge.

1 I have one more announcement in
2 the push-top mics, so you push to talk, state
3 your name and talk, and then once you finish,
4 please take the mic off. Once again, we'd
5 like you to speak loud. We have the house mic
6 phone at this time and there is a lot of
7 engineering going on.

8 TOM POWER: Good afternoon. I am
9 not Larry Strickling. I am Tom Power from the
10 Office of Science and Technology Policy in the
11 White House sitting in to do, I guess, the
12 welcoming for Larry.

13 And I am not going to say much
14 other than to thank you all for -- for being
15 here and for your continued work. It is a
16 really interesting time to be involved in
17 spectrum issues. Just in the last few days,
18 we've had the release of the PCAST report.

19 I understand yesterday the DoD
20 presented their list of facilities that could
21 be subject to testing under the STA request
22 that T-Mobile filed on behalf of the FCC which

1 all ties into the -- the working group --
2 working groups that -- that you folks have
3 been overseeing.

4 This morning, I've met some of
5 you. I attended the meeting of the NITRD WSRD
6 folks who are doing some good work. I know
7 you've got 5 GHz under your belt as well and
8 a bunch of issues on the agenda today.

9 So there is a lot to be done and a
10 lot of opportunities in front of us as well as
11 a lot of challenges, but I just want to say
12 welcome and thanks for your good efforts.

13 CO-CHAIR ROSSTON: Great. For
14 those of you on the phone, this is Greg
15 Rosston and welcome to Boulder and to the
16 CSMAC meeting.

17 One of the things that I think
18 we'd like to do first is to have the people
19 who are members of the committee on the phone
20 just to check in and say who's here so that we
21 have an accurate record of that. Maybe what
22 I'll do is I'll go through the names of the

1 people who we think are going to be on the
2 phone and then just say yes if you're there.

3 So Mark Crosby?

4 David Donovan?

5 Harold Furchtgott-Roth?

6 Is anyone on the phone?

7 (Laughter.)

8 CO-CHAIR ROSSTON: Is somebody
9 checking on that?

10 Okay. So, again, this is Greg
11 Rosston trying to do a roll call of people on
12 the phone. If you -- first of all, is anyone
13 on the phone that can speak, someone just so
14 we make sure we have that?

15 MR. SNYDER: Jim Snyder.

16 CO-CHAIR ROSSTON: Okay. Is Mark
17 Crosby there?

18 David Donovan?

19 Can anyone speak on the phone so
20 we can hear you?

21 MR. SNYDER: Hello, again. Jim
22 Snyder.

1 CO-CHAIR ROSSTON: Okay. Harold
2 Furchtgott-Roth?
3 Dan Stancil?
4 Jennifer Warren?
5 Okay. So if you all could figure
6 out -- well, maybe just have people e-mail you
7 at the end if they were on the phone or not.

8 So, anyway, welcome, and we are
9 looking forward to doing two things in this
10 meeting is going through our different
11 subcommittee reports that we have, and we have
12 some issues on which we will vote today, and
13 then also to talk about our work going forward
14 in the -- that is the -- not only -- not only
15 the entire evaluations of some of our
16 recommendations but how we're going to move
17 forward to work on the technical --

18 CO-CHAIR FONTES: For those who
19 are on the call, I think it'd be helpful as we
20 speak around the table here to say your name,
21 folks, for the record here, and in the event
22 there is anyone on the call that would be

1 helpful. And this is Brian Fontes who is
2 speaking.

3 CO-CHAIR ROSSTON: Thank you.

4 MR. NEBBIA: Karl Nebbia from
5 NTIA.

6 MR. POWER: Tom Power from OSTP.

7 MEMBER DOMBROWSKY: Tom
8 Dombrowsky, Wiley Rein.

9 MEMBER POVELITES: Carl Povelites,
10 AT&T.

11 MEMBER MCHENRY: Mark McHenry with
12 Shared Spectrum.

13 MR. ALDER: Larry Alder with
14 Google.

15 MEMBER CALABRESE: Michael
16 Calabrese, New America Foundation.

17 MEMBER OBUCHOWSKI: Janice
18 Obuchowski at FTI.

19 MEMBER TRAMONT: Bryan Tramont,
20 Wilkinson Barker.

21 MEMBER GIBSON: Mark Gibson,
22 Comsearch.

1 MEMBER FELDMAN: Molly Feldman,
2 Verizon Wireless.

3 MEMBER ROBERSON: Dennis Roberson,
4 Illinois Institute of Technology.

5 MEMBER MCGINNIS: Doug McGinnis,
6 Exelon.

7 MEMBER KAHN: Kevin Kahn, Intel.

8 MEMBER PEPPER: Robert Pepper,
9 Cisco.

10 MEMBER HATFIELD: Dale Hatfield,
11 University of Colorado.

12 CO-CHAIR ROSSTON: Okay. So now
13 we've -- now that we've done the roll, why
14 don't we -- we're ahead of schedule which is
15 nice to start at least.

16 So we want to move onto the
17 Subcommittee Enforcement unless there was
18 anything you wanted to add, Brian.

19 CO-CHAIR FONTES: I don't. Karl,
20 do you have any opening comments?

21 MR. NEBBIA: Just to thank
22 everybody for coming all the way out here.

1 Dale, you especially.

2 (Laughter.)

3 MR. NEBBIA: And we're -- we're
4 glad to be in Boulder and looking forward to
5 working today.

6 CO-CHAIR FONTES: Thanks, Karl.

7 CO-CHAIR ROSSTON: Great. So
8 Bryan and Mark, you guys are up first with the
9 Spectrum Management Improvement Subcommittee
10 Report.

11 MEMBER GIBSON: Okay. Thanks,
12 Greg. This is the report on the
13 recommendation -- this is Mark Gibson by the
14 way. This is the report on the
15 recommendations that -- NTIA's comments on the
16 recommendations that the subcommittee made to
17 make that clear. It's -- it's in the title.

18 And so what the subcommittee did
19 was based on the comments and the
20 recommendations that Karl talked about at the
21 last meeting in Stanford, the working group
22 went back and tried to address the questions

1 that the NTIA felt were left un -- unaddressed
2 or open. So what we did is we just went
3 through the various questions that were there
4 and tried to address them. I assume that
5 people have read this so I'm not going to read
6 this in detail, and Bryan and I are going to
7 tag team -- so -- but we'll go down through
8 here and try to address the questions that
9 Karl has -- as long as I'm not exiting, I
10 think we're good.

11 CO-CHAIR ROSSTON: You just have
12 to keep people's attention.

13 MEMBER GIBSON: Yes, okay.

14 (Laughter).

15 MEMBER GIBSON: -- At 1:30 in

16 Boulder

17 so --

18 (Off microphone comments.)

19 MEMBER GIBSON: That's for my next
20 act.

21 The recommendation that the
22 working group had made was that the NTIA

1 should do a one-time system-wide activity
2 check on the GMF, and the response from the
3 NTIA was they agreed but they wanted a greater
4 understanding -- a greater clarity to
5 understand what we meant, and given that
6 there's lots of records in the GMF and it
7 would take a lot of time for an individual at
8 the NTIA to go through it.

9 So what we did is we broke that
10 down and suggested that the effort could begin
11 on the bands that are the interest.

12 Primarily, obviously, the bands
13 that were part of the -- of the fast track
14 report which were the 1675 to 1710, 1755 to
15 1850, and so on and so forth. So those are
16 the bands that are really in a sweet spot of
17 the interest and in -- and efforts could be
18 focused on those bands initially, get them
19 cleaned up, and then move on to whatever other
20 low-hanging fruit are identified, maybe at a
21 PCAST report or whatever.

22 And also we recommended that there

1 -- there is a fair amount of effort that can
2 be undertaken to automate that process using
3 scripts, smart approaches, and whatnot, and
4 also concentrate only on the records -- or on
5 the fields that we reported on are necessary
6 to build a database for doing Spectrum
7 Management according to the administration.
8 So there's a lot of administrative records
9 that may not need to be addressed.

10 And we referred in -- by
11 reference, I think, in the footnotes to the
12 list of variables that the working group felt
13 were necessary for doing Spectrum
14 Administration. So we suggested that that --
15 that that was what you do.

16 As far as paying for it, we felt
17 like there were monies in the CSEA Spectrum
18 Release -- Spectrum Relocation Fund that we
19 felt like the Office of Special Counsel might
20 need to figure out how to get after.
21 Nonetheless, we suggested that there may be
22 monies there to -- to address that.

1 Am I missing anything?

2 MEMBER TRAMONT: What we suggested
3 we do is essentially take the Office of
4 General Counsel's view -- what CSEA funds
5 could be used for this purpose, and we cited
6 some language that we thought suggested that
7 was possible. We wanted to -- but in the
8 spirit of getting NTIA something that they can
9 execute on, we simply said just seek the
10 opinion of the General Counsel's office.
11 Thanks.

12 MEMBER GIBSON: On the next -- so
13 are there any questions on that comment and
14 recommendation? Yeah, Karl.

15 MR. NEBBIA: Just -- just so you
16 know the Chief Counsel, the General Counsel,
17 the Special Counsel are all three different
18 people --

19 MEMBER GIBSON: Yeah, I know, I
20 know. And --

21 MR. NEBBIA: -- and as long as I
22 never see a Special Counsel in my life, I'll

1 be very happy so --

2 MEMBER GIBSON: Okay. Thank you.

3 MR. NEBBIA: One thing to note
4 here, right now, the 4200-4400 ranges that
5 you've cited, there is no data on that band.
6 There's no data to check. There's no
7 licensing --

8 MEMBER GIBSON: Right.

9 MR. NEBBIA: -- that goes on in
10 that band so that one -- that one's probably
11 not one that will be -- that will be critical.

12 I think ultimately, at least from
13 my experience, the decision about what will
14 get paid and what will not get paid will
15 probably come out of OMB. We're hoping under
16 the new scheme to get updated guidance, and I
17 know that they're working on that guidance
18 that links to the new rules and so on. So it
19 probably will not be a call that we can make
20 inside of NTIA, but one certainly that they
21 can give this guidance.

22 And I think also as we head toward

1 any future activity under the CSEA and the --
2 the Spectrum Relocation Fund, there does come
3 a time in the process where the agencies have
4 to come back and update their information in
5 terms of transition plans and costs. And that
6 is the point at which on these it's just very
7 logical that that would be the point that
8 they're actually answering up for the systems
9 that are in this band a opposed to trying to
10 schedule a separate review in advance of that.

11 Now, you might say, well that --
12 that may be a little way off and it would be
13 helpful in the work that we're doing now to
14 have better data, but I think certainly in the
15 process of ensuring that it gets paid for, I
16 think the likely time is in that period where
17 the agencies are actually providing specific
18 transition plans and information about their
19 systems.

20 MEMBER TRAMONT: Just -- yeah, I
21 think our -- overall, our recommendation,
22 obviously, is to have a comprehensive view of

1 all Spectrum holdings not just the priority
2 bands that have been identified for
3 relocation. So I think it's important and
4 discussions go on being if Mr. Priman***
5 (00:14:01 ph) wants to weigh in now and allow
6 us to use the money, I think that would be
7 fine.

8 MR. NEBBIA: Because we have it to
9 do up here, but if we --

10 MEMBER TRAMONT: It's important
11 that it's not just focused on these particular
12 bands but it is in the long-term interests --
13 it's this committee's belief that's in the
14 long-term interests of NTIA to have a
15 comprehensive record and so, hopefully, those
16 funds can use -- can be used not just for
17 these short-term issues, maybe three to five
18 years, but even five to ten years out and get
19 some other bands identified as well.

20 MEMBER GIBSON: Is that it, Karl?

21 MR. NEBBIA: Yes, sir.

22 MEMBER GIBSON: Okay. Good.

1 Thank you.

2 The next recommendation was to
3 establish goals and metrics for data accuracy
4 and milestones for achieving. And,
5 essentially, what we did was you were asking
6 for further guidance regarding, essentially,
7 sampling techniques, what industry uses and
8 what the commission uses.

9 So in our reply, we specify -- we
10 identified several areas that come out of some
11 of the committee members' experience with the
12 commission, and their -- their company's
13 experience with managing commercial data bases
14 and/or licensing procedures, and so what you
15 see here is things like specified license
16 terms, performance and build-out requirements.

17 Some of this may or may not be
18 applicable, but it's offered up more or less
19 in terms of examples of the way that some
20 commercial Spectrum Management techniques are
21 used to deal with data issues: construction
22 notification, secondary market rights, all the

1 stuff that's in there.

2 So you read through that and you
3 find a litany of tools that would be available
4 for spectrum relocators and spectrum managers
5 to institute in the Spectrum Management and
6 regulatory -- or licensing process that can
7 help inform and make sure the data are
8 accurate.

9 And I don't need to go through it.

10 Did you have anything you want to
11 add?

12 Okay.

13 MEMBER TRAMONT: Yeah, we're aware
14 that FSMS is obviously a big part of this
15 equation, and we hope at some point to be able
16 to pick up this work after this iteration of -
17 - of CSMAC is concluded, that is the working
18 groups 1755 to 1850, and pick back up on FSMS
19 and what we'll work on going forward. So
20 that's a little bit of an outstanding issue.
21 You had asked for our evaluation of that and
22 I think we need to probably sit down with the

1 staff and figure that out, but we haven't had
2 a chance to -- we weren't able to get that
3 done before --

4 MEMBER GIBSON: Right.

5 MEMBER TRAMONT: -- we submitted
6 this last meeting.

7 PARTICIPANT: And that's Bryan and
8 Mark that were talking.

9 MEMBER GIBSON: Yes, yes.

10 MEMBER TRAMONT: We'll keep
11 identifying ourselves.

12 MEMBER GIBSON: I'm Mark and the
13 other one's Bryan. And, yes, so Bryan's point
14 of an FSMS, I will say that we did get some
15 feedback from NTIA and the offer of having a
16 briefing on FSMS. Well, that occurred right
17 at the time CSMAC pivoted toward working on
18 the five working groups, and we felt like we
19 just didn't have the bandwidth to go there.

20 We did a scheme up that was fairly
21 detailed as well as the data dictionary, and
22 those of us that understand that are going

1 through trying to figure out what it means.
2 The rest of us are hoping that those that
3 understand it can tell them what it means. So
4 we -- we will continue with that work and
5 follow back up with the powers that be at NTIA
6 to get the briefing on FSMS we've been looking
7 for it.

8 I don't think we're looking at
9 that as a panacea, but we also know that the
10 GAO report referred to that several times,
11 it's come up in several discussions, and we're
12 eager to find out to what extent that is going
13 to address some of the things we've been
14 raising.

15 MR. NEBBIA: Just a -- a few
16 thoughts. I -- I'm not exactly sure of -- I'm
17 sorry -- of the time requirements and staffing
18 requirements to pull these kind of things off.
19 I realize that the commission has them, for
20 instance, on the billed out requirements that
21 apply to some specific types of users, but I
22 assume they don't apply across the board to

1 all FCC users. I also am not quite clear as
2 to even where they exist, how they're or where
3 they're applied in terms of, you know, build
4 out of cell systems.

5 I think people are constantly
6 asking questions about, well, where are people
7 implemented where -- where they haven't? So
8 one of our challenges, of course, is -- and
9 certainly in the frequency of assignment area,
10 I have eight people, and those eight people
11 are spending day in, day out, reviewing
12 incoming frequency assignment requests, trying
13 to make sure the data is correct as possible.
14 We do have some automated processes that back
15 that up, and we will have more as part of --
16 as part of FSMS.

17 But I think it's certainly a
18 challenge as we look at what it would require
19 in terms of staffing to follow up on all this
20 stuff because it's one thing to set up a
21 process where people have build-out
22 requirements, it's another thing to go hunt

1 them down when, you know, somebody, you know,
2 blows the dust off the book and says, oh,
3 yeah, these people were supposed to have done
4 this back in this and this date. And it's not
5 like we're talking about small numbers either.
6 There are a lot of people to chase down in --
7 in doing that.

8 Also, at least from my -- my
9 perspective of -- of my time in Spectrum
10 Management, it seems to me that there has been
11 an emphasis probably for 20 or 30 years on
12 minimizing the burden on most of the users of
13 the spectrum and, in fact, as -- as we've
14 talked about the increased data requirements
15 under FSMS and had some conversations with the
16 FCC about having those same data requirements
17 so that we can actually do EMC calculations
18 and so on, run them between us, their -- their
19 feedback to us is, we could never go out and
20 ask all of our users to provide all of that
21 data.

22 So we continually seem to end up -

1 - even though we've got a line of requirements
2 here, we -- you know, we're -- we're concerned
3 about ending up in a place where a lot of
4 these things are expectations that come of the
5 government and not -- not -- not other people.

6 But as I was saying, it's
7 certainly been my experience that we have gone
8 out of our way in the past to provide maximum
9 flexibility to minimum regulatory burden, and
10 so on, all along the way for both federal and
11 non-federal users. So we're talking about a
12 significant change in direction to require all
13 these things. But, you know, build-out
14 information, construction notification, these
15 types of things I think are fairly significant
16 in terms of the number of people -- and
17 capabilities that would be required. So I
18 think it's not that we -- we disagree with the
19 idea and that these things would be useful,
20 the challenge for me as somebody that's
21 managing a group of, you know, federal
22 employees is that these things do take

1 people's time and so on. So just figuring out
2 how we would do that in a way that uses their
3 resources well, I think, is a significant
4 challenge for us.

5 The issue of data certification,
6 of course, we have picked up. That was one of
7 the items clearly stated in the GAO report,
8 and we've now implemented rules requiring
9 somebody from the agency that's actually going
10 to put their name on the dotted line affirming
11 that the data's correct, that the system is
12 necessary, and that sort of thing. We're
13 still working on actually the IT
14 implementation of that because it requires
15 changes to the software, and so on, to make a
16 place in the data field. But, so, each of
17 these things I think are good items to do.
18 The question just gets to be the resource
19 implications of getting into it. And,
20 ultimately, I don't mean just the resource
21 implications on -- on NTIA and our small
22 assignment group but on the agencies to be

1 tracking and reporting, and so on.

2 Then we get on the last item was
3 going out and -- and audits which, I assume --
4 would have assumed meant going out and
5 checking what they were doing, but then you
6 referred to the FCC's license audit software,
7 which I'm not quite familiar with what that
8 does so maybe you could give me a hint as to
9 how they perform their audits through software
10 just --

11 MEMBER GIBSON: Well, okay. Are
12 you --

13 MR. NEBBIA: Yup.

14 MEMBER GIBSON: All points well
15 taken. I -- you know, I think that the
16 working group was studying this from the
17 standpoint of what practices can be suggested
18 to improve the value of the data that is
19 contained in the GMF and associated related
20 databases through, you know, standard
21 practices, procedures, regulation, rules and
22 whatnot.

1 The issue of -- of -- of the
2 number of FTE's or -- or work -- you know,
3 manpower is attended to the discussion, but I
4 -- I don't think a working group wanted to be
5 constrained by that. I think we wanted to
6 look at what -- what should be done, suggest
7 approaches to take, and then work through,
8 either collaboratively or you can work through
9 off-line, what it would take to address these
10 so, all those points are well taken and in --
11 and, you know, we heard loud and clear the
12 first time that, you know, this is a -- a
13 resource issue, but nonetheless, at some
14 point, resources are going to have to be put
15 on -- on some of this, and so maybe there's a
16 point at which we discuss what type of
17 resources or something like that.

18 As far as the commission's audit
19 software, their -- and Mark Crosby actually
20 provided some of this -- so, Mark, if you're
21 still on, I'll turn that to you in just a
22 second.

1 But since this is a licensing
2 system, licensees are responsible on a regular
3 basis, depending upon the type of license they
4 have for the service class they're using, to
5 go in and update the license records to -- as
6 a -- as a product of their license renewal,
7 and most services are supposed to do it. It's
8 kind of finding rules as it relates to the
9 specific service so, for example, .95, it
10 addresses, say, medical whatnot, they have to
11 update it, and .101 that addresses microwave,
12 they have to do it on a regular basis, and so
13 on and so forth. So that's part of the
14 process. And so that's part of the auditing
15 you're talking about.

16 Mark, what other auditing software
17 is out there that you were thinking about when
18 you put this in?

19 MEMBER CROSBY: Mark. I'm at a --
20 it's a little noisy in the background. I'm at
21 an airport in Reno. The commission has, you
22 know, the capability to draw up from ULS

1 certain groups or segments of licensees,
2 whether they are for construction, and there's
3 notification sent to the construction
4 automatically. There's also -- we offer
5 capabilities to -- for renewals, construction
6 permits, and those type of things, and that's
7 all done automatically, and the licensee's to
8 receive those directly from the commission.

9 MEMBER GIBSON: And I would add to
10 that, there are commercial entities, such as
11 Comsearch, that endeavor to inform licensees
12 of their time -- of their -- the time frame
13 for renewal was happening.

14 MEMBER CROSBY: That's certainly -

15 -

16 (Simultaneous speaking.)

17 MEMBER GIBSON: Yes. Well, many -
18 - many people out there do it as a service to
19 customers and clientele so, you know, there's
20 -- there's a process that goes on. And as we
21 were saying earlier, some of this might be
22 able to be overlaid into FSMS, maybe not in

1 the current release structure but in future
2 release structures to the extent it resonates
3 with the need. So, you know.

4 This is Rick Reaser from Raytheon,
5 and I just want to add that one of the things
6 that we've sort of suggested is, you know,
7 many of these licenses in terms of -- of the
8 federal licenses are actually defense or FAA
9 contractor facilities, and we would be happy
10 to be a part of that process for renewal, but
11 there's like a wall between us. Because we
12 know of a number of instances where there are
13 licenses for our company locations and plants,
14 and so forth, that may not be accurate one way
15 or the other, in both directions by the way,
16 and, you know, I think you could sort of tap
17 into the industry as a -- as a -- as a part of
18 this thing to help review that.

19 We'd be happy to do that, and then
20 I have some proposals that I'm going to make
21 to this and others about that because we'd
22 like to keep all of our stuff straight and

1 understand when things are expiring or not.

2 He's right, on the FCC stuff, we
3 get notices, we -- we can keep on top of that
4 very well, but we have lots of things with --
5 with some of the federal government contracts,
6 and not just military but DHS and others,
7 where things come due and people aren't really
8 tracking it because there isn't a thing, and
9 then there's other things like, well, maybe
10 there's a new emissions designated so we don't
11 need this or we're just doing CW antenna
12 testing.

13 We can modify those particular
14 licenses to be more appropriate to the
15 activities that it's taking on whether than
16 just renewal after renewal after renewal for
17 something that we may not even need at a
18 location.

19 Because the tendency is just to
20 renew the damn thing because you don't know
21 whether you really need it or not, so what
22 happens is some bureaucrat will just renew it,

1 and that certainly was going on at our company
2 on all the FCC licenses until we started going
3 through them one by one because some central
4 office just renewed every one whether it
5 needed it or not.

6 I took the attitude on some of
7 these things, I'm -- I don't know what this is
8 for, I'm just going to not renew it and see if
9 anybody calls me.

10 (Laughter.)

11 MEMBER REASER: and I -- I did
12 that on two -- two lady assistants by the way,
13 and I believe that they were long gone, but
14 they -- those licenses had been around since
15 the 90's at locations where the plant -- where
16 the company had no longer had facilities, and
17 they -- they were continuing to be renewed.

18 So I think that the analog of
19 maybe looking at some of the good practices
20 that the FCC has and try to maybe export those
21 into the federal side might be a good thing,
22 and let the guys -- it's an issue of who's

1 really the license for. Yes, it's for the
2 military service or part of them, but at the
3 end of the day, it's some, you know,
4 contractor that's turned -- flipping the
5 switch on the radio and testing it. It's not
6 a -- not some federal guy in Washington who's
7 processing the license, so maybe those people
8 ought to have a little bit of a -- of a --
9 part of the process.

10 MEMBER CROSBY: Yeah, Karl, this
11 is Mark again. I -- I -- I don't think it's -
12 - it was sophisticated so all that
13 administrative software that every person of
14 every month, whatever, the people that are due
15 for renewal or you haven't heard from them for
16 awhile, the computer generates a nice letter
17 saying, hey, what's going on with the system?
18 Are you still using it? Things like that. It
19 not a technical software, more of an
20 administrative practice software to keep track
21 of licensees and their use of the spectrum.
22 That's all.

1 MR. NEBBIA: Okay. I did have
2 just a couple other short questions here about
3 right at the end of the text from this
4 section, there's a part that says
5 "establishing similar goals and metrics for
6 data accuracy in other bands," which I -- I
7 understand, as Bryan was talking about, the
8 fact that you're not looking for it to end
9 with the four primary bands. And I'm not sure
10 -- once again, originally, the two to four
11 million estimate, I'm not quite sure what that
12 was for because, once again, I -- it was
13 doubtful, at least in my mind, that that cost
14 was based on going through the entire
15 database.

16 As we looked at how many that
17 would be monthly, just didn't seem possible
18 that the two to four million was probably a
19 realistic number for doing an entire, you
20 know, database update. But, nonetheless, it
21 says that we should look at the other bands.

22 And then it adds, "other than

1 perhaps those established for unlicensed
2 uses," which we don't actually have any bands
3 established for unlicensed use, certainly not
4 on the federal side. I think it's
5 questionable whether they formally exist under
6 non-federal. So that may be an aspect you
7 just wanted to strike out on the last because
8 I don't -- I don't know what it means. You
9 guys may know what that was intended to refer
10 to.

11 But, I think, ultimately, we -- we
12 appreciate the -- the inputs and we realize
13 that you're trying to give us inputs that go
14 beyond the specific boundary of current date
15 budgets, structures, and so on.

16 The one -- the biggest challenge
17 for me in -- in dealing with those kinds of
18 recommendations is that people tend to expect
19 that they can be done once you put them on
20 paper and, you know, we -- we know that we've
21 had at least some CSMAC recommendations find
22 their way into legislation. And so that's --

1 you know, people do respect the outcome of the
2 thinking that's going on in this group. And
3 my challenge is finding myself, then, the
4 expectation is that we will, in fact, fulfill
5 everything that's on these lists, and that's -
6 - that's one that I think may be a bridge too
7 far, certainly for, you know, someone as young
8 as me so --

9 (Laughter.)

10 MR. NEBBIA: Anyway, so, I just
11 wanted to mention that. So I don't want to
12 prevent people from making recommendations
13 that they realize are probably beyond the --
14 the bounds of the current economy, but I think
15 we have to also recognize the fact that they -
16 - the recommendations in that sense can create
17 a -- an expectation without something that
18 goes with it. They -- they have to --

19 MEMBER TRAMONT: I was just going
20 to add that I think the useful part of this
21 process that we're continuing today, issuing
22 out recommendations, receiving questions from

1 you and then coming back, and then having the
2 resource question explicitly teed up,
3 hopefully, will prevent sort of the unfunded
4 mandate problem going forward. But I think
5 the key is to get -- if we could at least all
6 agree on a general direction of what an
7 idealized state looks like for the management
8 of the federal spectrum resource from the
9 database management perspective, then at least
10 we have a common set of goals that we're
11 working towards and then we can try and talk
12 about what the resource demands are. But I
13 don't think anybody realistically thinks that
14 the current resources at NTIA or at the
15 agencies are adequate to get us from where we
16 are to where we need to be from a database
17 management perspective.

18 MEMBER GIBSON: That was Bryan.

19 And this is Mark. And, again, your points are
20 well taken.

21 First of all, with respect to the
22 monies that we suggested, again, those are

1 realms and more maybe swags, maybe not even
2 swags but wags, and whatever acronym you want
3 to find out, but the point is that there was
4 some, you know, spreadsheet analysis that went
5 into trying to find those numbers,
6 notwithstanding, you know, their accuracy. I
7 would suggest that we -- we discussed in the
8 paper that there are automated processes that
9 can be undertaken that would streamline the
10 effort, which we had thought would be used as
11 part of that -- that monies.

12 The other thing is I don't think
13 we're suggesting anything that isn't already
14 in practice some place. Maybe not in the
15 federal government, but within commercial work
16 or within the FCC. So we're not trying to
17 blaze new ground here. We may be trying to
18 blaze new ground for NTIA, and we appreciate
19 that, but we try to be considerate of the
20 recommendations we're making as to their
21 applicability and their implementation ability
22 or "implement-ability" or whatever.

1 I hope whoever's putting this in
2 paper can figure out what I just said.

3 But having said all that, I think
4 that, you know, we want to charge ahead and
5 come up with a list of recommendations that we
6 can discuss and it -- you know, in the end, if
7 you find that they are not appropriate, then -
8 - then that's fine, but we didn't want to
9 leave any stone unturned as it relates to the
10 task at hand.

11 As far as the last recommendation
12 which was, you know, go to Congress and get
13 money, you agreed with that one, and I -- it's
14 no accident I mention that on the heels of the
15 2.2 -- two million dollar -- two to four
16 million dollars. We suggested that, you know,
17 again, go back and look at the CSEA, talk to
18 the Office of Counsel -- I forget which
19 counsel it is -- and so, you know, find ways
20 to possibly go out and -- and -- get, you
21 know, get monies to address the task at hand.

22 I would add on a point you made

1 earlier was the 4200 to 4400 meg band. We
2 were looking at that band as it relates to
3 issues associated with -- those were the radar
4 altimeters and other things. That -- that
5 work got put on the back burner for the new
6 working group work we're doing so we'll try to
7 pick that up, you know, whenever the time is
8 right and address that. But if we do redo
9 this, we'll pull that out of the discussion
10 because we understand that there's not much in
11 the database related to that. However, there
12 may be stuff in equipment databases, and
13 that's what we were finding out when we were
14 doing the work that we're not talking about so
15 --

16 MR. NEBBIA: Okay. One last point
17 in your -- in your -- I'm sorry, this is Karl
18 Nebbia again, sorry.

19 The last point in your final
20 recommendation, at this point, we don't have
21 the freedom to change the approach we have on
22 agency fees, and that's -- I think some might

1 argue that we have the freedom to re-shift --
2 or to shift some of the priorities or
3 weightings, and so on. I'm not sure there's
4 general legal agreement on that, but the one
5 thing we don't have the ability to change is
6 the fact that it is that the funds that we
7 receive are an amount, at this point, 80
8 percent of basically offices, spectrum
9 managements, cost to operate, so those costs
10 to operate are actually determined within the
11 budgetary process and work back down to us
12 through -- NTIA's given a budget, NTIA then --
13 so it's -- it's not as if we've got the
14 ability to just change that budget amount and
15 then recharge that to the agency. So there
16 are some limitations.

17 CONFERENCE COORDINATOR: Excuse
18 me, sir, this is the conference coordinator.
19 Are you having some issues in your conference?
20 We were told that you were.

21 CO-CHAIR FONTES: Yes, we are
22 having issues. There are people who are

1 joining the call and, apparently, either they
2 cannot hear us or, for whatever reasons,
3 they're exiting the call, and so there are
4 several attempts to join the call, exit the
5 call, and we just wanted to make sure that
6 folks who do, in fact, call in are capable of
7 hearing the conference.

8 PARTICIPANT: Let's see, there was
9 an e-mail sent in from Marty saying that he
10 and -- that he couldn't -- we couldn't hear
11 them.

12 CONFERENCE COORDINATOR: Okay. If
13 there's somebody on the conference that is
14 having -- still having issues hearing what's
15 being said, they can "star zero" and we'll
16 pull their line.

17 CO-CHAIR FONTES: Right. They're
18 able to hear, they're just not able to speak
19 back.

20 CONFERENCE COORDINATOR: Okay.
21 And they've verified that their line -- their
22 line on their end is not muted?

1 CO-CHAIR FONTES: Well --

2 CONFERENCE COORDINATOR: Okay. So
3 if they're having --

4 (Simultaneous speaking.)

5 CONFERENCE COORDINATOR: Okay. So
6 everything is okay then?

7 (Simultaneous speaking.)

8 CONFERENCE COORDINATOR: Do you
9 know what phone number he would be coming
10 from?

11 CO-CHAIR FONTES: Don't know.

12 CONFERENCE COORDINATOR: Okay.
13 They'd have to *0 in order for us to pull his
14 line, but again, I believe line -- it's not
15 muted on our end so it might be self-muted,
16 and that might be why you're not hearing
17 anything from -- from their end.

18 PARTICIPANT: Okay. We have
19 Jennifer Warren, we have Mark Crosby, are
20 there any other members on the call?

21 CONFERENCE COORDINATOR: Okay, you
22 have eight parties who have joined.

1 PARTICIPANT: That's fine. I'm
2 asking you specifically if there's any members
3 of the Spectrum Management Advisory Committee
4 on the call. Jennifer and Mark Crosby.
5 That's it? Thank you.

6 CONFERENCE COORDINATOR: Okay. So
7 do you need me any further then, sir, or --

8 CO-CHAIR FONTES: I think we're --
9 I think we'll go on.

10 CONFERENCE COORDINATOR: Okay.
11 I'll go ahead and leave your call then.

12 CO-CHAIR FONTES: Sorry. Madam
13 Chairman -- or madam -- sorry.

14 MEMBER TRAMONT: This is Bryan
15 Tramont. So I believe we need to move for
16 adoption of these recommendations with the
17 striking of the sentence of the clause --
18 dependent clause on page 7 but other than
19 perhaps just establish for unlicensed uses, so
20 we'd strike that but then if we could have a
21 motion to adopt the recommendations of the
22 Spectrum Management improvements working

1 group. I think that's the next sort of
2 business.

3 CO-CHAIR ROSSTON: I'm going to
4 presume that you're making that motion.

5 MEMBER TRAMONT: I would love to
6 make that motion.

7 CO-CHAIR ROSSTON: And is there a
8 second? Mark?

9 MEMBER CROSBY: Mark -- Mark
10 Crosby will second.

11 CO-CHAIR ROSSTON: All right.
12 Okay. Are there other -- is there other
13 discussion from people around here who want to
14 make comments on this at all or anyone on the
15 phone?

16 Okay. I guess we call for a vote.
17 All those in favor?

18 (Chorus of ayes.)

19 CO-CHAIR ROSSTON: Is there anyone
20 opposed?

21 (No response.)

22 CO-CHAIR ROSSTON: Okay. Thank

1 you very much.

2 CO-CHAIR FONTES: Did Marty just
3 join the call?

4 PARTICIPANT: Can you still hear
5 us?

6 CO-CHAIR ROSSTON: Yes, we can.
7 Okay. Next on the agenda is the report from
8 the Unlicensed Spectrum Subcommittee, and so
9 I'll turn this over to Janice and Michael.
10 And why don't -- why don't you kind of walk us
11 through the documents because some were
12 circulated.

13 MEMBER OBUCHOWSKI: Okay. Thank
14 you very much. And in terms of walking
15 through the documents, we have hard copies of
16 sort of an overview piece. Do we have that
17 circulated now?

18 (Chorus of yeses.)

19 MEMBER OBUCHOWSKI: I think
20 probably that will cover the heart of the
21 matter. I will be beginning, and Michael will
22 continue.

1 Part of what concludes this
2 authority is the unfinished business. So it
3 seems as though with PCAST and sharing work
4 underway, the unfinished business as it
5 pertains to unlicensed almost, you know, grows
6 as we try to knock off the specific issues
7 that -- that was, I think, addressed as best
8 we can.

9 So, basically, many of the issues
10 before our committee pertain to enforcement.
11 And of course, the unlicensed environment, we
12 have a technical non-status, enforcement
13 becomes a political matter as well as a
14 regulatory matter, because whereas people may
15 not have status, they -- they certainly have
16 expectations.

17 So there were four questions posed
18 to us as -- as part of that: How should
19 federal agencies deal with complaints of
20 interference? How should they deal with
21 interference, particularly when many of these
22 unlicensed users and devices are in the hands

1 of servicemen who don't honestly understand
2 the rules? They've bought a product and they
3 have a set of expectations that normally
4 accompany the purchase of a product. How
5 should we prevent software modifications that
6 alter the compatibility characteristics of the
7 device and with widened distributor products?
8 What's the best approach to enforcing the
9 rules?

10 We made a set of enforcement
11 recommendations in the preceding round of
12 CSMAC, so one of -- one recommendation that
13 will come at the conclusion of this report is
14 to, again, incorporate by reference those
15 enforcement recommendations. And then in
16 addressing as creatively and productively as
17 we could these questions, the committee
18 reached a strong conclusion that in an
19 environment where it's really very, very
20 difficult to enforce, one must append to the
21 extent maximum possible on technology
22 solutions and, basically, in an environment

1 with smart devices are capable of contacting
2 databases, being updated, being alerted, being
3 turned off.

4 So we have made the very strong
5 recommendation in the service throughout this
6 report that, prospectively, the government
7 must rely to the maximum extent possible on
8 enforcement by technology; making sure that
9 built into the device is the ability to be
10 updated, cataloged, turned off, et cetera.

11 The tougher question -- well, not
12 the tougher question, but the remaining
13 question, however, if you have this whole
14 category of cheap, dumb devices, most of which
15 -- many of which are historic, or close, there
16 aren't any perfect answers to those -- how to
17 address interference from those devices, but
18 we would strongly recommend that the band from
19 which they operate be circumscribed, closed
20 out, in essence, to historic bands, and that
21 going forward, in those instances, we try to
22 minimize the problem by minimizing the

1 existence of these devices.

2 In the past, I think there was a
3 stronger argument to be made for the economics
4 of these devices, but, in essence, even the
5 more intelligent devices now are at a price
6 point that we think enforcement through
7 technology is the better course.

8 So I think that covers slides
9 three and four.

10 Michael, do you have anything
11 you'd like to add on those points?

12 MEMBER CALABRESE: No, except, you
13 know, what -- I guess, you know, where it
14 mentions then --

15 Oh, yeah, right. This is Michael
16 Calabrese.

17 What it mentions at the bottom,
18 you know, you see that -- that distinction
19 just by way of example in comparing, for
20 example, the garage door opener -- the classic
21 garage door opener situation, a -- which we'd
22 call, I guess, an untethered or so-called dumb

1 device, compared to what we anticipate with
2 the unlicensed devices that will operate in
3 the TV white space subject to, you know,
4 having GPS, knowing their location, checking
5 the database for permission, to use channels
6 which can be changed at any time and that can
7 be even pushed further.

8 So -- so the place that the path
9 is clear, although as Janice said, and we'll
10 talk more about the -- what to do about what's
11 the legacy of these garage door opener,
12 perhaps baby monitor type devices that are
13 already out there, is -- you know, we weren't
14 able to add a whole lot to the -- to the
15 repertoire.

16 MEMBER OBUCHOWSKI: The reduced
17 lines on post-hoc regulatory enforcement, it
18 really kind of recognizes the inevitable, that
19 it's very hard in an environment where you
20 have myriad consumers with devices, the
21 regulatory status of which they'll never
22 reasonably be expected to fully understand,

1 post-hoc enforcement is just a bad idea. If
2 at all possible, avoid it.

3 But we do have, and we've
4 incorporated by reference -- this is on page
5 7 -- a set of past enforcement
6 recommendations, and these are designed to put
7 PC nodes that do exist. Part of this is
8 pretty more than onerous on manufacturers. I
9 mean, if there are devices that can be
10 tampered with, and this was a problem in the
11 5 GHz band, some of the devices, per se,
12 weren't interfering, but people could figure
13 out pretty quickly how to create powered-up
14 devices and then interfere with them.

15 If it's possible to avoid that, to
16 lock those down better, we should expect that
17 as manufacturers, we should expect
18 manufacturers to do their best and probably be
19 more specific about what their best is to
20 advise consumers about what their limitations
21 are. I think the oldest ones on the FCC, as
22 it increasingly relies on unlicensed in

1 certain areas, put a shock clock in place.

2 It's absolutely useless to have a
3 problem -- an interference problem and, you
4 know, wait for weeks, if not months, to get
5 that resolved if somebody kind of cranks
6 through the process.

7 People have suggested a tool
8 called the temporary restraint of
9 interference. If there's a problem, and
10 nobody can quite resolve that problem, perhaps
11 those should just be required to shut down
12 until the problem gets itself ironed out.

13 There's also, basically, almost
14 uniform beliefs that the FCC is going to have
15 to upgrade its monitoring capabilities. Some
16 of these problems, no matter -- no matter how
17 -- you know, how we try to address the
18 desirability of pinging back to databases, or
19 whatever, it's going to be an increasingly
20 complicated electromagnetic environment.

21 At times, it's not going to be a
22 simple fix or a simple understanding even of

1 where this is coming from. There is no amount
2 of reporting, first off, that's even
3 realistic, but second off is going to preclude
4 this from happening. And, frankly, license
5 users ought to be reasonably comforted that
6 the FCC has taken upon itself where there is
7 a problem at times to go out and do the
8 sophisticated monitoring, come up with a
9 recommendation, and then enforce it.

10 That -- that is -- you know, I
11 think going all the way back to my day at the
12 FCC, over 20 years ago, people almost, you
13 know, just shut down the possibility of, you
14 know, real -- real monitoring capability. And
15 it's hard to understand how to even deal with
16 an increasingly sophisticated electromagnetic
17 environment and not step up to that
18 expectation by licensed users in some context.

19 I think that would be my summary.
20 The basic objective here would be, number one,
21 rely on smart devices rather than dumb
22 devices, have the network monitor itself if

1 possible, and solve problems proactively.

2 Where there's a need to react, that reaction
3 should be more efficiently applied.

4 Michael?

5 MEMBER CALABRESE: Yeah. Just I'd
6 like to -- if I could just roll back one
7 minute to recommendations one and two, so on
8 slide five.

9 Because this really shows the
10 distinction, I think, between the way we were
11 thinking of the untethered and then going
12 forward. So in recommendation number one,
13 although we want to -- you know, we need to
14 reduce the reliance on post-hoc regulatory
15 enforcement, with respect to the legacy and
16 untethered devices, what we end up concluding
17 that really the best -- perhaps the only thing
18 that really can be done, and we hope it could
19 be more effective, is for NTIA with the FCC to
20 more proactively educate policymakers
21 concerning this secondary status of unlicensed
22 devices in federal bands.

1 And that means that when the calls
2 -- you know, from the garage door opener
3 people, when they start coming in to
4 congressional offices, that shouldn't be the
5 first time that those telecom allays are
6 hearing that garage door openers actually work
7 on federal bands, right? They should be --
8 there should be some -- I think some proactive
9 education on that, and it's probably the best
10 thing we can do is just -- is hold a hard line
11 and make sure people are aware of it. It's
12 just simply the rules of the road.

13 Whereas going forward, and this is
14 the most important recommendation, is that the
15 FCC should require then in all new unlicensed
16 bands or on shared federal bands designated
17 from licensed access, the devices should be
18 connected devices that are required to -- I
19 guess we use the phrase "call home", which
20 could mean a variety of things which would be
21 the -- the terms of access band by band
22 depending on the federal system.

1 So that could mean to -- such as
2 with TV white space to renew the authorization
3 to operate in the band, which TV white space
4 happens every 24 hours maximum. That could be
5 less or more. Obtain a firmware update to be
6 remotely disabled in a particular frequency or
7 to receive direction to switch frequencies.

8 So implicit in this recommendation
9 also is that devices not only be connected but
10 that they be multi-band so that they're not
11 dependent on any one federal band so that that
12 way consumer expectations are not, you know,
13 defied to the point that manufacturers or
14 consumers raise hell.

15 PARTICIPANT: Is that a technical
16 term?

17 MEMBER CALABRESE: Janice covers
18 three very, very well, and then four --
19 recommendation four -- this is on slide eight
20 -- again, it's to just try to push
21 specifically for manufacturers to increase
22 consumer education efforts about the nature of

1 unlicensed and their responsibilities as a --
2 as an important counter port -- counterpart or
3 backstop to enforcement and avoidance through
4 technology. Because even with enforcement
5 through technology, it's important for
6 manufacturers to be on board as partners, that
7 their consumers have the right expectations.

8 That means perhaps the FCC would
9 have labeling -- different labeling
10 requirements than they do now. I know,
11 personally, when I look at the wireless
12 microphone packaging and instruction booklet
13 in a TV band, if anything, it was almost the
14 opposite of warning people that they had no
15 rights. Recommendations number 5, and this
16 is another one that is potentially
17 controversial, that there should be further
18 study of the regulatory framework for so-
19 called cheap dumb devices or untethered
20 devices. The committee recommends that in the
21 future -- generally recommends that in the
22 future, unconnected devices should be

1 restricted to legacy bands where they are
2 already prevalent, which would be primarily
3 900 MHz in 2.4, and policymakers should
4 consider whether devices should even be
5 further restricted in the future phasing out
6 their access to very high quality bands over
7 some appropriate time period. And that's just
8 accepting that, you know, not everything
9 should be assumed to -- to live forever.

10 So those are the -- I guess one
11 last thing is just to call attention to
12 because Janice didn't get any possible
13 questions for further study, I believe -- I
14 think we had agreed this subcommittee, like a
15 couple others, would go on a bit of a hiatus
16 for the remainder of this calendar year to
17 focus on the five working groups for 1755, but
18 what we think is important to continue on,
19 perhaps early in the new year, and these are
20 some of the questions, you know, that have
21 been raised.

22 So, for example, one is how to pay

1 for -- how to reimburse federal agencies for
2 the cost of facilitating shared access for
3 unlicensees in particular, because, by
4 definition, there wouldn't be clear -- where
5 there's not clearly an option, there is not
6 currently revenue under CSEA. And, you know,
7 that was taken up a bit by the incentive
8 committee. PCAST addressed that to some
9 degree but probably more work needs to be
10 done.

11 I know Karl encouraged us to
12 figure out how, you know, in the context of an
13 inventory, how could we get a better handle on
14 where unlicensed devices are operating; for
15 example, you know, perhaps the quantities in
16 a particular band or their concentrations
17 geographically which could affect the noise
18 level overall. And we didn't really come up
19 with anything satisfying on that yet, so that
20 deserves further study.

21 There's also the question -- the
22 last meeting we talked about several pros and

1 several cons of setting aside new spectrum
2 exclusively for unlicensed or whether
3 unlicensed should simply be the -- in a sense,
4 the fallback state for available capacity on
5 federal bands that are not being fully
6 utilized, which is more or less what the PCAST
7 recommended last week, so-called authorized
8 shared access to all the bands that are open
9 for sharing because they're under-utilized to
10 a considerable degree.

11 So that needs further study, as
12 well as probably a -- if we want to look at
13 authorized shared access across a much wider
14 range of bands, what would be the nature of
15 that of being authorized and being connected?
16 Those would be good questions.

17 Also, and the final thing here is
18 the -- which was proposed, and we discussed a
19 bit, was the establishment of a voluntary
20 interference clearinghouse that could crowd-
21 source experience with interference on federal
22 bands, whether it be federal users and/or

1 private parties could report -- self-report
2 and that could be aggregated and viewed and
3 may provide some -- some visibility into where
4 problems are developing, not only in terms of
5 band, but in terms of type and terms of
6 geography.

7 So those are all interesting
8 future questions.

9 MEMBER OBUCHOWSKI: So to
10 summarize, Karl did give us a few follow-up
11 questions, and we didn't fully answer them,
12 and I have to say we probably concluded that
13 perhaps there's not going to be a perfect
14 answer, particularly on the topic of
15 inventory.

16 I suppose when you get into an
17 environment where people are going to be
18 interacting with the database, that will yield
19 a form of inventory. But the reality is
20 unlicensed and sharing is going to be -- has
21 become, is going to become a far more context
22 and multi-faceted endeavor. And, you know, I,

1 for one, don't think it's almost possible to
2 inventory in a classic way that -- how that
3 happens.

4 You will get data back from
5 manufacturers, you'll get data again from
6 people contacting databases. I think some of
7 the responsibility will also fall on the
8 government, at least to do spot checks and
9 that sort of thing.

10 Dan Stencil did put forth a good
11 crowd-sourcing paper which I hope is on the
12 website. We'll make sure it's on the website.
13 That kind of voluntary approach might be
14 helpful in some bands of great interest. In
15 other circumstances, I think the government is
16 going to have to depend on the reality that
17 information is going to be pretty limited in
18 a sort of forthcoming way.

19 I'd like to close by saying that
20 during this hiatus, this committee ought to be
21 watching the FCC because this is an area where
22 we've been asked to make recommendations about

1 government and sharing more with unlicensed,
2 so I think there's an implicit understanding
3 that is a thread here that that will be a
4 growing phenomena, but it's a very interesting
5 world where the -- you know, the interference
6 will be becoming out of commercial regulated
7 entities, and this is just a paper product so
8 we can't really make a recommendation to the
9 NTIA to enforce.

10 This is really a recommendation
11 that says if this is going to work, the FCC is
12 going to have to look at these more
13 complicated and probably far more promising
14 sharing of scenarios with unlicensed, but do
15 some hard work on conducting enforcement as
16 well as the sort of characteristics of
17 equipment that will be treated as unlicensed.

18 That completes our report. And,
19 Dan, you didn't hear the plug for your report
20 but we are going to double-check that it is
21 now on the website and that everybody studies
22 your concept of crowd surfing.

1 We have some very involved members
2 of the committee on the table. I want to add,
3 for example, Kevin. Kevin was sort of the
4 godfather of the intelligent device
5 recommendation which is really a very strong
6 thread.

7 Does anybody from the committee
8 want to report before I make a motion that
9 these recommendations be adopted -- or Michael
10 and I do?

11 Dr. Pepper?

12 MEMBER PEPPER: Robert Pepper,
13 Cisco.

14 Picking up on your last point, I
15 think there's echo -- echo because both of
16 your microphones, which are next to each
17 other.

18 About the complexity going
19 forward, if we go back to recommendation two
20 and then also look at that in the context of
21 the next report, which is the sharing report,
22 one of the conclusions, which goes to, I

1 think, your point also about the complexity,
2 is on the sharing report, it says that -- it
3 concludes that we shouldn't select one
4 particular technical approach to work through
5 the sharing issues because we don't yet know
6 what those are, right?

7 MEMBER KAHN: This report's not
8 about sharing.

9 MEMBER PEPPER: But it is.

10 MEMBER KAHN: Not this one. This
11 one is not about sharing. This is simply
12 about how you get your hands around a device
13 that passes certification but it turned out to
14 have a post-book, things of that sort, which
15 are --

16 MEMBER PEPPER: No, but -

17 MEMBER KAHN: It's not about
18 sharing. I mean, the sharing rules are
19 independent of that is all I'm saying.

20 MEMBER PEPPER: Well, except for
21 the --

22 MEMBER KAHN: Oh, sorry, Kevin, go

1 on.

2 MEMBER PEPPER: Except for the
3 fact, Kevin, that here there's a particular
4 approach selected which is the database
5 approach. There are multiple different
6 approach -- technical approaches is the point,
7 is that it doesn't have to be a single one --

8 MEMBER KAHN: No, no, no, listen -
9 -

10 MEMBER PEPPER: -- and
11 recommendation two appears to -- to focus on
12 one approach in particular which is the
13 database approach, which seems to be
14 inconsistent with some of the other
15 conversations we've had and, in fact, the
16 complexity of the issue. So --

17 MEMBER KAHN: We didn't take a
18 position on the appropriate way to decide how
19 a band should be shared. All I'm saying is
20 this report does not take a position on an
21 appropriate means for deciding if a band was
22 open at any given moment in time.

1 MEMBER PEPPER: No, I understand
2 that but -- but the -- one of the conclusion -
3 - and what I'm looking at here is a different
4 report. This is -- this is the sharing
5 report, right? This is what's going to be
6 presented next.

7 MEMBER KAHN: Oh, I'm not part of
8 that. I don't know.

9 (Laughter.)

10 MEMBER PEPPER: I know. So what
11 I'm saying is we're going to get a report from
12 the next subcommittee. One of the
13 recommendations from the next subcommittee is
14 not to select a certain spectrum sharing
15 approach at this time, because it's likely the
16 multiple spectrum sharing approaches will be
17 used in a band most economically to
18 accommodate the incumbent interest. So the
19 next committee's conclusion is that there are
20 multiple approaches. We're not yet ready to
21 pick one. Recommendation two appears to be
22 selecting --

1 MEMBER KAHN: No, that's what I
2 said, if it -

3 MEMBER PEPPER: -- if it does not
4 -- fine. If it doesn't, then I think we need
5 to make that absolutely clear.

6 (Simultaneous speaking.)

7 MEMBER PEPPER: Excuse me --

8 (Simultaneous speaking.)

9 MEMBER KAHN: Recommendation two
10 here is not about -- this is Kevin.
11 Recommendation two is not about sharing or how
12 you decide to share a band. It's simply not
13 about that. For example, recommendation two
14 would apply perfectly fine in a band that uses
15 DFS. Recommendation two is about a problem
16 that we saw in its first instance in things
17 like the garage door opener problem, which is
18 how do you make an entity that owns the band -
19 - say a federal agency -- comfortable that if
20 they aren't going to be party to sharing, that
21 they're not ultimately going to be screwed,
22 not by the rules, but rather by simple

1 mistakes; that people put a device out and the
2 firmware in the device is faulty, and you
3 can't get consumers to do an update.

4 So this is about solving that
5 problem. It is not about -- so this works
6 fine with -- for example, this would work with
7 the existing 5 gig DFS. It has nothing to do
8 with the DFS mechanism, it has to do with
9 whether the mechanism works in a specific
10 class of devices.

11 MEMBER CALABRESE: Can I answer
12 the question? So, yeah, there was no one --
13 and, you know, if many others are reading it
14 this way, we can try to tweak the language,
15 but there was no intention to preclude any
16 other -- any method of sharing -- of band
17 sharing, but simply saying the devices that
18 are operating on an unlicensed basis should be
19 connected devices, whether they're using
20 sensing, or not, or whether they're using DFS
21 or any other -- any other method.

22 And, in effect, that's -- as it

1 turns out, that's actually completely
2 consistent with what, for example, the PCAST
3 report last Friday said that, you know, all of
4 the -- you know, all of the authorized shared
5 access devices should be connected even if
6 permission to transmit could be accomplished
7 strictly through sharing -- strictly through
8 sensing, that the devices should still be
9 connected devices in order to accomplish these
10 other enforcement functions. So we're only
11 concerned about the enforcement function.

12 MEMBER PEPPER: No, I understand
13 that. And that actually -- this is Pepper
14 again. Specifically going to number three
15 which is receive direction from, you know --
16 receiving direction can also mean, and if it
17 does, then I think we're just going to be, you
18 know, putting -- making it explicit, that
19 receiving direction also could be because of
20 sensing and there -- thereby actually
21 switching frequencies, but it's not sending,
22 you know, direction from a third-party to the

1 device.

2 There are multiple ways that you
3 can do that so it's not clear what, number
4 one, receive is or receive from whom --

5 MEMBER KAHN: Yeah, I think -- to
6 answer that, I think what that -- I can tell
7 you what that really was aimed at was much
8 more -- yeah, I'm sorry, this is Kevin -- was
9 much more -- if you had a band in which part
10 of the band turned out that more study was
11 needed, you know, interference was discovered
12 post-hoc, you know, and people weren't quite
13 sure how to -- you know, it was more a case
14 of, gosh, we didn't think that kind of
15 interference was going to be an issue, let's
16 go off and study it for a few months and see
17 if we can figure out how to tell people to do
18 better firmware so that it won't be a problem.

19 In the meantime, we want to get
20 people out of that part of the band while we
21 work the problem. So it wasn't a -- it wasn't
22 a DFS kind of call. Maybe it was still -- it

1 was still addressing, essentially, problems
2 discovered with classes of devices coached --
3 so the worrying, perhaps, could be better in
4 that regard -- but this is not aimed at
5 dynamic assignment of frequency. That was
6 really not what this was about. This was
7 about this enforcement problem.

8 PARTICIPANT: Okay, now we're
9 going to go to Mark McHenry and then to Dale
10 Hatfield.

11 MEMBER MCHENRY: Bob, you said
12 this is inconsistent with the next panel, and
13 we agree with him that -- we call it
14 management in control, they call it
15 enforcement, but that should be database. And
16 for the frequency select -- just what Kevin
17 was saying, you can get any access that you
18 want, so I think the two groups are
19 consistent, and you were saying they were
20 inconsistent, I don't agree.

21 I see the recommendations as use
22 any sharer approach that's appropriate, but

1 for the command and control, you need a
2 database and a connection. If you need to use
3 something, you're going to want a database to
4 back that up. Even if it's in the licensed
5 band, you would want that.

6 PARTICIPANT: Thank you. Dale?

7 MEMBER HATFIELD: Sorry, I was
8 going to change the subject just slightly, and
9 I didn't want to interrupt before. Karl?

10 MR. NEBBIA: Sorry, Dale. I'm
11 just calling rank.

12 (Laughter.)

13 MEMBER HATFIELD: I used to -- I
14 used to be able to but I --

15 (Laughter.)

16 MR. NEBBIA: Yeah, well, I was a
17 little worried earlier. We don't have the FCC
18 people here but the language is starting to
19 get a little bit risky around here, and I
20 thought there might be some censorship that
21 would happen.

22 (Laughter).

1 MR. NEBBIA: But, anyway, I do
2 think -- I do think there are some issues here
3 that we're not exactly connecting on, and it
4 seems to me that the heart of the
5 recommendation was to say, regardless of
6 whether you're sensing, you're doing database
7 type stuff, regardless of how you go about it,
8 if there's a problem, there needs to be some
9 way of connecting to the network to get new
10 instructions as to -- for instance, on the
11 DFS, it may be to change your receiver
12 bandwidth or it might be to change something
13 else about what you're doing, but the heart of
14 it was you've got to have some way of
15 connecting back.

16 Now, Mark then interjected the
17 database back into his last statement, and I
18 think that's not the heart of the
19 recommendation here. I think it may be
20 database is part of what's controlling it, but
21 I don't think that's necessarily the whole.
22 I just think that the key here is if we're

1 going to fix problems after they occur, you
2 have to have some way of people are connected
3 and you get them new instructions as to how --
4 how to do it so --

5 PARTICIPANT SPEAKER: Janice, did
6 you have a comment that tied into that? And
7 then we'll go to Dale.

8 MEMBER OBUCHOWSKI: I just -- I
9 just had an interlude.

10 (Laughter.)

11 MEMBER OBUCHOWSKI: I have late
12 breaking news from the New London,
13 Connecticut, Daily, July 23rd, local resident
14 --

15 (Simultaneous speaking.)

16 MEMBER OBUCHOWSKI: -- so this is
17 a real time issue where, once again, some
18 upgrade at the sub-base has shut down a whole
19 bunch of garage doors in my part of
20 Connecticut so --

21 (Laughter.)

22 MEMBER HATFIELD: Well, I'm going

1 to change a little bit here. I wanted to
2 associate myself with Janice's comments
3 regarding the future where things are changing
4 so dynamically and there's so many different
5 emitter sources. There's so much opportunity
6 for things like inner mod.

7 There is a -- you know, talking
8 about signals coming from different
9 directions, the signals that are increasingly
10 noise-like and, therefore, more difficult to
11 find out, and also the aggregate noise
12 problem. We have not talked about unintended
13 interference here, but there's all kinds of
14 unintended interfering sources out there.

15 So when we talk about interference
16 at any one place, it may be some combination
17 of a bunch of intended emitters plus a bunch
18 of unintended emitters and I -- I get worried
19 that the end result of that is such a noisy-
20 like structure in the aggregate that you can't
21 -- even with a big budget and the best of
22 intentions, you may not be very easily able to

1 figure out the person you want to go to and
2 subject to a fine.

3 So I -- it just -- it -- it
4 bothers me but when Janice raised it, I -- in
5 fact, I -- I don't have to give my talk here.
6 I start at the end of Thursday because I've
7 just basically given it, but I am worried that
8 -- I am worried about that sort of aggregate
9 problem and noise-like situation that may be
10 difficult to track down the culprit.

11 PARTICIPANT: Karl -- or Bryan?

12 MEMBER TRAMONT: So I just want
13 actually us to go back to Karl. So you flag
14 this concern, which I share about whether or
15 not we're being too -- is there a path to
16 modifying the language that you feel like
17 would preserve the flexibility you just
18 flagged as an issue? Because I think it's
19 sort of -- I think I said that it would help
20 solve the problem and I do have the concern
21 that we're somehow locking ourselves into a
22 certain path. So I just want to go back to

1 that if we could.

2 MR. NEBBIA: Yeah, actually, I
3 didn't think -- this is Karl. Yeah, that's
4 right, with a "K".

5 I actually didn't think the
6 recommendation was confusing. I think
7 sometimes we -- we see things written and we
8 view them from a perspective that we have but
9 I think, for me, the emphasis is clear here.
10 It has nothing to do with what technique
11 you're using to -- to do the sharing but only
12 that you're looking for an -- a connectedness
13 in there. And I think there were other issues
14 regarding that, that I'd like to talk about a
15 little bit, but I do think the emphasis to me
16 is quite clear.

17 MEMBER KAHN: Quick question.
18 This is Kevin. Would it help if you just
19 deleted item three, because I don't think we
20 actually lose anything by this business about
21 drop -- by dropping the thing about change
22 frequencies, because that's sort of implicit

1 anyway. And that avoids any notion that what
2 we're doing is directing you to a frequency
3 which kind of suggests the sharing.

4 If there's anything in here that,
5 you know, I could see would make people think
6 it was something it wasn't, it would be that
7 little bullet three down there at the bottom.
8 Because it wasn't intended for that, but I
9 understand how you could read it as that. You
10 know, if that helps clarify it, I would have
11 no problem with just deleting that one item
12 because it doesn't --

13 CO-CHAIR ROSSTON: This is Greg
14 Rosston. Does that mean, basically, you're
15 told to stop -- in number two, stop using a
16 particular frequency, and then your -- your
17 device has the knowledge to go to another
18 frequency itself --

19 MEMBER KAHN: Yeah, I mean,
20 conceivably, this device had ten frequencies
21 to operate on and you told it to stop using
22 that one, we would still have ten minus one

1 frequency to operate on but --

2 (Simultaneous speaking.)

3 MEMBER KAHN: -- exactly. So
4 that's why I don't think you would lose
5 anything by deleting that item three and it
6 might avoid this -

7 MEMBER OBUCHOWSKI: That's fine.
8 Why don't with go with that? You know,
9 frankly, I think that Bob, as always, is
10 raising an interesting issue because I always
11 want to have it both ways. I do think it's
12 sort of a subtle world in which we're
13 operating here.

14 I, for one, am not intending this
15 set of recommendations be like an endorsement
16 in a more sophisticated PCAST environment, but
17 what I am -- but I think that we all agree
18 however we feel about the pace of that, you
19 know, future, that the entire committee really
20 bought in strongly to the idea that you can't
21 be allowing unlicensed devices, going forward,
22 to sort of be in a very primitive self-help,

1 self-enforcement mode, and this was the
2 minimum necessary to try to take us into a
3 future state.

4 So I think that is a good edit
5 that you promoted here, Bob, and I think that
6 we can all agree and with that said, if you
7 have other comments, I would like to --

8 MEMBER ALDER: This is Larry. All
9 right. Janice had a comment on recommendation
10 five which I agree with wholeheartedly in
11 spirit, which we're basically saying is that
12 cheap dumb devices have to be dealt with
13 appropriately, and I like the fact that she
14 used the word "generally", but I see also here
15 that you're getting a little bit prescriptive
16 by saying the solution is put them on a legacy
17 band.

18 It just seems like we may
19 encounter situations in the future where
20 that's not the appropriate action. I think
21 the spirit is good. I'm wondering if there's
22 just a way to be less prescriptive on that.

1 MEMBER OBUCHOWSKI: I would
2 actually support such an edit. I think it's -
3 - and, in fact, you know, one of -- one of the
4 views that I voiced during the committee's
5 work is, you know, the fact that the 9 is a 9
6 MHZ band and is an unlicensed band, and that
7 is a beautiful piece of spectrum. It's
8 totally trashed now with all sorts of stuff.

9 So, you know, saying that, you
10 know, it should be legacy spectrum probably
11 wasn't the right choice of words, so if
12 anybody can suggest a better choice of words.
13 I mean, basically, it's to find a select piece
14 of spectrum where that form of device would be
15 best suited and ensure that it would be
16 limited to that, you know, area.

17 MEMBER DOMBROWSKY: If I can make
18 a -- to me -- This is Tom Dombrowsky.

19 To me, the first sentence is all
20 you need in recommendation five. Really, why
21 don't we study the regulatory treatment of
22 cheap, dumb devices and not get into all the

1 other things because, frankly, there's a lot
2 of dumb devices, a lot of bands that aren't
3 even covering their 49 MHz. You know, there's
4 a lot of stuff being used there for dumb
5 devices and, frankly, being used well. I
6 mean, people like their remote key entry for
7 their car. They don't want to go and open
8 that car if they don't have to.

9 So I think just leaving it just to
10 that first sentence, let's study that and see
11 if there's a way to get around it, and it
12 might -- it might be the easiest way to get
13 there.

14 MEMBER CALABRESE: We did study it
15 and the recommendation we got was the second
16 sentence. I mean, you know, essentially, that
17 -- that unconnected devices should be
18 restricted to, you know, some -- some limited
19 number of bands so --

20 MEMBER DOMBROWSKY: Limited number
21 of bands.

22 MEMBER CALABRESE: Yeah, so I --

1 so I would disagree with that, although if we
2 wanted to make it less -- less prescriptive
3 about --

4 (Simultaneous speaking.)

5 MEMBER OBUCHOWSKI: -- Tom, why
6 would you object to the third -- third? I
7 mean, there's -- you know, in -- in bands that
8 are, you know, low --

9 CO-CHAIR ROSSTON: This is Greg
10 Rosston. Can I just suggest maybe moving more
11 generally to "should generally be restricted"
12 as opposed to becoming "generally recommends"?
13 Would that change your feeling about it any?

14 MEMBER CALABRESE: Could you
15 repeat that again?

16 CO-CHAIR ROSSTON: Just moving the
17 word generally to after should. Should
18 generally be restricted.

19 MEMBER CALABRESE: Should
20 generally be restricted to legacy bands where
21 they are already prevalent.

22 MEMBER OBUCHOWSKI: Or just

1 recommend study of. I don't have a problem.
2 I mean, I'd like the FCC to take up this topic
3 in a more disciplined fashion.

4 MEMBER DOMBROWSKY: Yeah, I mean,
5 my take is that the FCC hasn't done any
6 coordination on this yet so, you know -- I'm
7 sorry. Tom Dombrowsky again. And so I know
8 the committee has looked at it and we have
9 some thoughts about it, but at the end of the
10 day, some of these may be a little bit too
11 strong at this point just because there are so
12 many dumb devices out there and to try and say
13 you're now stuck here, we may be cutting you
14 out, it's just a -- I think something that
15 needs to be thought through a little bit more.

16 MEMBER KAHN: Kevin Kahn again. I
17 think really all we were trying to get to
18 there was that -- that if the big demand on
19 additional spectrum which is -- I mean, if you
20 didn't have demand for additional spectrum,
21 none of this would be interesting, and the big
22 demand for additional spectrum is not coming

1 from cheap dumb devices, it's coming from
2 smart connected devices.

3 So the intent -- and, I mean, I
4 think maybe we're too specific, but the intent
5 was basically to say, for the devices that are
6 not smart connected devices, let's try to keep
7 them isolated to some limited set of bands
8 that make sense to them rather than allowing
9 them to proliferate all over the place and
10 have, you know, interference problems with no
11 recourse that we could have for the connected
12 devices.

13 MEMBER TRAMONT: Could that be the
14 second sentence? This is Bryan. Could that
15 be -- could what Kevin just said be the second
16 sentence in --

17 MEMBER DOMBROWSKY: I mean --
18 (Simultaneous speaking.)

19 MEMBER DOMBROWSKY: -- intend any
20 more discussions, right.

21 MEMBER TRAMONT: So more like --

22 MEMBER DOMBROWSKY: This is Tom

1 Dombrowsky. That's kind of what I was driving
2 at is just sort of getting the framework of
3 we've got a problem, let's not let it spread,
4 yeah, but then having that last sentence that
5 sort of says, not only do we not want it
6 spread, we want to tamp it down, I think
7 that's where I have some concerns just because
8 a lot of the bands that they're in, we're not
9 going to be moving other stuff in there.
10 There's not enough spectrum there. They're
11 not broadband. I mean, 49 MHz is not
12 broadband. We're not going to put smart
13 connected devices in 49 MHz. So I think that
14 was my reaction.

15 MEMBER FELDMAN: This is Molly
16 Feldman. I mean, what Janice said earlier,
17 what about just taking out legacy and just
18 limited or specific at the end?

19 CO-CHAIR FONTES: Okay. Could
20 somebody now give us a corrected -- are you
21 going to try to give us a corrected --

22 (Laughter.)

1 MEMBER OBUCHOWSKI: The committee
2 recommends that future unconnected devices --
3 the -- the location of future unconnected
4 devices should be studied further by the FCC,
5 you know, and --

6 MEMBER CALABRESE: After the first
7 sentence, you could have, the committee rec --
8 let's see -- the committee recommends -- and
9 just start off the third sentence, actually.
10 The committee recommends the policymakers
11 should consider whether such devices should be
12 restricted in the future phasing out their
13 access to very high quality bands over an
14 appropriate time period.

15 CO-CHAIR FONTES: I think I -- I
16 share the concern of the last sentence that
17 Tom has.

18 (Simultaneous speaking.)

19 MEMBER TRAMONT: This is Bryan.
20 I'm sorry, but I don't want to -- we have a
21 lot of legacy devices and a lot of investment
22 in a lot of bands, and I don't know that I

1 would to put a cloud over them that we're
2 going to pull it out from underneath them at
3 this stage, so that last sentence makes me
4 nervous.

5 I notice Kevin has language for
6 his new sentence -- a different version of
7 sentence two.

8 MEMBER KAHN: Yeah, if we get just
9 get rid of some of the specificity, I think
10 you can do it. I mean, you know, if the
11 committee recommends that, you know,
12 unconnected devices, you know, be, you know,
13 assigned to, you know -- isolated sounds
14 negative --

15 (Simultaneous speaking.)

16 MEMBER KAHN: -- let me look for a
17 better word, but --

18 MEMBER CALABRESE: A limited
19 number of bands.

20 MEMBER KAHN: A limited number of
21 bands where, you know, -- no, recognizing
22 that, you know, once deployed, they will

1 always continue to exist, we recommend
2 unconnected devices be assigned to a limited
3 number of bands.

4 MEMBER DOMBROWSKY: Let me give it
5 a try. This is Tom Dombrowsky again. Maybe
6 we can do it from a positive perspective which
7 is, what are we trying to say: we want
8 connected devices in the new spectrum bands
9 and the broadbands. And so why don't we in
10 the second sentence say, for new bands that
11 could have broadband capability for unlicensed
12 use, they should be connected to the extent
13 that --

14 MEMBER KAHN: That was really what
15 the origin of this.

16 MEMBER DOMBROWSKY: -- let's make
17 it positive instead of restrictive. I mean,
18 that, to me, seems like what you're trying to
19 do and --

20 MEMBER OBUCHOWSKI: No, but that
21 wasn't all that we were trying to do.

22 MEMBER DOMBROWSKY: Okay. I'm

1 sorry.

2 MEMBER OBUCHOWSKI: I'm not -- I
3 don't know how we say this and maybe we should
4 --

5 CO-CHAIR FONTES: This is Brian
6 here. I think what we may want to do is take
7 a break, caucus end this so you can come out
8 with specific language rather than trying to
9 edit in a forum, and then after that break,
10 come back and present that agreed-upon edit to
11 recommendation five. Any thoughts?

12 So we'll take a 10-minute break.

13 (Whereupon, the above-entitled
14 matter went off the record at 2:53 p.m. and
15 resumed at 3:02 p.m.)

16 CO-CHAIR FONTES: Okay. So they
17 made progress during the break, and I'm going
18 to turn it over to -- and I'll turn it back
19 over to Janice and Michael to go through the
20 edits, and they're being typed in now, as I
21 believe, and then we'll read it for those
22 folks that are on the call.

1 MEMBER CALABRESE: Right. Okay.
2 So what we have -- this is -- I think we have
3 found an appropriate change for recommendation
4 number five to strike the sentence two and
5 sentence three, and replace those two
6 sentences with: "The committee recommends that
7 in the future", quote, "unconnected devices
8 generally should be restricted to a limited
9 number of appropriate bands" --

10 MEMBER OBUCHOWSKI: Okay,
11 unconnected devices --

12 MEMBER CALABRESE: -- actually,
13 recommends that in the future -- so, yeah --
14 I'm sorry --

15 MEMBER OBUCHOWSKI: Delete the
16 second that --

17 MEMBER CALABRESE: Yeah, delete
18 the second that, and sorry about that. Okay.
19 But in the future, unconnected devices
20 generally should be restricted to a limited
21 number of appropriate bands.

22 MEMBER OBUCHOWSKI: Can everybody

1 live with that? Can everybody live with that?
2 Are there any more comments on these
3 recommendations? I am so excited --

4 (Laughter.)

5 MEMBER OBUCHOWSKI: -- that my
6 field could generate such drama.

7 PARTICIPANT: Okay. Michael?

8 MEMBER CALABRESE: We found a --
9 it looks like Kevin flagged this that in --

10 MEMBER KAHN: Actually, Mark
11 flagged it but --

12 MEMBER CALABRESE: Oh, Mark, okay.

13 (Simultaneous speaking.)

14 MEMBER CALABRESE: Recommendation
15 two -- so --

16 MEMBER KAHN: In addition to the--

17 MEMBER CALABRESE: Yeah, so we
18 should probably do that if there's -- so
19 delete three and then after -- after the
20 comment after firmer update, it's probably
21 where three should go because -- and/or
22 because I'll give you a firm update and

1 nothing necessarily to do with disabling a
2 particular frequency. Those are two actually
3 separate mitigation processes that might
4 happen.

5 (Simultaneous speaking.)

6 MEMBER KAHN: So just put a three
7 --

8 MEMBER CALABRESE: -- and/or three
9 to be -- okay. That, I think -- thank you,
10 Mark. And thank you, Chris, for their editing
11 ability there. Can you say number five again?

12 (Laughter.)

13 MEMBER MCGINNIS: So as she's
14 going to point out -- there's excess "D" on
15 the appropriate bands.

16 (Laughter.)

17 CO-CHAIR FONTES: For those of you
18 who are wondering, that's not appropriate in
19 band.

20 And we're changing that to
21 appropriate bands.

22 (Off microphone comments.)

1 CO-CHAIR FONTES: Okay. Now, I
2 think Karl had some comments.

3 MR. NEBBIA: Thank you. I've been
4 enjoying the fray. Janice uncensored is
5 really, you know --

6 (Laughter.)

7 MR. NEBBIA: Anyway, I had a few
8 comments to make. First of all, we -- I
9 noticed this committee was getting created, we
10 had a lot of discussions internally about what
11 kind of things we should have the group
12 consider and whether the recommendations
13 should all pertain to federal use of the
14 spectrum or be more general. There was a lot
15 of argument back and forth. And, in fact, the
16 four questions here were constructed in a way
17 where we were sort of limiting ourselves to
18 what can the federal government do about these
19 problems that we're experiencing, and as
20 Janice said earlier, you know, the news today
21 is that the problems still exist on the garage
22 door side.

1 So -- and I understand the idea
2 that ultimately the answers are in fixing the
3 technology, and so on, but interestingly
4 enough, it seems that more from the, what does
5 the government do? How do we respond to these
6 problems to an FCC problem?

7 And as we look ahead here, I think
8 it's the recommendations, of course, are all
9 stated, in essence, that NTIA should recommend
10 to the commission that we alter something.

11 But I think one of the questions
12 that's of interest to me here is when we see
13 anywhere from industry a recommendation or a
14 petition to the commission to make these kinds
15 of changes, because that seems to me to be --
16 certainly, if the unlicensed community steps
17 up and says, this is how we would like it done
18 in the future in order to keep ourselves out
19 of these problems, it has a whole lot of
20 weight if it's done that way, as opposed to
21 the federal agencies, you know, complaining
22 about an item -- which, to be honest, I was

1 talking earlier, I'm not sure I know of a
2 single case where an unlicensed device is
3 actively interfering with a non-federal user
4 or, vice versa, that the non-federal user is
5 interfering with an unlicensed device and,
6 therefore, people are calling the Hill.

7 It seems like many of these
8 untethered devices, and even the newer devices
9 that are linked to the -- to the Net have, in
10 fact, been placed in bands where the federal
11 government operates. So it remains a
12 significant issue for us.

13 And, certainly, I don't know based
14 on the information here, I recognize that Wi-
15 Fi has become like a focal point for many
16 people, but I honestly don't know how many
17 untethered devices are still out there.
18 Certainly, all the car key fobs are
19 untethered. Many of the new car ignition
20 systems have a radio linked in them. The --
21 the tire reporting gauges are not tethered.
22 The garage door openers more and more, I

1 think, are getting tethered to people's cell
2 phone connections, and so on; but I don't
3 really have a good sense of how big a piece
4 this is, and we didn't -- we didn't spend time
5 necessarily on that, but I would certainly
6 hope that if this is a significant item for us
7 in the future, that we would see folks from
8 the industry side step up and say, yes, this
9 is really needed.

10 I mean, we can certainly, I think,
11 maybe start the ball rolling by the fact that
12 it has been interference in the federal
13 systems that have really stood out -- or to or
14 from federal systems. So we -- so we may able
15 to take the ball on but, ultimately, this is
16 an area that the non-feds -- in fact, the FCC
17 does -- does regulate.

18 Now, one of the things I thought
19 also was a key item in here is that the
20 concept of requiring devices in the hands of
21 all of our Americans with all of our rights
22 and freedoms that their devices are all

1 calling back into somebody else's data system
2 and reporting on themselves, I -- I found a
3 little -- I mean, I understand the -- the
4 concept of it and why it sounds like a really
5 good idea to make this work, but I just found
6 it a little bit surprising with all the kind
7 of policy people we have around the table that
8 nobody stood up and said, there are issues
9 with requiring everybody's devices to report
10 and especially those that carry location
11 information, and so on. And so I just -- that
12 seemed to me seeing them be two major items --
13 but, Kevin.

14 MEMBER KAHN: Just an observation.
15 This is Kevin. The devices should not have to
16 report in, in this recommendation. It simply
17 has to ask whether it is still authorized.
18 So, really, all it needs to do is query the
19 database to ask, is the signature of its
20 current former hardware still authorized? So
21 the -- it's, for the most part, in one way --
22 I mean, you know, you can argue that there's

1 some privacy issues there, but, for the most
2 part, this is used as a one-way query of a
3 database. So it's not -- the device isn't
4 telling you anything particularly in this
5 case.

6 Just -- so that's just an
7 observation on that last comment. But I would
8 agree, if it were, then this gets a lot
9 dicier.

10 MR. NEBBIA: I know -- this is
11 Karl again.

12 Certainly, in the 5 GHz issues
13 that we've had, part of what we wanted to do
14 was get them to make contact so that these
15 downloads could -- you know, could actually be
16 placed on their devices, but I think that's
17 interesting that the queries one direction.
18 I'm not sure --

19 Janice, do you have a comment?

20 MEMBER OBUCHOWSKI: I'm sorry. I
21 don't -- I agree that that's typically what
22 would happen, but I do think there were --

1 there was discussion about firmware, whatever,
2 being, you know, upgraded in some instances
3 but --

4 MEMBER KAHN: Sure, but that's --
5 that happens even now. If you go to your
6 manufacturer's site with your device, they
7 will, you know, download an upgrade to
8 firmware. It's still a one-way -- I don't
9 mean one-way because obviously these are --
10 there's a protocol handshake, but the
11 information content flow is from the database
12 to the device. The device is not saying where
13 it is, you know, it is not saying who owns it,
14 you know, it's simply saying, you know, give
15 me the keys that are valid for a device, you
16 know, of this type and, you know, it will give
17 back a set of information. If you have one of
18 the following hash keys, you're still good to
19 go, and if it doesn't, then it needs, you
20 know, to get new firmware or do something
21 else. Again, it goes to the manufacturer and
22 says, you know, give me an update to my

1 firmware.

2 So it really is -- I mean, this
3 one -- this one we did think about some, and
4 it's not a -- I'm not saying you could not
5 add, okay, big brother capabilities here, but
6 that's not -- that is not required to meet the
7 description of this.

8 MR. NEBBIA: This is Karl again.
9 Also, the recommendation statements up front
10 in the recommendation one about proactively
11 educating policymakers here. Certainly, from
12 our experience, I think the critical component
13 of that is, once again, the unlicensed
14 industry being willing to educate the folks up
15 on the Hill.

16 Because, first of all, I think
17 you've got to recognize there's a limited
18 number of folks on the Senate and House side
19 that are directly linked to telecom issues,
20 and most of the people getting the calls are
21 people just representing, you know, Joe Smith
22 at home that called them. They don't know

1 anything about telecom at all and to make a --
2 you know, a major educational effort across
3 the House and Senate, that's a pretty
4 significant challenge when, in fact, when the
5 problems happen, if the industry stood up
6 right away and said, "these are the rules we
7 live by, they make our industry work, we need
8 everybody, including the folks on the Hill, to
9 support the structure that we have in place,
10 otherwise the whole system begins to erode,"
11 that would have significantly altered the
12 amount of time and resources that went into
13 correcting at least the garage door problem,
14 as temporarily as that may be.

15 And the challenge there was we
16 didn't have the door opener stepping up and
17 saying, "you know, yes, Madam Congressperson,
18 this is the correct way, we've got to stick by
19 these rules."

20 So I think that certainly the
21 educational aspect, I think, needs to be
22 carried out to a great extent and certainly

1 encouraged by the industry. So I think as we
2 look at that, we certainly would appreciate
3 the industry's support in -- in looking at
4 this.

5 Also, as we get into -- there's
6 the recommendation three, which we really
7 haven't talked about to a great deal, the
8 streamlining of interference reporting tools.
9 I'm not sure what that exactly means or what
10 your understanding of the -- of the reporting
11 requirements right now. If we have
12 interference in the 5 GHz radars, we're
13 getting calls immediately from the FAA.
14 They've gone into -- into the FCC. They got
15 people out in the field that are going after
16 these folks.

17 So I'm not sure, some of those
18 things about the reporting aspect, I just --
19 I didn't quite grasp what speeding up of the
20 process people felt really did happen. We've
21 certainly not sensed, certainly, a lack of
22 response by the Commission enforcement bureau

1 people, so I'm not exactly sure, you know,
2 where we go with that.

3 But looking to the future, I think
4 one of the considerations that we had here is
5 the cost aspect and, as most of you know,
6 there were probably times during the drafting
7 of the Middle Class Tax Relief Act where costs
8 related to sharing spectrum with unlicensed
9 was in the text. It, in the end, was removed
10 from the text as a -- you know, as that
11 discussion went forward.

12 So that still becomes a critical
13 item right now. We're working on 5 GHz
14 expansion that's going to take resources from
15 the agencies to make that happen, and clearly
16 there is not a mechanism in place now.

17 When we talk about the inventory,
18 I think what we were hoping was not an
19 inventory in the sense that we know where
20 everybody is, but could we -- could, in fact,
21 through the FCC's product certification
22 process, isn't there something there that

1 says, okay, all of the garage door openers are
2 in three to four hundred MHz, the car key fobs
3 that are 315, so that we had a sense as we
4 were making plans that these folks are in
5 certain locations.

6 I don't need to know where
7 everybody's car key fob is, but I would like
8 to know that the car key fob industry had
9 settled on 315, and if we start seeing issues,
10 that we know they're there. So I'm not
11 looking for an inventory as in a licensing
12 inventory. I'm just talking about where are
13 the products? Where are the baby monitors?
14 And so on, in the -- and so on.

15 The last interesting thing I've
16 found as recently -- I don't know if many of
17 you are aware -- but the Europeans, I think,
18 have finally gotten frustrated with the
19 unlicensed device routine, and their problem
20 was they were pushing them into specific bands
21 and the rest of the world wasn't buying it,
22 particularly, the United States, and we were -

1 - equipment was floating around the world, and
2 now they finally have adopted a much more --
3 or a new direction headed toward basically
4 allowing unlicensed devices to go anywhere if
5 they meet certain power requirements, and so
6 on.

7 So it's interesting that we're
8 suggesting a solution for the future is
9 forcing the untethered guys into more focus
10 spectrum when the Europeans have finally
11 gotten frustrated with their own approach and
12 now they're heading in the other direction,
13 so.

14 CO-CHAIR FONTES: Is that your last
15 comment?

16 (Laughter.)

17 CO-CHAIR FONTES: Okay. Turn it
18 back over to Janice and Michael. Wait, wait,
19 microphone.

20 MEMBER OBUCHOWSKI: With all that
21 said, and recognizing the very positive
22 editorial work of the group here, we would

1 like to put these recommendations to a vote.

2 CO-CHAIR FONTES: Is that a
3 motion?

4 MEMBER OBUCHOWSKI: That is -- I
5 make that motion.

6 CO-CHAIR FONTES: Is there a
7 second to that motion? Okay. Is there any
8 further discussion?

9 Hearing none, all those in favor,
10 say aye.

11 (Chorus of ayes.)

12 CO-CHAIR FONTES: Any opposed?

13 (No response.)

14 CO-CHAIR FONTES: Thank you. And
15 I want to thank everybody for their
16 cooperation on the edits.

17 CO-CHAIR ROSSTON: Okay. Now
18 we're moving onto the structured spectrum
19 subcommittee report and this is -- we
20 discussed these -- this report and these
21 recommendations at the March meeting and have
22 re-circulated in hard copy, although it's

1 available on the website from the previous
2 meeting, the slide deck that Larry and Mark
3 were going to prepare and going to discuss
4 with the recommendations from that March
5 meeting. So I'll turn it over to you guys.

6 MEMBER ALDER: All right. This is
7 Larry. I'll kick it off. So, again, as Greg
8 just said, these were discussed in the March
9 meeting, and we just didn't have time to bring
10 them for a vote for approval, so that's sort
11 of what we're doing today.

12 To remind everyone of the
13 background, the question we were working
14 really on is how do we set up sharing
15 arrangements when the primary service may
16 continue or has the right to continue to
17 evolve, and what kind of sharings are workable
18 for the industry in the long term. We
19 basically distilled the recommendations into
20 two sets of technology set of recommendations,
21 and a process set. So I'm going to turn it
22 over to Mark.

1 MEMBER MCHENRY: So the technical
2 recommendations from the chart are not up
3 there. There's three recommendations. The
4 first was that NTIA should develop a set of
5 spectrum sharing requirements. I'm on the new
6 working groups, and we were sent the planned
7 exclusion zone but, really, spectrum sharing
8 has more features, you know. Is there --
9 what's your enforcement mechanism? What
10 changes can the incumbent make in the weight
11 form or the entrance? So if the NTIA would
12 make like a memo or a list of all these
13 requirements, they might not put numbers
14 against them but at least they would say that
15 there is this issue that needs to be resolved.
16 So we kind of become a template for making
17 spectrum deals. So that's the first
18 recommendation.

19 The second recommendation, which
20 was already talked about, is even in licensed
21 band and unlicensed band, you need a
22 management and control approach to change the

1 software. And this has already been
2 discussed, so I think our recommendation, I
3 can't imagine a situation where you wouldn't
4 want this, where the two parties are sharing
5 and they could cause interference with each
6 other, the incumbent's going to want some type
7 of management control.

8 And the third recommendation is --
9 it's too early to pick winners and losers --
10 we would look at different bands, like
11 aircraft telemetry where the database works,
12 where the sensing works, and sometimes both
13 work and some other scenarios a different case
14 works. So I recommend NTIA not pick a general
15 approach and they kind of let it get worked
16 out on a band by band approach. It could be
17 even that within the band there might be two
18 or three approaches depending on the incumbent
19 and the entering systems. There are no clear
20 winners or losers, and that would just leave
21 it open. So those are the three technical
22 recommendations.

1 And then if you turn forward a
2 couple pages -- there's no page numbers for
3 some reason on this one that I have, my
4 printed copy -- that there's a process
5 recommendation, titled recommendation four,
6 which largely is one I think with the NTIA is
7 already adopting, so this is kind of a
8 softball for Karl and Mark. This is
9 essentially a dialogue between the incumbents
10 and the new entrants to develop specific
11 sharing recommendations.

12 Generally, the feeling was that,
13 without reading all the rules here -- maybe I
14 will -- but the general idea was you need good
15 cooperation between the incumbents and the new
16 interests to really figure out the technical
17 solutions. You can't do it in silos. It has
18 to be cooperative. And I think that's the
19 process that the NTIA is undertaking now with
20 the 1755 band.

21 So just to read the
22 recommendation, it says: In the interests

1 where sharing is necessary, NTIA should work
2 with the FCC, federal agencies, or potential
3 new interests to develop specific
4 recommendations on the extent, impact and
5 method of sharing spectrum. Direct
6 discussions between the experts result in the
7 most efficient and dynamic sharing method
8 based on detailed understanding of how systems
9 and technologies operate and are used.

10 Discussion should be open to any interested
11 party but must be focused on a limited number
12 of issues or scenarios to develop actionable
13 recommendations that would be codified in the
14 rulemaking procedure.

15 The discussions should be held as
16 early in the process as possible to provide
17 sufficient time and to allow open and direct
18 discussion between the parties, including the
19 federal agencies. They must have senior level
20 oversight to ensure the discussions are based
21 on official recommendations and with an
22 expectation that proposals will be

1 implemented.

2 So that -- again, we presented
3 these last time, there was some discussion
4 last time, we wanted to bring them back, have
5 a discussion, and then maybe entertain a
6 motion to adopt these.

7 CO-CHAIR ROSSTON: Okay. Is the
8 discussion of these in addition to what we
9 discussed last time?

10 Karl, do you want to --

11 MEMBER NEBBIA: My -- my only
12 comment was, just to be clear on the technical
13 recommendations, that these are for sharing
14 the federal spectrum, because I don't think we
15 want to say that we need to have as an
16 interactive database if they're sharing
17 between two commercial operators that decide
18 to do it on their own, just to make sure that
19 it's -- it doesn't say it anywhere in here,
20 but with that understanding, at least in my
21 perspective, it should be only for a federal
22 perspective in this since it's NTIA.

1 CO-CHAIR FONTES: The question I -
2 - I --Before you do that, for those who are on
3 the call, if you can mute your phone, that
4 would be helpful. If somebody's moving papers
5 around or microphone around --

6 MEMBER ALDER: Oh, I just want the
7 respond to Greg. So, Greg, I don't know if we
8 -- if you're suggesting an edit. The
9 recommendations do the NTIA share --

10 (Simultaneous speaking.)

11 MEMBER PEPPER: My question,
12 though, is you said something that maybe I
13 missed it, I didn't read it, that the
14 recommendation, which I agree we should get to
15 the federal spectrum, but that was to use an
16 interactive database. That's an example in
17 the text but not on the PowerPoint -- these
18 are still recommendations or am I missing
19 that?

20 CO-CHAIR ROSSTON: I'm looking at
21 technical recommendation number two.

22 MEMBER PEPPER: Oh, okay, you're

1 right. Yes, but if you want to do that, an
2 interactive database, but there are other
3 names as well. If you want to put examples,
4 you can put in other examples, whether it's
5 sensing or peak, there are a number of
6 different approaches that are not in the
7 database --

8 MEMBER MCHENRY: Again, this is
9 just an ad hoc control. Once the device is
10 screwed up and it gets put in time-out, how do
11 you -- you know, experiments are taking a
12 time-out. While it's operating normally, it
13 can be doing beaconing, any other thing you'd
14 want. This is only after there's a problem,
15 how do you fix it? That's management and
16 control. This isn't -- maybe you're saying
17 management means that moment-by-moment
18 management, but this is kind of a month-by-
19 month management.

20 CO-CHAIR ROSSTON: And that was
21 Mark McHenry. And there's someone on the
22 phone who keeps moving stuff around. Please

1 do a mute so we don't have to hear your papers
2 going around. Thanks.

3 MEMBER MCHENRY: Well, did you get
4 the management, not a dynamic spectrum --

5 MEMBER ALDER: It's not
6 operational control, it's a management.

7 CO-CHAIR FONTE: Then I guess we
8 can't mute from our end?

9 (Laughter.)

10 MEMBER MCHENRY: Maybe it's not
11 somebody just moving papers, they're just
12 walking around.

13 MEMBER PEPPER: Okay. So, anyway,
14 I guess the question, Mark, is I understand
15 the management controls -- it does not -- you
16 know, it does not necessarily define, but this
17 is an interactive database. I mean, we heard
18 some -- I mean, this is enforcement, right, so
19 we heard some of the other examples.

20 It's not necessarily, you know,
21 querying an interactive database, but in the
22 management control, it could also be turned

1 off to a specific frequency, or use of that
2 frequency being turned off, and maybe it's
3 just over-definition of interactive database.

4 MEMBER ALDER: What words do you
5 want in there?

6 So the reason -- let me give a
7 historical context before you respond to that.
8 So, again, the question -- one of the
9 questions that was proposed to the group to
10 work on was the situation where you're having
11 a sharing and the primary service may continue
12 to evolve, and so the idea was, a solution to
13 that was to have a management and control
14 interface versus having some kind of magical
15 one-size-fits-all sharing technology, that was
16 the approach that we thought of as a group.
17 So that's the background of the discussion and
18 how the recommendations came out why.

19 There's kind of this management --
20 you can do the spectrum sharing and the
21 incumbent user has the right to evolve each of
22 the management and control capabilities so you

1 can deal with things that might not be
2 unanticipated in the future.

3 MEMBER MCHENRY: I think we kind
4 of recommend just one side -- this is Mark.
5 Imagine if you had a million unlicensed
6 devices and a radar complain, you just can't
7 turn them million off to figure out what it
8 is. You might go ask people questions, like
9 what frequency are you on? Or you might have
10 a process to figure out, what is this problem
11 versus, just what Kevin said, call for
12 permission to keep going, because it might be
13 pretty painful if you have a million
14 unlicensed devices just to turn them all off -
15 -

16 MEMBER PEPPER: But, again, it's
17 in the previous discussion, right, it's a
18 device -- if the device is operating across
19 the range of frequencies, to tell, you know,
20 a million devices not to use a particular
21 frequency but there's still other frequencies
22 that they can use.

1 MEMBER MCHENRY: But then what's
2 the next step? Then what -- you still haven't
3 fixed the problem. You just -- you know, you
4 turned them all off in some parts of band.
5 You might want other features -- the committee
6 didn't work out what these other features, and
7 that would be worked out band by band.

8 MEMBER PEPPER: Yeah, but I guess
9 the question is, is it interactive or is it
10 interactive database? You know, maybe it's
11 just the way I tend to think of database in a
12 very narrow sense of, you know, the TV white
13 space database --

14 MEMBER MCHENRY: No, I can imagine
15 --

16 MEMBER PEPPER: -- because this is
17 different. I mean, it's, I think, broader
18 than that in terms of --

19 MEMBER MCHENRY: You might force
20 that license device to run a log file and keep
21 it for a day and ask, send me your log files
22 because I want to figure out what unlicensed

1 device caused the problem. That would be one
2 extreme of what this might be. It's going to
3 be very hard to figure out what unlicensed
4 device or what was the problem, and just
5 turning things off, that's only --

6 MEMBER PEPPER: No, no I
7 understand. I guess it's -- it's maybe it's -
8 - it's the definition of database and thinking
9 about it more broadly. What you just
10 described, I don't think of as a database.

11 MEMBER MCHENRY: Okay. We could
12 put ergo database. We could list ten other
13 things. Maybe we should take the example out
14 just so that --

15 MEMBER PEPPER: Why don't we just
16 take the example out. I think that would be -
17 -

18 MEMBER MCHENRY: I'm not
19 supportive of taking the example out. I think
20 the example helps clarify the intent. I'd be
21 more inclined to add other --

22 (Simultaneous speaking.)

1 MEMBER MCHENRY: -- other

2 examples.

3 CO-CHAIR ROSSTON: Okay. Do you
4 want to propose adding other things perhaps?

5 MEMBER ALDER: If there's a
6 suggested additional example.

7 CO-CHAIR ROSSTON: Do you just
8 want to have just one more example, beacons or
9 --

10 MEMBER MCHENRY: Well, you could
11 request a log files from device. Please send
12 me a report.

13 CO-CHAIR ROSSTON: We want
14 something that we can actually put in here --

15 MEMBER MCHENRY: Yeah, on the --
16 suggest log file be sent would be another
17 example feature you'd want the device to do.
18 Send in the frequencies that you transmit on
19 the last three hours so I help diagnosis the
20 problem.

21 MEMBER PEPPER: I mean -- yeah,
22 well, I'm not sure how --

1 CO-CHAIR ROSSTON: Kevin, Kevin,
2 you need to --

3 MEMBER KAHN: This is the user's
4 device that's going to send you this
5 information?

6 MEMBER MCHENRY: No, the
7 incumbent. The more features you put in the
8 incumbent to diagnose the problem --

9 MEMBER KAHN: Oh, the incumbent.

10 MEMBER MCHENRY: No, no. The
11 entrant.

12 MEMBER KAHN: The entrant.

13 MEMBER MCHENRY: If the entrant
14 had total recording and helped the incumbent
15 figure the problem out, they could --

16 MEMBER PEPPER: You did now just
17 walk across --

18 MEMBER ALDER: Wait, wait. Time
19 out. Mark is now adding speculative stuff.
20 It's not the recommendation of the group.

21 (Simultaneous speaking.)

22 MEMBER ALDER: The recommendation

1 of the group is --

2 (Simultaneous speaking.)

3 MEMBER ALDER: So Mark is
4 speculating here how to add other possible
5 techniques. The recommendation of the group
6 is to require a management and control feature
7 using the spectrum sharing approaches, and we
8 put an example so people understood what that
9 meant, we said that interactive database would
10 be one example. We didn't specify other
11 examples. Mark's thinking about that right
12 now.

13 MEMBER PEPPER: Right, but if you
14 want to think of it broadly, a management and
15 control technique would be, you know, using
16 sensing and beacons.

17 MEMBER ALDER: Beacons, sensing,
18 fine.

19 MEMBER MCHENRY: You might ask,
20 did you get a beacon? What beacon strength?
21 Let's try to diagnose why did this fault
22 happen.

1 CO-CHAIR ROSSTON: Can we just --
2 rather than -- we just want to have something
3 that's very clear and concise --

4 MEMBER MCHENRY: Do you want
5 "comma beacons"?

6 CO-CHAIR ROSSTON: Okay. Can we
7 do that and is that enough?

8 MEMBER MCHENRY: Beacon's not the
9 controller.

10 CO-CHAIR ROSSTON: Well, I'm fine
11 for leaving it but I'm fine for adding
12 something if you want. Just add away.

13 MEMBER MCHENRY: So I think the
14 ball's in your court, Pepper.

15 (Laughter.)

16 (Simultaneous speaking.)

17 MEMBER PEPPER: You know, I can't
18 think at the moment of what to add as opposed
19 to, you know -- deleting it makes it easy, but
20 it's actually to some extent interactive
21 features, not just a database. It's, you
22 know, in an interactive database --

1 MEMBER MCHENRY: Who knows what
2 your iPhone is sending out and going on
3 between Apple and your phone and --

4 MEMBER PEPPER: There are very
5 different reasons -- I mean, this very
6 different -- and that's, by the way, using
7 licensed bands. How about interactive
8 database or other system?

9 MEMBER ALDER: Or other system?

10 MEMBER MCHENRY: Or other, yeah,
11 just --

12 MEMBER PEPPER: Fine.

13 MEMBER ALDER: Or other system.

14 MEMBER TRAMONT: This is Bryan. I
15 think, Greg, did you want to add your caveat
16 to top the NTIA should, in addressing -- I
17 thought you were saying in addressing sharing
18 with government bands, is that what the --

19 CO-CHAIR ROSSTON: The original
20 edit. I didn't know if I had to edit or
21 whether it was clear just because it's NTIA
22 that it's obviously dealing with.

1 MEMBER TRAMONT: What other
2 examples where NTIA is being asked to do
3 things that are related to commercial use, so
4 I think it's probably useful to go ahead and
5 do your edit here.

6 CO-CHAIR ROSSTON: So what would
7 my edit say?

8 (Laughter.)

9 (Simultaneous speaking.)

10 CO-CHAIR ROSSTON: NTIA should,
11 when adjusting from federal bands?

12 MEMBER TRAMONT: Yeah, consider
13 the following technical recommendations when
14 addressing shared federal system bands, I
15 guess. The NTIA should when addressing shared
16 federal -- shared federal spectrum?

17 MEMBER PEPPER: Shared federal
18 bands.

19 MEMBER ALDER: The following
20 tentative recommendations when addressing --
21 yes.

22 MEMBER MCHENRY: So -- this is

1 Mark. After its auction, is it still a
2 federal band? So what's the point of this if
3 they turn around and auction it?

4 CO-CHAIR ROSSTON: Well, if it's
5 not shared with federal anymore -- shared with
6 federal users? When they auction bands,
7 right, they have federal users still in them
8 so it's not as if auction alone takes them out
9 but it's just depends --

10 (Simultaneous speaking.)

11 CO-CHAIR ROSSTON: -- but still --
12 you could still auction the right to share it
13 with the federal bands, with federal users,
14 that's what I meant to say.

15 PARTICIPANT: So what is the
16 wording we came up with?

17 CO-CHAIR ROSSTON: Should consider
18 the following technical recommendations when
19 addressing sharing with federal users.

20 Okay. So are we at a -- do we
21 call --

22 MR. NEBBIA: Couple short non-

1 controversial comments.

2 (Laughter.)

3 MR. NEBBIA: First of all, the
4 issue of requirements, I think, certainly
5 understanding what the requirements are as
6 part of any interaction and trying to come up
7 with best solutions, I think is important. I
8 don't think it's really possible to specify
9 out front what all those requirements are.

10 And also once -- once you get into
11 this kind of discussion, I think, with an
12 incumbent service, there has to be a certain
13 since of limitation on their stating their
14 requirements as they are, the idea you're
15 going to open up all their requirements and
16 re-discuss the wave forms and so on. I'm not
17 sure that you can realistically pursue that
18 but, certainly, the understanding that the
19 requirements for the users involved in the
20 sharing arrangement need to be known, I would
21 certainly agree with that and can support
22 that.

1 As we discussed the sharing
2 arrangements, I know down at the WSRD earlier,
3 they named the database side, the sensing
4 side, and then of course the beacon side which
5 has recently been mentioned here. One of the
6 things that we're looking at in the 1755 to
7 1850 band is the whole question of
8 interference acceptance or tolerance, which is
9 not particularly a new -- it's not a
10 technique, necessarily, but it may, in fact --
11 particularly when we're talking with
12 intermittent operations, may, in fact, become
13 a critical part. So just so everybody
14 recognizes when you're -- when you're thinking
15 of those different approaches, that may become
16 a really important one.

17 And then certainly on the fourth
18 recommendation, I think this is pointing in a
19 direction -- and I realize this recommendation
20 has been developing over time, but certainly
21 as it was developing, we are seeing this need
22 to get the -- the sides of the issue together,

1 and as we look at the working group
2 discussions coming up, I think that's what we
3 are attempting to do there. And it seems like
4 in solving future problems, it's going to
5 become a critical component of what we do.

6 CO-CHAIR ROSSTON: Okay. I think
7 I -- I think I lost track, but I'm not sure
8 we've had a motion on this.

9 (Simultaneous speaking.)

10 MEMBER ALDER: I will make a
11 motion to adopt these recommendations.

12 CO-CHAIR ROSSTON: Second. Okay.
13 Any further discussion?

14 Okay. All those in favor?

15 (Chorus of ayes.)

16 CO-CHAIR ROSSTON: Opposed?

17 (No response.)

18 CO-CHAIR ROSSTON: Okay. Great.

19 CO-CHAIR FONTES: Okay. Now we're
20 in the next item in our agenda, and this is a
21 progress report in the CSMAC working groups.

22 And in this one, Karl, I don't

1 know if you want to start it out, but I think
2 we're really looking for the liaisons for each
3 of the five working groups to kind of give us
4 a quick update.

5 MR. NEBBIA: That's all. Yeah,
6 we're just we're looking for that kind of
7 report from folks who are in the groups.

8 CO-CHAIR FONTES: So for the 1695-
9 1710 MHz meteorological satellite, Mark, if
10 you want to give us a quick update? Or
11 Dennis?

12 MEMBER MCHENRY: I'll give you the
13 update. So there's been two face-to-face
14 meetings. NTIA gave a nice briefing on the
15 fast track analysis, went through all the
16 technical details, and then NOAA provided an
17 excellent overview of how all the satellite
18 systems work and the frequencies. And there
19 was a lot of technical discussions in the
20 meetings and aggregation effects and they're
21 starting to get down to the nuts and bolts.
22 So there is a listing generated, we need to

1 know all these parameters, and the entrant and
2 the incumbent will do the analysis. And Steve
3 is circulating that around.

4 They set up a data repository and
5 people were so friendly no head-knocking yet.
6 So there's no problems. That's it.

7 MR. NEBBIA: Not like this group.

8 MEMBER MCHENRY: Not like this
9 group. Very congenial.

10 (Laughter.)

11 CO-CHAIR FONTES: So the next
12 group is the working group two, 1755 to 1850
13 MHz, law enforcement, surveillance, et cetera,
14 et cetera. Tom?

15 MEMBER DOMBROWSKY: Yes, Tom
16 Dombrowsky. The group has had an initial call
17 just this week, in fact, yesterday, and
18 expects to have a face-to-face in about a
19 week-and-a-half on this issue. I think one of
20 the questions that's come up in that working
21 group, and there will be questions coming back
22 to NTIA on that, is a little bit on the scope

1 side, because there is some concern as to
2 whether they should be looking at sharing or
3 just looking at relocation schedules or not.

4 And I think more broadly another
5 question, I think, Karl, you've heard from
6 other groups, I think we're hosting several of
7 these working groups and I think one of the
8 questions is on the ethical side of providing
9 foods and drinks for all the government folks
10 that are coming to these meetings, so
11 clarification there would be greatly
12 appreciated, too, so we don't get into any
13 trouble on that.

14 CO-CHAIR ROSSTON: This could be
15 the Office of Special Counsel.

16 (Laughter.)

17 MR. NEBBIA: A couple quick
18 comments. First, you're always safe at giving
19 them nothing.

20 (Laughter.)

21 MR. NEBBIA: That's a good -- good
22 place to start. But with respect to the --

1 and we have sent this information back to our
2 own staff who are participating -- certainly,
3 we have done testing in the past that make it
4 appear that traditional sharing between the
5 existing incumbents and a wireless broadband
6 system is not realistic, given the need for
7 these agencies to go anywhere, and so on, at
8 any time.

9 So from that standpoint, I don't
10 think that sharing is a realistic aspect to
11 pursue. The critical issue is what's the
12 order of march for moving the systems out of
13 the band.

14 However, there were some questions
15 that came up that I think can be linked into
16 that, and that is whether, ultimately, the law
17 enforcement community can use the network, and
18 in that sense share the industry's technology,
19 and, in doing that, might be able to be on the
20 network where the network is available, and in
21 places where the network's signal is not
22 strong enough for them to use, that they would

1 have some sort of agreement with the network
2 operators that they would be free to put up
3 their own stick there to do whatever they
4 needed in that location.

5 So it might end up in some sort of
6 broader cooperative sharing capability or
7 arrangement but, certainly, the initial step
8 has to be looking at the order of march for
9 moving systems out.

10 CO-CHAIR FONTES: All right. Any
11 other comments then, Tom?

12 MEMBER GIBSON: Yeah, this is
13 Mark. I want to make one comment. There was
14 a question from that working group as to what
15 you meant by other short distance links. We
16 thought what you meant was the -- essentially,
17 the repeaters that were put in place to
18 facilitate the connection with the law
19 enforcement efforts, but we weren't sure.

20 MR. NEBBIA: I would have to go
21 back to our list, but I think that would
22 probably also include like some of the

1 electronic ordinance disposal, maybe that type
2 of thing. So there were some very short
3 range, mostly, once again, linked to law
4 enforcement.

5 CO-CHAIR FONTES: Okay. Any
6 others?

7 Okay, the working group three.
8 Rick, if you want to provide a comment or --

9 MEMBER REASER: We had our first
10 telecon last week, was primarily mostly about
11 getting to know each other, and it was fairly,
12 I think, friendly and so forth. Not a whole
13 lot of technical things were done at the
14 meeting.

15 I think the plan -- there's a
16 couple of action items, most of them dealt
17 with federal government side providing
18 information about technical characteristics
19 regarding satellite uplinks, and so forth, for
20 the ground stations. There's some continuing
21 discussion about exactly how the electronic
22 warfare stuff would be handled, and there's

1 going to be some things provided by the
2 government next week.

3 The first face-to-face meeting
4 will be next week on August 1st, downtown, and
5 hope to accomplish a lot. It can be a long
6 meeting. It starts very early in the morning
7 and goes till late at night. So lots of
8 things to be discussed, but we are off and
9 running.

10 CO-CHAIR FONTES: Great. Any
11 comments? Okay. Working group four? Mark?

12 MEMBER GIBSON: I'm going to have
13 to defer to either Tom or Mark because -- this
14 is Mark Gibson -- I wasn't able to make the
15 call, but I would add that I think our next
16 meeting's got yours beat because it's
17 scheduled from 12:00 a.m. till 12:00 a.m.

18 (Laughter).

19 MEMBER GIBSON: So it's a 24-hour
20 meeting, or a very short one, for the working
21 group four. But I wasn't on the call so, Tom
22 or Mark, you know, you have the details.

1 MEMBER DOMBROWSKY: Sure. This is
2 Tom Dombrowsky. I was on the working group
3 four call, and as he said, we have an initial
4 call, we have a face-to-face meeting that I
5 hope the schedule's not midnight to midnight,
6 but that will be next week. I think that
7 group went very -- very cleanly.

8 I think there was a little bit of
9 discussion about not everybody was involved in
10 the last go around with the fixed microwave so
11 there was concern about should we be doing
12 sharing or should we not, and we said, no,
13 you've fixed microwave, you're moving,
14 everybody knows you're moving. We don't need
15 to talk about sharing with fixed microwave.

16 And there was a lot more
17 discussion of the tactical radio because
18 that's where we really haven't done a lot of
19 ground work. So the focus of the group's
20 primarily going to be on the tactical radio,
21 not on the fixed microwave, and I think
22 everybody agreed with that.

1 CHARIR FONTE: Karl?

2 MR. NEBBIA: Just a note.

3 Certainly, with the experience of 1710 and
4 1755, there has been a lot of work done with
5 the tactical radio, at least in being able to
6 shrink the areas that you would have to
7 protect until you came up with some other
8 arrangement.

9 CO-CHAIR FONTES: Okay. No other
10 comment?

11 For working group five, I don't
12 know if Jennifer Warren is on the call to make
13 a presentation, or do you, Bryan?

14 MEMBER TRAMONT: I believe Ms.
15 Warren is going to take the lead here.

16 CO-CHAIR FONTES: Great.
17 Jennifer?

18 MEMBER TRAMONT: She was going to
19 take the lead per e-mail. If not, I can take
20 the lead.

21 (Simultaneous speaking.)

22 CO-CHAIR FONTES: Jennifer, if you

1 can hear us, just hold for a moment, please.

2 We were trying to mute the call based on the
3 interference we were hearing at this end.

4 Jennifer, are you on the call?

5 You know what, Bryan, why don't
6 you go ahead and, Jennifer, when you're on the
7 call, why don't you give me a quick text or
8 send me a quick e-mail just so I know you're
9 on the call.

10 MEMBER TRAMONT: So the working
11 group five had our initial conference call
12 last week. It was very productive. Our task
13 is fairly complex, like many of the other
14 committees, so there is going to be some
15 division of the group into multi-subgroups.

16 I think we had upwards of 80
17 people on the call, so we were very well
18 attended. And we actually -- 85, I think was
19 the number.

20 And our next meeting is scheduled
21 for next week, August 2nd, I guess we're the
22 slackers of the group, similar all-day affair.

1 We're going to start to dig in. There were
2 some work items in terms of people
3 volunteering for leadership roles in our
4 subgroups as well as submitting questions that
5 can help to frame the debate on the incumbent
6 systems across five different vectors. So we
7 are underway and, hopefully, the heavy lifting
8 is starting now and will continue on the 2nd.

9 MEMBER DOMBROWSKY: Just one
10 correction. It's a two-day meeting. It's
11 Thursday and Friday.

12 CO-CHAIR FONTES: For the rest of
13 the committee it's a two-day meeting, is that
14 what you're saying, Tom? Thank you.

15 Okay, any other questions for
16 Bryan?

17 Okay. Jennifer is on the call
18 and, unfortunately, we're unable to hear her.

19 MR. NEBBIA: Just one comment.
20 I'd ask just that you keep us informed along
21 the process if, in fact, the 80-person, 100-
22 person participant list gets to be an issue,

1 we may have to figure out another approach.
2 We are trying to keep this as open as possible
3 and yet -- but if you start getting 100 people
4 trying to resolve issues, it will be even a
5 little bit more difficult than it's been
6 today.

7 CO-CHAIR FONTES: Janice?

8 MEMBER OBUCHOWSKI: Yeah, I wanted
9 to highlight a topic that came up at this
10 meeting that I think is probably going to be
11 across the board. The question came up of,
12 you know, foreign participation, foreign
13 participation in person, foreign participation
14 by phone. That's sort of one subset of kind
15 of who becomes directly involved in this
16 process.

17 The second being kind of
18 guidelines for protection of data, and while
19 data may not be classified, one can envision
20 that from a federal side, but also from a
21 company side, if we're really going to get
22 into the nitty-gritty, something this -- this

1 open-ended probably will not yield the results
2 everybody's hoping for.

3 So I simply raise those two kind
4 of subsets of organizational questions to you,
5 and so NTIA will have to be guiding us through
6 this process, and there may well be a time
7 when, you know, we're going to have to close
8 down some degree of openness.

9 MR. NEBBIA: This is Karl. Well,
10 I should indicate that I know the issue of the
11 non-U.S. citizens came up at one point, and it
12 just seemed like the simple solution, at least
13 as the question was posed, was just not meet
14 on restricted facilities. And it's not --
15 it's harder on everybody to meet in those
16 facilities anyway, so even the people that are
17 hosting the meetings. So I think we've kind
18 of solved that one, and I hope the co-chairs
19 of each of the groups feel they have the
20 ability to resolve a lot of these types of
21 issues.

22 With respect to the data itself,

1 at this point, we would certainly look for the
2 agencies that have such data that they feel is
3 vital to the discussion that, obviously, that
4 they would bring that up and that they would
5 let it be known what kind of limitations there
6 are.

7 We're not -- we're not sure at
8 this point whether there's going to be very
9 much of that, as we've seen a lot of work go
10 on in ITU work and other places where there's
11 been a limited set of data that was all that
12 was really necessary to get the formulating
13 and outcome. So we're -- at this point, we're
14 not putting out a general policy telling
15 everybody how to do that.

16 We'd certainly like to get as much
17 out on the table as possible, but if an agency
18 feels they get to the point where a key factor
19 in coming to a solution is something they
20 can't release, then we'll -- we will certainly
21 deal with that and may have to limit the
22 group.

1 CO-CHAIR FONTES: Thank you,
2 Janice, for raising questions on foreign
3 participation in database.

4 Any other comments on the brief
5 reports?

6 Thank you.

7 CO-CHAIR ROSSTON: Okay. Next,
8 we're going to move to the NTIA evaluation and
9 the CSMAC recommendation regarding
10 interference and dynamic access subcommittee.

11 MR. NEBBIA: This is Karl. We had
12 put together a table going through all the
13 recommendations in that report and,
14 interesting enough, there's a report dating
15 from November 10, 2010, so it pre-dates some
16 of your involvement here.

17 We have noted, however, that the
18 unlicensed group, and others along the way,
19 have, in fact, referred to some of the
20 recommendations in this report.

21 We're running a little bit behind
22 schedule here today so I think, just

1 generally, I'd like to say that -- that we've
2 tried to give a -- you know, a good
3 explanation of what we think of the
4 recommendations as they were, you know, laid
5 out in this report. Most of them we think
6 certainly are things that we will continue to
7 do, things like guard bands, obviously a part
8 of our tool chest with the new services.

9 Of course, I think there is a
10 general expectation that the new service
11 provides the guard band, but I'm not sure that
12 we can enforce that in every case,
13 particularly if somebody participates in an
14 auction and they're paying for spectrum right
15 up to the boundary. We would expect that
16 creating a guard band may not be the right --
17 you know, expecting it to come out of their
18 spectrum may not be the right thing.

19 We've also found in some of these
20 cases that there are choices that can be made
21 in that sharing environment where, instead of
22 establishing a guard band, we take some other

1 approach, it may be down tilting antennas, it
2 may be selecting a different frequency in
3 those areas where we're having interference.
4 And some of you may have seen recently, we
5 just have completed a report dealing with this
6 adjacent band interference problem between the
7 communications systems below 2690 and weather
8 radar systems above 2700.

9 And, once again, there are cases
10 where filtering the signal along that boundary
11 was the only solution, but there are also lots
12 of other approaches that could be taken and,
13 certainly, fixed in a location-by-location
14 basis not one that required a general rule
15 that says everybody has to have guard bands
16 and those sorts of things.

17 So I think we weren't real clear
18 on what the virtual guard bands are, and we
19 may need to spend a little bit more time
20 looking at that. The same thing pertaining to
21 this concept of data technology which, once
22 again, it's not that easy for the feds to be

1 changing technology. They have but,
2 nonetheless, I think most of these
3 recommendations, I think, we can -- you know,
4 we can work with, and are certainly within the
5 frame work of what we're -- you know, what
6 we're doing.

7 We do -- as indicated, there's a
8 recommendation that we should examine the
9 application of DSA technologies for sharing
10 and increase that use. Once again, we have
11 certain, you know, limitations on the amount
12 of resources we have for moving that forward.

13 On the other hand, there are other
14 groups. The NITRD WSRD group this morning are
15 looking at how to expand those test
16 capabilities and opportunities so we may see
17 more on that in the future. The PCAST report
18 cited a concept they called "test cities"
19 which is another new interesting idea.

20 We're going to continue the
21 progress on our spectrum sharing testbed
22 that's working in one particular band but,

1 once again, certainly some of the limitations
2 there are due to the amount of resources that
3 we can apply to it. Some of them are due to
4 the fact that it's -- for some manufacturers,
5 it's a new thing to come into an environment
6 where all those characteristics are being
7 tested of their devices.

8 So we've got a number of
9 recommendations that you've made here where,
10 unfortunately, we've had to cite the reality
11 that doing this work has not been placed in
12 our appropriations, so you'll see some of
13 those there. And they're not in the budget
14 for 2013. That's in front of Congress right
15 now. So those things are -- you know, there's
16 just some realistic aspects about it.

17 As the talk about the database
18 issues, I think once again, realistically,
19 NTIA controls the federal database. The
20 challenge oftentimes is that even though we
21 hold the database, the information belongs to
22 the agencies; and, therefore, we can't make

1 the GMF data, even the non-classified data
2 that is FOI exempt -- that's how it's marked
3 at the current time -- we can't make that
4 available without the agency's participation.

5 So as we get into all the
6 recommendations related to a database, there
7 at least seemed to us the assumption that the
8 federal database could be made available, and
9 that assumption, of course, doesn't play out
10 in reality. So until something changes along
11 that line, you know, we will be, I think,
12 handcuffed in some of those areas.

13 And so I think at this point --
14 oh, there's another section dealing with
15 harmonized spectrum, and I think that is
16 certainly an area that we're looking toward.
17 I think everybody has to recognize what
18 harmonization generally means. Certainly,
19 from my experience, the United States often
20 jumps out in front in terms of implementing
21 innovative concepts, new bands. We generally
22 are willing to step forward in doing that, and

1 we make frequency decisions as quickly as
2 possible to get those systems implemented.

3 The challenge that creates is that
4 then the rest of the world looks at what we've
5 done. They obviously have other market
6 motivations and other motivations, so what we
7 frequently find is the thing that we've set
8 out, and it can be the 700 MHz band plan, it
9 can be decisions that we've made about where
10 we're putting wireless broadband, both in the
11 past and the future. We find them, I think,
12 making an effort to check our advancements by
13 coming up with a contrary solution and,
14 therefore, putting into question the direction
15 we've taken.

16 So then when you start talking in
17 terms of harmonization, they're call is for us
18 to change to become what they want to do, not
19 the other way around, so we have to realize
20 the issue of harmonization is kind of a two-
21 edged sword.

22 Certainly, from the DoD

1 perspective, harmonization always means they
2 end up with less spectrum because nobody's
3 harmonizing military, they're only
4 harmonizing, you know, commercial uses, and so
5 on. So I think we need to, you know, consider
6 that. And I think that's probably all I feel
7 like I need to go into in detail.

8 I know most of you just probably
9 saw this last week when it popped up. So I'm
10 happy to give you more time, and if you want
11 to come back at the next meeting with any
12 questions about what we're implementing,
13 that's certainly a satisfactory way for us.

14 CO-CHAIR FONTES: I think that
15 will probably be the best approach. It is
16 time to read this and review it carefully, and
17 then where there are concerns based on your
18 comments, then we can bring them up at the
19 next meeting.

20 MEMBER TRAMONT: Actually, who are
21 the co-chairs of that committee -- of the
22 committee that made those recommendations?

1 Sorry, this is Bryan.

2 MR. NEBBIA: The co-chairs, it's -

3 -

4 (Simultaneous speaking.)

5 MEMBER TRAMONT: My only concern
6 is that somebody has responsibility for
7 writing something down. And so you've asked
8 for feedback on certain -- a list of things
9 and I don't remember who the co-chairs were or
10 how this is structured, but if we actually
11 want that, we need to have somebody take
12 responsibility for that.

13 MR. NEBBIA: We're hearing David
14 Donovan's name spoken in vain.

15 (Simultaneous speaking.)

16 CO-CHAIR ROSSTON: We can go back
17 to the two CSMAC co-chairs.

18 MEMBER TRAMONT: We'll follow up
19 with David, maybe, does that make sense?
20 Okay.

21 CO-CHAIR FONTES: You are next.

22 MR. NEBBIA: So we're down to the

1 items scheduled for 3:45 so we're just a
2 little bit behind, and I will talk fast. So,
3 first of all, I want to bring everybody up-to-
4 date that the FSMS phase one implementation
5 has begun, so we're actually starting that
6 process of moving to the FSMS on the
7 unclassified side, and this involves enabling
8 the agencies to implement the data through new
9 mechanisms. So the process is beginning of
10 this transition and that's good news for us to
11 finally get the system moving.

12 The phase two and three will be
13 following along but, anyway, I think that's a
14 major step for us and, once again, the new
15 data coming in, the new data checks will be
16 more substantial. We will have issues with
17 some of the agencies in transferring over to
18 the new system because there's security, IT
19 security issues that we have to walk through
20 there, but it is currently available to them
21 to use.

22 Within that, we also noted earlier

1 that we have changed our own rules.
2 Everything's signed off. The only thing that
3 hasn't quite happened yet is the updating of
4 what's called Spectrum 21, which is an
5 internal component of our current system that
6 provides them the place for them to
7 electronically put in their name and
8 verification of what's going on. But
9 certainly the agreement that they're going to
10 do that, that there's going to be a contact
11 point in each agency who verifies that the
12 assignment was necessary and the data was
13 accurate is going to be inserted into the
14 system. So that, I think, is progress.

15 We also wanted to bring to your
16 attention -- most of you probably seen it, at
17 least through the trade press -- the letter
18 that we received from the Hill requesting data
19 on federal operations. It's broken out into
20 a couple -- certainly, two major questions:
21 The one asking us through three different band
22 ranges, 300 MHz, the 3 GHz, 1755 to 1850, and

1 then the smaller band up to 1780, basically
2 asking us for assignment counts and, you know,
3 who they are linked to, whether they are
4 space-based, air-based, or ground-based and
5 then broken out by the frequency ranges. So
6 that item is probably well within our grasp to
7 do an assignment count.

8 The second item becomes a little
9 bit more challenging and, certainly, it would
10 be interesting if you had any thoughts on what
11 that means and how we would go about doing
12 that, maybe even on a non-federal perspective;
13 but, once again, trying to come up with
14 something that states the amount of spectrum.

15 Once again, spectrum is a multi-
16 dimensional concept. We don't give agencies
17 whole bands or blocks of spectrum, we give
18 them locations, characteristics under their
19 authorization, and so on. So that one will
20 certainly be more challenging. If you have
21 any thoughts on how that can be reasonably
22 done, just any thoughts at the moment before -

1 -

2 MEMBER GIBSON: Well, yes, this is
3 Mark Gibson. What about just telling them the
4 number of assignments?

5 MR. NEBBIA: That's the first
6 question. So we --

7 MEMBER GIBSON: Well, then tell
8 them the side of the assignment.

9 MR. NEBBIA: So I think one of the
10 possibilities is that you can, in fact, take
11 the number of assignments, you can link their
12 bandwidth to them. It doesn't necessarily,
13 once again, convey the idea whether they're a
14 nationwide assignment, whether they are a very
15 geographically restricted assignment, it's
16 just not something that lends itself to a good
17 number.

18 CO-CHAIR ROSSTON: Do you find
19 that the number of ones that have a certain
20 radius -- so one thing on the, you know, the
21 commercial, the FCC side, they use MHz-pops
22 but I'm not sure that that's a reasonable

1 thing to think about for -- for defense things
2 but --

3 MR. NEBBIA: Yes, the pops was
4 very appropriate.

5 MEMBER GIBSON: Well, it would
6 seem that it's left, you know, to your own
7 interpretation but, I mean what Rick was
8 saying is, you know, it seems to make sense,
9 I think it's a challenge but I also think it's
10 doable. You know, the commission has done it
11 before, but I can't remember when, but I do
12 remember them undergoing exercises at some
13 point to try to do something similar to this,
14 and I forget the bands.

15 It might have been -- I forget the
16 bands, but we tried to look at forgiven
17 carriers, how much spectrum they had, you
18 know, for given areas. So, you know, it's not
19 intractable, it just needs -- I think you need
20 some boundary conditions and definition.

21 MR. NEBBIA: Okay. Any other
22 thoughts before I move on -- yes, sir.

1 MEMBER ROBERSON: Yes, just
2 actually a couple questions. One in the
3 previous topic, do we have a time line for
4 phase one complete, phase two start, phase
5 three start?

6 MR. NEBBIA: There are. I don't
7 have them with me but, yes, there are
8 schedules laid out for all those -- you know,
9 and we would probably provide those schedules
10 -- there's overlap between them but, you know
11 --

12 MEMBER ROBERSON: And then it's a
13 question that's not really for you, it's
14 really for Congress, but why would they use
15 the 300 to 3 GHz and then cut out the band
16 that is part of the 300 to 3 GHz, and then a
17 part that's part of the 1755 to 1850, because
18 it's really -- the latter two are redundant.
19 They're actually covered by the first
20 question. So I don't know why they would have
21 used that structure.

22 MR. NEBBIA: I mean, certainly,

1 from our standpoint, trying to do any
2 informational dumps is always easiest if you
3 break things at clean band edges for one
4 thing. That's always helpful. One thing we,
5 I think, do recognize that within the 1755 to
6 1850 band, almost all of the uses are the same
7 as those within the limited bands is that the
8 system's operating across the entire spectrum,
9 I think with the exception of the precision
10 guided munitions don't operate down on that
11 lower portion.

12 So if we're talking about times of
13 systems operating, the reports will look very
14 much alike. I would expect that the
15 assignment counts of the 25 MHz will
16 approximately be 20 to 25 percent of the total
17 95 MHz.

18 I think, certainly, that the
19 difficulties in looking at the 300 to 3 GHz,
20 that's much more difficult. If you're going
21 across lots of different kind of spectrum, but
22 we can certainly give assignment counts in

1 that range. One of the things that -- the odd
2 things that comes up with those that deal with
3 science services, we have been getting the
4 radio astronomers and some of the other
5 passive users to actually get assignments for
6 or register their operations.

7 The problem in our database is
8 they're all zero hertz. So you multiply the
9 number of frequencies by the zero hertz and it
10 still comes out to be zero when, in fact,
11 they've got bands that they occupy.

12 MEMBER GIBSON: Okay. It's Mark
13 again. One quick question. Your assumption
14 is that this is spectrum used from transmitter
15 side, not spectrum that the receivers can see?

16 MR. NEBBIA: That's another good
17 question because we do have bands, maybe not
18 in this range that are -- well, the passive
19 ones are receive only, but even on the -- like
20 I said, we get up in the 4 GHz with the radar
21 altimeters, there are no records there. Or if
22 we look at the weather satellite downlink

1 band, the key factor there wasn't so much the
2 specific sites but at least a portion of the
3 band, the fact that everybody's brother bought
4 a satellite receiver to get the weather
5 information, and whether it's police stations
6 or local TV stations or universities, and so
7 on.

8 And so those things play into it
9 as a difficulty in trying to calculate this
10 kind of number. But in line with this, just
11 so everybody knows, and I know you have heard
12 about the Energy and Commerce Committee folks
13 working on these spectrum working groups and
14 they are meeting, they are calling in
15 representatives from the FCC and NTIA and
16 Department of Defense, and we're making
17 presentations to them so that's actively
18 underway.

19 And the last thing I wanted to
20 mention is ask Peter Tenhula briefly to let
21 you know what's going on, on the NTIA's work
22 on the technical panel and dispute resolution

1 board that we're required by the Middle Class
2 Tax Relief Act.

3 MR. TENHULA: Hi, this is Peter
4 Tenhula, NTIA, and just want to provide an
5 update on actually some recommendations that
6 came out of CSMAC a few years ago regarding
7 the improving the process for identifying
8 spectrum for future reallocation or sharing --
9 and that made it into the law, the 2012 Tax
10 Relief Act -- specifically provided
11 significant improvements and modifications to
12 the Commercial Spectrum Enhancement Act, also
13 known as CSEA.

14 Some of the improvements involving
15 authorizing transfers from the spectrum
16 relocation fund for a much wider array of
17 costs incurred by the federal agencies that
18 have to relocate. It also added the concept
19 of sharing costs and getting those reimbursed.
20 It also included in the list of costs that are
21 reimbursable are pre-auction planning, using
22 alternative technologies, using state-of-the-

1 art systems, research, engineering studies,
2 economic analysis, and coordination with
3 auction winners. All of those are not covered
4 under the spectrum relocation fund.

5 Some processes were also put in
6 place, I think, pursuant to the
7 recommendations to improve transparency and
8 accountability, specifically involving
9 specifying contents for new agency transition
10 plans. So a band that has been reallocated
11 from federal to non-federal use, either on an
12 exclusive or a shared basis, in order to get
13 these reimbursements, they have to have a --
14 the agencies have to have a transition plan.

15 These transition plans are then
16 reviewed by a technical panel. The technical
17 panel is made up of three folks, one appointed
18 by NTIA, one appointed by OMB, and one
19 appointed by FCC. The first technical panel
20 serves 18-month terms will be in place as of
21 August 20th, and we're also developing the
22 mechanisms for capturing the transitions

1 plans.

2 The Act requires us to come up
3 with a common format, or templates, for the
4 NCC use in preparing their transition plans
5 and, you know, part of the template and the
6 format is to ensure that classified and
7 sensitive information is protected as well.

8 Part of the -- I mentioned the
9 technical panel and other part of the
10 improvements involve a dispute resolution
11 board that would be established when, and if,
12 there is a dispute between non-federal and
13 federal entities in implementing those
14 transition plans.

15 So a lot of thought went into pre-
16 auction planning, the transition process
17 itself, and then even the implementation of
18 these transition plans. And our
19 implementation right now is kind of focusing
20 on those transition plans, the contents of
21 those, and that's going to be in the context
22 of where those rules take place -- or they're

1 contained in Annex "O" of the NTIA manual --
2 and two other rules involve the workings of
3 the technical panel and the dispute resolution
4 board, and so we recently issued a notice of
5 proposed rulemaking on those two aspects of it
6 and comment on that. Those proposed rules are
7 due August 1st. That's it.

8 Any questions?

9 Thank you.

10 CO-CHAIR FONTES: I want to thank
11 Karl and Peter for an update. Are there any
12 questions based on their update?

13 Okay, the next one that we have on
14 our agenda today is committee questions and
15 discussion. So I've got questions coming from
16 the committee. I thought that we had a few
17 earlier, but go ahead.

18 MEMBER ALDER: Larry Alder again.
19 Just one more question is on the whole 1755 of
20 the subcommittee. I ended up getting
21 disconnected from the e-mail chains along the
22 way. I don't know if that happened to other

1 members. I sent in my list of preferred
2 things, never heard anything from anybody and
3 didn't know what was going on. What is the
4 mechanism -- and that's actually fine. I'm
5 happy with that outcome.

6 (Laughter.)

7 CO-CHAIR FONTES: We'll get people
8 over there to figure this out.

9 (Laughter.)

10 MR. NEBBIA: At this point, we've
11 provided you the leadership structure for the
12 groups, so if you want to be in one of those
13 groups, the easiest thing, I think, is for you
14 to contact them and say, I want to participate
15 in your group as opposed to --

16 MEMBER ALDER: So I guess that
17 what happened is if you weren't actually on
18 the CSMAC mailing list, so some names got
19 dropped, mine got dropped, and I just
20 confirmed -- I wasn't getting those e-mails.
21 So I don't know if you're going to use the
22 mailing list to all CSMAC or just to

1 individuals, but I think that something
2 happened in there and just wasn't sure. So
3 there will be just going forward just contact
4 the group chairs that have been named?

5 MR. NEBBIA: I think that would be
6 the easiest way and, in fact, one of the group
7 chairs, it almost seemed in working group
8 five, was it seemed like they're mailing out
9 the list to everybody. I was getting them
10 all, and I've never signed up for any of the
11 groups, so I don't know, but that's -- that
12 would be the easiest route if you're missing--

13 CO-CHAIR FONTES: Did that answer
14 your question?

15 MEMBER ALDER: Yes, thank you.

16 CO-CHAIR FONTES: Are there other
17 questions from the committee?

18 Okay. Great. Thank you.

19 CO-CHAIR ROSSTON: Now we have an
20 opportunity for any public comment about -- as
21 we put out the procedures of public
22 participation. So the subject matter is

1 listed in the agenda, if there was any public
2 comment in the room first? Is there anyone in
3 the room that would like to speak? Okay. Is
4 there anyone on the telephone who would like
5 to speak?

6 MR. SNYDER: Yes, it's Jim Snyder.

7 CO-CHAIR ROSSTON: Okay, Jim?

8 MR. SNYDER: So it's Jim Snyder
9 from the Edmond J. Safra Center for Ethics at
10 Harvard University, and my comments relate to
11 the CSMAC working group. I'd like to get some
12 clarification about some information about the
13 working groups.

14 Today's agenda included contact
15 information about the working committees in
16 quite a bit of detail, but it's not clear to
17 me if all the industry members are listed
18 there.

19 Are their meetings public? And
20 are all the informal and formal industry
21 members posted on that list?

22 It certainly listed quite a bit of

1 information, but I have to think that there
2 are industry members that are not listed
3 there. So if I could get some clarification
4 about that, I would appreciate it.

5 And then I have a few other
6 questions about the working groups.

7 MR. NEBBIA: The -- certainly, all
8 of the participants are not on the list that
9 you have. They are, in fact, contacting the
10 co-chairs directly so that's -- they are not
11 on the list that you have.

12 MR. SNYDER: Okay, I would suggest
13 that that's a problem. And then are there
14 meeting dates posted anywhere? They certainly
15 had a number of meetings but I haven't seen
16 any postings of their meetings. I would like
17 to attend at least one of their meetings but,
18 of course, I can't unless the information is
19 publicly posted.

20 CO-CHAIR ROSSTON: Again, I think
21 as Karl suggested to Larry, contacting the
22 group leaders to get the information about the

1 committee meetings will allow you to
2 understand when they are, and I think that
3 would be good for us to make sure that these
4 are well-known as well.

5 MR. SNYDER: Yes, I think that's
6 impractical to contact them, so I think you
7 have to either post them or assume that they
8 are, as a practical matter, private.

9 Now I'd like to also note that if
10 the industry wants re-licensees to the
11 spectrum in the name of the public good, you
12 need to convince the public you're acting in
13 the public interest, which seems to be pretty
14 reasonable. To build that trust, I would
15 suggest you need to operate transparently and
16 with accountability, and then I mean by this,
17 not just as a public facade but for real, and
18 that means complying with the laws and the
19 ethics laws. It means not attacking those who
20 speak to have those laws enforced or turning
21 a blind eye while others engage in such
22 behavior.

1 (Simultaneous speaking.)

2 CO-CHAIR ROSSTON: No, I think
3 that that's something that's not on the agenda
4 for the day. The working group stuff and
5 getting the contact information for the
6 working groups is very appropriate, but then
7 throwing in other things like that, I think we
8 can have you take up at another time.

9 MR. SNYDER: Well, Karl, for
10 example, said, you are always safe by giving
11 them nothing, say, and, you know, Janice
12 raised issues about coming -- what time to
13 close down with degree of openers, so at least
14 procedural --

15 CO-CHAIR ROSSTON: Karl's point
16 about giving them nothing was in reference to
17 food.

18 MR. SNYDER: Okay. Well, working
19 group number two asked a procedural question,
20 and then Karl said, You're always safe by
21 giving them nothing. The attitude that I feel
22 that, you know, has --

1 (Simultaneous speaking.)

2 CO-CHAIR ROSSTON: Jim, let's --
3 let's stick to the agenda, please.

4 MR. SNYDER: Yes, but let me just
5 also note, finally, in conclusion on this
6 subject is the last meeting, it was very
7 clearly stated that the procedural issues are
8 relevant and public comments, which is the
9 norm at FACA proceedings, and this was a
10 unilateral change of policy. And it's really
11 been now since last May of 2011, it really has
12 been for one reason -- for technical problems,
13 last meeting, the meeting was closed -- there
14 really hasn't been any opportunity, and
15 there's no other vehicle to do it than at
16 these meetings, and it's not as though you're
17 overwhelmed with public participation.

18 CO-CHAIR ROSSTON: Jim, if you'd
19 like to look at the very last bullet point on
20 the participation policy, there is an
21 opportunity for a public comment on this
22 stuff, just not in the public comment period

1 at the meetings, but there is --

2 (Simultaneous speaking.)

3 MR. SNYDER: -- comments are not
4 posted online, for example, like the PCAST
5 comments, they are posted publicly and yours
6 are not, so it's a different type of public
7 the way you've set it up, quite qualitatively
8 would be different.

9 So, okay, I've had my piece and
10 I've -- you know, I suppose that if you're
11 within your powers to restrict such comments,
12 but it clearly is implicit, the members of
13 CSMAC have many procedural questions that came
14 up repeatedly today, and there's certainly, in
15 any type of democratic process --

16 (Simultaneous speaking.)

17 CO-CHAIR ROSSTON: Thank you very
18 much. Is there anyone else who would like to
19 make a comment from the public on the phone?

20 Okay. I think we will not go till
21 4:40 a.m. before the next agenda item.

22 (Laughter.)

1 MEMBER TRAMONT: Either that or
2 we've already concluded it.

3 (Laughter.)

4 CO-CHAIR ROSSTON: So I think this
5 is just a notice of the schedule -- the next
6 scheduled meeting so that you can get those on
7 your calendar. And if there's any other --
8 not any other comments, I think we're --

9 MEMBER TRAMONT: Can I make a
10 quick comment?

11 CO-CHAIR ROSSTON: Bryan, yes.

12 MEMBER TRAMONT: This is Bryan
13 Tramont. I just want to welcome a number of
14 students from CU who are part of our structure
15 and policy course who, rather than going to
16 class today, had the opportunity to sit around
17 this table and listen to all of us.

18 So if students can raise your
19 hands, excellent. And I encourage the members
20 of CSMAC and the members of the public to
21 visit with the students. This is their
22 learning -- this is an opportunity to see

1 public policymaking up close and personal.
2 And so Dale and I were excited -- and our co-
3 teacher Jill Van Matre in the back. We were
4 excited to be able to bring the students in
5 and have them experience this firsthand. So
6 I'm sure it wasn't planned as we had forecast
7 but anyway. Just wanted to acknowledge their
8 presence.

9 And also David Donovan has agreed
10 to pick up the ball on the one thing that we
11 talked about.

12 CO-CHAIR ROSSTON: Fantastic.
13 Thank you. And we do welcome the students
14 here. Yes. Anything else?

15 I think we stand adjourned.

16 Thank you everyone.

17 (Whereupon, the above-entitled
18 matter went off the record at 4:23 p.m.)
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A				
ability 40:21 43:5 43:14 51:9 97:11 147:20	activity 14:1 18:1	Advisory 1:4,11 46:3	118:6 120:5 121:4 125:5 126:18,22 127:3,17 129:9,13 130:19 134:10 170:18,18 171:16 172:15	77:1 82:1 98:7 120:13 147:16 158:13 180:7
able 21:15 22:2 31:22 44:18,18 53:14 76:14 79:22 101:14 138:19 141:14 143:5 180:4	add 11:18 21:11 31:9 32:5 38:20 41:22 52:11 53:14 67:2 105:5 124:21 127:4 128:12,18 129:15 141:15	affair 144:22	alerted 51:2	apparently 44:1
above-entitled 94:13 180:17	added 167:18	affect 62:17	alike 164:14	appear 138:4
absolutely 55:2 71:5	adding 125:4 126:19 128:11	affirming 27:10	Alliance 2:1	appears 69:11 70:21
acceptance 133:8	addition 96:16 117:8	afternoon 5:4 6:8	allow 19:5 116:17 175:1	append 50:20
accepting 61:8	additional 88:19,20 88:22 125:6	agencies 18:3,17 27:22 39:15 49:19 62:1 99:21 108:15 116:2,19 138:7 148:2 153:22 158:8,17 160:16 167:17 168:14	allowing 83:21 89:8 110:4	Apple 129:3
access 4:12 58:17 58:21 61:6 62:2 63:8,13 73:5 75:17 91:13 149:10	address 12:22 13:4 13:8 15:22 23:13 29:9 41:21 42:8 51:17 55:17	agency 27:9 42:22 43:15 71:19 148:17 159:11 168:9	all-day 144:22	applicability 40:21
accident 41:14	addressed 15:9 49:7 62:8	agency's 154:4	alter 50:6 99:10	applicable 20:18
accommodate 70:18	addresses 30:10,11	agenda 7:8 48:7 134:20 170:14 173:1,14 176:3 177:3 178:21	altered 106:11	application 152:9
accompany 50:4	addressing 50:16 75:1 129:16,17 130:14,15,20 131:19	aggregate 79:11,20 80:8	alternative 167:22	applied 24:3 57:3
accomplish 73:9 141:5	adds 36:22	aggregated 64:2	altimeters 42:4 165:21	apply 23:21,22 71:14 153:3
accomplished 73:6	adequate 39:15	aggregation 135:20	America 1:1,23 10:16	appointed 168:17 168:18,19
accountability 168:8 175:16	adjacent 151:6	ago 56:12 167:6	Americans 101:21	appreciate 37:12 40:18 107:2 174:4
accuracy 20:3 36:6 40:6	adjourned 180:15	agree 39:6 75:13,20 83:17 84:6,10 103:8,21 118:14 132:21	amount 15:1 43:7 43:14 56:1 106:12 152:11 153:2 160:14	appreciated 137:12
accurate 7:21 21:8 32:14 159:13	adjusting 130:11	agreed 14:3 41:13 61:14 142:22 180:9	analog 34:18	approach 42:21 50:8 65:13 68:4 69:4,5,6,12,13 70:15 75:22 110:11 113:22 114:15,16 121:16 146:1 151:1 156:15
achieving 20:4	admin 5:6	agreed-upon 94:10	analysis 40:4 135:15 136:2 168:2	approaches 15:3 29:7 69:6 70:16 70:20 114:18 119:6 127:7 133:15 151:12
acknowledge 5:13 180:7	administration 15:7,14	agreement 43:4 139:1 159:9	and/or 20:14 63:22 96:21 97:8	appropriate 33:14 41:7 61:7 69:18 69:21 75:22 84:20 91:14 95:3,9,21 97:15,18,21 162:4 176:6
acronym 40:2	administrative 15:8 35:13,20	ahead 11:14 41:4 46:11 99:7 130:4 144:6 170:17	Annex 170:1	appropriately 84:13
act 13:20 108:7 167:2,10,12 169:2	adopt 46:21 117:6 134:11	aimed 74:7 75:4	announcement 6:1	appropriations 153:12
acting 175:12	adopted 67:9 110:2	Airborne 2:19	answer 64:11,14 72:11 74:6 172:13	approval 112:10
action 84:20 140:16	adopting 115:7	aircraft 114:11	answering 18:8	approximately 164:16
actionable 116:12	adoption 46:16	airport 30:21	answers 51:16 99:2	area 24:9 65:21
actively 100:3 166:17	advance 18:10	air-based 160:4	antenna 33:11	
activities 33:15	Advanced 2:15	Alder 1:21 10:13 10:13 84:8 112:6	antennas 151:1	
	advancements 155:12		anticipate 53:1	
	advise 54:20		anybody 34:9 39:13 67:7 85:12 171:2	
			anymore 131:5	
			anyway 9:8 38:10	

85:16 101:16 154:16 areas 20:10 55:1 143:6 151:3 154:12 162:18 argue 43:1 102:22 argument 52:3 98:15 arrangement 132:20 139:7 143:8 arrangements 112:15 133:2 array 167:16 ArrayComm 1:25 art 168:1 aside 63:1 asked 21:21 65:22 130:2 157:7 176:19 asking 20:5 24:6 46:2 159:21 160:2 aspect 37:6 106:21 107:18 108:5 138:10 aspects 153:16 170:5 assigned 92:13 93:2 assignment 24:9,12 27:22 75:5 159:12 160:2,7 161:8,14 161:15 164:15,22 assignments 161:4 161:11 165:5 Assistant 2:17 3:13 assistants 34:12 associate 3:8 79:2 associated 28:19 42:3 Association 1:17 2:3 ASST 5:3 assume 13:4 23:22 28:3 175:7 assumed 28:4 61:9 assumption 154:7	154:9 165:13 astronomers 165:4 attacking 175:19 attempt 5:19 attempting 134:3 attempts 44:4 attend 174:17 attended 7:5 29:3 144:18 attention 13:12 61:11 159:16 attitude 34:6 176:21 AT&T 2:17 10:10 auction 131:1,3,6,8 131:12 150:14 168:3 169:16 audit 28:6 29:18 auditing 30:14,16 audits 28:3,9 August 141:4 144:21 168:21 170:7 authority 49:2 authorization 59:2 160:19 authorized 63:7,13 63:15 73:4 102:17 102:20 authorizing 167:15 automate 15:2 automated 24:14 40:8 automatically 31:4 31:7 available 21:3 63:4 112:1 138:20 154:4,8 158:20 avoid 54:2,15 83:6 avoidance 60:3 avoids 82:1 aware 21:13 58:11 109:17 awhile 35:16 aye 111:10 eyes 47:18 111:11 134:15	a.m 141:17,17 178:21 <hr/> B <hr/> baby 53:12 109:13 back 12:22 18:4 21:18 23:5 24:14 25:4 39:1 41:17 42:5 43:11 44:19 55:18 56:11 57:6 65:4 67:19 76:4 77:15,17 80:13,22 94:10,18 98:15 102:1 104:17 110:18 117:4 136:21 138:1 139:21 156:11 157:16 180:3 background 30:20 112:13 121:17 backstop 60:3 bad 54:1 ball 101:11,15 180:10 ball's 128:14 band 17:5,10 18:9 42:1,2 51:18 54:11 58:21,21 59:3,11 60:13 62:16 64:5 69:19 69:21 70:17 71:12 71:14,18 72:16 74:9,10,20 76:5 84:17 85:6,6 97:19 113:21,21 114:16,16,17 115:20 123:4,7,7 131:2 133:7 138:13 150:11,16 150:22 151:6 152:22 155:8 159:21 160:1 163:15 164:3,6 166:1,3 168:10 bands 14:11,12,16 14:18 19:2,12,19 36:6,9,21 37:2	51:20 57:22 58:7 58:16,16 61:1,6 63:5,8,14,22 65:14 86:2,19,21 87:7,20 89:7 90:8 91:13,22 92:19,21 93:3,8,10 95:9,21 97:15,21 100:10 109:20 114:10 129:7,18 130:11 130:14,18 131:6 131:13 150:7 151:15,18 154:21 160:17 162:14,16 164:7 165:11,17 bandwidth 22:19 77:12 161:12 Barker 2:23 10:20 based 12:19 36:14 100:13 116:8,20 144:2 156:17 170:12 bases 20:13 basic 56:20 basically 43:8 49:9 50:22 55:13 80:7 82:14 84:11 85:13 89:5 110:3 112:19 160:1 basis 30:3,12 72:18 151:14 168:12 beacon 127:20,20 133:4 beaconing 119:13 beacons 125:8 127:16,17 128:5 Beacon's 128:8 beat 141:16 beautiful 85:7 becoming 66:6 87:12 beginning 48:21 158:9 begins 106:10 begun 158:5 behalf 6:22 behavior 175:22	belief 19:13 beliefs 55:14 believe 5:19 34:13 45:14 46:15 61:13 94:21 143:14 belongs 153:21 belt 7:7 best 49:7 50:8 54:18,19 57:17 58:9 79:21 85:15 132:7 156:15 better 18:14 52:7 54:16 62:13 74:18 75:3 85:12 92:17 beyond 37:14 38:13 big 21:14 79:21 88:18,21 101:3 105:5 biggest 37:16 billed 23:20 bit 21:20 35:8 61:15 62:7 63:19 76:19 79:1 81:15 84:15 88:10,15 102:6 136:22 142:8 146:5 149:21 151:19 158:2 160:9 173:16,22 blaze 40:17,18 blind 175:21 blocks 160:17 blows 25:2 board 23:22 60:6 146:11 167:1 169:11 170:4 Bob 75:11 83:9 84:5 bolts 135:21 book 25:2 booklet 60:12 BORTH 1:22 bothers 80:4 bottom 52:17 82:7 bought 50:2 83:20 166:3
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Boulder 1:13 5:4 7:15 12:4 13:16	budgets 37:15	102:1 166:14	132:18,21 133:17	chart 113:2
boundary 37:14 150:15 151:10 162:20	build 15:6 24:3 175:14	calls 34:9 58:1 105:20 107:13	133:20 138:2	chase 25:6
bounds 38:14	Building 1:12	capabilities 26:17 31:5 55:15 105:5	139:7 143:3 148:1 148:16,20 150:6	cheap 51:14 60:19 84:12 85:22 89:1
break 94:7,9,12,17 164:3	build-out 20:16 24:21 26:13	capability 30:22 56:14 93:11 139:6	151:13 152:4	check 7:20 14:2 17:6 155:12
breaking 78:12	built 51:9	capable 44:6 51:1	153:1 154:16,18	checking 8:9 28:5 53:4
Brian 1:13,16 10:1 11:18 94:5	bullet 82:7 177:19	capacity 63:4	155:22 156:13	checks 65:8 158:15
bridge 5:10,11,11 5:14,22 38:6	bunch 7:8 78:19 79:17,17	capturing 168:22	159:9,20 160:9,20	chest 150:8
brief 149:4	bureau 107:22	car 86:7,8 100:18 100:19 109:2,7,8	163:22 164:18,22	Chief 1:16 16:16
briefing 22:16 23:6 135:14	bureaucrat 33:22	carefully 156:16	173:22 174:7,14 178:14	choice 85:11,12
briefly 166:20	burner 42:5	Carl 2:17 10:9	certification 27:5 68:13 108:21	choices 150:20
bring 112:9 117:4 148:4 156:18 158:3 159:15 180:4	business 1:21 2:5,6 47:2 49:2,4 81:20	Carolina 2:22	cetera 51:10 136:13,14	Chorus 47:18 48:18 111:11 134:15
broadband 90:11 90:12 93:11 138:5 155:10	buying 109:21	carried 106:22	chains 170:21	Chris 97:10
broadbands 93:9	C	carriers 162:17	Chairman 1:24 46:13	circulated 48:12,17
broader 123:17 139:6	C 1:22 2:10	carry 102:10	chairs 172:4,7	circulating 136:3
broadly 124:9 127:14 137:4	Calabrese 1:22 10:15,16 52:12,16 57:5 59:17 72:11 86:14,22 87:14,19 91:6 92:18 95:1 95:12,17 96:8,12 96:14,17 97:8	case 74:13 100:2 103:5 114:13 150:12	challenge 24:18 26:20 27:4 37:16 38:3 106:4,15 153:20 155:3 162:9	circumscribed 51:19
Broadway 1:13	calculate 166:9	cases 150:20 151:9	challenges 7:11 24:8	circumstances 65:15
broke 14:9	calculations 25:17	cataloged 51:10	challenging 160:9 160:20	Cisco 2:16 11:9 67:13
broken 159:19 160:5	calendar 61:16 179:7	category 51:14	chance 22:2	cite 153:10
brother 105:5 166:3	call 8:11 9:19,22 17:19 44:1,3,4,5,6 45:20 46:4,11 47:16 48:3 52:22 58:19 61:11 74:22 75:13,14 94:22 118:3 122:11 131:21 136:16 141:15,21 142:3,4 143:12 144:2,4,7 144:9,11,17 145:17 155:17	caucus 94:7	change 26:12 42:21 43:5,14 76:8 77:11,12 79:1 81:21 87:13 95:3 113:22 155:18 177:10	cited 16:5 17:5 152:18
BRUCE 3:18	called 55:8 60:19 105:22 152:18 159:4	cause 114:5	changed 53:6 159:1	cities 152:18
Bryan 2:22 10:19 12:8 13:6 22:7,13 36:7 39:18 46:14 80:11 89:14 91:19 129:14 143:13 144:5 145:16 157:1 179:11,12	calling 76:11 100:6	caused 124:1	changes 27:15 99:15 113:10 154:10	citizens 147:11
Bryan's 22:13		caveat 129:15	changing 79:3 97:20 152:1	clarification 137:11 173:12 174:3
budget 43:12,14 79:21 153:13		cell 5:8,8 24:4 101:1	channels 53:5	clarify 82:10 124:20
budgetary 43:11		cell 5:8,8 24:4 101:1	characteristics 50:6 66:16 140:18 153:6 160:18	clarity 14:4
		cell 5:8,8 24:4 101:1	charge 41:4	class 30:4 72:10 108:7 167:1 179:16
		cell 5:8,8 24:4 101:1	CHARIR 143:1	classes 75:2
		cell 5:8,8 24:4 101:1		classic 52:20 65:2
		cell 5:8,8 24:4 101:1		classified 146:19 169:6
		cell 5:8,8 24:4 101:1		clause 46:17,18
		cell 5:8,8 24:4 101:1		clean 164:3
		cell 5:8,8 24:4 101:1		cleaned 14:19
		cell 5:8,8 24:4 101:1		cleanly 142:7

clear 12:17 24:1 29:11 53:9 62:4 71:5 74:3 81:9,16 114:19 117:12 128:3 129:21 151:17 173:16	96:20 103:7,19 110:15 117:12 139:13 140:8 143:10 145:19 170:6 172:20 173:2 177:21,22 178:19 179:10	2:11	concerning 57:21 concerns 90:7 156:17 concise 128:3 concluded 21:17 64:12 179:2 concludes 49:1 68:3 concluding 57:16 conclusion 50:13 50:18 70:2,19 177:5 conclusions 67:22 conditions 162:20 conducting 66:15 conference 1:12 43:17,18,19 44:7 44:12,13,20 45:2 45:5,8,12,21 46:6 46:10 144:11 confirmed 171:20 confusing 81:6 congenial 136:9 Congress 41:12 153:14 163:14 congressional 58:4 Congressperson 106:17 connected 58:18 59:9 63:15 72:19 73:5,9 78:2 89:2,6 89:11 90:13 93:8 93:12 connectedness 81:12 Connecticut 78:13 78:20 connecting 77:3,9 77:15 connection 76:2 139:18 connections 101:2 cons 63:1 consider 61:4 91:11 98:12 130:12 131:17 156:5	communications 3:14 151:7 community 99:16 138:17 company 2:13 3:17 32:13 34:1,16 146:21 company's 20:12 compared 53:1 comparing 52:19 compatibility 50:6 complain 122:6 complaining 99:21 complaints 49:19 complete 163:4 completed 151:5 completely 73:1 completes 66:18 complex 144:13 complexity 67:18 68:1 69:16 complicated 55:20 66:13 complying 175:18 component 105:12 134:5 159:5 comprehensive 18:22 19:15 computer 2:21 35:16 Comsearch 2:7 10:22 31:11 conceivably 82:20 concentrate 15:4 concentrations 62:16 concept 66:22 101:20 102:4 151:21 152:18 160:16 167:18 concepts 154:21 concern 80:14,20 91:16 137:1 142:11 157:5 concerned 26:2 73:11	considerable 63:10 considerate 40:19 considerations 108:4 consistent 73:2 75:19 constantly 24:5 constrained 29:5 constructed 98:16 construction 20:21 26:14 31:2,3,5 Consultant 1:22 2:2,10 consumer 59:12,22 consumers 53:20 54:20 59:14 60:7 72:3 contact 103:14 159:10 171:14 172:3 173:14 175:6 176:5 contacting 51:1 65:6 174:9,21 contained 28:19 170:1 content 104:11 contents 168:9 169:20 context 56:18 62:12 64:21 67:20 121:7 169:21 continually 25:22 continue 23:4 48:22 61:18 93:1 112:16,16 121:11 145:8 150:6 152:20 continued 6:15 continuing 34:17 38:21 140:20 contractor 32:9 35:4 contracts 33:5 contrary 155:13 control 75:14 76:1 113:22 114:7 119:9,16 120:6,22
clearinghouse 63:20 clearly 27:7 62:5 108:15 177:7 178:12 clientele 31:19 clock 55:1 close 51:15 65:19 147:7 176:13 180:1 closed 51:19 177:13 cloud 92:1 coached 75:2 codified 116:13 collaboratively 29:8 Colorado 2:9 11:11 combination 79:16 come 17:15 18:2,4 20:10 23:11 26:4 33:7 41:5 50:13 56:8 62:18 94:7 94:10 132:6 136:20 150:17 153:5 156:11 160:13 169:2 comes 165:2,10 comfortable 71:19 comforted 56:5 coming 11:22 39:1 45:9 56:1 58:3 79:8 88:22 89:1 134:2 136:21 137:10 148:19 155:13 158:15 170:15 176:12 comma 128:5 command 76:1 comment 4:19 16:13 78:6 84:9	comments 4:3 11:20 12:15,19 13:18 47:14 79:2 84:7 96:2 97:22 98:2,8 132:1 137:18 139:11 141:11 149:4 156:18 173:10 177:8 178:3,5,11 179:8 Commerce 1:1,4 3:14 166:12 commercial 20:13 20:20 31:10 40:15 66:6 117:17 130:3 156:4 161:21 167:12 commission 20:8 20:12 23:19 30:21 31:8 99:10,14 107:22 162:10 commission's 29:18 committee 1:4,11 4:17 7:19 20:11 46:3 49:10 50:17 60:20 62:8 65:20 67:2,7 83:19 88:8 91:1,7,8,10 92:11 95:6 98:9 123:5 145:13 156:21,22 166:12 170:14,16 172:17 175:1 committees 144:14 173:15 committee's 19:13 70:19 85:4 common 39:10 169:3 Communication				

121:13,22 127:6 127:15 controller 128:9 controlling 77:20 controls 120:15 153:19 controversial 60:17 132:1 conversations 25:15 69:15 convey 161:13 convince 175:12 COOPER 1:24 cooperation 111:16 115:15 cooperative 115:18 139:6 coordination 88:6 168:2 coordinator 43:17 43:18 44:12,20 45:2,5,8,12,21 46:6,10 copies 48:15 copy 111:22 115:4 Corporation 2:12 2:25 correct 24:13 27:11 106:18 corrected 90:20,21 correcting 106:13 correction 145:10 cost 36:13 43:9 62:2 108:5 costs 18:5 43:9 108:7 167:17,19 167:20 counsel 3:16 15:19 16:16,16,17,22 41:18,19 137:15 Counsel's 16:4,10 count 160:7 counter 60:2 counterpart 60:2 counts 160:2 164:15,22 couple 36:2 61:15	115:2 131:22 137:17 140:16 159:20 163:2 course 24:8 27:6 49:11 52:7 99:8 133:4 150:9 154:9 174:18 179:15 court 128:14 cover 48:20 covered 5:20 163:19 168:3 covering 86:3 covers 52:8 59:17 Co-Chair 1:17,20 7:13 8:8,16 9:1,18 10:3 11:12,19 12:6,7 13:11 43:21 44:17 45:1 45:11 46:8,12 47:3,7,11,19,22 48:2,6 82:13 87:9 87:16 90:19 91:15 94:5,16 97:17 98:1 110:14,17 111:2,6,12,14,17 117:7 118:1,20 119:20 120:7 125:3,7,13 126:1 128:1,6,10 129:19 130:6,10 131:4,11 131:17 134:6,12 134:16,18,19 135:8 136:11 137:14 139:10 140:5 141:10 143:9,16,22 145:12 146:7 149:1,7 156:14 157:16,21 161:18 170:10 171:7 172:13,16,19 173:7 174:20 176:2,15 177:2,18 178:17 179:4,11 180:12 co-chairs 1:13 4:3 147:18 156:21	157:2,9,17 174:10 Co-Founder 1:24 1:25 cranks 55:5 create 38:16 54:13 created 98:9 creates 155:3 creating 150:16 creatively 50:16 critical 17:11 105:12 108:12 133:13 134:5 138:11 Crosby 2:1 8:3,17 29:19 30:19 31:14 35:10 45:19 46:4 47:9,10 crowd 63:20 66:22 crowd-sourcing 65:11 CSEA 15:17 16:4 18:1 41:17 62:6 167:13 CSMAC 1:4 4:8,10 5:12,14 7:16 21:17 22:17 37:21 50:12 134:21 149:9 157:17 167:6 171:18,22 173:11 178:13 179:20 CU 179:14 culprit 80:10 current 32:1 37:14 38:14 39:14 102:20 154:3 159:5 currently 5:9 62:6 158:20 customers 31:19 cut 163:15 cutting 88:13 CW 33:11 C-O-N-T-E-N-T-S 4:1	D 97:14 Daily 78:13 Dale 2:8 11:10 12:1 75:9 76:6,10 78:7 180:2 damn 33:20 Dan 9:3 65:10 66:19 DANIEL 2:21 data 17:5,6 18:14 20:3,13,21 21:7 22:21 24:13 25:14 25:16,21 27:5,16 28:18 36:6 65:4,5 102:1 136:4 146:18,19 147:22 148:2,11 151:21 154:1,1 158:8,15 158:15 159:12,18 database 15:6 36:15,20 39:9,16 42:11 53:5 64:18 69:4,13 75:15 76:2,3 77:6,17,20 102:19 103:3 104:11 114:11 117:16 118:16 119:2,7 120:17,21 121:3 123:10,11 123:13 124:8,10 124:12 127:9 128:21,22 129:8 133:3 149:3 153:17,19,21 154:6,8 165:7 databases 28:20 42:12 51:2 55:18 65:6 data's 27:11 date 25:4 37:14 158:4 dates 174:14 dating 149:14 David 1:22 2:3 8:4 8:18 157:13,19 180:9 day 24:11,11 35:3	56:11 88:10 123:21 176:4 days 6:17 deal 20:21 49:19,20 56:15 107:7 122:1 148:21 165:2 dealing 37:17 129:22 151:5 154:14 deals 113:17 dealt 84:12 140:16 DEAN 2:21 debate 145:5 decide 69:18 71:12 117:17 deciding 69:21 decision 17:13 decisions 155:1,9 deck 112:2 defense 32:8 162:1 166:16 defer 141:13 defied 59:13 define 120:16 definition 62:4 124:8 162:20 degree 62:9 63:10 147:8 176:13 delete 95:15,17 96:19 deleted 81:19 deleting 82:11 83:5 128:19 demand 88:18,20 88:22 demands 39:12 democratic 178:15 Dennis 2:19 11:3 135:11 Department 1:1 2:18,21 166:16 depend 65:16 dependent 46:18 59:11 depending 30:3 58:22 114:18 depends 131:9
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

deployed 92:22	103:16 110:4	discovered 74:11	86:20 88:4,7	dynamically 79:4
Deputy 1:18,19	122:6,14,20 153:7	75:2	89:17,19,22 90:1	<hr/> E <hr/>
described 124:10	DFS 71:15 72:7,8	discuss 29:16 41:6	93:4,5,16,22	E 1:22 2:1
description 105:7	72:20 74:22 77:11	112:3	136:15,16 142:1,2	eager 23:12
deserves 62:20	DHS 33:6	discussed 40:7	145:9	earlier 31:21 42:1
designated 3:18	diagnose 126:8	63:18 111:20	Donovan 2:3 8:4,18	76:17 90:16 98:20
33:10 58:16	127:21	112:8 114:2 117:9	180:9	100:1 133:2
designed 54:6	diagnosis 125:19	133:1 141:8	Donovan's 157:14	158:22 170:17
desirability 55:18	dialogue 115:9	discussion 4:17	door 52:20,21	early 61:19 114:9
detail 13:6 156:7	dicier 103:9	29:3 42:9 47:13	53:11 58:2,6	116:16 141:6
173:16	dictionary 22:21	104:1 108:11	71:17 98:22	easiest 86:12 164:2
detailed 22:21	different 9:10	111:8 116:10,18	100:22 106:13,16	171:13 172:6,12
116:8	16:17 60:9 69:5	117:3,5,8 121:17	109:1	easily 79:22
details 135:16	70:3 79:4,8 92:6	122:17 132:11	doors 78:19	easy 128:19 151:22
141:22	114:10,13 119:6	134:13 140:21	dotted 27:10	echo 67:15,15
determined 43:10	123:17 129:5,6	142:9,17 148:3	double-check	economic 1:18
develop 113:4	133:15 145:6	170:15	66:20	168:2
115:10 116:3,12	151:2 159:21	discussions 19:4	doubtful 36:13	economically 70:17
developing 64:4	164:21 178:6,8	23:11 89:20 98:10	Doug 2:11 11:5	economics 52:3
133:20,21 168:21	difficult 50:20	116:6,15,20 134:2	downlink 165:22	economy 38:14
Development 2:5,7	79:10 80:10 146:5	135:19	download 104:7	edged 155:21
device 50:7 51:9	164:20	disposal 140:1	downloads 103:15	edges 164:3
53:1 67:4 68:12	difficulties 164:19	dispute 166:22	downtown 141:4	edit 84:4 85:2 94:9
72:1,2 74:1 82:17	difficulty 166:9	169:10,12 170:3	Dr 1:16,18,22 2:5	94:10 118:8
82:20 85:14 100:2	dig 145:1	distance 139:15	2:10,13,15,21	129:20,20 130:5,7
100:5 103:3 104:6	dimensional	distilled 112:19	67:11	editing 97:10
104:12,12,15	160:16	distinction 52:18	drafting 108:6	editorial 110:22
109:19 119:9	direct 116:5,17	57:10	drama 96:6	edits 94:20 111:16
122:18,18 123:20	directing 82:2	distributor 50:7	draw 30:22	Edmond 173:9
124:1,4 125:11,17	direction 26:12	division 144:15	drinks 137:9	educate 57:20
126:4	39:6 59:7 73:15	doable 162:10	driving 90:1	105:14
devices 49:22 51:1	73:16,19,22	documents 5:19	drop 81:21	educating 105:11
51:14,17 52:1,4,5	103:17 110:3,12	48:11,15	dropped 171:19,19	education 58:9
53:2,12,20 54:9	133:19 155:14	DoD 6:19 155:22	dropping 81:21	59:22
54:11,14 56:21,22	directions 32:15	doing 7:6 9:9 15:6	DSA 152:9	educational 106:2
57:16,22 58:17,18	79:9	15:13 18:13 25:7	due 33:7 35:14	106:21
59:9 60:19,20,22	directly 31:8	28:5 33:11 36:19	153:2,3 170:7	effect 72:22
61:4 62:14 72:10	105:19 146:15	42:6,14 77:6,13	dumb 51:14 52:22	effective 57:19
72:17,19 73:5,8,9	174:10	82:2 112:11	56:21 60:19 84:12	effects 135:20
75:2 83:21 84:12	Director 1:18,19,23	119:13 138:19	85:22 86:2,4	efficient 116:7
85:22 86:2,5,17	2:6,8,15	142:11 152:6	88:12 89:1	efficiently 57:3
88:12 89:1,2,5,6	disabled 59:6	153:11 154:22	dumps 164:2	effort 14:10 15:1
89:12 90:13 91:2	disabling 97:1	160:11	dust 25:2	40:10 106:2
91:4,11,21 92:12	disagree 26:18 87:1	dollar 41:15	DYNA 1:25	155:12
93:2,8 95:7,11,19	disciplined 88:3	dollars 41:16	dynamic 4:11 75:5	efforts 7:12 14:17
100:8,8,17 101:20	disconnected	Dombrowsky 2:2	116:7 120:4	59:22 139:19
101:22 102:9,15	170:21	10:7,8 85:17,18	149:10	

eight 24:10,10 45:22 59:19	6:7 168:1 Enhancement 167:12	150:22 establishment 63:19	excess 97:14 excited 96:3 180:2 180:4	50:21 51:7 93:12 106:22 116:4 128:20
either 25:5 29:8 44:1 141:13 168:11 175:7 179:1	enjoying 98:4 ensure 85:15 116:20 169:6	estimate 36:11 et 51:10 136:13,14	exclusion 113:7 exclusive 168:12 exclusively 63:2	extreme 124:2 eye 175:21
Electrical 2:21 electromagnetic 55:20 56:16	ensuring 18:15 entering 114:19	ethics 137:8 Europeans 109:17 110:10	Excuse 43:17 71:7 execute 16:9 Executive 1:16 2:8	e-mail 9:6 44:9 143:19 144:8 170:21
electronic 140:1,21 electronically 159:7	Enterprise 2:1 Enterprises 2:6	evaluation 4:10 21:21 149:8	Exelon 2:12 11:6 exempt 154:2	e-mails 171:20
electronic 140:1,21 electronically 159:7	entertain 117:5 entire 9:15 36:14 36:19 83:19 164:8	evaluations 9:15 event 9:21	exercises 162:12 exist 24:2 37:5 54:7 93:1 98:21	<hr/> F <hr/>
else's 102:1 EMC 25:17	entities 31:10 66:7 169:13	everybody 11:22 66:21 95:22 96:1 106:8 108:20 111:15 133:13 142:9,14,22 147:15 148:15 151:15 154:17 158:3 166:11 172:9	existence 52:1 existing 72:7 138:5 exit 44:4 exiting 13:9 44:3 expand 152:15 expansion 108:14 expect 37:18 54:16 54:17 150:15 164:14	FAA 32:8 107:13 FACA 177:9 facade 175:17 face-to-face 135:13 136:18 141:3 142:4
Emergency 1:17 emissions 33:10 emitter 79:5 emitters 79:17,18 emphasis 25:11 81:9,15 employees 26:22 enabling 158:7 encounter 84:19 encourage 179:19 encouraged 62:11 107:1	entrance 113:11 entrant 126:11,12 126:13 136:1 entrants 115:10 Entrepreneurship 2:9 entry 86:6 environment 49:11 50:19,22 53:19 55:20 56:17 64:17 83:16 150:21 153:5	everybody's 102:9 109:7 147:2 166:3 Everything's 159:2 evolve 112:17 121:12,21 EWA 2:1 exactly 23:16 77:3 83:3 107:9 108:1 140:21	expectation 38:4 38:17 56:18 116:22 150:10 expectations 26:4 49:16 50:3 59:12 60:7 expected 53:22 expecting 150:17 expects 136:18 experience 17:13 20:11,13 26:7 63:21 105:12 143:3 154:19 180:5	fact 25:13 36:8 38:4,15 43:6 44:6 69:3,15 80:5 84:13 85:3,5 98:15 100:10 101:11,16 106:4 108:20 133:10,12 136:17 145:21 149:19 153:4 161:10 165:10 166:3 172:6 174:9 factor 148:18 166:1 fair 15:1 fairly 22:20 26:15 140:11 144:13 fall 65:7 fallback 63:4 familiar 28:7 Fantastic 180:12 far 15:16 29:18 38:7 41:11 64:21 66:13 fashion 88:3 fast 14:13 135:15 158:2 fault 127:21
encouraging 50:8 engage 175:21 engineering 2:2,21	establish 20:3 46:19 established 37:1,3 169:11 establishing 36:5	examples 20:19 119:3,4 120:19 125:2 127:11 130:2 excellent 135:17 179:19 exception 164:9	experiencing 98:19 experiments 119:11 experts 116:6 expiring 33:1 explanation 150:3 explicit 73:18 explicitly 39:2 export 34:20 extent 23:12 32:2	

faulty 72:2	Feldman 2:4 11:1,1 90:15,16	132:3 137:18	143:1	108:11 115:1
favor 47:17 111:9 134:14	felt 13:1 15:12,16 15:19 22:18 107:20	140:9 141:3 158:3 161:5 163:19 168:19 173:2	Fontes 1:13,16 9:18 10:1 11:19 12:6 43:21 44:17 45:1 45:11 46:8,12 48:2 90:19 91:15 94:5,16 97:17 98:1 110:14,17 111:2,6,12,14 118:1 134:19 135:8 136:11 139:10 140:5 141:10 143:9,16 143:22 145:12 146:7 149:1 156:14 157:21 170:10 171:7 172:13,16	152:12 154:22 172:3
FCC 6:22 24:1 25:16 33:2 34:2 34:20 40:16 54:21 55:14 56:6,12 57:19 58:15 60:8 65:21 66:11 76:17 88:2,5 91:4 99:6 101:16 107:14 116:2 161:21 166:15 168:19	Fi 100:15	firsthand 180:5	food 176:17	found 95:3 96:8 102:2,5 109:16 150:19
FCC's 28:6 108:21	field 27:16 96:6 107:15	five 19:17,18 22:18 57:8 61:17 84:10 85:20 94:11 95:4 97:11 135:3 143:11 144:11 145:6 172:8	foods 137:9	Foundation 1:23 10:16
feature 125:17 127:6	fields 15:5	fix 55:22 78:1 119:15	footnotes 15:11	Founder 2:14
features 113:8 123:5,6 126:7 128:21	figure 9:5 15:20 22:1 23:1 41:2 54:12 62:12 74:17 80:1 115:16 122:7 122:10 123:22 124:3 126:15 146:1 171:8	fixed 123:3 142:10 142:13,15,21 151:13	force 123:19	four 36:9,10,18 41:15 49:17 52:9 59:18,19 98:16 109:2 115:5 141:11,21 142:3
federal 3:18 26:10 26:21 32:8 33:5 34:21 35:6 37:4 39:8 40:15 49:19 57:22 58:7,16,22 59:11 62:1 63:5 63:21,22 71:19 98:13,18 99:21 100:10 101:12,14 116:2,19 117:14 117:21 118:15 130:11,14,16,16 130:17 131:2,5,6 131:7,13,13,19 140:17 146:20 153:19 154:8 159:19 167:17 168:11 169:13	figuring 27:1	fixing 99:2	forcing 110:9	fourth 133:17
feedback 22:15 25:19 157:8	file 123:20 125:16	flag 80:13	forecast 180:6	frame 31:12 145:5 152:5
feel 80:16 83:18 147:19 148:2 156:6 176:21	filed 6:22	flagged 80:18 96:9 96:11	foreign 146:12,12 146:13 149:2	framework 60:18 90:2
feeling 87:13 115:12	files 123:21 125:11	flexibility 26:9 80:17	forever 61:9	frankly 56:4 83:9 86:1,5
feels 148:18	filtering 151:10	flipping 35:4	forget 41:18 162:14 162:15	fray 98:4
fees 42:22	final 42:19 63:17	floating 110:1	forged 162:16	free 139:2
	finally 109:18 110:2,10 158:11 177:5	flow 104:11	form 64:19 85:14 113:11	freedom 2:14 42:21 43:1
	find 21:3 23:12 37:21 40:3,5 41:7 41:19 79:11 85:13 155:7,11 161:18	fob 109:7,8	formal 173:20	freedoms 101:22
	finding 30:8 38:3 42:13	fobs 100:18 109:2	formally 37:5	frequencies 59:7 73:21 81:22 82:20 122:19,21 125:18 135:18 165:9
	fine 19:7 41:8 46:1 71:4,14 72:6 80:2 83:7 127:18 128:10,11 129:12 171:4	focus 61:17 69:11 110:9 142:19	format 169:3,6	frequency 24:9,12 59:6 75:5,16 82:2 82:16,18 83:1 97:2 121:1,2 122:9,21 151:2 155:1 160:5
	finish 6:3	focused 14:18 19:11 116:11	former 102:20	frequently 155:7
	firm 96:22	focusing 169:19	forms 132:16	Friday 73:3 145:11
	firmer 96:20	FOI 154:2	formulating 148:12	friendly 136:5 140:12
	firmware 59:5 72:2 74:18 104:1,8,20 105:1	folks 7:2,6 9:21 44:6 94:22 101:7 105:14,18 106:8 107:16 109:4 135:7 137:9 166:12 168:17	forth 14:15 30:13 32:14 65:10 98:15 140:12,19	front 7:10 105:9 132:9 153:14 154:20
	first 7:18 8:12 12:8 29:12 39:21 56:2 58:5 71:16 85:19 86:10 91:6 98:8 105:16 113:4,17	follow 23:5 24:19 157:18	forthcoming 65:18	fruit 14:20
		following 104:18 130:13,19 131:18 158:13	forum 94:9	frustrated 109:18 110:11
		follow-up 64:10	forward 9:9,13,17 12:4 21:19 39:4 51:21 57:12 58:13 67:19 83:21	FSMS 21:14,18
		FONTE 120:7		

22:14,16 23:6 24:16 25:15 31:22 158:4,6 FTE's 29:2 FTI 10:18 fulfill 38:4 fully 53:22 63:5 64:11 function 73:11 functions 73:10 fund 15:18 18:2 167:16 168:4 funds 16:4 19:16 43:6 Furchtgott-Roth 2:5,6 8:5 9:2 further 20:6 46:7 53:7 60:17 61:5 61:13 62:20 63:11 91:4 111:8 134:13 future 1:23 18:1 32:1 60:21,22 61:5 64:8 79:3 83:19 84:3,19 91:2,3,12 95:7,13 95:19 99:18 101:7 108:3 110:8 122:2 134:4 152:17 155:11 167:8	150:1 154:18,21 generate 96:6 generated 135:22 generates 35:16 geographically 62:17 161:15 geography 64:6 getting 5:5 16:8 27:19 84:15 90:2 98:9 101:1 105:20 107:13 140:11 146:3 165:3 167:19 170:20 171:20 172:9 176:5 GHz 7:7 54:11 103:12 107:12 108:13 159:22 163:15,16 164:19 165:20 Gibson 2:6 10:21 10:21 12:11,13 13:13,15,19 16:12 16:19 17:2,8 19:20,22 22:4,9 22:12 28:11,14 31:9,17 39:18 139:12 141:12,14 141:19 161:2,3,7 162:5 165:12 gig 72:7 give 17:21 28:8 37:13 64:10 80:5 90:20,21 93:4 96:22 104:14,16 104:22 121:6 135:3,10,12 144:7 150:2 156:10 160:16,17 164:22 given 14:5 43:12 69:22 80:7 138:6 162:18 giving 137:18 176:10,16,21 glad 12:4 Global 2:15 GMF 14:2,6 28:19	154:1 go 7:22 13:7 14:8 19:4 21:9 22:19 24:22 25:19 30:5 37:13 41:12,17,20 46:9,11 56:7 61:15 67:19 68:22 74:16 75:9 77:7 78:7 80:1,13,22 82:17 83:8 86:7 94:19 96:21 104:5 104:19 108:2 110:4 122:8 130:4 138:7 139:20 142:10 144:6 148:9 156:7 157:16 160:11 170:17 178:20 goals 20:3 36:5 39:10 godfather 67:4 goes 17:9 31:20 38:18 67:22 104:21 141:7 going 5:18 6:7,13 8:1 9:10,13,16 13:5,6 21:19 22:22 23:12 27:9 28:3,4 29:14 32:20 34:1,2,8 35:17 36:14 38:2 38:19 39:4 47:3 51:21 55:14,19,21 56:3,11 57:11 58:13 64:13,17,20 64:21 65:16,17 66:11,12,20 67:18 70:5,11 71:20,21 73:14,17 74:15 75:9 76:3,8 78:1 78:22 83:21 90:9 90:12,21 92:2 94:17 97:14 107:15 108:14 112:3,3,21 114:6 120:2 122:12 124:2 126:4 129:2	132:15 134:4 141:1,12 142:20 143:15,18 144:14 145:1 146:10,21 147:7 148:8 149:8 149:12 152:20 159:8,9,10,13 164:20 166:21 169:21 171:3,21 172:3 179:15 good 5:3,7 6:8 7:6 7:12 13:10 19:22 27:17 34:19,21 63:16 65:10 84:4 84:21 101:3 102:5 104:18 115:14 137:21,21 150:2 158:10 161:16 165:16 175:3,11 Google 1:21 10:14 gosh 74:14 gotten 109:18 110:11 government 26:5 33:5 40:15 51:6 65:8,15 66:1 98:18 99:5 100:11 129:18 137:9 140:17 141:2 GPS 53:4 grasp 107:19 160:6 great 7:13 12:7 65:14 106:22 107:7 134:18 141:10 143:16 172:18 greater 14:3,4 greatly 137:11 Greg 7:14 8:10 12:12 82:13 87:9 112:7 118:7,7 129:15 Gregory 1:13,18 ground 40:17,18 140:20 142:19 ground-based 160:4	group 7:1 12:21 13:22 15:12 26:21 27:22 28:16 29:4 38:2 42:6 47:1 98:11 110:22 121:9,16 126:20 127:1,5 134:1 136:7,9,12,12,16 136:21 139:14 140:7 141:11,21 142:2,7 143:11 144:11,15,22 148:22 149:18 152:14 171:15 172:4,6,7 173:11 174:22 176:4,19 groups 4:8 7:2 21:18 22:18 31:1 61:17 75:18 113:6 134:21 135:3,7 137:6,7 147:19 152:14 166:13 171:12,13 172:11 173:13 174:6 176:6 group's 142:19 growing 66:4 grows 49:5 guard 150:7,11,16 150:22 151:15,18 guess 6:11 47:16 52:13,22 58:19 61:10 120:7,14 123:8 124:7 130:15 144:21 171:16 guidance 17:16,17 17:21 20:6 guided 164:10 guidelines 146:18 guiding 147:5 guy 35:6 guys 12:8 34:22 37:9 110:9 112:5
<hr/> G <hr/>				<hr/> H <hr/>
GAO 23:10 27:7 garage 52:20,21 53:11 58:2,6 71:17 78:19 98:21 100:22 106:13 109:1 gauges 100:21 general 3:16 16:4 16:10,16 39:6 43:4 98:14 114:14 115:14 148:14 150:10 151:14 generally 60:21 84:14 87:11,11,12 87:17,18,20 95:8 95:20 115:12			H 2:6	

hand 5:17 41:10,21 152:13	heard 29:11 35:15 120:17,19 137:5 166:11 171:2	108:18 147:2	impractical 175:6	138:18
handcuffed 154:12	hearing 44:7,14 45:16 58:6 111:9 144:3 157:13	hosting 137:6 147:17	improve 28:18 168:7	inevitable 53:18
handle 62:13	heart 48:20 77:4,13 77:18	Hot 4:15	Improvement 12:9	inform 21:7 31:11
handled 140:22	heavy 145:7	hours 59:4 125:19	improvements 4:4 46:22 167:11,14 169:10	informal 173:20
hands 49:22 68:12 101:20 179:19	heels 41:14	house 3:10 6:5,11 105:18 106:3	improving 167:7	information 3:15 18:4,18 26:14 65:17 100:14 102:11 104:11,17 126:5 138:1 140:18 153:21 166:5 169:7 173:12,15 174:1 174:18,22 176:5
handshake 104:10	held 116:15	hundred 109:2	incentive 62:7	informational 164:2
happen 76:21 97:4 103:22 106:5 107:20 108:15 127:22	hell 59:14	hunt 24:22	inclined 124:21	informed 145:20
happened 159:3 170:22 171:17 172:2	Hello 8:21	I	include 139:22	Infrastructure 2:12
happening 31:13 56:4	help 21:7 32:18 80:19 81:18 125:19 145:5	idea 26:19 54:1 83:20 99:1 102:5 115:14 121:12 132:14 152:19 161:13	included 167:20 173:14	initial 136:16 139:7 142:3 144:11
happens 33:22 59:4 65:3 104:5	helped 126:14	idealized 39:7	including 106:8 116:18	initially 14:18
happy 17:1 32:9,19 156:10 171:5	helpful 9:19 10:1 18:13 65:14 118:4 164:4	identified 14:20 19:2,19 20:10	incoming 24:12	inner 79:6
hard 48:15 53:19 56:15 58:10 66:15 111:22 124:3	helps 82:10 124:20	identifying 22:11 167:7	inconsistent 69:14 75:12,20	innovative 154:21
harder 147:15	hertz 165:8,9	ignition 100:19	incorporate 50:14	inputs 37:12,13
hardware 102:20	hey 35:17	Illinois 2:19 11:4	incorporated 54:4	inserted 159:13
harmonization 154:18 155:17,20 156:1	Hi 167:3	imagine 114:3 122:5 123:14	increase 59:21 152:10	inside 17:20
harmonized 154:15	hiatus 61:15 65:20	immediately 107:13	increased 25:14	instance 23:20 71:16 77:10
harmonizing 156:3 156:4	high 61:6 91:13	impact 116:4	increasingly 54:22 55:19 56:16 79:9	instances 32:12 51:21 104:2
Harold 2:5 8:5 9:1	highlight 146:9	implement 158:8	incumbent 70:18 113:10 114:18 121:21 126:7,8,9 126:14 132:12 136:2 145:5	institute 1:12,18 2:19 11:4 21:5
Harvard 173:10	Hill 100:6 105:15 106:8 159:18	implementation 27:14 40:21 158:4 169:17,19	incumbent's 114:6	instruction 60:12
hash 104:18	hint 28:8	implemented 24:7 27:8 117:1 155:2	incurred 167:17	instructions 77:10 78:3
Hatfield 2:8 11:10 11:10 75:10 76:7 76:13 78:22	historic 51:15,20	implementing 154:20 156:12 169:13	independent 1:22 68:19	Intel 2:10 11:7
head 2:18,21 17:22	historical 121:7	implement-ability 40:22	indicate 147:10	intelligent 52:5 67:4
headed 110:3	hold 58:10 144:1 153:21	implications 27:19 27:21	indicated 152:7	intend 89:19
heading 110:12	holdings 19:1	implicit 59:8 66:2 81:22 178:12	individual 14:7	intended 37:9 79:17 82:8
head-knocking 136:5	home 58:19 105:22	important 19:3,10 58:14 60:2,5 61:18 132:7 133:16	individuals 172:1	intending 83:14
hear 8:20 44:2,10 44:18 48:4 66:19 120:1 144:1 145:18	honestly 50:1 100:16		industry 20:7 32:17 99:13 101:8 105:14 106:5,7 107:1 109:8 112:18 173:17,20 174:2 175:10	intent 89:3,4 124:20
	hope 21:15 41:1 57:18 65:11 101:6 141:5 142:5 147:18		industry's 107:3	intention 72:15
	hopefully 19:15 39:3 145:7			intentions 79:22
	hoping 17:15 23:2			interacting 64:18

interaction 132:6	170:2	Janice 2:14 10:17	32:22 33:3 35:20	52:13,13,18 53:3
interactive 117:16	involved 6:16 67:1	48:9 53:9 59:17	89:6 99:18 122:12	53:13 55:4,17
118:16 119:2	132:19 142:9	61:12 78:5 80:4	123:20 145:20	56:10,13,14 57:13
120:17,21 121:3	146:15	84:9 90:16 94:19	146:2	58:2 59:12 60:10
123:9,10 127:9	involvement	98:4,20 103:19	keeps 119:22	61:8,20 62:6,11
128:20,22 129:7	149:16	110:18 146:7	Kevin 2:10 11:7	62:12,15 64:22
interest 14:11,17	involves 158:7	149:2 176:11	67:3,3 68:22 69:3	66:5 68:5 70:8,10
65:14 70:18 99:12	involving 167:14	Janice's 79:2	71:10 74:8 75:16	72:13 73:3,4,15
175:13	168:8	Jennifer 2:23 9:4	81:18 88:16 89:15	73:18,22 74:11,12
interested 116:10	iPhone 129:2	45:19 46:4 143:12	92:5 96:9 102:13	74:13 79:7 82:5
interesting 6:16	ironed 55:12	143:17,22 144:4,6	102:15 122:11	82:10 83:8,19
64:7 66:4 83:10	isolated 89:7 92:13	145:17	126:1,1	85:3,5,9,10,16
88:21 103:17	issue 21:20 27:5	Jill 180:3	key 39:5 77:22 86:6	86:3,16,18 87:7,8
109:15 110:7	29:1,13 34:22	Jim 8:15,21 173:6	100:18 101:19	88:6,7 89:10 91:5
149:14 152:19	69:16 74:15 78:17	173:7,8 177:2,18	109:2,7,8 148:18	91:22 92:10,11,12
160:10	80:18 83:10	Joe 105:21	166:1	92:12,13,21,22
interestingly 99:3	100:12 113:15	join 44:4 48:3	keys 104:15,18	94:3 98:5,20
interests 19:12,14	132:4 133:22	joined 45:22	kick 112:7	99:21 100:1,13,16
115:16,22 116:3	136:19 138:11	joining 44:1	kind 23:18 30:8	102:22 103:10,15
interface 121:14	145:22 147:10	JR 2:2,18	48:10 53:18 55:5	104:2,7,13,14,14
interfere 54:14	155:20	July 1:9 78:13	65:13 74:14,22	104:16,16,20,22
interference 4:11	issued 170:4	jumps 154:20	82:3 90:1 98:11	105:21,22 106:2
49:20,21 51:17	issues 6:17 7:8 9:12		102:6 112:17	106:17 108:1,5,10
55:3,9 63:20,21	19:17 20:21 42:3		113:16 114:15	108:19 109:6,8,10
66:5 74:11,15	43:19,22 44:14	<hr/> K <hr/>	115:7 119:18	109:16 113:8
79:13,15 89:10	49:6,9 68:5 77:2	K 81:4	121:14,19 122:3	118:7 119:11
101:12 107:8,12	81:13 102:8 103:1	Kahn 2:10 11:7,7	132:11 135:3,6	120:16,20 122:19
114:5 133:8 144:3	103:12 105:19	68:7,10,17,22	146:14,17 147:3	123:3,10,12
149:10 151:3,6	109:9 116:12	69:8,17 70:7 71:1	147:17 148:5	127:15 128:17,19
interfering 54:12	146:4 147:21	71:9 74:5 81:17	155:20 164:21	128:22 129:20
79:14 100:3,5	153:18 158:16,19	82:19 83:3 88:16	166:10 169:19	133:2 135:1 136:1
interjected 77:16	176:12 177:7	88:16 92:8,16,20	kinds 37:17 79:13	140:11 141:22
interlude 78:9	issuing 38:21	93:14 96:10,16	99:14	143:12 144:5,8
intermittent	item 28:2 81:19	97:6 102:14 104:4	Knauer 2:23	146:12 147:7,10
133:12	82:11 83:5 99:22	126:3,9,12	knock 49:6	150:2,4,17 152:3
internal 159:5	101:6,19 108:13	Karl 3:8 10:4 11:19	know 7:6 16:16,19	152:5,11 153:15
internally 98:10	134:20 160:6,8	12:6,20 13:9	16:20 17:17 23:9	154:11 156:4,5,8
interpretation	178:21	16:14 19:20 35:10	24:3 25:1,1 26:2	160:2 161:20
162:7	items 4:22 27:7,17	42:17 62:11 64:10	26:13,21 28:15,20	162:6,8,10,18,18
interrupt 76:9	102:12 140:16	76:9 80:11,13	29:2,11,12 30:22	163:8,10,20
intractable 162:19	145:2 158:1	81:3 98:2 103:11	31:19 32:3,6,12	166:11,21 169:5
inventory 62:13	iteration 21:16	105:8 115:8	32:16 33:20 34:7	170:22 171:3,21
64:15,19 65:2	ITU 148:10	117:10 134:22	35:3 36:20 37:8,9	172:11 176:11,22
108:17,19 109:11	it'd 9:19	137:5 143:1 147:9	37:20,20 38:1,7	178:10
109:12		149:11 170:11	40:4,6 41:4,6,12	knowing 53:4
investment 91:21	<hr/> J <hr/>	174:21 176:9,20	41:16,19,21 42:7	knowledge 82:17
involve 169:10	J 173:9	Karl's 176:15	45:9,11 49:5	known 132:20
		keep 13:12 22:10		

148:5 167:13 knows 129:1 142:14 166:11	legal 43:4 legislation 37:22 lends 161:16 letter 35:16 159:17 let's 44:8 74:15 86:10 89:6 90:3 91:8 93:16 127:21 177:2,3 level 62:18 116:19 liaisons 135:2 license 20:15 28:6 30:3,5,6 35:1,7 56:4 123:20 licensed 56:18 58:17 76:4 113:20 129:7 licensees 30:2 31:1 31:11 35:21 licensee's 31:7 licenses 32:7,8,13 33:14 34:2,14 licensing 17:7 20:14 21:6 30:1 109:11 life 16:22 lifting 145:7 limit 148:21 limitation 132:13 limitations 43:16 54:20 148:5 152:11 153:1 limited 65:17 85:16 86:18,20 89:7 90:18 92:18,20 93:2 95:8,20 105:17 116:11 148:11 164:7 limiting 98:17 line 26:1 27:10 44:16,21,22 45:14 45:14 58:10 154:11 163:3 166:10 lines 53:17 link 161:11 linked 100:9,20 105:19 138:15	140:3 160:3 links 17:18 139:15 list 6:20 15:12 41:5 113:12 124:12 139:21 145:22 157:8 167:20 171:1,18,22 172:9 173:21 174:8,11 listed 173:1,17,22 174:2 listen 69:8 179:17 listing 135:22 lists 38:5 litany 21:3 little 18:12 21:20 30:20 35:8 76:17 76:19 79:1 81:15 82:7 84:15 88:10 88:15 102:3,6 136:22 142:8 146:5 149:21 151:19 158:2 160:8 live 61:9 96:1,1 106:7 LLC 1:25,25 LLP 2:2,23 local 78:13 166:6 location 33:18 53:4 91:3 102:10 139:4 locations 32:13 34:15 109:5 160:18 location-by-locat... 151:13 lock 54:16 Lockheed 2:24 locking 80:21 log 123:20,21 125:11,16 logical 18:7 London 78:12 long 13:9 16:21 34:13 112:18 141:5 longer 34:16 long-term 19:12,14	look 24:18 29:6 36:21 41:17 60:11 63:12 66:12 67:20 92:16 99:7 107:2 114:10 134:1 148:1 162:16 164:13 165:22 177:19 looked 36:16 88:8 looking 9:9 12:4 23:6,8 34:19 36:8 42:2 70:3 81:12 107:3 108:3 109:11 118:20 133:6 135:2,6 137:2,3 139:8 151:20 152:15 154:16 164:19 looks 39:7 96:9 155:4 lose 81:20 83:4 losers 114:9,20 lost 134:7 lot 6:6 7:9,10,11 14:7 15:8 25:6 26:3 53:14 86:1,2 86:4 90:8 91:21 91:21,22 98:10,14 99:19 103:8 135:19 140:13 141:5 142:16,18 143:4 147:20 148:9 169:15 lots 14:6 33:4 141:7 151:11 164:21 loud 6:5 29:11 love 47:5 low 87:8 lower 164:11 low-hanging 14:20	172:8 major 102:12 106:2 158:14 159:20 making 38:12 40:20 47:4 51:8 73:18 109:4 113:16 155:12 166:16 management 1:4 2:18 3:9 4:4,15 12:9 15:7 20:20 21:5 25:10 39:7,9 39:17 46:3,22 75:14 113:22 114:7 119:15,17 119:18,19 120:4,6 120:15,22 121:13 121:19,22 127:6 127:14 managements 43:9 Manager 1:21 2:11 managers 21:4 managing 2:15,22 20:13 26:21 mandate 39:4 manpower 29:3 manual 170:1 manufacturer 104:21 manufacturers 54:8,17,18 59:13 59:21 60:6 65:5 153:4 manufacturer's 104:6 march 111:21 112:4,8 138:12 139:8 MARGARET 2:4 Mark 2:1,6,13 8:3 8:16 10:11,21 12:8,13 22:8,12 29:19,20 30:16,19 35:11 39:19 45:19 46:4 47:8,9,9 75:9 77:16 96:10,12
L				
L 2:3 labeling 60:9,9 lack 107:21 lady 34:12 laid 150:4 163:8 language 16:6 72:14 76:18 80:16 92:5 94:8 largely 115:6 Larry 1:21 3:13 6:9 6:12 10:13 84:8 112:2,7 170:18 174:21 late 78:11 141:7 Laughter 8:7 12:2 13:14 34:10 38:9 70:9 76:12,15,22 78:10,21 90:22 96:4 97:12,16 98:6 110:16 120:9 128:15 130:8 132:2 136:10 137:16,20 141:18 171:6,9 178:22 179:3 law 2:8 136:13 138:16 139:18 140:3 167:9 LAWRENCE 3:13 laws 175:18,19,20 lead 143:15,19,20 leaders 174:22 leadership 145:3 171:11 learning 179:22 leave 41:9 46:11 114:20 leaving 86:9 128:11 left 13:1 162:6 legacy 53:11 57:15 61:1 84:16 85:10 87:20 90:17 91:21				
				M
			M 3:18 madam 46:12,13 106:17 magical 121:14 mailing 171:18,22	

97:10 112:2,22 115:8 119:21 120:14 122:4 126:19 127:3 131:1 135:9 139:13 141:11,13 141:14,22 161:3 165:12 marked 154:2 market 20:22 155:5 Mark's 127:11 Martin 1:24 2:24 Marty 44:9 48:2 Matre 180:3 matter 48:21 49:13 49:14 55:16,16 94:14 172:22 175:8 180:18 maximum 2:4 26:8 50:21 51:7 59:4 McGINNIS 2:11 11:5,5 97:13 McHENRY 2:13 10:11,11 75:9,11 113:1 119:8,21 120:3,10 122:3 123:1,14,19 124:11,18 125:1 125:10,15 126:6 126:10,13 127:19 128:4,8,13 129:1 129:10 130:22 135:12 136:8 mean 27:20 54:9 58:20 59:1 68:18 73:16 82:14,19 85:13 86:6,16 87:7 88:2,4,19 89:3,17 90:11,16 92:10 93:17 101:10 102:3,22 104:9 105:2 120:17,18 123:17 125:21 129:5 162:7 163:22 175:16	means 23:1,3 37:8 58:1 60:8 69:21 107:9 119:17 154:18 156:1 160:11 175:18,19 meant 14:5 28:4 127:9 131:14 139:15,16 mechanism 72:8,9 108:16 113:9 171:4 mechanisms 158:9 168:22 medical 30:10 meet 105:6 110:5 147:13,15 meeting 1:6 7:5,16 9:10 12:21 22:6 62:22 111:21 112:2,5,9 140:14 141:3,6,20 142:4 144:20 145:10,13 146:10 156:11,19 166:14 174:14 177:6,13,13 179:6 meetings 4:21 135:14,20 137:10 147:17 173:19 174:15,16,17 175:1 177:16 178:1 meeting's 141:16 meg 42:1 member 5:14 10:7 10:9,11,15,17,19 10:21 11:1,3,5,7,8 11:10 12:11 13:13 13:15,19 16:2,12 16:19 17:2,8 18:20 19:10,20,22 21:13 22:4,5,9,10 22:12 28:11,14 30:19 31:9,14,17 34:11 35:10 38:19 39:18 46:14 47:5 47:9 48:13,19 52:12 53:16 57:5	59:17 64:9 67:12 68:7,9,10,16,17 68:20,22 69:2,8 69:10,17 70:1,7 70:10 71:1,3,7,9 72:11 73:12 74:5 75:11 76:7,13 78:8,11,16,22 80:12 81:17 82:19 83:3,7 84:8 85:1 85:17 86:14,20,22 87:5,14,19,22 88:4,16 89:13,17 89:19,21,22 90:15 91:1,6,19 92:8,16 92:18,20 93:4,14 93:16,20,22 94:2 95:1,10,12,15,17 95:22 96:5,8,10 96:12,14,16,17 97:6,8,13 102:14 103:20 104:4 110:20 111:4 112:6 113:1 117:11 118:6,11 118:22 119:8 120:3,5,10,13 121:4 122:3,16 123:1,8,14,16,19 124:6,11,15,18 125:1,5,10,15,21 126:3,6,9,10,12 126:13,16,18,22 127:3,13,17,19 128:4,8,13,17 129:1,4,9,10,12 129:13,14 130:1 130:12,17,19,22 134:10 135:12 136:8,15 139:12 140:9 141:12,19 142:1 143:14,18 144:10 145:9 146:8 156:20 157:5,18 161:2,7 162:5 163:1,12 165:12 170:18	171:16 172:15 179:1,9,12 members 1:15 5:12 5:16 7:19 20:11 45:20 46:2 67:1 171:1 173:17,21 174:2 178:12 179:19,20 memo 113:12 mention 38:11 41:14 166:20 mentioned 133:5 169:8 mentions 52:14,17 met 1:11 7:4 meteorological 135:9 method 72:16,21 116:5,7 metrics 20:3 36:5 MHz 61:3 85:6 86:3 90:11,13 109:2 135:9 136:13 155:8 159:22 164:15,17 MHz-pops 161:21 mic 6:4,5 Michael 1:22 10:15 48:9,21 52:10,15 57:4 67:9 94:19 96:7 110:18 microphone 13:18 60:12 97:22 110:19 118:5 microphones 67:16 microwave 30:11 142:10,13,15,21 mics 6:2 Middle 108:7 167:1 midnight 142:5,5 milestones 20:4 military 33:6 35:2 156:3 million 36:11,18 41:15,16 122:5,7 122:13,20 mind 36:13	mine 171:19 minimize 51:22 minimizing 25:12 51:22 minimum 26:9 84:2 minus 82:22 minute 57:7 Miscellaneous 4:22 missed 118:13 missing 5:20 16:1 118:18 172:12 mistakes 72:1 mitigation 97:3 mod 79:6 mode 84:1 modifications 50:5 167:11 modify 33:13 modifying 80:16 Molly 2:4 11:1 90:15 moment 69:22 128:18 144:1 160:22 moment-by-mo... 119:17 money 19:6 41:13 monies 15:17,22 39:22 40:11 41:21 monitor 53:12 56:22 monitoring 55:15 56:8,14 monitors 109:13 month 35:14 119:19 monthly 36:17 months 55:4 74:16 month-by 119:18 morning 7:4 141:6 152:14 motion 46:21 47:4 47:6 67:8 111:3,5 111:7 117:6 134:8 134:11 motivations 155:6
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

155:6	132:3 135:5 136:7	17:16,18 33:10	179:5	objective 56:20
move 9:16 11:16	137:17,21 139:20	40:17,18 42:5	noticed 98:9	observation 102:14
14:19 46:15 149:8	143:2 145:19	58:15 61:19 63:1	notices 33:3	103:7
162:22	147:9 149:11	77:9 78:3,12 92:6	notification 20:22	Obtain 59:5
moving 87:10,16	157:2,13,22 161:5	93:8,10 100:19	26:14 31:3	Obuchowski 2:14
90:9 111:18 118:4	161:9 162:3,21	104:20 110:3	notion 82:1	10:17,18 48:13,19
119:22 120:11	163:6,22 165:16	113:5 115:10,15	notwithstanding	53:16 64:9 78:8
138:12 139:9	171:10 172:5	116:3 133:9 150:8	40:6	78:11,16 83:7
142:13,14 152:12	174:7	150:10 152:19	November 149:15	85:1 87:5,22 91:1
158:6,11	necessarily 77:21	153:5 154:21	NTIA 4:10 10:5	93:20 94:2 95:10
multi 160:15	97:1 101:5 120:16	158:8,14,15,18	13:1,22 14:3,8	95:15,22 96:5
multiple 69:5 70:16	120:20 133:10	168:9	16:8 17:20 19:14	103:20 110:20
70:20 74:2	161:12	newer 100:8	22:15 23:5 27:21	111:4 146:8
multiply 165:8	necessary 15:5,13	news 78:12 98:20	39:14 40:18 43:12	obviously 14:12
multi-band 59:10	27:12 84:2 116:1	158:10	57:19 66:9 99:9	18:22 21:14 104:9
multi-faceted	148:12 159:12	nice 11:15 35:16	113:4,11 114:14	129:22 148:3
64:22	need 5:13 15:9,20	135:14	115:6,19 116:1	150:7 155:5
multi-subgroups	21:9,22 32:3	night 141:7	117:22 118:9	occupy 165:11
144:15	33:11,17,21 39:16	NITRD 7:5 152:14	129:16,21 130:2	occur 78:1
munitions 164:10	46:7,15 57:2,13	nitty-gritty 146:22	130:10,15 135:14	occurred 22:16
mute 118:3 120:1,8	71:4 76:1,2 85:20	NOAA 135:16	136:22 147:5	odd 165:1
144:2	106:7 109:6	nobody's 156:2	149:8 153:19	offer 22:15 31:4
muted 44:22 45:15	113:21 115:14	nodes 54:7	166:15 167:4	offered 20:18
myriad 53:20	117:15 126:2	noise 62:17 79:11	168:18 170:1	office 3:9,10 4:15
	132:20 133:21	noise-like 79:10	NTIA's 12:15	6:10 15:19 16:3
	135:22 138:6	80:9	43:12 166:21	16:10 34:4 41:18
N	142:14 151:19	noisy 30:20 79:19	number 1:17 26:16	137:15
N 2:8	156:5,7 157:11	non 131:22	29:2 32:12 36:19	Officer 1:16 3:20
name 6:3 9:20	162:19 175:12,15	non-classified	45:9 56:20 57:12	offices 43:8 58:4
27:10 157:14	needed 34:5 74:11	154:1	60:15 73:14 74:3	official 116:21
159:7 175:11	101:9 139:4	non-federal 26:11	82:15 86:19,20	off-line 29:9
named 133:3 172:4	needs 5:17 62:9	37:6 100:3,4	92:19,20 93:3	oftentimes 153:20
names 7:22 119:3	63:11 77:8 88:15	160:12 168:11	95:4,9,21 97:11	oh 25:2 52:15 68:22
171:18	102:18 104:19	169:12	105:18 116:11	70:7 96:12 118:6
narrow 123:12	106:21 113:15	non-feds 101:16	118:21 119:5	118:22 126:9
National 1:17	162:19	non-status 49:12	144:19 153:8	154:14
nationwide 161:14	negative 92:14	non-U.S 147:11	161:4,11,17,19	okay 5:18 8:10,16
nature 59:22 63:14	nervous 92:4	norm 177:9	165:9 166:10	9:1,5 11:12 12:11
NCC 169:4	Net 100:9	normally 50:3	174:15 176:19	13:13 17:2 19:22
Nebbia 3:8 10:4,4	network 56:22 77:9	119:12	179:13	21:12 28:11 36:1
11:21 12:3 16:15	138:17,20,20	North 2:22	numbers 25:5 40:5	42:16 44:12,20
16:21 17:3,9 19:8	139:1	note 17:3 143:2	113:13 115:2	45:2,5,6,12,18,21
19:21 23:15 28:13	network's 138:21	175:9 177:5	nuts 135:21	46:6,10 47:12,16
36:1 38:10 42:16	never 16:22 25:19	noted 149:17		47:22 48:7,13
42:18 76:10,16	53:21 171:2	158:22	O	75:8 90:19 93:22
77:1 81:2 98:3,7	172:10	notes 5:6	O 170:1	94:16 95:1,10,18
103:10 105:8	new 1:23 10:16	notice 92:5 170:4	object 87:6	96:7,12 97:9 98:1
117:11 131:22				

105:5 109:1 110:17 111:7,17 117:7 118:22 120:13 124:11 125:3 128:6 131:20 134:6,12 134:14,18,19 140:5,7 141:11 143:9 145:15,17 149:7 157:20 162:21 165:12 170:13 172:18 173:3,7 174:12 176:18 178:9,20	open-ended 147:1 operate 43:9,10 51:19 53:2 59:3 82:21 83:1 116:9 164:10 175:15 operates 100:11 operating 62:14 72:18 83:13 119:12 122:18 164:8,13 operational 120:6 operations 1:21 133:12 159:19 165:6 operators 117:17 139:2 opinion 16:10 opportunities 7:10 152:16 opportunity 4:19 79:5 172:20 177:14,21 179:16 179:22 opposed 18:9 47:20 87:12 99:20 111:12 128:18 134:16 171:15 opposite 60:14 option 62:5 order 45:13 73:9 99:18 138:12 139:8 168:12 ordinance 140:1 organizational 147:4 origin 93:15 original 129:19 originally 36:10 OSTP 10:6 ought 35:8 56:5 65:20 outcome 38:1 148:13 171:5 outstanding 21:20 overall 18:21 62:18 overlaid 31:22 overlap 163:10	overseeing 7:3 oversight 116:20 overview 48:16 135:17 overwhelmed 177:17 over-definition 121:3 owns 71:18 104:13	participates 150:13 participating 138:2 participation 146:12,13,13 149:3 154:4 172:22 177:17,20 particular 19:11 33:13 59:6 62:3 62:16 68:4 69:3 69:12 82:16 97:2 122:20 152:22 particularly 49:21 64:14 103:4 109:22 133:9,11 150:13 parties 45:22 64:1 114:4 116:18 Partner 2:22 partners 60:6 parts 123:4 party 71:20 116:11 passes 68:13 passive 165:5,18 passwords 5:15 path 53:8 80:15,22 pay 61:22 paying 15:16 150:14 PC 54:7 PCAST 6:18 14:21 49:3 62:8 63:6 73:2 83:16 152:17 178:4 peak 119:5 people 7:18 8:1,11 9:6 13:5 16:18 24:5,6,10,10,21 25:3,6 26:5,16 31:18 33:7 35:7 35:14 37:18 38:1 38:12 43:22 47:13 49:14 54:12 55:7 56:12 58:3,11 60:14 64:17 65:6 72:1 74:12,17,20 76:18 78:2 82:5 86:6 100:6,16	102:7 105:20,21 107:15,20 108:1 122:8 127:8 136:5 144:17 145:2 146:3 147:16 171:7 people's 13:12 27:1 101:1 Pepper 2:15 11:8,8 67:11,12,12 68:9 68:16,20 69:2,10 70:1,10 71:3,7 73:12,13 118:11 118:22 120:13 122:16 123:8,16 124:6,15 125:21 126:16 127:13 128:14,17 129:4 129:12 130:17 percent 43:8 164:16 perfect 51:16 64:13 perfectly 71:14 perform 28:9 performance 20:16 period 18:16 61:7 91:14 177:22 permission 53:5 73:6 122:12 permits 31:6 person 35:13 80:1 145:22 146:13 personal 180:1 personally 60:11 perspective 25:9 39:9,17 81:8 93:6 117:21,22 156:1 160:12 pertain 49:10 98:13 pertaining 151:20 pertains 49:5 Peter 3:16 166:20 167:3 170:11 petition 99:14 ph 19:5 phase 158:4,12
P				
oldest 54:21 OMB 17:15 168:18 once 5:5 6:3,4 36:10,12 37:19 78:17 92:22 105:13 119:9 132:10,10 140:3 151:9,21 152:10 153:1,18 158:14 160:13,15 161:13 onerous 54:8 ones 54:21 161:19 165:19 one's 17:10 22:13 one-size-fits-all 121:15 one-time 14:1 one-way 103:2 104:8,9 online 178:4 open 13:2 63:8 69:22 86:7 114:21 116:10,17 132:15 146:2 opener 52:20,21 53:11 58:2 71:17 106:16 openers 58:6 100:22 109:1 176:13 opening 4:2,3 11:20 openness 147:8	pace 83:18 packaging 60:12 page 46:18 54:4 115:2 pages 115:2 paid 17:14,14 18:15 painful 122:13 panacea 23:9 panel 75:12 166:22 168:16,17,19 169:9 170:3 paper 37:20 40:8 41:2 65:11 66:7 papers 118:4 120:1 120:11 parameters 136:1 part 14:13 21:14 24:15,16 30:13,14 32:10,17 35:2,9 36:4 38:20 40:11 49:1,18 54:7 70:7 74:9,20 77:20 78:19 102:21 103:2,13 132:6 133:13 150:7 163:16,17,17 169:5,8,9 179:14 participant 22:7 44:8 45:18 46:1 48:4 59:15 75:8 76:6 78:5 80:11 96:7 131:15 145:22 participants 174:8 participate 171:14	participates 150:13 participating 138:2 participation 146:12,13,13 149:3 154:4 172:22 177:17,20 particular 19:11 33:13 59:6 62:3 62:16 68:4 69:3 69:12 82:16 97:2 122:20 152:22 particularly 49:21 64:14 103:4 109:22 133:9,11 150:13 parties 45:22 64:1 114:4 116:18 Partner 2:22 partners 60:6 parts 123:4 party 71:20 116:11 passes 68:13 passive 165:5,18 passwords 5:15 path 53:8 80:15,22 pay 61:22 paying 15:16 150:14 PC 54:7 PCAST 6:18 14:21 49:3 62:8 63:6 73:2 83:16 152:17 178:4 peak 119:5 people 7:18 8:1,11 9:6 13:5 16:18 24:5,6,10,10,21 25:3,6 26:5,16 31:18 33:7 35:7 35:14 37:18 38:1 38:12 43:22 47:13 49:14 54:12 55:7 56:12 58:3,11 60:14 64:17 65:6 72:1 74:12,17,20 76:18 78:2 82:5 86:6 100:6,16	102:7 105:20,21 107:15,20 108:1 122:8 127:8 136:5 144:17 145:2 146:3 147:16 171:7 people's 13:12 27:1 101:1 Pepper 2:15 11:8,8 67:11,12,12 68:9 68:16,20 69:2,10 70:1,10 71:3,7 73:12,13 118:11 118:22 120:13 122:16 123:8,16 124:6,15 125:21 126:16 127:13 128:14,17 129:4 129:12 130:17 percent 43:8 164:16 perfect 51:16 64:13 perfectly 71:14 perform 28:9 performance 20:16 period 18:16 61:7 91:14 177:22 permission 53:5 73:6 122:12 permits 31:6 person 35:13 80:1 145:22 146:13 personal 180:1 personally 60:11 perspective 25:9 39:9,17 81:8 93:6 117:21,22 156:1 160:12 pertain 49:10 98:13 pertaining 151:20 pertains 49:5 Peter 3:16 166:20 167:3 170:11 petition 99:14 ph 19:5 phase 158:4,12	

163:4,4,4	22:13 29:14,16	post-book 68:14	prevalent 61:2	165:7 174:13
phasing 61:5 91:12	40:3 41:22 42:16	post-hoch 53:17	87:21	problems 55:16
phenomena 66:4	42:19,20 43:7	54:1 57:14 74:12	prevent 38:12 39:3	57:1 64:4 75:1
phone 5:8,8 6:6	52:6 59:13 67:14	potential 116:2	50:5	78:1 89:10 98:19
7:14,19 8:2,6,12	68:1 69:6 88:11	potentially 60:16	previous 112:1	98:21 99:6,19
8:13,19 9:7 45:9	97:14 100:15	Povelites 2:17 10:9	122:17 163:3	106:5 134:4 136:6
47:15 101:2 118:3	131:2 147:11	10:9	pre-auction 167:21	177:12
119:22 129:3	148:1,8,13,18	power 3:10 6:8,9	pre-dates 149:15	procedural 176:14
146:14 178:19	154:13 159:11	10:6,6 110:5	price 52:5	176:19 177:7
phrase 58:19	162:13 171:10	powered-up 54:13	Priman 19:4	178:13
pick 21:16,18 42:7	176:15 177:19	PowerPoint 118:17	primarily 14:12	procedure 116:14
70:21 114:9,14	pointing 133:18	powers 23:5 178:11	61:2 140:10	procedures 20:14
180:10	points 28:14 29:10	practical 175:8	142:20	28:21 172:21
picked 27:6	39:19 52:11	practice 35:20	primary 36:9	proceedings 177:9
Picking 67:14	police 166:5	40:14	112:15 121:11	process 15:2 18:3
piece 48:16 85:7,13	policy 1:18,19 2:10	practices 28:17,21	primitive 83:22	18:15 21:6 24:21
101:3 178:9	2:15,17,24 3:12	34:19	printed 115:4	30:14 31:20 32:10
pinging 55:18	6:10 102:7 148:14	pre 169:15	priorities 43:2	35:9 38:21 43:11
pivoted 22:17	177:10,20 179:15	preceding 50:11	priority 19:1	55:6 107:20
place 26:3 27:16	policymakers	precision 164:9	privacy 103:1	108:22 112:21
40:14 53:8 55:1	57:20 61:3 91:10	preclude 56:3	private 64:1 175:8	115:4,19 116:16
79:16 89:9 106:9	105:11	72:15	proactive 58:8	122:10 145:21
108:16 137:22	policymaking	preferred 171:1	proactively 57:1,20	146:16 147:6
139:17 159:6	180:1	prepare 112:3	105:10	158:6,9 167:7
168:6,20 169:22	political 49:13	preparing 169:4	probably 17:10,15	169:16 178:15
placed 100:10	popped 156:9	prescriptive 84:15	17:19 21:22 25:11	processes 24:14
103:16 153:11	pops 162:3	84:22 87:2	36:18 38:13 48:20	40:8 97:3 168:5
places 138:21	port 60:2	presence 180:8	54:18 58:9 62:9	processing 35:7
148:10	portion 164:11	present 1:15 3:6,22	63:12 64:12 66:13	product 30:6 50:2
plan 140:15 155:8	166:2	5:12 94:10	85:10 96:18,20	50:4 66:7 108:21
168:14	posed 49:17 147:13	presentation	108:6 130:4	productive 144:12
planned 113:6	position 69:18,20	143:13	139:22 146:10	productively 50:16
180:6	positive 93:6,17	presentations	147:1 156:6,8,15	products 50:7
planning 167:21	110:21	166:17	159:16 160:6	109:13
169:16	possibilities 161:10	presented 6:20	163:9	program 1:19,23
plans 18:5,18 109:4	possibility 56:13	70:6 117:2	problem 39:4	progress 4:8 94:17
168:10,15 169:1,4	possible 16:7 24:13	preserve 80:17	51:22 54:10 55:3	134:21 152:21
169:14,18,20	36:17 50:21 51:7	President 1:22 2:3	55:3,9,10,12 56:7	159:14
plant 34:15	54:2,15 57:1	2:4,5,13,14,17,23	71:15,17 72:5	Project 1:21
plants 32:13	61:12 65:1 116:16	3:16	74:18,21 75:7	proliferate 89:9
play 154:9 166:8	127:4 132:8 146:2	President/CEO 2:1	77:8 79:12 80:9	promising 66:13
please 5:8,11,17	148:17 155:2	presiding 1:14	80:20 82:11 88:1	promoted 84:5
6:4 119:22 125:11	possibly 41:20	press 159:17	90:3 99:6 106:13	proposals 32:20
144:1 177:3	post 175:7	presume 47:4	109:19 119:14	116:22
plug 66:19	posted 173:21	pretty 54:8,13	122:10 123:3	propose 125:4
plus 79:17	174:14,19 178:4,5	65:17 106:3	124:1,4 125:20	proposed 63:18
point 18:6,7 21:15	postings 174:16	122:13 175:13	126:8,15 151:6	121:9 170:5,6

<p>pros 62:22 prospectively 51:6 protect 143:7 protected 169:7 protection 146:18 protocol 104:10 provide 25:20 26:8 64:3 116:16 140:8 163:9 167:4 provided 29:20 135:16 141:1 167:10 171:11 provides 150:11 159:6 providing 18:17 137:8 140:17 public 1:19 2:17 4:19 172:20,21 173:1,19 175:11 175:12,13,17 177:8,17,21,22 178:6,19 179:20 180:1 publicly 174:19 178:5 pull 23:18 42:9 44:16 45:13 92:2 purchase 50:4 purpose 16:5 pursuant 168:6 pursue 132:17 138:11 push 6:2 59:20 pushed 53:7 pushing 109:20 push-top 6:2 put 27:10 29:14 30:18 37:19 42:5 54:6 55:1 65:10 72:1 84:16 90:12 92:1 97:6 111:1 113:13 119:3,4,10 124:12 125:14 126:7 127:8 139:2 139:17 149:12 159:7 168:5 172:21</p>	<p>putting 41:1 73:18 148:14 155:10,14 P-R-O-C-E-E-D-... 5:1 p.m 1:13 5:2 94:14 94:15 180:18</p> <hr/> <p style="text-align: center;">Q</p> <p>qualitatively 178:7 quality 61:6 91:13 quantities 62:15 queries 103:17 query 102:18 103:2 querying 120:21 question 27:18 39:2 51:11,12,13 62:21 72:12 81:17 112:13 118:1,11 120:14 121:8 123:9 133:7 137:5 139:14 146:11 147:13 155:14 161:6 163:13,20 165:13,17 170:19 172:14 176:19 questionable 37:5 questions 4:17 12:22 13:3,8 16:13 24:6 36:2 38:22 49:17 50:17 61:13,20 63:16 64:8,11 98:16 99:11 121:9 122:8 136:20,21 137:8 138:14 145:4,15 147:4 149:2 156:12 159:20 163:2 170:8,12,14 170:15 172:17 174:6 178:13 quick 81:17 135:4 135:10 137:17 144:7,8 165:13 179:10 quickly 54:13 155:1 quite 24:1 28:7</p>	<p>36:11 55:10 74:12 81:16 107:19 159:3 173:16,22 178:7 quote 95:7</p> <hr/> <p style="text-align: center;">R</p> <p>radar 42:3 122:6 151:8 165:20 radars 107:12 radio 35:5 100:20 142:17,20 143:5 165:4 radius 161:20 raise 5:17 59:14 147:3 179:18 raised 61:21 80:4 176:12 raising 23:14 83:10 149:2 range 63:14 122:19 140:3 165:1,18 ranges 17:4 159:22 160:5 rank 76:11 Raytheon 2:18 32:4 reached 50:18 react 57:2 reaction 57:2 90:14 read 13:5,5 21:2 82:9 94:21 115:21 118:13 156:16 reading 72:13 115:13 ready 70:20 real 56:14,14 78:17 151:17 175:17 realistic 36:19 56:3 138:6,10 153:16 realistically 39:13 132:17 153:18 reality 64:19 65:16 153:10 154:10 realize 23:19 37:12 38:13 133:19 155:19</p>	<p>reallocated 168:10 reallocation 167:8 really 6:16 14:16 33:7,21 35:1 50:19 53:18 57:9 57:17,18 62:18 66:8,10 67:5 74:7 75:6 83:19 85:20 88:17 93:14 98:5 101:3,9,13 102:4 102:18 105:2 107:6,20 112:14 113:7 115:16 132:8 133:16 135:2 142:18 146:21 148:12 163:13,14,18 177:10,11,14 realms 40:1 Reaser 2:18 32:4 34:11 140:9 reason 115:3 121:6 177:12 reasonable 161:22 175:14 reasonably 53:22 56:5 160:21 reasons 44:2 129:5 rec 91:7 receive 31:8 43:7 59:7 73:15 74:4,4 165:19 received 159:18 receiver 77:11 166:4 receivers 165:15 receiving 38:22 73:16,19 recharge 43:15 recognize 38:15 100:14 105:17 154:17 164:5 recognizes 53:18 133:14 recognizing 92:21 110:21 recommend 51:18</p>	<p>88:1 93:1 99:9 114:14 122:4 recommendation 12:13 13:21 16:14 18:21 20:2 41:11 42:20 50:12 51:5 56:9 57:12 58:14 59:8,19 66:8,10 67:5,19 69:11 70:21 71:9,11,13 71:15 77:5,19 81:6 84:9 85:20 86:15 94:11 95:3 96:14 99:13 102:16 105:9,10 107:6 113:18,19 114:2,8 115:5,5 115:22 118:14,21 126:20,22 127:5 133:18,19 149:9 152:8 recommendations 4:10 9:16 12:15 12:16,20 37:18,21 38:12,16,22 40:20 41:5 46:16,21 50:11,15 54:6 57:7 60:15 65:22 67:9 70:13 75:21 83:15 96:3 98:12 99:8 111:1,21 112:4,19,20 113:2 113:3 114:22 115:11 116:4,13 116:21 117:13 118:9,18 121:18 130:13,20 131:18 134:11 149:13,20 150:4 152:3 153:9 154:6 156:22 167:5 168:7 recommended 14:22 63:7 recommends 60:20 60:21 87:12 91:2 91:8,10 92:11 95:6,13</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

record 7:21 9:21 19:15 94:14 180:18	reliance 57:14 Relief 108:7 167:2 167:10	151:5 152:17	106:12 108:14 152:12 153:2	95:1 106:6 107:11 108:13 112:6,16 119:1 120:18 121:21 122:17 127:11,13 131:7 131:12 139:10 150:14,16,18 153:14 169:19
recording 126:14	relies 54:22	reported 15:5	respect 38:1 39:21 57:15 137:22 147:22	rights 20:22 60:15 101:21
records 14:6 15:4,8 30:5 165:21	relocate 167:18	reporting 28:1 56:2 100:21 102:2 107:8,10,18	respond 99:5 118:7 121:7	risky 76:19
recourse 89:11	relocation 15:18 18:2 19:3 137:3 167:16 168:4	reports 9:11 149:5 164:13	response 14:2 47:21 107:22 111:13 134:17	road 58:12
redo 42:8	relocators 21:4	report's 68:7	responsibilities 60:1	Roberson 2:19 11:3,3 163:1,12
reduce 57:14	rely 51:7 56:21	repository 136:4	responsibility 65:7 157:6,12	Robert 2:15 11:8 67:12
reduced 53:16	remainder 61:16	representatives 166:15	responsible 30:2	roles 145:3
redundant 163:18	remaining 51:12	representing 105:21	rest 23:2 109:21 145:12 155:4	roll 8:11 11:13 57:6
refer 37:9	remains 100:11	request 6:21 125:11	restraint 55:8	rolling 101:11
reference 15:11 50:14 54:4 176:16	Remarks 4:2	requesting 159:18	restrict 178:11	room 1:12 173:2,3
referred 15:10 23:10 28:6 149:19	remember 157:9 162:11,12	requests 24:12	restricted 61:1,5 86:18 87:11,18,20 91:12 95:8,20 147:14 161:15	Rosston 1:13,18 7:13,15 8:8,11,16 9:1 10:3 11:12 12:7 13:11 47:3,7 47:11,19,22 48:6 82:13,14 87:9,10 87:16 111:17 117:7 118:20 119:20 125:3,7,13 126:1 128:1,6,10 129:19 130:6,10 131:4,11,17 134:6 134:12,16,18 137:14 149:7 157:16 161:18 172:19 173:7 174:20 176:2,15 177:2,18 178:17 179:4,11 180:12
regard 75:4	remind 112:12	require 24:18 26:12 58:15 127:6	restrictive 93:17	result 79:19 116:6
regarding 4:11 20:6 79:3 81:14 140:19 149:9 167:6	reminded 5:11	required 26:17 55:11 58:18 105:6 151:14 167:1	result 147:1	results 147:1
regardless 77:5,7	remote 86:6	requirements 20:16 23:17,18,20 24:22 25:14,16 26:1 60:10 107:11 110:5 113:5,13 132:4,5,9,14,15 132:19	resumed 94:15	resumed 94:15
register 165:6	remotely 59:6	requires 27:14 169:2	revenue 62:6	review 18:10 32:18 156:16
regular 30:2,12	removed 108:9	requiring 27:8 101:20 102:9	reviewed 168:16	reviewing 24:11
regulate 101:17	renew 33:20,22 34:8 59:2	research 1:19 168:1	re-circulated 111:22	re-discuss 132:16
regulated 66:6	renewal 30:6 31:13 32:10 33:16,16,16 35:15	resident 78:13	re-discuss 132:16	re-licenses 175:10
regulation 2:24 28:21	renewals 31:5	resolution 166:22 169:10 170:3	re-licenses 175:10	re-shift 43:1
regulatory 21:6 26:9 49:14 53:17 53:21 57:14 60:18 85:21	renewed 34:4,17	resolve 55:10 146:4 147:20	re-shift 43:1	RICHARD 2:18
reimbursable 167:21	Reno 30:21	resolved 55:5 113:15	Rick 2:18 32:4 140:8 162:7	Rid 92:9
reimburse 62:1	repeat 87:15	resonates 32:2	right 17:4,8 22:4 22:16 33:2 36:3 42:8 44:17 47:11 52:15 58:7 60:7 68:6 70:5 81:4 84:9 85:11 89:20	right 17:4,8 22:4 22:16 33:2 36:3 42:8 44:17 47:11 52:15 58:7 60:7 68:6 70:5 81:4 84:9 85:11 89:20
reimbursed 167:19	repeatedly 178:14	resource 27:18,20 29:13 39:2,8,12		
reimbursements 168:13	repeaters 139:17	resources 27:3 29:14,17 39:14		
Rein 2:2 10:8	repertoire 53:15			
relate 173:10	replace 95:5			
related 28:19 42:11 108:8 130:3 154:6	reply 20:9			
relates 30:8 41:9 42:2	report 4:5,6,7,8 6:18 12:10,12,14 14:14,21 23:10 27:7 48:7 50:13 51:6 64:1 66:18 66:19 67:8,21,21 68:2 69:20 70:4,5 70:11 73:3 102:9 102:16 111:19,20 125:12 134:21 135:7 149:13,14 149:20 150:5			
release 6:18 15:18 32:1,2 148:20				
relevant 177:8				

58:12 68:18 71:22 106:6,19 115:13 159:1 169:22 170:2,6 run 25:18 123:20 running 141:9 149:21	science 3:10 6:10 165:3 Sciences 1:12 scope 136:22 screwed 71:21 119:10 scripts 15:3 se 54:11 SEC 5:3 second 29:22 47:8 47:10 56:3 86:15 89:14,15 93:10 95:16,18 111:7 113:19 134:12 146:17 160:8 secondary 20:22 57:21 Secretary 3:14 section 36:4 154:14 security 158:18,19 see 16:22 20:15 34:8 44:8 52:18 74:16 75:21 81:7 82:5 84:14 86:10 91:8 99:12 101:7 152:16 153:12 165:15 179:22 seeing 102:12 109:9 133:21 seek 16:9 seen 148:9 151:4 159:16 174:15 segments 31:1 select 68:3 70:14 75:16 85:13 selected 69:4 selecting 70:22 151:2 self-enforcement 84:1 self-help 83:22 self-muted 45:15 self-report 64:1 Senate 105:18 106:3 send 123:21 125:11 125:18 126:4	144:8 sending 73:21 129:2 senior 2:15 116:19 sense 38:16 63:3 89:8 101:3 108:19 109:3 123:12 138:18 157:19 162:8 sensed 107:21 sensing 72:20 73:8 73:20 77:6 114:12 119:5 127:16,17 133:3 sensitive 169:7 sent 31:3 44:9 113:6 125:16 138:1 171:1 sentence 46:17 85:19 86:10,16 89:14,16 90:4 91:7,9,16 92:3,6,7 93:10 95:4,5 sentences 95:6 separate 18:10 97:3 serves 168:20 service 2:4 30:4,9 31:18 35:2 51:5 112:15 121:11 132:12 150:10 servicemen 50:1 services 30:7 150:8 165:3 set 24:20 39:10 50:3,10 54:5 83:15 89:7 104:17 112:14,20,21 113:4 136:4 148:11 155:7 178:7 sets 112:20 setting 63:1 settled 109:9 share 71:12 80:14 91:16 118:9 131:12 138:18	shared 2:13 3:17 10:12 58:16 62:2 63:8,13 69:19 73:4 130:14,15,16 130:17 131:5,5 168:12 sharer 75:22 sharing 4:7 49:3 63:9 64:20 66:1 66:14 67:21 68:2 68:5,8,11,18,18 70:4,14,16 71:11 71:20 72:16,17 73:7 81:11 82:3 108:8 112:14 113:5,7 114:4 115:11 116:1,5,7 117:13,16 121:11 121:15,20 127:7 129:17 131:19 132:20 133:1 137:2 138:4,10 139:6 142:12,15 150:21 152:9,21 167:8,19 sharings 112:17 shift 43:2 shock 55:1 short 36:2 131:22 139:15 140:2 141:20 short-term 19:17 shows 57:9 shrink 143:6 shut 55:11 56:13 78:18 side 34:21 37:4 98:22 101:8 105:18 122:4 133:3,4,4 137:1,8 140:17 146:20,21 158:7 161:8,21 165:15 sides 133:22 signal 138:21 151:10 signals 79:8,9	signature 102:19 signed 159:2 172:10 significant 26:12 26:15 27:3 100:12 101:6 106:4 167:11 significantly 106:11 silence 5:8 silos 115:17 similar 36:5 144:22 162:13 simple 55:22,22 71:22 147:12 simply 16:9 58:12 63:3 68:11 71:12 72:17 102:16 104:14 147:3 Simultaneous 31:16 45:4,7 71:6 71:8 78:15 83:2 87:4 89:18 91:18 92:15 96:13 97:5 118:10 124:22 126:21 127:2 128:16 130:9 131:10 134:9 143:21 157:4,15 176:1 177:1 178:2 178:16 single 69:7 100:2 sir 19:21 43:18 46:7 162:22 sit 21:22 179:16 site 104:6 sites 166:2 sitting 6:11 situation 52:21 80:9 114:3 121:10 situations 84:19 slackers 144:22 slide 57:8 59:19 112:2 slides 52:8 slightly 76:8 small 25:5 27:21
S				
S 2:2 safe 137:18 176:10 176:20 Safra 173:9 sampling 20:7 satellite 135:9,17 140:19 165:22 166:4 satisfactory 156:13 satisfying 62:19 saw 71:16 156:9 saying 26:6 31:21 35:17 44:9 65:19 68:19 69:19 70:11 72:17 75:17,19 84:11,16 85:9 104:12,13,14 105:4 106:17 119:16 129:17 145:14 162:8 says 25:2 36:4,21 66:11 68:2 90:5 99:17 104:22 109:1 115:22 151:15 scenarios 66:14 114:13 116:12 schedule 4:21 11:14 18:10 149:22 179:5 scheduled 141:17 144:20 158:1 179:6 schedules 137:3 163:8,9 schedule's 142:5 scheme 17:16 22:20				

smaller 160:1	sounds 92:13 102:4	39:8 43:8 46:3,22	started 34:2	83:20
smart 15:3 51:1	source 63:21	48:8 63:1 70:14	starting 76:18	structure 32:1
56:21 89:2,6	sources 79:5,14	70:16 85:7,10,14	135:21 145:8	79:20 106:9
90:12	so-called 52:22	88:19,20,22 90:10	158:5	163:21 171:11
Smith 105:21	63:7	93:8 98:14 108:8	starts 141:6	179:14
Snyder 8:15,15,21	space 2:18 53:3	110:10 111:18	state 2:22 6:2 39:7	structured 111:18
8:22 173:6,6,8,8	59:2,3 123:13	113:5,7,17 116:5	63:4 84:3	157:10
174:12 175:5	space-based 160:4	117:14 118:15	stated 27:7 99:9	structures 32:2
176:9,18 177:4	speak 6:5 8:13,19	120:4 121:20	177:7	37:15
178:3	9:20 44:18 173:3	127:7 130:16	statement 77:17	stuck 88:13
softball 115:8	173:5 175:20	150:14,18 152:21	statements 105:9	students 179:14,18
software 27:15	SPEAKER 78:5	154:15 156:2	states 1:1 109:22	179:21 180:4,13
28:6,9 29:19	speaking 10:2	159:4 160:14,15	154:19 160:14	studied 91:4
30:16 35:13,19,20	31:16 45:4,7 71:6	160:17 162:17	state-of-the 167:22	studies 66:21 168:1
50:5 114:1	71:8 78:15 83:2	164:8,21 165:14	stating 132:13	study 60:18 61:13
solution 84:16	87:4 89:18 91:18	165:15 166:13	stations 140:20	62:20 63:11 74:10
110:8 121:12	92:15 96:13 97:5	167:8,12,15 168:4	166:5,6	74:16 85:21 86:10
147:12 148:19	118:10 124:22	175:11	status 49:15 53:21	86:14 88:1
151:11 155:13	126:21 127:2	speculating 127:4	57:21	studying 28:16
solutions 50:22	128:16 130:9	speculative 126:19	Stencil 65:10	stuff 21:1 24:20
115:17 132:7	131:10 134:9	speeding 107:19	step 56:17 101:8	32:22 33:2 42:12
solve 57:1 80:20	143:21 157:4,15	spend 101:4 151:19	123:2 139:7	77:7 85:8 86:4
solved 147:18	176:1 177:1 178:2	spending 24:11	154:22 158:14	90:9 119:22
solving 72:4 134:4	178:16	spirit 16:8 84:11,21	stepping 106:16	126:19 140:22
somebody 8:8 25:1	Special 15:19 16:17	spoken 157:14	steps 99:16	176:4 177:22
26:20 27:9 44:13	16:22 137:15	spot 14:16 65:8	Steve 136:2	subcommittee 4:12
55:5 90:20 102:1	specific 18:17	spread 90:3,6	stick 106:18 139:3	9:11 11:17 12:9
120:11 150:13	23:21 30:9 37:14	spreadsheet 40:4	177:3	12:16,18 48:8
157:6,11	49:6 54:19 72:9	STA 6:21	stone 41:9	61:14 70:12,13
somebody's 118:4	89:4 90:18 94:8	staff 22:1 138:2	stood 101:13 102:8	111:19 149:10
sophisticated 35:12	109:20 115:10	staffing 23:17	106:5	170:20
56:8,16 83:16	116:3 121:1 166:2	24:19	stop 82:15,15,21	Subcommittee's
sorry 23:17 42:17	specifically 46:2	stage 92:3	straight 32:22	4:5,6,7
42:18 46:12,13	59:21 73:14	Stancil 2:21 9:3	Strategy 2:12	subgroups 145:4
68:22 74:8 76:7	167:10 168:8	stand 180:15	streamline 40:9	subject 6:21 53:3
76:10 88:7 91:20	specificity 92:9	standard 28:20	streamlining 107:8	76:8 80:2 172:22
94:1 95:14,18	specified 20:15	standpoint 28:17	strength 127:20	177:6
103:20 157:1	specify 20:9 127:10	138:9 164:1	Strickling 3:13 5:3	submitted 22:5
sort 27:12 32:6,16	132:8	Stanford 1:18,19	6:9	submitting 145:4
39:3 47:1 48:16	specifying 168:9	12:21	strictly 73:7,7	subset 146:14
65:9,18 66:16	spectrum 1:4 2:13	star 44:15	strike 37:7 46:20	subsets 147:4
67:3 68:14 80:8	2:18 3:9,17 4:4,6	start 11:15 58:3	95:4	substantial 158:16
80:19 81:22 83:12	4:7,15 6:17 10:12	80:6 91:9 101:11	striking 46:17	subtle 83:12
83:22 90:2,5	12:9 15:6,13,17	109:9 135:1	strong 50:18 51:4	sub-base 78:18
98:17 112:10	15:18 18:2 19:1	137:22 145:1	67:5 88:11 138:22	sufficient 116:17
139:1,5 146:14	20:20 21:4,4,5	146:3 155:16	stronger 52:3	suggest 29:6 40:7
sorts 85:8 151:16	25:9,13 35:21	163:4,5	strongly 51:18	85:12 87:10

125:16 174:12 175:15 suggested 14:10 15:14,21 16:2,6 28:17 32:6 39:22 41:16 55:7 125:6 174:21 suggesting 40:13 110:8 118:8 suggests 82:3 suited 85:15 summarize 64:10 summary 56:19 support 85:2 106:9 107:3 132:21 supportive 124:19 suppose 64:16 178:10 supposed 25:3 30:7 sure 8:14 21:7 23:16 24:13 36:9 36:11 43:3 44:5 51:8 58:11 65:12 74:13 100:1 103:18 104:4 107:9,17 108:1 117:18 125:22 132:17 134:7 139:19 142:1 148:7 150:11 161:22 172:2 175:3 180:6 surfing 66:22 surprising 102:6 surveillance 136:13 swags 40:1,2 sweet 14:16 switch 35:5 59:7 switching 73:21 sword 155:21 system 27:11 30:2 35:17 58:22 102:1 106:10 129:8,9,13 130:14 138:6 158:11,18 159:5 159:14 systems 2:16,19	18:8,19 24:4 100:20 101:13,14 114:19 116:8 135:18 138:12 139:9 145:6 151:7 151:8 155:2 164:13 168:1 system's 164:8 system-wide 14:1 <hr/> T <hr/> table 9:20 67:2 102:7 148:17 149:12 179:17 tactical 142:17,20 143:5 tag 13:7 take 6:4 14:7 16:3 26:22 29:7,9 69:17,20 84:2 88:2,5 94:6,12 101:15 108:14 124:13,16 143:15 143:19,19 150:22 157:11 161:10 169:22 176:8 taken 28:15 29:10 39:20 56:6 62:7 151:12 155:15 takes 131:8 talk 6:2,3 9:13 39:11 41:17 53:10 79:15 80:5 81:14 108:17 142:15 153:17 158:2 talked 12:20 25:14 62:22 79:12 107:7 113:20 180:11 talking 22:8 25:5 26:11 30:15 36:7 42:14 79:7 100:1 109:12 133:11 155:16 164:12 tamp 90:6 tampered 54:10 tap 32:16 task 41:10,21	144:12 Tax 108:7 167:2,9 teacher 180:3 team 13:7 technical 9:17 35:19 49:12 59:15 68:4 69:6 113:1 114:21 115:16 117:12 118:21 130:13 131:18 135:16,19 140:13 140:18 166:22 168:16,16,19 169:9 170:3 177:12 technique 81:10 127:15 133:10 techniques 20:7,20 127:5 technologies 2:14 116:9 152:9 167:22 technology 2:8,10 2:15,20,23 3:12 6:10 11:4 50:21 51:8 52:7 60:4,5 99:3 112:20 121:15 138:18 151:21 152:1 teed 39:2 telecom 58:5 105:19 106:1 Telecommunicat... 1:12 telecon 140:10 telemetry 114:11 telephone 3:22 5:10 173:4 Television 2:4 tell 23:3 74:6,17 122:19 161:7 telling 103:4 148:14 161:3 template 113:16 169:5 templates 169:3 temporarily 106:14	temporary 55:8 ten 19:18 82:20,22 124:12 tend 37:18 123:11 tendency 33:19 Tenhula 3:16 166:20 167:3,4 tentative 130:20 term 59:16 112:18 terms 18:5 20:16 20:19 24:3,19 26:16 32:7 48:14 58:21 64:4,5,5 123:18 145:2 154:20 155:17 168:20 test 152:15,18 testbed 152:21 tested 153:7 testing 6:21 33:12 35:5 138:3 tethered 100:21 101:1 text 36:3 108:9,10 118:17 144:7 thank 6:14 10:3 11:21 17:2 20:1 46:5 47:22 48:13 76:6 97:9,10 98:3 111:14,15 145:14 149:1,6 170:9,10 172:15,18 178:17 180:13,16 thanks 7:12 12:6 12:11 16:11 120:2 They'd 45:13 thing 17:3 24:20,22 27:12 32:18 33:8 33:20 34:21 40:12 43:5 57:17 58:10 61:11 63:17 65:9 81:21 109:15 119:13 140:2 150:18 151:20 153:5 155:7 159:2 161:20 162:1 164:4,4 166:19	171:13 180:10 things 5:7 7:17 9:9 20:15 23:13,18 26:4,13,15,19,22 27:17 31:6 32:5 33:1,4,7,9 34:7 35:18 42:4 58:20 68:14 71:16 79:3 79:6 81:7 86:1 98:11 101:18 107:18 122:1 124:5,13 125:4 130:3 133:6 140:13 141:1,8 150:6,7 151:16 153:15 157:8 162:1 164:3 165:1 165:2 166:8 171:2 176:7 think 5:20 7:17 8:1 9:19 13:10 15:11 17:12,22 18:14,16 18:21 19:3,6 21:22 23:8 24:5 24:17 26:15,18 27:3,17 28:15 29:4,5 32:16 34:18 35:11 37:4 37:11 38:6,14,20 39:4,13 40:12 41:3 42:22 46:8,9 47:1 48:19 49:7 52:2,6,8 54:21 56:11,19 57:10 58:8 61:14,18 65:1,6,15 66:2 67:15 68:1 71:4 73:17 74:5,6,14 75:18 77:2,2,18 77:19,21,22 80:18 80:19 81:3,5,6,9 81:13,15,19 82:5 83:4,9,11,17 84:4 84:5,20 85:2 86:9 88:14,17 89:4 90:6,13 91:15 92:9 94:6 95:2
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

97:9 98:2 99:7,11 101:1,10 103:16 103:22 105:3,12 105:16 106:20,21 107:1 108:3,18 109:17 114:2 115:6,18 117:14 122:3 123:11,17 124:10,16,19 127:14 128:13,18 129:15 130:4 132:4,7,8,11 133:18 134:2,6,7 135:1 136:19 137:4,5,6,7 138:10,15 139:21 140:12,15 141:15 142:6,8,21 144:16 144:18 146:10 147:17 149:22 150:3,5,9 151:17 152:2,3 153:18 154:11,13,15,17 155:11 156:5,6,14 158:13 159:14 161:9 162:1,9,9 162:19 164:5,9,18 168:6 171:13 172:1,5 174:1,20 175:2,5,6 176:2,7 178:20 179:4,8 180:15 thinking 30:17 38:2 57:11 124:8 127:11 133:14 thinks 39:13 third 87:6,6 91:9 114:8 third-party 73:22 THOMAS 2:2 thought 16:6 40:10 76:20 88:15 101:18 121:16 129:17 139:16 169:15 170:16 thoughts 23:16 88:9 94:11 160:10	160:21,22 162:22 thread 66:3 67:6 three 16:17 19:17 52:9 59:18 73:14 81:19 82:7 83:5 95:5 96:19,21 97:6,8 107:6 109:2 113:3 114:18,21 125:19 140:7 158:12 159:21 163:5 168:17 throwing 176:7 Thursday 80:6 145:11 tied 78:6 ties 7:1 till 141:7,17 178:20 tilting 151:1 time 6:6,16 14:7 18:3,16 22:17 23:17 25:9 27:1 29:12 31:12,12 53:6 58:5 61:7 69:22 70:15 78:17 91:14 101:4 106:12 112:9 116:17 117:3,4,9 126:18 133:20 138:8 147:6 151:19 154:3 156:10,16 163:3 176:8,12 times 23:10 55:21 56:7 108:6 164:12 time-out 119:10,12 tire 100:21 title 12:17 titled 115:5 today 7:8 9:12 12:5 38:21 98:20 112:11 146:6 149:22 170:14 178:14 179:16 Today's 173:14 told 43:20 82:15,21 tolerance 133:8	Tom 3:10 6:8,9 10:6,7 85:18 87:5 88:7 89:22 91:17 93:5 136:14,15 139:11 141:13,21 142:2 145:14 tool 55:7 150:8 tools 21:3 107:8 top 33:3 129:16 topic 64:14 88:2 146:9 163:3 Topics 4:15 total 126:14 164:16 totally 85:8 tougher 51:11,12 track 14:13 35:20 80:10 134:7 135:15 tracking 28:1 33:8 trade 159:17 traditional 138:4 Tramont 2:22 10:19,19 16:2 18:20 19:10 21:13 22:5,10 38:19 46:14,15 47:5 80:12 89:13,21 91:19 129:14 130:1,12 143:14 143:18 144:10 156:20 157:5,18 179:1,9,12,13 transferring 158:17 transfers 167:15 transition 18:5,18 158:10 168:9,14 168:15 169:4,14 169:16,18,20 transitions 168:22 transmit 73:6 125:18 transmitter 165:14 transparency 168:7 transparently 175:15	trashed 85:8 treated 66:17 treatment 85:21 tried 12:22 13:4 150:2 162:16 trouble 137:13 trust 175:14 try 13:8 34:20 39:11 40:19 42:6 49:6 51:21 55:17 59:20 72:14 84:2 88:12 89:6 90:21 93:5 127:21 162:13 trying 8:11 18:9 23:1 24:12 37:13 40:5,16,17 88:17 93:7,18,21 94:8 132:6 144:2 146:2 146:4 160:13 164:1 166:9 TUESDAY 1:9 turn 29:21 48:9 94:18,18 110:17 112:5,21 115:1 122:7,14 131:3 turned 35:4 51:3 51:10 68:13 74:10 120:22 121:2 123:4 turning 124:5 175:20 turns 73:1 TV 53:3 59:2,3 60:13 123:12 166:6 tweak 72:14 two 9:9 34:12,12 36:10,18 41:15,15 57:7 67:19 69:11 70:21 71:9,11,13 71:15 75:18 82:15 92:7 95:4,5 96:15 97:2 102:12 112:20 114:4,17 117:17 118:21 135:13 136:12	147:3 155:20 157:17 158:12 159:20 163:4,18 170:2,5 176:19 two-day 145:10,13 type 29:16 30:3 31:6 42:7 53:12 64:5 77:7 104:16 114:6 140:1 178:6 178:15 typed 94:20 types 23:21 26:15 147:20 typically 103:21 T-Mobile 6:22 <hr/> U <hr/> ULS 30:22 ultimately 17:12 27:20 37:11 71:21 99:2 101:15 138:16 un 13:1 unable 145:18 unaddressed 13:1 unanticipated 122:2 uncensored 98:4 unclassified 158:7 unconnected 60:22 86:17 91:2,3 92:12 93:2 95:7 95:11,19 undergoing 162:12 underneath 92:2 understand 6:19 14:5 22:22 23:3 33:1 36:7 42:10 50:1 53:22 56:15 70:1 73:12 82:9 99:1 102:3 120:14 124:7 175:2 understanding 14:4 55:22 66:2 107:10 116:8 117:20 132:5,18 understood 127:8
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

undertaken 15:2 40:9	upgrade 55:15 78:18 104:7	version 92:6	157:11 158:3	week 63:7 136:17 140:10 141:2,4 142:6 144:12,21 156:9	
undertaking 115:19	upgraded 104:2	versus 121:14 122:11	167:4 170:10	weeks 55:4	
underway 49:4 145:7 166:18	uplinks 140:19	vice 1:22 2:4,17,23 3:16 100:4	171:12,14 179:13	week-and-a-half 136:19	
under-utilized 63:9	upwards 144:16	view 16:4 18:22 81:8	wanted 11:18 14:3 16:7 29:4,5 37:7 38:11 44:5 79:1 87:2 103:13 117:4 146:8 159:15 166:19 180:7	weigh 19:5	
unfinished 49:2,4	up-to 158:3	viewed 64:2	166:19 180:7	weight 99:20 113:10	
unfortunately 145:18 153:10	use 5:15 19:6,16 35:21 37:3 53:5 58:19 75:21 76:2 93:12 98:13 118:15 121:1 122:20,22 130:3 138:17,22 152:10 158:21 161:21 163:14 168:11 169:4 171:21	views 85:4	wants 19:5 175:10	weightings 43:3	
unfunded 39:3	useful 26:19 38:20 130:4	virtual 151:18	warfare 140:22	welcome 4:2 5:4 7:12,15 9:8 179:13 180:13	
uniform 55:14	useless 55:2	visibility 64:3	warning 60:14	welcoming 6:12	
unilateral 177:10	user 100:3,4 121:21	visit 179:21	Warren 2:23 9:4 45:19 143:12,15	well-known 175:4	
unintended 79:12 79:14,18	users 23:21 24:1 25:12,20 26:11 49:22 56:5,18 63:22 131:6,7,13 131:19 132:19 165:5	visitors 5:6	Washington 3:18 35:6	went 12:22 13:2 40:4 94:14 106:12 108:11 135:15 142:7 169:15 180:18	
United 1:1 109:22 154:19	user's 126:3	vital 148:3	wasn't 74:21,21 82:6,8 85:11 93:21 109:21 141:14,21 166:1 171:20 172:2 180:6	weren't 22:2 53:13 54:12 74:12 139:19 151:17 171:17	
universities 166:6	uses 20:7,8 27:2 37:2 46:19 71:14 156:4 164:6	voiced 85:4	watching 65:21	we'll 5:17 13:7 21:19 22:10 42:6 42:9 44:15 46:9 53:9 65:12 78:7 94:12,21 148:20 157:18 171:7	
University 1:20 2:9 2:22 11:11 173:10	utilized 63:6	voluntary 63:19 65:13	wave 132:16	we're 5:9,9,18,21 5:21 9:16 11:14 12:3,3 13:10 17:15 18:13 21:13 23:8,11 25:5 26:2 26:2,11 27:12 33:11 38:21 39:10 40:13,16,20 42:6 42:14 46:8 70:11 70:20 73:10,17 75:8 77:3,22 80:15,21 82:2 83:12 84:11 89:4 90:8,12 92:1 97:20 98:19 107:12 108:13	
unlicensed 4:6 37:1 37:3 46:19 48:8 49:5,11,22 53:2 54:22 57:21 58:15 60:1 62:14 63:2,3 64:20 66:1,14,17 72:18 83:21 85:6 93:11 99:16 100:2 100:5 105:13 108:8 109:19 110:4 113:21 122:5,14 123:22 124:3 149:18	<hr/> V <hr/>	volunteering 145:3	way 5:18 11:22 12:14 18:12 20:19 26:8,10 27:2 32:14,15 34:12 37:22 52:19 56:11 57:10 59:12 65:2 65:18 69:18 72:14 77:9,14 78:2 84:22 86:11,12 98:16 99:20 102:21 106:18 123:11 129:6 149:18 155:19 156:13 170:22 172:6 178:7		
unlicensees 62:3	vain 157:14	vote 9:12 47:16 111:1 112:10	ways 41:19 74:2 83:11		
untethered 52:22 57:11,16 60:19 100:8,17,19 110:9	valid 104:15	<hr/> W <hr/>	weather 151:7 165:22 166:4		
unturned 41:9	value 28:18	wags 40:2	webcast 5:21		
update 18:4 30:5 30:11 36:20 59:5 72:3 96:20,22 104:22 135:4,10 135:13 167:5 170:11,12	Van 180:3	wait 55:4 110:18,18 126:18,18	webcasting 5:9		
updated 17:16 51:2 51:10	variables 15:12	walk 48:10 126:17 158:19	website 65:12,12 66:21 112:1		
updating 159:3	variety 58:20	walking 48:14 120:12			
	various 13:3	wall 32:11			
	vectors 145:6	want 7:11 11:16 21:10 32:5 38:11 40:2 41:4,8 47:13 57:13 63:12 67:2 67:8 74:19 75:18 76:3,5,9 80:1,12 80:22 83:11 86:7 90:5,6 91:20 93:7 94:6 111:15 114:4 114:6 117:10,15 118:6 119:1,3,14 121:5 123:5,22 125:4,8,13,17 127:14 128:2,4,12 129:15 135:1,10 139:13 140:8 155:18 156:10			
	vehicle 177:15				
	verification 159:8				
	verified 44:21				
	verifies 159:11				
	Verizon 2:5 11:2				
	versa 100:4				

110:7 111:18 112:11 133:6,11 134:19 135:2,6,6 137:6 144:21 145:1,18 146:21 147:7 148:7,7,13 148:13 149:8,21 151:3 152:5,6,20 154:16 155:10 156:12 157:13,22 158:1,5 164:12 166:16 167:1 168:21 179:8 we've 5:20 6:18 11:13,13 23:6,13 25:13 26:1 27:8 32:6 37:20 43:13 54:3 65:22 69:15 90:3 103:13 106:18 107:20 134:8 147:17 148:9 150:1,19 153:8,10 155:4,7 155:9,15 171:10 179:2 whatnot 15:3 28:22 30:10 white 3:10 6:11 53:3 59:2,3 123:12 whoever's 41:1 wholeheartedly 84:10 Wi 100:14 widened 50:7 wider 63:13 167:16 Wiley 2:2 10:8 Wilkinson 2:23 10:20 willing 105:14 154:22 winner 114:9,20 168:3 wireless 1:23 2:1,5 11:2 60:11 138:5 155:10 Wi-Fi 5:15	wondering 84:21 97:18 word 84:14 87:17 92:17 wording 131:16 words 85:11,12 121:4 work 6:15 7:6 9:13 9:17 18:13 21:16 21:19 23:4 29:2,7 29:8 40:15 42:5,6 42:14 43:11 49:3 58:6 62:9 66:11 66:15 68:4 72:6 74:21 85:5 102:5 106:7 110:22 114:13 116:1 121:10 123:6 135:18 142:19 143:4 145:2 148:9 148:10 152:4,5 153:11 166:21 workable 112:17 worked 114:15 123:7 working 4:8 7:1,2 12:5,21 13:22 15:12 17:17 21:17 22:17,18 27:13 28:16 29:4 39:11 42:6 46:22 61:17 108:13 112:13 113:6 134:1,21 135:3 136:12,20 137:7 139:14 140:7 141:11,20 142:2 143:11 144:10 152:22 166:13,13 172:7 173:11,13,15 174:6 176:4,6,18 workings 170:2 works 72:5,9 114:11,12,14 world 66:5 83:12 109:21 110:1 155:4	worried 76:17 79:18 80:7,8 worrying 75:3 wouldn't 62:4 114:3 writing 157:7 written 81:7 WSRD 7:5 133:2 152:14 <hr/> Y <hr/> yeah 16:14,19 18:20 21:13 25:3 35:10 52:15 57:5 72:12 74:5,8 76:16 81:2,3 82:19 86:22 88:4 90:4 92:8 95:13 95:17 96:17 123:8 125:15,21 129:10 130:12 135:5 139:12 146:8 year 61:16,19 years 19:18,18 25:11 56:12 167:6 yeses 48:18 yesterday 6:19 136:17 yield 64:18 147:1 young 38:7 Yup 28:13 <hr/> Z <hr/> zero 44:15 165:8,9 165:10 zone 113:7 <hr/> 0 <hr/> 0 45:13 00:14:01 19:5 <hr/> 1 <hr/> 1 1:12 1st 141:4 170:7 1:30 1:13 5:2 13:15 10 149:15 10-minute 94:12 100 145:21 146:3	101 30:11 1107 1:12 113 4:7 12 4:4 12:00 141:17,17 134 4:8 149 4:10 157 4:15 167 4:17 1675 14:14 1695 135:8 1710 14:14 135:9 143:3 172 4:19 1755 14:14 21:18 61:17 115:20 133:6 136:12 143:4 159:22 163:17 164:5 170:19 1780 160:1 179 4:22 18-month 168:20 1850 14:15 21:18 133:7 136:12 159:22 163:17 164:6 <hr/> 2 <hr/> 2nd 144:21 145:8 2.2 41:15 2.4 61:3 2:53 94:14 20 25:11 56:12 164:16 20th 168:21 2010 149:15 2011 177:11 2012 1:9 167:9 2013 153:14 21 159:4 23rd 78:13 24 1:9 59:4 24-hour 141:19 25 164:15,16 2690 151:7 2700 151:8	<hr/> 3 <hr/> 3 159:22 163:15,16 164:19 3:02 94:15 3:45 158:1 30 25:11 300 159:22 163:15 163:16 164:19 315 109:3,9 325 1:12 <hr/> 4 <hr/> 4 165:20 4:23 180:18 4:40 178:21 4200 42:1 4200-4400 17:4 4400 42:1 48 4:6 49 86:3 90:11,13 <hr/> 5 <hr/> 5 4:2 7:7 54:11 60:15 72:7 103:12 107:12 108:13 <hr/> 6 <hr/> 6 4:3 <hr/> 7 <hr/> 7 46:18 54:5 700 155:8 <hr/> 8 <hr/> 80 43:7 144:16 80-person 145:21 85 144:18 <hr/> 9 <hr/> 9 85:5,5 90's 34:15 900 61:3 95 30:9 164:17
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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Commerce Spectrum Management
Advisory Committee

Before: US DOC

Date: 07-24-12

Place: Boulder, CO

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