UNITED STATES OF AMERICA

FEDERAL COMMUNICATIONS COMMISSION

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CONSUMER ADVISORY COMMITTEE

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MEETING

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FRIDAY

JANUARY 27, 2017

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The Advisory Committee met in the Commissioners Meeting Room, 445 12th Street, S.W., Washington, D.C., at 9:00 a.m., Eduard Bartholme, Chairman, presiding.

FF COMMISSIONERS PRESENT:

AJIT PAI, Chairman

COMMITTEE MEMBERS PRESENT:

EDUARD BARTHOLME, Committee Chairman

ZAINAB ALKEBSI, Deaf and Hard of Hearing Consumer

Advocacy Network

ELIZABETH BARKET, Competitive Carriers

Association

DEBRA BERLYN, National Consumers League

JOSLYN DAY, Massachusetts Department of

Telecommunications and Cable

MARK DEFALCO, Appalachian Regional Commission

AMINA FAZLULLAH, Benton Foundation

DANA FLOBERG, Free Press

B. LYNN FOLLANSBEE, USTelecom

CLAIRE GARTLAND, Electronic Privacy Information

Center

PAUL GOODMAN, Center for Media Justice Media

Action Grassroots Network

DALLAS HARRIS, Public Knowledge

MITSUKO HERRERA, National Association of

Telecommunications Officers and Advisors

IRENE LEECH, Consumer Federation of America

ROSS LIEBERMAN, American Cable Association

ANDY LOMELI, National Hispanic Media Coalition

KENNETH MALLORY, National Association of State

Utility Consumer Advocates

KEN MCELDOWNEY, Consumer Action

STEVEN MORRIS, NCTA- The Internet and Television

Association

STEVE POCIASK, American Consumer Institute

ANGELA SIEFER, National Digital Inclusion

Alliance

LARRY WALKE, National Association of Broadcasters

OLIVIA WEIN, National Consumer Law Center

KRISTA WITANOWSKI, CTIA- The Wireless Association

COMMISSION STAFF:

SCOTT MARSHALL, Designated Federal Official

ANITA DEY

BEAU FINLEY

BRITTANY GOMES

KURIAN JACOB

CHARLES MEISCH, JR.

KAREN PELTZ STRAUSS

MARK STONE

ANTONIO SWEET

D'WANA TERRY

\*Present by teleconference

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P‑R‑O‑C‑E‑E‑D‑I‑N‑G‑S

9:01 a.m.

CHAIR BARTHOLME: Thank you all for taking time out of your busy schedules to join us today. We appreciate having so many of you here in the room. I know a couple of people are on the phone line, and we're happy to have those folks with us as well.

Welcome to CAC number nine. This is the ninth iteration of the CAC. We were appointed last October and this is our first meeting, and we're glad to have everybody here with us today.

I want to start by thanking CTIA for the food because that's probably one of the more important elements of the day, so breakfast and lunch are all brought to you by CTIA. Thanks, Krista.

It's great to see a lot of familiar faces and a lot of new faces at the table. I think we have an exciting opportunity over the next couple of years to really provide some valuable input to the Commission.

We're going to have Chairman Pai join us here in a short while, and we'll probably get to hear a little bit more about what he sees as the vision over the next few years, and how we can hopefully fit into that vision and be helpful and provide insights and feedback.

As some of you know, we got a quick start to this CAC because we were given a task right off the bat, and one of our working groups has been very active, and the other two have at least started to have phone calls.

So we're underway already, and I think we've got a little bit of a head of steam heading into this meeting, and we'll have some more time to talk about and have focused discussions around the working groups later this afternoon.

We did something a little bit different this time around with the CAC in that we had orientation sessions prior to this first meeting, so that was a chance to hear from staff and other people here about how things should work, sort of the legalities and logistics of meetings.

If you have any questions, feel free to ask Scott or I at any point during the day. We're happy to answer those, and if we don't have an answer, we can find the person in the building who would have an answer and track that down for you.

So I think one of the first things that we always do at our meetings is go around the table and introduce ourselves, so we'll start with -

MR. MARSHALL: Should we wait until the Chairman gets here for introductions?

CHAIR BARTHOLME: Okay, I was just informed that the Chairman asked us to wait and do that when he's here, so we'll wait and do that when he's here. I'm not going to start tap dancing, but we've got a couple of minutes, Scott. Did you want to?

MR. MARSHALL: Well, I didn't know we made a dynamic duo there, right? Hello, everybody, and welcome. It's always good to have old friends back and lots of new ones too.

Ed, I don't remember mentioning this, but there are 11 of you from CAC 8th that are returning with us, but the remainder out of our 29 are either people that are entirely new to CAC or have been here in many years past, so there you go, so it will be a good chance to make some new friends and get reacquainted with some old ones as well.

For those of you that are new to the building, by the way, the restrooms are right out the door to my right at the intersecting corridor. The restrooms will be on your left sort of in that corridor going back toward the 12th Street lobby.

If you need anything, let me know. Is Brittany in the room, Ed, at the moment? Brittany actually keeps me on track all the time, and runs this thing really, if the truth must be known, so I really want to express my appreciation to her.

And I know that - wave madly, Brittany. I can't see you, but wave. Okay, there, good, good. If you need anything during the day, copying or anything of that sort, or if you think I've done something wrong, you can complain to her too, but anyway, thanks, Brittany. I think that's all I have at the moment, Ed.

CHAIR BARTHOLME: A couple of quick other logistical things.

MR. MARSHALL: Oh, yeah, we do have a couple, yeah, yeah, yeah, yeah, go ahead.

CHAIR BARTHOLME: When you would like to speak, find a microphone and raise your hand. It's not me waving at you all day. It's so that the people in the booth know which mics to make active, and that's part of the live feed and some of the disability access that we have going on in the room.

The Wi-Fi password, which does change quarterly, the current one, everybody got a pen and ready to write this down, is FCC082481, and that -

MR. MARSHALL: It will be on the agenda next time.

CHAIR BARTHOLME: One more time, it's FCC082481, and that should get you connected to Wi-Fi.

MR. MARSHALL: And we did send out a bunch of stuff electronically, and one document we didn't provide in the packet, which is the long mailing list with your contact info. If you could do me the great favor of reviewing that for accuracy and letting me know if there are any errors or changes, that would be great because we want to make sure that we can stay in touch with you.

And also, if you will, it's real important for you to designate an alternate rep. As you've seen from our working groups so far, they are getting larger and larger, and invariably that means conflicts when we're trying to have concurrent sessions in the afternoon.

So it would be really helpful for you to have an alternate who can attend those on your behalf if you're interested in participating, or to call in, and that's why we've also provided bridges for each one of those working groups, and more on that later.

CHAIR BARTHOLME: If your alternate changes, please keep us posted on that so that we can add them to the appropriate LISTSERVs and those sorts of things.

One other thing that kind of helps with the flow of the day, we're going to have a number of people presenting. If you do have a question or would like to sort of interact and be part of the conversation, we ask that you turn your tent card up like this just so that it's evident who wants to be engaged, and you don't have to sit there with your hand up for five minutes while we're getting through other discussions and questions. Are we good?

MR. MARSHALL: Okay, yeah, I think we've fairly well covered it so far. Any questions that anyone would like to raise for either Ed or I while we're waiting for the Chairman?

MEMBER MCELDOWNEY: Someone put a cell phone on the table. I don't know if someone lost it or it was just for what use for it.

CHAIR BARTHOLME: It's recording.

MEMBER MCELDOWNEY: Recording? Okay, good, never mind.

CHAIR BARTHOLME: And we have our first speaker who just entered the room.

MR. MARSHALL: Excellent.

CHAIR BARTHOLME: Welcome.

MR. MARSHALL: What timing, perfect.

CHAIRMAN PAI: Happy new year. Hi, how are you doing? It's good to see you.

MR. MARSHALL: Hi, how are you? Good to see you too, Chairman.

CHAIR BARTHOLME: So we're very pleased to be joined by Chairman Pai. I was told that you wanted us to defer introductions until you were here, so -

CHAIRMAN PAI: Yes.

CHAIR BARTHOLME: Would you like to start with us going around the room?

CHAIRMAN PAI: If that's okay. I don't want to impose, but -

CHAIR BARTHOLME: No, that would be wonderful.

CHAIRMAN PAI: - that would be nice.

CHAIR BARTHOLME: I'm Ed Bartholme with Call for Action, and we'll go to my right.

MR. MARSHALL: And I'm Scott Marshall, and I actually do work for you, sir.

CHAIRMAN PAI: Yeah?

MR. MARSHALL: And I staff the Consumer Advisory Committee.

MEMBER ALKEBSI: Good morning, Zainab Alkebsi, Deaf and Hard of Hearing Consumer Advocacy Network.

MEMBER LOMELI: Good morning, Andy Lomeli with the National Hispanic Media Coalition.

MEMBER BERLYN: Good morning, Debra Berlyn, and I'm representing the National Consumers League.

MEMBER WEIN: Good morning, Olivia Wein, National Consumer Law Center.

MEMBER MCELDOWNEY: Ken McEldowney, Consumer Action.

MEMBER HARRIS: Dallas Harris with Public Knowledge.

MEMBER WITANOWSKI: Krista Witanowski, CTIA.

MEMBER HERRERA: Mitsuko Herrera with NATOA and Montgomery County.

CHAIRMAN PAI: And also an occasional retweeter and favorite of mine on Twitter.

MEMBER HERRERA: Yes, yes.

CHAIRMAN PAI: Thank you for that.

MEMBER MALLORY: Good morning, everyone, Kenneth Mallory with the National Association of State Utility Consumer Advocates.

MEMBER POCIASK: And Steve Pociask with the American Consumer Institute.

MEMBER SIEFER: Good morning, Angela Siefer from the National Digital Inclusion Alliance.

MEMBER FLOBERG: Dana Floberg with Free Press.

MEMBER GARTLAND: Claire Gartland with the Electronic Privacy Information Center.

MEMBER LEECH: Irene Leech with the Consumer Federation of America.

MEMBER FOLLANSBEE: Lynn Follansbee with USTelecom.

MEMBER MORRIS: Steve Morris with NCTA.

MEMBER LIEBERMAN: Ross Lieberman, American Cable Association.

MEMBER WALKE: Larry Walke, National Association of Broadcasters.

MEMBER DAY: Good morning, Joslyn Day, Massachusetts Department of Telecommunications and Cable.

MEMBER GOODMAN: Good morning, Paul Goodman with the Center for Media Justice and Media Action Grassroots Network.

MEMBER DEFALCO: Good morning, Mark Defalco with the Appalachian Regional Commission.

MEMBER BARKET: Liz Barket with the Competitive Carriers Association.

CHAIR BARTHOLME: Oh, and a couple of people on the phone who couldn't join us, if you guys want to chime in and introduce yourselves?

MR. CARROLL: Sean Carroll with the Massachusetts Department of Telecommunications and Cable.

MEMBER SCHWANTES: Hi, Ed, it's Jon Schwantes with Consumers Union.

MEMBER NULL: This is Eric Null with the Open Technology Institute.

CHAIRMAN PAI: Well, great, well, good morning, everyone. Happy Friday. I guess every Friday is a happy Friday, and I really appreciate all of you coming here and taking time out of your busy schedules on a Friday morning, without coffee apparently, most of you, to labor in these important fields.

This is my first week on the job, but I'm really glad that one of the first public remarks, that I'm giving this to you because I think that the focus of this Committee really is where the rubber meets the road in terms of the FCC's mission.

I appreciate all of the work that you're doing on all of these different issues, and I just wanted to highlight a couple of the consumer related issues that are important to me, and that I hope that the FCC will tackle going forward, and that I hope also will appeal to you.

The first one is one that I hear about a lot, including from my own mom. She just called me, "Why can't you guys do something about that?" and now actually I can't defer by saying, "Well, that's somebody else's problem." It's now my problem, but, and that is robocalls. You've gotten them. I've gotten them. You know, you're sitting there enjoying a program or eating dinner, and you just get these calls.

Artificial or prerecorded calls are intrusive. They're unwanted. They're just, frankly, a nuisance, and in fact, they are the number one source of consumer complaints that we receive here at the FCC.

Now, a lot of these robocalls are a scam, and I noted with interest some of the recent stories about call centers in India that were busted up thanks in part to the cooperation of the U.S. government and the Indian government, where entire businesses are set up and predicated on robocalling people in the United States pretending to be an IRS agent, and threatening Americans, especially elderly people, immigrant populations here in the United States, and other vulnerable populations. "If you don't send us a check for X amount, the IRS is coming after you."

They were receiving $150,000 to $250,000 a day per call center just from this one operation. So just think about that and multiply it across all of these different scams across all of the country, how many consumers must have been harmed.

Former Senator Fritz Hollings, one of my favorite Senators growing up who I had the pleasure of meeting a couple of years ago, put it well when he referred to robocalls as "the scourge of civilization." I think everyone who has received one of these calls could probably agree.

Unfortunately, the problem is only getting worse, and that's why I hope the Commission will take aggressive action, hopefully with your counsel, to end it.

I think there are a lot of solutions that the FCC can and should pursue, for example, enforcement action against unscrupulous telemarketers and other robocallers who are preying on innocent consumers, as well as the establishment of safe harbor so that carriers can block spoofed calls from overseas without fear of liability.

I'd also urge you to think about several additional issues that I'm thinking about as well. For example, how can we make it easier for consumers to tell us about robocalls that they receive, and to make it easier for the enforcement bureau to take action to track down and shut down those fraudulent robocallers?

Similarly, would carving out a safe harbor for telephone companies seeking to provide those call blocking services to their customers encourage experimentation that would allow them to use different types of technological solutions to help solve that problem from the carrier end?

Would creating a reassigned numbers database give callers the ability to avoid dialing wrong numbers by mistake? And last, but certainly not least, would granting the petition of 51 consumer advocacy organizations, including some of you, to overturn the FCC created exemption for federal contractors, would that help close a potential loophole in our robocalling regulations?

I know there are a lot of complicated issues here to tackle, and the legal thicket is pretty challenging, but nonetheless, I hope to work with you so that we can once and for all help channel Rachel from cardholder services into more productive social activities.

Turning away from robocalling, which is of course an area of consumer complaint, I want to turn to something proactive, one of my core priorities here at the FCC so long as I have the privilege of serving, and that is closing the digital divide.

I believe at my core that every American who wants internet access should be able to get it, but in too many places in this country, Americans are being left behind, and I've seen that for myself in my travels from tiny Fort Yukon, Alaska near the Arctic Circle to Carthage, Mississippi.

We need to do what we can to ensure that all Americans are participants in, rather than spectators of the digital economy. So last year to help address this problem, I put some ideas on the table as part of what I've called a digital empowerment agenda. This included several proposals.

First and foremost was the creation of what I've called gigabit opportunity zones, and essentially the idea here, which would require Congressional authorization, would be to set up a geographic area, it could be as small as a city block or as large as a rural county, in which the median income of that area was 75 percent or less of the national median.

And in those areas, the federal government would provide tax incentives to the private sector to build out broadband if the state and local governments adopted broadband deployment friendly regulations, and if there were appropriate safeguards on the federal level to make sure that there was oversight for the use of those funds.

We would also be able to, under my proposal, offer entrepreneurs tax incentives in terms of relieving them from the employer side payroll taxes, to encourage them to create jobs, to hire people who are living in those gigabit opportunity zones.

So imagine a block of Detroit that needs to be revitalized, or a part of rural Nebraska where people don't have broadband. This could be a solution, I think, for incentivizing the private sector to build some of these networks, to make the business gates easier for deployment.

I think it would also be a platform for job creation and entrepreneurship. Just think about how many entrepreneurs out there probably have a good idea, but for want of expression of that idea over the internet to the world, that idea simply withers on the vine. My hope is that through these gigabit opportunity zones, we can create a greater opportunity for these folks to take advantage of the digital age.

The next thing that I proposed was a three-step plan to boost mobile broadband in rural America, and this hit home with me when I was driving this past fall from Wichita to Des Moines, and that's an exciting drive by the way if you ever have the chance to do it, but I noticed that there were long stretches where I simply couldn't get any signal at all.

I would just look at my phone, and at most it would have one or two bars, and it got me thinking how can we change this situation so that everyone in Ottumwa or Topeka can have the same expectation of a 4G LTE signal that we do here in the FCC's building, and so I came up with a three-step plan as I mentioned.

One is to increase the build out obligations for wireless carriers, and we would do this by increasing the percentage requirement, percentage coverage requirement for certain licenses.

So right now for example, when we grant a license to a carrier, we'll say, "Okay, you can have this license on the condition that you build out to, say, 66 percent of your coverage area within 10 years." I propose increasing that to 95 percent to make sure that all - as many Americans as possible within that service area are covered.

To also ease the case for build out to those areas, we would extend the license terms. So for example, instead of 10 years, it would be 15 years. And my hope is that that long-term time frame as well as the heightened expectation will give more rural Americans the chance to benefit from the mobile revolution.

Secondly, I've also proposed moving forward with a Mobility Fund phase two, which is a highly technical and complicated item, I know, but essentially here, we would make sure that federal subsidies would be devoted to solving the problem for the lack of mobile connectivity in areas where the private sector simply can't or won't do the job, and also subsidizing the deployment of current networks to the extent necessary where the private sector otherwise wouldn't be providing any service at all, and of course basing the funds on current needs and current facts.

The third thing I proposed in terms of a mobile broadband solution was something I've called a rural dividend. So right now, as all of you know, we option spectrum, and then we get money back for that spectrum, and we deposit it into the Treasury. Well, I've proposed a rural dividend, that is setting aside 10 percent of the money that we get from those spectrum options and devoting that to rural broadband.

And to give you an example of the kind of money we're talking about, if we had this policy in place the last 10 years, the U.S. government would have an extra $7 billion that we could have used to build out mobile broadband in parts of this country that simply don't have it. I think that would be a pretty powerful solution that would benefit a lot of Americans.

The third and last part of the digital empowerment agenda that I talked about was removing some of the general regulatory barriers to broadband deployment, and here I had in mind the whole grab bag of sort of regulatory obstacles that stand in the way of people - of building out broadband, using our existing authority at the FCC to remove state and local barriers to deployment, for example, unreasonable fees that are changed to companies big and small to attach broadband infrastructure, reforming the pole attachment rules to reduce the cost of deployment.

I was visiting with a very small fiber company in Louisiana called Southern Light, and they told me how that's one of the biggest cost elements for them, and they don't have a fleet of people to negotiate these deals, and so essentially if the pole attachment case is too difficult, they simply won't deploy in that area. And if you look at their map of fiber deployment in Mississippi for example, there are huge patches where entire cities are left out because they simply can't get access to those poles.

The third thing, we would be developing model code for communities that want to have a broadband friendly approach. One of the things I've heard from a lot of municipalities is, "We really like the idea, but we - there's no person in our group within our city government who has the ability to sit down and write down, 'Okay, here are the guidelines that we think we should pursue.' Wouldn't it be nice if we had an off the shelf rack approved by the FCC where we could simply pull it out and say, 'Okay, this is a plan that's friendly to consumers and would encourage deployment.'"

Fourth would be speeding up the deployment of broadband on federal lands. I've consistently been surprised that it takes twice as long on average for people to get the requisite permits and approvals when they're trying to cite infrastructure on federal lands than it does on private lands, and I would hope to - especially to the extent that a lot of federal lands involve either a lot of tribal areas that are either a part of federal land or abut federal land. I think that would be a really powerful solution to making sure that tribal broadband is boosted.

And last, but not least, something that has gotten a lot of bipartisan support, and that is making dig once the national policy of the land. It seems elementary to me that if you're going to dig up the road, why not lay the conduit, you know, the big pipes that would allow anybody, incumbents and competitors alike, to have a fair chance to include their fiber through that conduit?

That would be a very simple thing to do that would encourage competition so that if you're an upstart like Southern Light or RG Fiber in my home state of Kansas, you don't have to negotiate with the city to have a permit for you to dig up the road. You don't have to expend the cost to hire a crew to dig up that road and to put it back together. You could simply use the conduit that's already there for any federally funded transportation project.

So I know that I've blathered on far too long about this agenda, but I really do encourage you, if you have a chance, to look at it. It's on the website under September 13, 2016.

I proposed them precisely because I think that it delivers on what I hear anyway from consumers the most when it goes across the country is that, "We don't have enough options or affordable options for broadband." My goal is for this digital empowerment agenda to deliver on that need, and in a bipartisan way.

I'm hopeful that we can move forward and really make a difference for the American consumer, so that's pretty much all I had. I want to thank you for your attention. I apologize for diverting you to more important topics, but I really am excited to work with you in the time to come, and yeah, please do stay in touch. Thanks.

CHAIR BARTHOLME: Thank you for joining us.

CHAIRMAN PAI: Thanks.

CHAIR BARTHOLME: Have a good day.

CHAIRMAN PAI: You too. I'm sorry I have to run, but it's a busy day.

CHAIR BARTHOLME: Yeah, I can imagine. Okay, so next up we have a familiar face to the CAC for those of you who are returning, Mark Stone, the deputy bureau chief for the Consumer Governmental Affairs Bureau will be joining us. He brought his own name card. You brought your own name plaque.

MR. STONE: I did. I didn't make the tent card, but I did bring it.

MR. MARSHALL: Did we spell it right, Mark? I hope.

MR. STONE: Yeah, if you can't get my name right -

MR. MARSHALL: Yes, I know. I was joking.

MR. STONE: Good morning, and welcome to the FCC. Thanks to all of you for being here, and a special welcome to those of you that are new to the committee. The committee's been an important partner and resource to the Commission in the past, and we're sure that with your addition, it will continue to serve consumers and advance Commission priorities.

We also welcome your new chair, Ed, representing Call for Action. Call for Action, of course, has been a long time CAC member, and Ed has been instrumental in many CAC projects to help consumers make smart purchasing decisions. Ed's common sense approach to tackling tough issues will no doubt aid your work greatly, plus he's just an all-around nice guy.

Now, I know you've already hit the ground running with two orientation sessions which focused on the operations of the CAC as a federal advisory committee and the rulemaking process here at the Commission. I hope both new and returning members found these sessions to be helpful.

And you've already started work on a couple of projects and have organized your subgroups. We're glad that you're now thinking about important priorities such as tech transitions, consumer transparency issues, and universal service.

As always, we thank you for your willingness to share your expertise with us. We understand this is an investment of time and effort, and we want you to know how valuable your work is.

Your agenda today includes items that we know are of interest to you. A frequent hot topic, as the Chairman mentioned, is robocalls. You'll hear from AT&T, the industry lead of the Robocall Strike Force, about that group's significant progress fighting to help consumers avoid unwanted calls, and you'll hear about an issue that is a big part of the unwanted robocalls problem, caller ID spoofing. You'll also get presentations on incentive auctions and several other subjects.

So to get you started, we in CGB wanted to get you up to speed on our recent work. I work on our general consumer policy portfolio which includes the Telephone Consumer Protection Act. The TCPA covers robocalls and robotexts. We continue to review the significant number of TCPA petitions that are before us. I wanted to highlight two of those for you. Both concern robocalls from the federal government and its contractors. You heard Chairman Pai refer to a couple of those issues.

First, in last summer's Broadnet decision, the Commission interpreted the TCPA to exclude the federal government and its contractors from the robocalls protections in the law. Several parties have now sought reconsideration asking the FCC to find that contractors are in fact covered by the law.

These parties argued that the Commission misinterpreted the TCPA and incorrectly limited its coverage so that they will receive significant numbers of unwanted robocalls made by federal contractors, and that consumers would not have a right to revoke their consent to receive such calls. The Commission sought comment on those recon petitions last fall and is reviewing the record now.

Second, in a separate action last summer, the Commission released an order addressing a new section of the TCPA. That new section directed the Commission to adopt rules addressing debt owed to the federal government. The Commission received a request to reconsider the rules, including a three-call limit and restrictions on calls to reassigned numbers. Oppositions to that petition are due February 1, and replies to any oppositions on February 13.

So those are just two of the hot topics in the robocalls arena, and they really address sort of the legal framework that addressed robocalls in TCPA.

You'll hear later, again, from AT&T on ways that consumers can arm themselves to protect themselves from unwanted robocalls, so the two sort of work in conjunction, the law and its liability, and then consumers being able to on their own block such robocalls.

So with that, I'll turn it over to my fellow CGB managers for updates in their areas. Thanks again.

CHAIR BARTHOLME: Thanks, Mark.

MR. STONE: You're welcome.

CHAIR BARTHOLME: Yeah, do you want to take some questions?

MR. STONE: I can take them now or take them later, whatever.

CHAIR BARTHOLME: Let's do them now and then we'll -

MR. STONE: Do you want to do it now?

CHAIR BARTHOLME: Sure, yeah. Does anybody have a question for Mark? Mitsuko?

MEMBER HERRERA: Hi, there, Mitsuko Herrera from Montgomery County and the National Association of Telecommunications Officers and Advisors. Do you have - is this - so along the lines of what Chairman Pai was talking about, do you have any statistics either showing on the robocalls, the complaints, or breakdown?

I mean, part of it really is a matter of there are some calls that are unwanted, but it's the only way really to reach a lot of people, particularly over their mobile phones, versus it's literally criminal activity. Is there anything that you have that can help kind of guide the discussion in terms of the prevalence of the problem, or how it breaks out, or how big a percentage the criminal activity is from other types of free speech?

MR. STONE: Yeah, so we do gather that information, as the Chairman mentioned. Writ large robocalls tend to be among the top consumer complaint categories, but you're right. There's another level of analysis that we try to look at which is to say, okay, what are robocalls that are not necessarily evil, that don't necessarily intend to defraud a consumer, but maybe are just simply unwanted and not evil? So we are looking at that.

I will say when I personally looked into our complaints database, there is a decent amount of each different type, and so we are working to sort of further refine it, and it will certainly inform our analysis going forward. Unfortunately, I don't have for you right at the moment that sort of break out, but we'll definitely be in touch with that.

CHAIR BARTHOLME: Debbie?

MEMBER BERLYN: Yeah, my question is right on top of that one. So the Chairman mentioned that he wanted to make it easier -

MR. STONE: Let me say, I've got to get used to you not being right there.

MEMBER BERLYN: Close enough. So the Chairman mentioned that he wanted to make it easier for consumers to report these calls, and I just want to - I know we're two or three days into this, but I just wanted to ask you what thoughts you might have on how we can, you know, do that for consumers, and what exactly we're talking about?

MR. STONE: Yeah, that's a great question as well. I'd like to think that over time, the Commission has made it easier for consumers to file complaints generally as part of our efforts to improve the complaint intake process, and I think obviously the Chairman is exactly right.

Robocalls is a particular area that seems to lend itself to the ease of reporting because my goodness, you usually get upset when you're right there on the phone. It would be great to make that as simple as possible. So I don't have a solution for you right now in my pocket, but I just want to assure you that we'll be working closely with the Chairman's office and other commissioners to make something happen on that, but I can't tell you right now at this moment what that -

MEMBER BERLYN: And can I ask one follow up to that?

MR. STONE: You sure can.

MEMBER BERLYN: Because now consumers complain to the FTC as well with robocalls, so, you know, is there thought on how we can clarify to consumers about the complaint process with robocalling?

MR. STONE: In terms of whether they should go to only one agency or the other or?

MEMBER BERLYN: Or, you know, because I think that consumers complain. I know when I got a robocall -

MR. STONE: Yeah.

MEMBER BERLYN: - there's, you know, the FTC is also a place where consumers complain.

MR. STONE: Yeah, absolutely, so we always try to coordinate closely with the FTC to make sure we're on the same page with respect to our outreach and complaint filing, so we'll continue to do that so that - it's a good question. Consumers ought to know who to file with and which agency will do what with it, and that's a matter we'll continue to work on.

CHAIR BARTHOLME: Thank you, Mark.

MR. STONE: Sure.

CHAIR BARTHOLME: So next up, we have another familiar face here to the CAC. Karen Peltz Strauss is the deputy bureau chief of the Consumer and Governmental Affairs Bureau.

MS. PELTZ STRAUSS: Thank you, and it's great to see you, welcome, and I also have to get used to Debbie being over there. Thank you for having me. Welcome, everyone. It's nice to see familiar faces, and again, as Mark said, welcome new members of this committee. It's a fantastic committee, and I'm looking forward to seeing great work from you.

I'm here to present an overview of the disability actions that have taken place since the last CAC meeting in October. We've actually been pretty busy. Our most significant accomplishment was adoption by the Commission in the December agenda meeting of a report and order and further notice of proposed rulemaking on real-time texts.

I've reported on this before, but for those of you who are new, this is a way for wireless telecommunications providers and manufacturers to have an option of instead of supporting TTYs which are antiquated and were made for an analog environment, to support real-time text.

And the biggest difference between TTYs and real-time text, or actually I should say between TTYs and SMS in real-time text, is that real-time text is reliable and dependable in an IP environment.

Unlike SMS where you type and then press send, with real-time text, as you are typing, the characters or the words appear automatically on the screen or the device of the person receiving your call, so as you are either speaking or typing, the words are generated and received. This is particularly important in an emergency where seconds can be essential in terms of life-saving capabilities.

So what this item does - the other thing, actually there are a few other differences. Let me just mention those. With real-time text, you can use mainstream technology, so real-time text will be built into mobile devices.

You won't need a special TTY which is burdensome, heavy, and slow. Real-time text also allows use of far more characters, foreign language, other language characters, the at symbol. TTYs were very limited in their characters.

There is a plethora of reasons that are listed in the item, as well as the items that preceded it, that explain why real-time text is so much more preferable. And for that reason, the wireless industry has really stepped up and has actively been engaged in starting to already deploy and implement this technology.

And our schedule of implementation for those entities opting to support real-time text instead of TTYs is fairly soon. It starts at the end of this year actually, and goes to 2021. And I see somebody just coming in now who was instrumental in helping this move along from AT&T.

Over the last year or two, we've been granting waivers to entities, to wireless carriers, that are preferring to move to real-time text instead of supporting TTYs, and let me just add that our rules require support for TTY, so there is this now an option of moving to real-time text in lieu of support for TTY.

We had already granted waivers to AT&T, Verizon, and the Competitive Carriers Association at the time that this real-time text order was adopted. We have since, on January 13, adopted the last of the waivers requested of us. This one was to the Iowa rural carriers, various Iowa rural carriers.

So one of the - just very, very briefly. I don't want to go into too much detail. You can see the order for yourself, but one of the most important things about this order is that it establishes as a safe harbor, a particular interoperability standard, and the goal here is to make sure that people using real-time text can cross networks, and providers, and equipment.

So just the way you make a voice phone call and you don't know whether you're - if you're using one carrier like Verizon and you're calling Sprint, or T-Mobile, or AT&T, you don't know what other carrier that person is using because the system is completely interoperable. That's what we're going for here.

There are various other nuances to the order. Again, I'd be happy to explain these to anybody, but the order is pretty clear on most of them.

Another item that we took up over the last couple of months was ensuring that video relay service providers' services are interoperable with each other, and on January 17, we released a Bureau-level rulemaking actually, an order that the Bureau released with a notice of proposed rulemaking to make sure, again, interoperability is the goal, and this would apply to people using video relay service, which is a service that allows people who use sign language to call a call center or relay center. Typically, it's always done on broadband. You log into a website and you get a sign language interpreter, and that interpreter interprets for you with voice callers or other individuals, and then signs back to you what the voice party says.

Up until now, there have been lots of complaints about lack of interoperability and portability the way we have, again, interoperability and portability for voice across providers, and this document again incorporates a standard, and compliance with that standard will ensure interoperability for users of this service.

We also issued a waiver, a small waiver to a company called VTCSecure allowing VTCSecure to have access to our numbering database to obtain ten-digit numbers for call centers for video relay calls made to call centers.

This is part of our direct video calling project, a project that is designed to encourage the use of sign language, people who know sign language in call centers, so we actually have this here.

Individuals who use sign language do not have to go through a relay center to call here to get information or to file a complaint. They can call a direct video number and we have people that know sign language. We have deaf individuals who know sign language that can communicate with those individuals directly. So while we still have our video relay service program, we are encouraging businesses and government agencies to hire people who know sign language to take calls directly, something that couldn't be done in the past, but can be done easily now with broadband.

What this waiver does is it allows this particular company to have access to ten-digit numbers so that you would be able to use a ten-digit number to make these calls to call centers.

And generally, our direct video calling project, again, is designed to provide greater equivalency. It's not even really functional equivalency. It's really equal access for people who sign to call centers.

Something else that we've done is we released a public notice announcing the second term of our disability advisory committee, your counterpart in the disability world. We will now be having 37 members. It's actually the numbers are almost identical to our last group, and an additional 24 subcommittee members.

We have subcommittees on emergency access, relay services and equipment distribution, tech transition, and video programming. We also have three members, ex officio members, from the Access Board, the Department of Homeland Security, and the Small Business Administration.

I encourage you to keep abreast of the activities of that committee, many of their recommendations. They've made, I think, approximately 20 recommendations during their first term, many of which were adhered to or followed by the Commission, including two major recommendations on real-time text, so many of you may be affected as well by what they do, and our first meeting is in March, mid-March.

We also extended a waiver to the Entertainment Software Association on advanced communication services to not have to comply with our advanced communication services rule. That is an extension of a waiver that had been granted a couple of years ago in 2015, and this group now has until January 1, 2017 to come into compliance, and are required to submit a progress report to us on what they're doing to make individuals who use gaming software - I just want to make sure that that's the - yeah, video game software compliant with our rules during this period.

Next, we issued a public notice on January 10 seeking comment on a petition that was filed by the Alliance for Community Media for a waiver of certain of our closed captioning registration and certification rules. Comments are due on February 9 and February 24. And again, to be brief, anybody that wants more information, just let me know. I just wanted you to know about that.

We issued a public notice granting video relay certification to a company called Convo. Going back to direct video calling, we hosted a major showcase on that on November 4. The room was actually packed with companies and agencies interested in this technology.

And finally, the Media Bureau, actually we issued a public notice announcing the compliance dates for accessibility requirements pertaining to televisions, set-top boxes, and other video programming apparatus. These require that by December 20, they be capable of having user interfaces for people who are blind or visually impaired that are accessible.

Some of you may be familiar with this. If you have Comcast as your video cable provider, you know that two years ago, Comcast came into very early compliance and has a talking remote, but basically this allows people to have audio access to on-screen information so they can change channels and select programming, set their DVR, turn the television on and off, use volume control, etcetera.

These are long awaited rules by the blind community and the visually impaired community, and we're really excited about the fact that they're finally going into effect. So that's my review, and again, thank you, and welcome. I'm delighted to have you here and to have an opportunity to speak to you.

CHAIR BARTHOLME: Do you have a couple of minutes for questions?

MS. PELTZ STRAUSS: Yes, and any questions.

CHAIR BARTHOLME: Does anybody have any questions for Karen? Okay.

MS. PELTZ STRAUSS: Okay, thank you.

CHAIR BARTHOLME: So next up, we have D'wana Terry joining us. She's the acting deputy bureau chief with CGB. Welcome.

MS. TERRY: Thank you. Good morning. I'm delighted to have the opportunity to speak with you this morning, and what I thought would be helpful is to just start with an overview of how we got to where we are now with respect to our informal complaint process.

So with that being said, several years ago, we initiated a complaint reform effort with three goals in mind, one, to simplify the consumer experience, to streamline the processing of informal complaints, and to make data more publicly available about the complaints.

To this end, through outreach with stakeholders, we engaged a path to see how we could accomplish those goals, and in addition, to see what necessary changes we would need to make to our process. As a result, in 2014, we launched what we now call the Consumer Help Center.

The Consumer Help Center has actually two phases. One part is the consumer complaint center where you will see that we streamlined our processing of complaints, and we also enhanced and simplified the user interface. We built our system based on an off-the-shelf platform where we modified that so that consumers could - it would be easier for consumers to file their complaints.

As opposed to having 18 individual forms, they now can navigate the platform with six categories where they then are led through the complaint process with questions. And in addition to that, they can now check the status of their complaints online as opposed to only having the option of calling into the call center to get that information.

We also are able to interface with providers in real-time. Actually, the providers who are served complaints can actually get those complaints served within two business days, and we can interface with consumers who file their complaints online in real-time as well.

In addition to those advantages with respect to streamlining the process for the consumers and for providers, we also have made data publicly available, both in terms of presentation through our consumer data center where you can get the raw data sets of our complaint data which is updated daily, and you can also see charts indicating breakouts of the various categories for consumer complaints, and through an API, our complaint data can be made available to third parties who are interested in extracting and manipulating data for call blocking technologies.

We have - while we have continued to work to further streamline and enhance the process for consumers, we look forward to working with this group as we have worked with the Consumer Advisory Committee in the past to figure out what changes we can make that would make it easier for consumers, that would also provide more information that is desired by consumers and providers.

And so the CAC previously has been very helpful with respect to recommendations, and we look forward to that dialogue continuing as we move forward. And so that's where we are at this time, and I'm available for questions should you have any.

CHAIR BARTHOLME: Thank you. Does anybody have any questions? Does anybody on the phone have any questions? Okay, thank you. And rounding out our CGB update, we have Anita Dey joining us. She is the assistant bureau chief with CGB, so thank you and welcome.

MS. DEY: Good morning, everyone. It's a pleasure to be here today with you. This is my first time addressing the group, so it's a real pleasure for me. I work on outreach for CGB, so that's what I'll be telling you about.

We've been quite busy this year with our outreach efforts, and we plan to continue to stay busy, but I'm not going to try to tell you about everything we do. I'll just highlight a couple of things, robocalls, because of course that's of great interest to everyone and to Chairman Pai, and also tech transitions.

So first, to discuss robocalls, we have issued three robocall alerts over the past few months. To do this, we drew from a variety of sources internal, including consumer complaints, and external, to determine what robocall scams were affecting consumers the most. So we issued consumer advisories and used social media to get the word out, and let me just go through the three topics that we covered. We started with gift cards. This was about callers who were pretending to be government or law enforcement officials, and they would call people demanding immediate payment, usually in the form of a gift card. So we also hosted a Twitter town hall to discuss the topic. This was in November.

Our next alert was about utility scams where callers would pretend to be utility employee companies, again demanding immediate payment either in the form of prepaid debit cards, credit cards, or again, gift cards.

Our third alert was about financial scams where callers were falsely offered lower credit card payments or interest rates, or credit card debt relief, or improved credit scores.

So generally speaking, our three alerts would explain the scam, and then tell consumers where to report it, and that would usually be us, the FTC, the gift card company if a gift card was involved, and also the police if it was - actually I think we used the police for all of these.

We also offered tips to help consumers protect themselves. Some of the tips were specific to the scam, but the general tips were consistent throughout the alerts. Those were do not answer calls from unknown numbers. Let them go to voicemail.

If you are unclear if a call is legitimate, hang up, look up the number either on the website or on your bill, and call them back on your own to verify, and by initiating the communication, you can tell if the request was legitimate.

If you answer a phone call and the caller, which could be a recording, asks you to hit a button to opt out of getting these phone calls, just hang up because scammers will often use these tricks to identify and then target live respondents.

And we also encouraged consumers to ask their phone service provider if it offers a robocall blocking service. We also directed people to our website. We have a section, web resources for blocking robocalls, for information and resources. And of course, we're constantly looking for other ways to reach consumers, and so one thing we've been working on is having webinars on important topics like this one, so we hope to plan something in the very near term. And at this webinar, we would plan on explaining the FCC's role in addressing whatever hot topic we're looking at, and the steps that consumers can take to protect themselves. And of course, we would welcome the CAC's ideas on topics that would be of most interest to the consumers.

So moving onto tech transitions, I wanted to be sure to address this because of course, the last CAC had some recommendations for us which we really appreciated. So what we've been doing for consumers, we had an informational session on September 26 about tech transitions. It was live here in the commission meeting room and we streamed it. So in plain language, we explained the issue and what consumers needed to know about the issue, and the video is still available on our website if you're interested to see what we did.

We improved our consumer guide, which of course is now also on the FCC website. It includes now a section on battery backup. We've also been talking to state utility commissions with the hopes of gathering some more on the ground experiences of what consumers are saying. We've been sharing our consumer info, the guide and this video that I mentioned, with the PUCs as well.

So that was for consumers, but for state and local governments and public safety entities, we've also been doing some work. Our Office of Intergovernmental Affairs has a guide on its website calls, "Modernizing Communication Networks: What Government Officials Need to Know."

Our Public Safety Bureau has made public a guide called, "Technology Transitions Impact Guide for State, Local, Tribal, and Territorial Authorities and Public Safety Entities." It's on their front page of their web page.

We've talked to NARUC about this issue. Public Safety has talked to the Association of Public Safety Communications Officials. We also raised this issue at the National Governors Association webinar. At a conference called IIT Real-Time Communications, the Public Safety Bureau discussed backup power and tech transitions in a keynote speech.

There was also a joint conference of the National Council of Statewide Operability Coordinators and SAFECOM, which is a Department of Homeland Security committee, and the Public Safety Bureau staff talked about tech transitions. They talked about their guide, and they encouraged attendees to look into the issue further.

So those are some of the highlights of what we've been working on, and we look forward to telling you about our upcoming work at your next meeting. Thank you.

CHAIR BARTHOLME: Questions, Ken?

MEMBER MCELDOWNEY: Yeah, I was really glad to see the outreach you're doing. A question I had is what you're doing in terms of outreach to consumers for whom English is not their primary language, in terms of media interviews and things like that, in terms of reaching those consumers?

Certainly, I know that Consumer Action has been very effective in terms of reaching Spanish-speaking, Cantonese, and Mandarin-speaking consumers through the interviews that we do with our - with the in language media. I'm just wondering what the FCC is doing in that area?

MEMBER GARTLAND: So we are working on expanding our collection of consumer guides in different languages. We have a great number of guides in Spanish. I can't give you the number off the top of my head, unfortunately. But we're working on expanding to other languages as well. And we do have partners within the consumer community that represent different ethnic groups. So we've been working with them as well. But I'm fascinated to hear that you've had good luck doing outreach to different communities. So we'd love to talk you about that in the future. Thanks.

CHAIR BARTHOLME: Dallas?

MEMBER HARRIS: Hi. Can you hear me? MEMBER GARTLAND: Yes.

MEMBER HARRIS: Okay, great. Has the Commission thought about any outreach with regards to the new privacy rights that were passed late last year? Does the Commission have any plans to inform consumers about what those new rights are and kind of how that works?

MEMBER GARTLAND: Thanks. As you can well imagine, we're still in the process of formulating our plans going forward. So we will definitely take that into consideration. Thanks.

CHAIR BARTHOLME: Mark?

MEMBER DEFALCO: In the last couple of weeks AT&T, I believe, cancelled their two ongoing trials in the tech transition, one in Alabama and the other one in Florida. And it was cancelled before it got to the final phase of trial which would have been the forced migration from land line phones to wireless in the more rural areas.

Do you have any insight? We have asked AT&T to talk to our transition subcommittee at a future point in time, but did you have any insight as to, you know, why this was done and, you know, thoughts as to -- I mean, part of the trial was to determine the procedures and processes for migrating customers from land line to a substitute. That was one of the reasons for the trail to start with, and it was stopped before we got to that point.

MEMBER GARTLAND: Yes. Thanks for that question. Unfortunately, I'm not the substantive expert on tech transitions. So I can't address the issue. But let me go back to the Wireline Bureau and ask them what they know about the situation. And I'll get back to you.

CHAIR BARTHOLME: Mitsy?

MEMBER HERRERA: Hi. Again, I just have the same question. Can you provide the summary and the statistics that you provided in your statement there about the robocalls? Can you share with the CAC what statistics you have about the robocalls that are being used for fraudulent -- the complaints that you have that are related to fraudulent or questionable activity?

MEMBER GARTLAND: I'll definitely work with D'wana and Mark, and we'll provide you what we can.

MEMBER HERRERA: Thank you.

CHAIR BARTHOLME: All right. Thank you very much for joining us.

MEMBER GARTLAND: Thank you.

CHAIR BARTHOLME: So next up we have Kurian Jacob. And I would really like to see how this fits on a business card. So I'm going to go through the entire title here, Electronics Engineer with the Cybersecurity and Communications Reliability Division of Public Safety and Homeland Security Bureau at the Federal Communications Commission. So Kurian's going to talk to us today about consumer device security. Welcome.

MR. JACOB: Thank you. I have some slides, if you could pull the slides up. Thank you.

So, good morning, everybody. Can everybody hear me? All right. So Scottie told me to talk to everybody about consumer device security.

So this is not very technical. This is something that I would tell my parents, my relatives. And I'm, you know, as a tech guy in the family, I'm, you know, the expert and the 24-hour tech support for my family and friends. So I will go --

So I'm going to discuss why consumers should secure the device, you know, more than ever now. And what can consumers do to secure the device? So that's the topic I'm going to cover today.

And so on the topic of why, we all know, you know, the number of devices on the Internet has increased, right? That means our homes also have more devices. This is how it used to look like. Every few years, because this is a -- it used to look like a computer connected to your printer. And everything is connected to the Internet through a modem.

And this is how it is now for most homes, you know, your computer is upright, your printer connects to the Internet directly through your router. You have your smartphone, you have some accessories connected to your smartphone, and through your smartphone, it is connected to the Internet. Sometimes your smartphone is connected through your router to the Internet. So it's getting complex.

You have laptops, you have game consoles at your house if you have teenagers or, you know, guys like me at home, thermostats, you know. It's increasing. And it's hard for ordinary users to keep track of it. So that's why I'm going to see, you know, what can we do.

So more devices are being connected all the time. That means more entrances and exits from your home to the Internet. And it's hard to keep track of all of them.

And we're reaching a point where it's easier to ask what's not connected to the Internet, right. I think, you know, you have gardens, watering system, everything is connected to the Internet. And this is now, I mean, all these products are available now.

And if you have been following the consumer electronics show, which happened last night, I mean, earlier this month, then you would know it's more complex than ever.

So most devices, you know, we take it for granted, you know, many of our appliances work for long time, right, 10 years, 15 years. And many times the functional lifetime of the device will be much larger than the software support lifetime.

That means, I mean, software engineers are expensive, you know. Once you buy a device, you know, it's hard to keep track, you know, whether you have software, you know, whether the company is providing software support for your device.

So if the company -- when the company stops supporting your device, you know, there will be unpatched properties. And it's hard for ordinary consumers to know whether your device are having any unpatched properties. So it's up to the manufacturer. They will usually support standard software updates to a device.

So if you have unpatched device on your network, that makes it easier for the cyber criminals to exploit your devices. And, you know, people will ask me, like, when I tell my relatives and friends, hey, you need to, you know, put a password on it, this network. They're, like, oh, who cares about my device. I don't know. Who is interested in my toaster?

So, well, unfortunately, you know, cyber criminals have become more efficient. They are not targeting just we are -- mostly because we are not very important, you know, you are just -- they're targeting everyone. It's easy to target everyone and select, you know, who is more, you know, who has more money. Or even if you don't have anything valuable, they can use your computing resources.

And even before you need to have the motive, you need to have the resources, you need to have skill sets to hack somebody, now you only need the motive and the, you know, the money, and you can pay somebody for the skill sets. So they are efficient, they are running things more efficiently than ever. So it's easy for them.

You know, if you have a wonderful device on the network, you know, one day or another somebody will hack into it. And usually, if it is a wonderful device, the stats are it takes only six minutes for somebody to hack on your device, you know, depending on the device. But if it is wonderful, you know, they are scanning your device, trying to scan your device and exploit your device every day.

So what can consumers do? The easier things, and I'm listing the very easy things that everybody should do. You know, some of the time, if it's not familiar with technical, and you can always look for it. But the key thing is to know that, you know, you are a target now. I mean, once you understand that, it's easier. You know, you can look for protection.

I mean, the resources are now available online. You know, there are sort of good website, you know, FCC consumer websites have, you know, excellent information about particular devices.

So the first step is to know which devices in your home are connected to the Internet. So this is just that, you know, I just wrote down what I can think of. And these are most of -- I have most of the things at home. From the left, you know, the usual device is the routers, desktop, laptop, printer, scanner. You know, these used to be connected to the Internet so you are familiar with it. But when you go to the right, you know, it's become the door locks, you know, your oven, thermostats, your watch, your dishwasher and dryer. So it's complex.

And before you connect, you know, make sure you know this is connected to the Internet. Keep track of your devices. You know, and when you connect -- when you buy a device, you know, try to understand what's a popular support site. So many times, you know, you look for the features, you know, you look for the deals. And you're buying a device which might not be supported anymore. That will be okay if you're not connecting it to the Internet. But if you plan to connect it to the Internet for a long time, it's better to look for your software, you know, consumers are shown software and support life cycle when you're buying devices. You know, that's a safe bet. I mean, if everything is the same, I would buy a device that you have more software support life than a device that doesn't have that much support.

The next thing, when you get a device, you know, use strong and unique credentials on all interconnected device. Simple as everybody knows it, nobody does it, you know, still 1234 is the popular password. Or password is the popular password. So that, you know, they compete for one and two, but never really goes down.

So everybody, you know, use unique password. And change the default credentials. That's been an issue for a long time. And criminals have -- they have programmed in a -- if your default credential is same as every other device out there, you know, they can program computers to scan for devices, the default credential, and login, and lock you out.

So change your default credentials. And, you know, if it is unique -- if it is not unique and strong, you know, change it. That's one thing that everybody should be doing.

And more towards, you know, since we are going towards the cloud, I mean, many of the converting happens in the cloud, you know, if you are offered to do two-factor authentication, go for it and enable two-factor authentication.

And it's a consumer choice, you know, nobody will force you to do, you know, two-factor authentication. But if you are important, if you think your data is important, you know, you should enable two-factor authentication where it is available.

The next thing is patch all devices. That's, you know, if you look at any consumer advice, really the top ten, you know, the first will be patch all devices. You know, if -- I know this, it is annoying. I have to tell my wife, she's a software engineer, I have to tell my wife to patch everywhere.

But of course, you know, it is in the way, right, many times. But it's a minor inconvenience, you know, to restart your device. But in the long term, it will be -- it's better than getting locked out with a ransom or something. And you have to pay up the money later. So patch the device.

You know, most devices, the options are available, you know, in the settings. And, you know, as newer devices are coming online, it changes device by device. But, you know, you can find it if you know what to look for. You know, there is the sources available.

The next thing is staying off remote access. So this is hard to find, we know, in the settings. But, you know, if you don't want -- if you're not accessing your device at home, from your vacation home or, you know, somewhere from your work, and you don't really need this remote access feature. And not everybody needs it, you know.

So once you set up the device, you know, try to find a remote access option in your device and turn it off. And make sure, you know, if you are using it, you know, if you think you want to use that feature, and that's the reason you bought that device, well, you know, use unique and strong passwords for remote access. That's very important.

That's when, you know, if your password is weak or if your password is the default password, you know, it won't take much time for somebody to hack into your device.

And not last but not least, don't connect and forget. You know, periodically, go back and check. You know, just search your device name on the Internet. You know, if there is a big vulnerability, you know, it will be -- it will pop-up. You know, you won't miss it. But you have to do that checking for you.

And, I mean, some manufacturers do provide, you know, prompting for updates. And not all of them does. So depending on your device, you know, be proactive and do, you know, do a periodical review on your device.

So to wind up, there are plenty of resources available online, you know. But make sure you know what to look for, the key things are you are now a target, unfortunately. You know, it's easier to hack everyone then decide, you know, who to go behind later.

So for specific instructions, you can always visit the device manufacturer's website. They will have the specific instruction on how to do the things that I mentioned before. But, you know, it is changing. More and more devices are coming online. So by that, you know, I can take some questions if anybody have it.

CHAIR BARTHOLME: Mitsy?

MEMBER HERRERA: Thank you for your presentation. And as someone who works in an IT department, we always appreciate someone getting out the message. But you said it in the beginning, that everybody knows this, and nobody does it. So what are your thoughts?

I mean, the things that you presented up there are things that people who follow this have seen. So do you have thoughts on how do you get the larger consumer public to comply with those, or to realize the importance of these few steps?

MR. JACOB: So I personally, you know, as a family tech support person, I try to scare them. But, you know, on the mass it doesn't work. You know, you don't want to drive consumers away.

But I think awareness is the key. You know, that's the main thing. Like, you know, I remember I asked my brother-in-law. He had his phone and doesn't have a password on it. And I'm, like, you should really have a password on that.

And he was, like, oh, it's hard, you know. So I have my kid in one hand and, you know, when I pick up my phone, you know, it's hard to handle a password. I'm, like, yeah, but that's not the, you know, convenience. You know, what if you lose it?

I mean, people won't realize the inconvenience they have to face when they lose it. So once they understand that, I think they will do it. But if it makes it easier for them, you know, now with some of this fingerprint scanners, it's easier. It's not the perfected art but, you know, it will help.

CHAIR BARTHOLME: Do you want to move to the mic and introduce yourself, please? Thank you.

MR. JOHNSON: Kais Johnson. Do you have -- the way that so many things are connected, do you have an opinion as to whether a VPN would be useful on mobile devices or at home to add an additional layer of security?

MR. JACOB: I mean, it's -- more security is good. But, as I say, it's hard for, you know, ordinary consumer, like, the people I talk to doesn't know what the VPN is, right? So even if I go enable a VPN at somebody's home, and if something goes wrong then, you know, I can't -- they can't fix it. They have no idea what a VPN is. All they know is my computer is not working, right? So it's a good idea, but you need to have the resources to maintain it.

I think the easier way is to do the, you know, integrate them to do the basic stuff. Once you have that, you know, once everybody is good with, you know, updating the passwords, and having the passwords, you know, I think the next step will be, you know, securing them better.

CHAIR BARTHOLME: Irene?

MEMBER LEECH: With so many passwords that we need, and they need to be changed so often that it's overwhelming to most of us. There are some programs out there that will -- you can put all your passwords in. Is that a good solution?

MR. JACOB: So password managers, I use it. If I tell my parents, they won't understand. That's why I didn't have that in the list. But I think for -- so there are some things that is hard for people to understand.

So even if it is the best secure way to do it, and they won't -- it won't be easier for them to do it. And so if you have that many passwords, then you should know, you know, how these things work. And, you know, it's advisable for you to have a password manager. Easy schedule to have, you know. Nobody can remember all the passwords.

But, like, somebody like my parents, they don't have that many accounts. You know, they have two, three accounts. So they can write it down, you know. Nobody, I mean, you know, they can write it down in their original language. So that's what I tell them. You know, make an English password, write it down in your local language. And at least you have some kind of encryption.

CHAIR BARTHOLME: Steve?

MEMBER MORRIS: Have you talked at all with your colleagues in the consumer bureau who were just here about maybe doing some consumer outreach on this?

MR. JACOB: Not for this but, you know, the Public Safety Bureau, we collaborate with the Consumer Bureau many times. There are a few consumer gates on our website, the smartphone checker, FCC smartphone security checker is one of them. I think we did that, like, three years ago, maybe. Well, yes, this is one thing that we continue to work with the Consumer Bureau.

CHAIR BARTHOLME: Go ahead, Kenneth?

MEMBER MALLORY: So you presented some really helpful information. My concern is that it's kind of complex, well, it's very complex. And to the average, everyday consumer it may be difficult to understand.

And you also mentioned that there were some resources online that people can go to seek additional clarification. Is there a single, maybe comprehensive resource that you recommend that presents some of this information in a way that's easy to understand?

MR. JACOB: So, I mean, the top 10 or, you know, top 15 basic security, basic cyber site is the same. You know, depending upon who writes it, you know, on which subset it is, it's the same. You know, FCC website has some -- FCC's website has it, Department of Homeland Security's website has, and a lot of private and public websites have it.

I think the reason the -- I don't think that it's a -- I would recommend any single of them. But the key is what to -- you have to know, you know, your devices, you know, you have to look for it. So if you know what to look for, you can find it. It's not hard to find.

MEMBER MALLORY: Okay. I guess I should also ask, aside from your presentation, is there anything on the FCC's website that you think would be helpful for consumers?

MR. JACOB: Yes, of course. I mean, if you go, like I said, most information comes, like, one that I worked on is the FCC smartphone security checker. So that is, I think you can search it. It is easy to find. The URL is FCC.gov/smartphonechecker, I guess. But it is easy to find.

So that was to, you know, specific for the smartphones have your pin, you know, have it remote wipe ready, you know, if it is lost, those kind of stuff, and write down your IMEI number in case, you know, you had to share it with somebody when somebody -- if your device is stolen.

So those are -- and it has specific information on how to do it on different versions of the device, like, you know, Android, IOS, Windows, Blackberry. So that's a good resource for smartphones. But like I say, it's hard to be updated on that list. And things keep changing, you know. You can't have a list and you have to update it, like, literally month by month. Otherwise it will be outdated.

CHAIR BARTHOLME: So maybe Scott and I reach out to you following the meeting and get some links together to send around to the full CIC of stuff that's on the FCC's site. Claire?

MEMBER GARTLAND: Thank you. I have sort of a related question. So when a consumer is, you know, out shopping for one of these new, you know, smart coffee maker, smart fridge, or something like that, is there anything on the packaging that they should be looking for to sort of answer some of the questions that you felt they should be asking?

I mean, for example, I'm looking at a smart coffee maker right now. And I cannot find, in the terms of use or the privacy policy, any information that would answer these important questions that you raised.

So I guess I'm wondering, sort of what the FCC thinks, you know, we can do in terms of making it really clear and easy to find for consumers, particularly when they're shopping in store and would be able to, you know, do all of, you know, search online for this information.

MR. JACOB: So I agree, most new devices doesn't have an easy way to find these things. I mean, even big manufacturers or for, like, dedicated Internet devices are starting to come up with, you know, we will support this device for five years after we release it. So if you are buying it, like, at the four and a half years, you know, the life of the device is actually just, you know, six months.

So one thing is consumers are not demanding it, right. That's why they -- I believe that's why manufacturers doesn't have it on their websites. So once consumers like, you know, like you started looking for this information, you know, they would know, hey, this is something that people are interested in. And they would add that to their list.

So I think that's one key where consumers can try some of these changes. Or, you know, if you ask for security, you know, they will consumerize these things, right. You know, they will give it to you. But if you are not asking for it then it will come in a slower pace.

CHAIR BARTHOLME: Can you raise your hand?

MEMBER BARKET: Sorry about that. So first, I wanted to ask if the Commission is coordinating with NTIA. Because, as I understand it, they have a pretty robust initiative going right now regarding IOT, even down to having, you know, separate working groups on patchability. And then second, I wanted to ask a bit more about the cybersecurity NOI, and the Public Safety Bureau's recent cybersecurity report, and just what the Commission has in mind this year for acting on cybersecurity and what your goals are.

MR. JACOB: So both of the questions, I'm not in a position to answer. I'm not directly related to those. So I would go back and try to get answer to, you know, from somebody else in the Bureau to those questions.

CHAIR BARTHOLME: I had a couple things. So kind of to Claire's point, one of the things that is very common on the boxes, and packaging, and information that comes with all of these devices is an FCC logo, proving that it passed some sort of FCC certification.

Are you using those interactions as an opportunity to either look for security features in devices or have conversations with manufacturers who are coming to you for that to pass these requirements about the importance of security life cycle support and other things like that?

MR. JACOB: So FCC logo on the device is connected to a specific law. You know, if the Commission requirements or if you have a FCC logo on your device that means you pass the initial requirements that's there in the law.

So that's not, as of now, it has nothing to do with the, you know, security. In the future, it might happen. I am not aware of any programs like that. But again, you know, most of these things should come from the consumer versus so that, you know, companies can derive it easier.

CHAIR BARTHOLME: I think that's an opportunity to consider. Because you are one of the few sort of universal players in that landscape right now.

And the other thought that I had, or question, is recently a number of IOT device attacks have involved infrastructure deployed in cities.

And as more and more cities become connected and have little toggles and switches all along their water systems, and power lines, and everywhere else, do you guys have a primer for cities that's focused on security, and education efforts geared towards cities, and their deployment in large scale of IOT devices so that they're not as vulnerable and susceptible to these things moving forward?

MR. JACOB: So as far as I know, we don't have any specific programs. But, you know, I don't know all the programs that FCC has, so pardon me.

But again, I think the key is, if, like, you know, the purchase of a -- when you write a contract if you know, hey, my water, or my door, or my window controller should warrant for ten years, and they should support it, and when you add that in the contract, you know, in the contract you know that, you know, you will get support for these four or five years, ten years.

But if the contract person knows to add the security part to the contract, you know, that will drive the companies to offer it for the masses. So I think, you know, again, that's one key aspect of it, the knowledge about these wonderful -- this is key.

CHAIR BARTHOLME: Right. Do you have any questions from the phone?

(No response.)

CHAIR BARTHOLME: All right. So we're on schedule now for our break. So thank you for joining us. We appreciate the information. We're going to take a ten minute break, and then we'll get going back again at 10:40.

(Whereupon, the above-entitled matter went off the record at 10:30 a.m. and resumed at 10:42 a.m.)

CHAIR BARTHOLME: All right. So next up, we are pleased to be joined by Antonio Sweet. He is a technology policy advisor with the Office of Strategic Planning here at the FCC.

Before joining the Commission staff, Mr. Sweet was an engineer and developer of network devices in the private sector. He advises the agency's chief technology officer in various bureaus on technical issues, including security and robocall mitigation.

Antonio regularly engages standards bodies and industry groups to advance the progress of security and reliability of voice networks. We're pleased to be joined by Antonio Sweet.

MR. SWEET: All right. Well, thank you very much for the introduction. I kind of wanted to make the presentation walk through a very brief history of phone and voice network technology followed by how robocalls technically work, what's being done to mitigate them, and what consumers can do to help themselves alleviate this problem.

But I think, first and foremost, if I could speak on behalf of all engineers, I want to say I'm very sorry. You know, we often advance technology with the best of intentions but don't think about the worst consequences. And to that end, I do want to reassure everybody here that there are a lot of dedicated folks that are spending night and day addressing this very issue.

And the way that it kind of got started, if you think back to the very original telephone network where you had a single output, single input phone line. We essentially had people reachable through one path. And the phone number associated with that person or that phone was how you routed to that person.

That's why area codes no longer really mean area, but it got started based on how the public switches were navigating from one caller to another. And the numbering associated with that, and the connections between those networks relied on route of trust.

Essentially, you had different providers knowing that, on the other end, even though they personally didn't manage the network, the people they were connecting to were going to make sure that the right person was reached.

And so we look at that in conjunction with the evolution of the Internet and how email developed. So with the Internet, suddenly you have a multiple output, multiple input system for a single person or a single device.

And the email situation that we saw in the early 2000s is actually a very good analogy for what we're seeing now. So email essentially mirrored hard mail, paper copies, or envelopes and things where you would write the sender. You would write yourself as the return address, and you would write your recipient on an envelope.

And so when you have software that enabled that, and the email architecture where all you had to do was type in a person's address, and oftentimes you could type in your own return address, or tell the network what your identity was, suddenly you lost the route of trust that existed with the phone networks. And you could simply give off a sense of identity without ever having to authenticate who you were.

So what we had in mass mailers evolved in the Internet side into email spam where you had software that was enabling the rapid delivery to a very large audience and using the economics of that as the case for the business.

So you had maybe one in a million people who would actually open up that spam, and it would cost, you know, a millionth of penny to send that individual email, but aggregate that over, let's say, a quarter billion people, and suddenly, in a day, you could get a success rate then landed you about a quarter million dollars. And so the economics of the email spam case has now translated into the robocall telemarketing space.

Unfortunately, on top of just telemarketing, there's malicious attacks that do more than just try to get you to buy a product. They will defraud you out of money or even use that rapid delivery system to flood networks and endanger the public.

And so in the email world, we obviously saw the evolution of spam filters and, eventually, email verification technology. And that was enabled by an industry group known as the Internet Engineering Task Force. They are a standards body made up collectively of engineers from across multiple sectors, across multiple countries, typically working for businesses that provide these services for the public.

And so this task force shortly, or abbreviated to the IETF, are essentially the protocol architects of the Internet. And so they are the group that develops the spam filters, and identity authentication for the email case. And they're the ones who essentially developed the little green lock that you see on your browser or the green checkmark that you see on an email from, let's say, your financial institution or your email service provider directly.

So now, when we think about the email case, it isn't a perfect analogy, because email lives strictly on the Internet. Whereas, voice calls now can originate from a traditional landline phone, cross the Internet, come back onto a legacy network, or simply live entirely on the Internet, or start in the Internet and go to a legacy network. So we have these hybrid systems that complicate the matter.

And so what we do know from the data and simply the technical capability is that about 99 percent of all robocalls or spoof calls, whether or not they're automated, are from IP voice networks, Internet voice networks.

And what they're doing is they're taking advantage of those same vulnerabilities that email had. And they're using a variety of tactics. So you obviously have the auto-dialed robocalls. You have artificial voices, you have a couple of different kinds of spoofing. They're actually multiple flavors of spoofing.

So you have anonymized spoofing which is hiding your identity either through a totally randomized number that you present to the call recipient, or you have something called the neighborhooding where you use software to pick out a target. And then you use, let's say, the first six digits of their number, change the last four, and then it seems like someone in your neighborhood is actually calling you. And you're more likely to pick-up.

In addition to that we have impersonation of spoofing. So that's someone pretending they're the IRS by actually presenting themselves with the IRS's main phone number. Or you have someone who, as we heard earlier about hacking personal devices, is able to get your contact list and use one of the numbers that they find in there to present themselves as a family or friend so that, again, you're more likely to pick up.

And those are actually really interesting, because we've seen a series of fraud cases where -- and particularly the elderly or residents of retirement homes will receive calls from a number that is one of their family's phone numbers.

And the fraudster will say, oh, this is your grandson, Johnny. I'm in a jail and I need bail. Can you wire this amount to this number so that I can get out. You know, I didn't want to call mom and dad, because I'm really embarrassed about this. I'd really appreciate it. And just like that, that person is out, you know, potentially several thousand dollars.

And so what we have trouble with in the phone network case, that we don't really have in the email sense, is that in email the content of the message is there. It's in the body, and you can pretty easily use software to detect if, for example, the same Nigerian prince is sending the same email to millions of people, right.

But in the phone context, you don't have that. Because the content of the message doesn't start until someone picks up. And so you don't have any way to detect on a content basis. You also run into issues of traceability. Like I said before, your routing a call potentially over many interconnection points in a network. You're routing it from the Internet to a land line. And when it makes those hops over major networks, a lot of times the origination or the path of the call gets lost. And right now, there are industry groups and telecom service providers that are working to enhance the traceability. And we're also seeing that what they essentially want to do is include a path -- information headers so that the recipient, or at least the network that they subscribe to, knows every single hand that touched that call on the way from origination to delivery.

Another major issue along those same lines is simply the lack of interoperability among the Internet and traditional networks. The information that you get in the header of an email, for example, and that would exist on a strictly Internet-based voice call, is maintained. But as soon as it lands on the traditional network, that information is stripped out, it's gone. Because the legacy system doesn't support it.

So to that end, there is an incredible amount of work being done by the IETF and other industry groups, specifically, one is a protocol that enables the same kind of green lock that exists in the email case where you have the identity of the caller verified through an encrypted digital certificate, essentially, saying I am who I say I am, and if I were lying the call wouldn't be put through, just by a technical capability.

And that is one of the major tools that is going to enable third party developers of filtering services and apps to present more reliable information to people on their handsets and on their landline phones as well.

There is already an incredible amount of call pattern analysis done on voice networks. The major thing that does remain constant is that you can see massive floods of calls being made in the same way that massive floods of emails are sent.

And by having a skeptical eye or a suspicious eye of some of the subscribers of your service perhaps thinking, you know, I know that this is a residential line, but somehow they're calling 1,000 people over the course of an hour, I should probably not be putting those through. Then you know that there is some mitigation going on behind the scenes and that maybe the recipients are only getting a very small fraction of the calls that are actually put forward.

Another really interesting development that we've seen is kind of a parallel case to do not call. And it's called do not originate. And it uses the path, the call path that I mentioned earlier, as a way to, again, kind of guess the probability that this is a fraudulent call.

So if you think about calls, again, over the Internet coming from all over the world, potentially, you might want to filter out calls that say they're from the IRS but came in through India, for example. That interconnection is probably not valid. And it's a pretty easy flag to put in and use to prevent people from getting attacked by fraudsters.

And the last thing that we're really interested in here as enforcers of our TCPA, and going after these fraudsters, is automatic traceback.

So traditionally our enforcement bureau, when we receive a complaint from a consumer, goes to their service provider with a subpoena and say, okay, who gave you this call? And then they say, all right, well this person, this network did.

Then we go to that one and serve another. And we go up the chain through a legal process to eventually find who originated it or if it came from an international connection. Fortunately, there's a lot of good work being done in the industry to streamline that process. Again, it'll be helpful once the standards are in place for logging the actual call path so that we can go straight to the source as opposed to have to start from the beginning and work our way through the networks. And so we're very pleased to get updates regularly on industry groups who are working on that.

When it comes to solutions that consumers can use, a lot of it is dependent on what kind of network they use. Traditional landlines, again, have fewer capabilities that Internet based voice services do.

But there are some really great things that will mitigate this. For example, when we see on websites, you know, when you're buying, let's say concert tickets, and you have to type in a captcha code to prove that you're not a robot.

There is similar technology where, if you enable a captcha system for your calls, a caller will have to dial your number. And then they'll receive back a challenge saying dial a random four digit code to prove that you're not a robot just massively sending out these calls and that you are a person who can dial.

Another really interesting thing that's been going on it phone-printing. Now, that's a voice version of fingerprinting where, unfortunately, this requires someone to actually answer the call.

But what it does is it analyzes, within a few seconds, if the audio coming through is the same, or very, very similar to, audio that has come in elsewhere on the network. And by making those matches, you can, with a really high probability, check that the audio is pre-recorded, for example, or artificially voiced.

In addition, you obviously have mobile apps that allow you to crowdsource the reliability of a number or the reputation of a caller, almost like a Yelp for phone numbers.

There are a lot of people that are developing that, and they require or, rather, they're enhanced by large pools of people who contribute to that database of reliability information.

Unfortunately, it does require active engagement by users, but as we all know, if people are willing to file complaints with the federal government, I'm sure they're willing to say something about robocallers on their apps.

And unfortunately, there are apps on major app stores and platforms that enable spoofing. And there are not as many that do what I just mentioned, which is detect spoofing. It is as easy as writing an address to write the phone number you want to present yourself as.

And so, that capability is only enabled by a lot of these technologies that are technically legal but are often abused. And so we are really encouraged to see a lot of the work being done by third party app developers to offer kind of the opposite solution and help people avoid being misled or become victims of fraud.

Lastly, I want to follow up with what one of my colleagues in CGB mentioned earlier, which is that our complaint database, we feel, is one of the better ones. Not because of the data that we collect but because of how often we update it.

So, a lot of these third party app developers are using our realtime pushes of complaint data to augment their algorithms for detection. So we have not just contributed to an enforcement effort, but we're also helping people -- we're helping prevent people from being victims of this as well. And we're really encouraged that many of the third party developers have come to us directly and said, "We have used your API in our system and we're actually seeing improved performance, and we're blocking even more than we were before."

And this is in contrast to some of the other complaint databases that publish, maybe, on a weekly or a monthly basis. Because what we've been told is that a lot of these fraud campaigns are in such realtime, in such quick pace, that by the time you have waited a month, that campaign's been over and that fraudster's already collected millions of dollars from the public.

And so I really just encourage all of you to make sure that consumers are filing complaints, that they are visiting fcc.gov/robocalls to learn about the solutions being offered by third parties and their service providers, and also learn about what we're doing to protect them. And with that, I open it up to any questions.

MEMBER GOODMAN: Thank you. Given that this is an issue of great concern to consumers, are there any engineering reasons that carriers have not responded to this issue in a more timely fashion?

MR. SWEET: So, one of the major issues is what we call a weak link system, where, if you implement a solution, it's only as good as it promises to be if everybody adopts it.

And so that's why standards bodies are trying to get not just national but international approval consensus in the architecture and adoption broadly. Because, simply put, if anybody doesn't adopt those standards, then it's as if no one did.

CHAIR BARTHOLME: Ken?

MEMBER MCELDOWNEY: Yeah, I'm sort of curious about what you said in terms of that the apps that can spoof someone's phone number is not illegal. To me, I would think it would be a form of ID theft. And I just -- I cannot think of any legitimate reason for an app to do that. It would seem that you could go after those apps on that basis.

MR. SWEET: So our Truth in Caller ID Act of 2009 only makes the fraudulent or abusive cases of spoofing illegal. And the reason that is is because there are, in fact, use cases where you might want to present a different number.

A couple of the ones that we see all the time are doctors who want to spoof their office number on their mobile phone or people who are staying in domestic violence shelters who don't want to use the location or the phone number of their shelter and they want to use a random one to call people or use as a personal phone number.

CHAIR BARTHOLME: Steve, and then we'll go across the room.

MEMBER POCIASK: Yeah, thanks. I appreciate it. So, I'm kind of intrigued by a lot of the different approaches of this, the certification sort of approach, and I thought the phone-printing is sort of interesting.

I mean, even if you don't match sort of the voice coming over the originating and terminating, I just think just having the phone engaged is sort of a signal that the phone is, in fact, in use.

But I haven't -- just a sort of basic question that I can't figure out myself: at sort of the handout from or within a backbone provider, can we identify, or can the backbone provider identify, what's an IP-based phone call?

And if they can, can't they identify the subset of those calls that are presenting a domestic phone number? So then you have the situation where somebody, it's a foreign IP call with a domestic number. Shouldn't that send up a flag?

MR. SWEET: So, certainly they have that information in their routing servers. But, again, IP spoofing and number spoofing are pretty easy to do. So until those digital certificates are there to authenticate the information being presented, again, it's as easy as typing it in yourself.

So, fortunately, once you have the certificate architecture in place, then you're able to verify, with much more certainty, who's calling.

MR. POCIASK: I don't mean when the call is terminating at someone's residence. I meant at the backbone provider itself as the call comes into the US, or it's within the backbone provider. I meant up-front.

MR. SWEET: Sure. So that's the Do Not Originate case that I was talking about.

MR. POCIASK: Okay.

MR. SWEET: So they're filtering based on foreign IPs that are showing domestic phone numbers.

MEMBER LIEBERMAN: I just have a question that may be basic. I assume some people are more prone to become victims, but what about just being prone to receiving the calls themselves? I don't seem to receive that many robocalls, and I'm wondering if other people are sort of more targeted and why they would be.

MR. SWEET: So, there are a lot of cases where what started as a very benign, legal marketing effort, you know, enter your email address and phone number to be part of this contest for a free cruise, for example, a lot of people actively go through that. And those contact lists get shared everywhere. And very often, they land in the hands of people trying to commit fraud.

And so I guess I applaud you for staying from those. There are a lot of email lists -- or, rather, phone lists of people who answer calls, meaning, "Oh, even though they didn't fall for our trick, we know that this a live number with a person who picks up." And suddenly, those are the prioritized numbers to target. And again, we always encourage people not to pick up unknown numbers.

MR. ELLROD: Frederick Ellrod with NATOA. I'm curious whether those traceback methods you mentioned, whether implementing those would require a complete redesign of the telephone network or how extensive that move would have to be.

MR. SWEET: I'm sorry, could you repeat the question?

MR. ELLROD: Sorry, yes. To implement the kind of traceback methods you're mentioning, I'm wondering whether that would require a complete redesign of the telephone network, or the switches, or extensive rebuilding of what's already there in the public switch telephone network.

MR. SWEET: In the public switch telephone network case, it is very difficult to retrofit. As we heard earlier, a lot of device manufacturers do not support things after end of life, and a lot of those switches are decades old. And so it's very unlikely that, you know, you're able to find a new third party who has the knowledge base to go in and retrofit those systems. That's why a lot of the security that we rely on today in what's being developed is for strictly IP purposes.

CHAIR BARTHOLME: Thank you so much for joining us.

Staying on the robocall topic, our next speaker is Linda Vandeloop with AT&T. She's the assistant vice president of external affairs, and was their lead person on the task force that the FCC convened last fall. And she's here to give us sort of an overview of that task force and its activities and where we're headed next. So, welcome, Linda.

MS. VANDELOOP: Thank you. And thank you for inviting me to talk about this. It's a very interesting topic. I'll give you a little bit of background.

This was started in July of last year. It started with a letter from Chairman Wheeler to certain carriers and -- after asking us what we are doing to deal with the problem. And after really looking at it for a couple of days, AT&T agreed to chair an industry-wide Strike Force, because we have all been struggling. All of the companies have been struggling individually at trying to do something to stop this problem. And it really is an industry problem.

So we pulled together about 30 different companies and different types of companies. It was wholesale, wireless, cable, manufacturers, OS operators pulled together to tackle some of the big problems.

And Chairman Wheeler had said thank you and I will expect some short-term deliverables in 60 days. So it was a big effort. It was a lot of work pulling people together.

We had our kickoff meeting August 19th. We had focused on four areas: the caller ID authentication, empowering consumer choice, the traceback effort, detection and mitigation. And then also regulatory support, because we figured that there would be some regulatory clarifications that we might need to implement some of the changes that we were going to propose.

So, you know, some people think, a lot of people think or thought the industry really didn't care and that is not true at all. We had four working groups and those working groups, by the way, even started before the kickoff meeting, because 60 days is not a lot of time to make progress.

And each working group met at least two times a week and there were some people that were on more than one working group, so it was a big effort. And I was a little apprehensive. I thought, okay, well, this came from the Chairman and, you know, the Chairman of the company has asked them to participate, you know, will they go through the motions?

No. It was full participation. And they did a lot of homework in between the meetings. It was one of the most positive, cooperative and productive industry groups that-- efforts that I have been involved in. And believe it or not, you know, industry, different industry members don't always agree on issues, but this one people were willing to come together and really work.

Now, there were lots of ideas and constructive disagreements, but, in the end, we were always able to come to consensus and come up with a solution that everybody could at least live with.

So and I've gotten a lot of questions in the past on well, you know, there is laws in place already. There is rules in place. What about the Do Not Call List? Does that mean that is not working? It is working, but only legitimate companies honor the Do Not Call List.

These robocallers, their main goal, their only goal is to defraud people out of money. So if they are going to steal the money, they really don't care about a violation of the Do Not Call List. So that's why that helps with calls, but it doesn't help with the robocall problem.

You know, I think Antonio talked a lot about the challenges of coming up with a solution. One of the challenges, too, is that these robocallers are very flexible and very smart and as soon as we come up with something, they come up with a way around it. So we are, as an industry, working on coming up with a very comprehensive, flexible solutions to continually -- so that we can change as they change.

The working groups, the Authentication Working Group worked on the Caller ID Authentication standards and they actually were able to move up the approval of the standard from, it was targeted for, December. It was moved up to October, which also moved up the next steps in the whole process.

So there was some positive work there and they are continuing to do the work through the standards bodies.

The Empowering Consumer Choice had a huge job. I mean they were looking at how do you implement the caller ID authentication on the customer devices? What's the customer going to see? You know, what is the best way to communicate the information to the customer, customer education. And they really did a lot of work.

And by the way, the cooperation, I need to mention, wasn't just with the companies that were a part of the companies and organizations that were part of the Strike Force, but the FCC and the FTC worked very closely with us and really helped in developing some productive progress.

And so to that end, the FCC agreed to implement or launch a website that pulled together all of the consumer information that we could pull together because the FTC had websites, some of the consumer groups had websites, the individual companies had websites and so they pulled it together all in one place. And I actually have a few copies. I have printed out some links, if people are interested.

And so that grew out of the Strike Force. And also they reached out to the App Developers Association to take a look at how do we encourage app developers to develop some robocall blocking solutions that customers want and need to use. And they identified some key features for consumers with respect to the caller ID authentication and worked with that group.

The Detection, Assessment, Traceback, and Mitigation Working Group, they said the traceback -- Antonio talked a little bit about the traceback and this actually started with a small group of companies, well, AT&T, Verizon and CenturyLink, the large companies in the USTelecom Association, and started to work together to do traceback.

We have been working on the issue. I know AT&T does a lot of analysis and research and we try and identify the robocalling campaigns, like when we see a phone number that generally makes two or three calls a day and all of a sudden there is a hundred thousand calls going over it, we kind of think that there might be a problem, and try and identify and do the traceback.

And so we start working together and made a little bit of progress, but recognized quickly that we need to pull in more companies, because the more companies that are involved in the traceback and cooperating, the quicker we can get to the source of the robocalls and work with FTC and FCC to get it stopped.

So that group went a little bit further, went through the Strike Force and one of the outcomes, USTelecom decided to expand that group where by the time the Strike Force had started, there were 11 members and they agreed to at least double it by July of this year. They are already up to 19 members. So work is continuing there and there is more and more robocall incidents that they are doing tracebacks on and so that has been a positive development.

The Do Not Originate, there is some discussion within the industry whether Do Not Originate Database is the right way to go. And so through the Strike Force, they agreed to do a feasibility study. And one of the things they decided to do through that feasibility study or for that feasibility study was to do a trial.

So we worked with the IRS and got the number that was being typically spoofed and did a Do Not Originate. Well, we blocked all the calls going on that number, because it was a number that was in place just to receive calls. And it really had a big impact and it was very successful.

Now, we don't know how successful because, at the same time, there was a bust of some of the centers that were making those calls. So more work is going on and some additional trials are going on and the feasibility study will be done by the first quarter of 2017.

And the other -- oh, one thing to mention on the Do Not Originate, I mentioned that the Regulatory Support Group had to do some work to identify, you know, give advice on what rules they needed to follow, what rules needed to change. So we got the request hey, are we authorized to block calls that the IRS says they want us to block?

And we looked through the rules and we couldn't find where there was that authorization. So I called up the FCC. I said can you help us with that? We can't identify the rules and people, you know, want to make sure that they are not stepping over the line. And they said, you know what, there isn't really a rule that allows companies to block a call at the request of the number owner or assignee.

We can block calls at the request of the subscriber. So if a customer says I don't want to get calls from this number, we have the authority to block those, but we did not have the authority to block a request of the number assignee. So the FCC very quickly issued a public notice clarifying and giving us the authorization to be able to block those numbers.

So it was, like I said, a very cooperative effort. It was a very positive effort.

And the other thing that this group focused on in conjunction with the Regulatory Support Group is shortening the cycle time, because it is one thing to be able to identify an illegal robocall campaign, but until we get all the information to be able to get it stopped, people are getting calls and people are getting defrauded. So we want to shorten the cycle time.

So going forward, a lot of work continues to be done both through the associations and the standards bodies and companies individually. I mentioned that the Traceback Group is continuing to grow and refine its process. CTIA is doing some really great work pulling members together.

I know the App Association is also involved in the ongoing work of the Strike Force. And then individual companies are also increasing their efforts. AT&T, for example, is increasing its data analysis to try and identify the robocalling campaigns quicker.

In addition, we have introduced an app to -- for customers to control their calls. It is called Call Protect and it works on HD wireless phones. Now, it doesn't work on all -- for all customers, but we are just trying to roll things out as quickly as possible and that we could roll out quicker than others.

There is also some other very effective third-party apps we advertise on our website. Nomorobo, which works on wireline IP phones and I can tell you it works really well, because I -- before we put it on our website, I wanted to test it out and I did. And I only put it on my line as a test, but I'm not taking it off. It's great. It works with simultaneous ring. It rings once on my line, Nomorobo picks it up and I don't -- I haven't gotten any robocalls.

No, I take that back. Once in a while one slips through and then they catch on and put that in their blacklist database.

So that sums up the Strike Force. Does anybody have any questions?

CHAIR BARTHOLME: Steve?

MEMBER POCIASK: Yeah, this is Steve with ACI. I am not exactly sure that this is the right question for you. Maybe it should have gone earlier, but in regard to like the compensation between various phone companies and so on, I imagine phone calls coming in from Europe, for example, have a number of international fees and then, of course, there is probably access charges and those sorts of things, which generally fall on the originating party.

If we really don't know, because these phone numbers are being spoofed, how do we reconcile the access fees that are being charged and paid by the various parties? I just wonder.

MS. VANDELOOP: I'm not sure I understand the question.

MEMBER POCIASK: Okay. Well, let's just say I have a call that comes across and it says it's from Tennessee and it is coming to my number, so that might be say an AT&T call that is going to Verizon, as an example. But the reality is that call might be coming from Europe. So how do we figure out how the access charges work on a call like that?

MS. VANDELOOP: Yeah, I would -- you're right. I would just be guessing, so --

MEMBER POCIASK: Okay.

CHAIR BARTHOLME: Anyone else? Anybody? Okay.

MS. VANDELOOP: Oh, but I can try to find out.

MEMBER GOODMAN: On the phone, too?

CHAIR BARTHOLME: Yeah. Okay. Thanks. Paul?

MEMBER GOODMAN: Oh, thank you. I had a question about say that, you know, the hardware/software solutions you are using, I'll say, for authentication or detection. I'm wondering if the Strike Force has any rules about members of the Strike Force that own intellectual property interests in those software/hardware tools?

MS. VANDELOOP: No, there is no rules. What we have tried to do in the Strike Force is keep the members to carriers and like operating system operators and not actual vendors. When we started -- and there was a lot of requests to join the Strike Force and the vendors that are out there do -- I mean, they do a lot of good. There are some really good apps out there. There are some really good resources out there, but they already existed.

And so what -- the goal of the Strike Force was to identify and work on the gaps, you know, and we only had 60 days, so we had to really focus.

As far as whether any of the companies have an interest in any of the -- I don't know, yeah.

CHAIR BARTHOLME: Anybody on the phone have any questions? Okay. Great. Thanks for joining us.

MS. VANDELOOP: Thank you.

CHAIR BARTHOLME: The resources that Linda handed out, there is a table over behind the lunch table and I know that everybody is going to be able to find lunch, so you will be able to find this table behind it, there is a nice stack of these there. Feel free to grab them during lunch or as we head off to the working group meetings later today.

MS. VANDELOOP: Thanks.

CHAIR BARTHOLME: So moving right along, up next we have Patrick McFadden from the National Association of Broadcasters. He is the Associate General Counsel there. And Patrick is going to talk to us today about introducing ATSC 3.0, a new broadcasting standard. So welcome.

MR. McFADDEN: Thank you very much. Thanks for having me. It's great to be here and have an opportunity to talk to you about one of the things that really excites me, which is the future of broadcast television.

The Next-Generation TV standard, which is what we like to call ATSC 3.0, because when I say ATSC 3.0, people's eyes tend to glaze over a little bit.

Next-Generation TV is a really exciting new development and I'm going to try to talk fairly quickly at a high level about three main points to save some time for questions, if there are any.

The three things that I would like to cover are: What is Next-Generation TV? What are we talking about when we use that term? What are some of the consumer benefits associated with Next-Gen? And what would a transition to Next-Gen look like and how do we protect consumers during that transition?

So first, what is Next-Generation TV? Next-Generation TV is a new broadcast transmission standard. The old analog standard was approved in 1941, that standard did not provide for color. Color came along in 1953. And then in 1996, the current DTV standard was approved.

A lot has changed in the video marketplace since 1996. And for broadcasters to continue to offer a robustly competitive service offering, we feel that we need to upgrade our technology, so we can offer viewers a compelling product. So that's briefly what Next-Gen is.

Why is it important and what do we think some of the benefits for consumers are? There are several.

First, better picture quality. Some of our competitors in the video marketplace, both MVPDs and over-the-top service providers are beginning to offer 4K programming, so even better than digital television, even better than HD, Ultra HD programming.

Broadcasters cannot currently offer Ultra HD using their current transmission standard. So for us to be able to offer -- to continue to offer the best picture, we need to upgrade our technology.

There are other benefits as well, significantly more immersive and improved audio quality, wide-color gamut, so right now colors are sort of approximations. There are times when we may be in between a specific color, but with a wider color gamut, we can more accurately reflect real-life color, high dynamic range.

And some other really exciting features because Next-Gen integrates pretty seamlessly with Internet Protocol that will allow us to offer interactive features to viewers, but it would also allow for advanced emergency alerts. So a couple of examples of what I'm talking about there.

If, for example, you get an AMBER Alert while you are watching television, you could click through and get more information about that AMBER Alert. Maybe a picture of the victim, if one is available, you know, a picture of maybe the model of car that the victim was last seen in, a picture of the suspect, if one is available.

Other examples of advanced emergency alerts, when we are talking about storms, for example, rather than just having a region-wide alert to everybody in an area, you could have more targeted warnings to really address viewers who might be at-risk. You could provide further information, such as evacuation routes and things like that.

So those are some of the benefits that are associated with Next-Generation TV. Better picture, better sound, interactive features and advanced emergency alerts.

Another one that we are excited about is the potential for more robust mobile television reception. The possibility to be able to receive over-the-air broadcast television programming on your mobile device, which is challenging for us to do right now.

And so turning to the idea of a transition to Next-Generation Television and here we have to be very clear about something. As excited as we are about Next-Generation Television, it is not backwards compatible with current equipment. So your current TV at home is not able to receive the Next-Generation Television signal. Just like the DTV standard was not backwards compatible with analog era equipment.

So how do we handle that transition? How do we protect viewers and continue to innovate, which we feel we need to do? To address that, there is a couple of things that we are not doing that I want to knock off first.

First of all, we are not asking for federal subsidies. We are not asking for any money from the Federal Government. We are not asking the Federal Government to underwrite a converter box program as happened with the DTV transition. We are not asking for more spectrum.

In fact, with the conclusion of the Incentive Auction, we would be repacked into a smaller portion of our current band. So we are seeking to do this without Government subsidies and without expanding our spectrum footprint.

The way that we propose to protect consumers during this transition is by arranging for simulcasting arrangements. So what that would mean is, and I'll pick on Krista, because I'm looking at her right now, this is best understood if you use a two station example, but, obviously, in markets where there are a lot of television stations, it would be more complex.

But for example, let's say Krista and I both owned a television station in the same market. Krista and I are both innovative people and we are interested in moving forward with Next-Generation Television. We would engage in a voluntary arrangement where we would agree that, for example, I would continue to transmit both of our programming in the current standard on my facilities, so everybody in our service area would continue to receive an over-the-air signal in the current transmission standard.

Krista, the innovative one in this example, would transmit both of our programming using the new transmission standard on her facilities. So the idea is that we would both be transmitting, both in the current and in the new transmission standard, so that we can begin to roll-out this transmission standard and the features and the programming advantages that go along with it.

The theory, basically, for the transition is sort of an if you build it, they will come theory. We envision a wholly voluntary market-driven transition where broadcasters would begin offering Next-Generation transmissions and if consumers like it and begin to buy equipment that is capable of receiving it, then the transition will move forward.

But the pace of the transition, unlike previous transitions, will not have a firm cut-off date. It will rather be market-driven.

So just to put a pin in that for example would be DTV transition, there was a firm cut-off date for analog programming. Everybody knew what date the analog signals would stop. That's not going to be the case with the transition we envision here.

Rather, again, it would be a wholly market-driven, wholly voluntary transition. Broadcasters won't be mandated to do it. Consumer electronics manufacturers will not be mandated to include a tuner capable of receiving the new transmission standard in new television sets. And again, we are not asking for the Federal Government to do anything for us in terms of subsidies or more spectrum. We are simply asking them for permission to try to do this.

That is basically how we envision the transition unfolding. I should add that in addition to protecting consumers who receive over-the-air programming, we are also acutely aware that many consumers receive programming through MVPDs.

So one of the other things that our petition notes is that we are emphatically not asking the FCC to require MVPDs to carry this Next-Generation signal. If MVPDs want to do that, if they choose to, that would be great. We would be very excited about that. But our petition does not seek to mandate that carriage.

When we think about the Next-Generation TV signal and the transmission standard, I mentioned that we view it as sort of the future of broadcasting because the video marketplace has been evolving.

One of the interesting things about broadcasting is that unlike many other industries regulated by the FCC, the technology that we use is mandated. The FCC specifies the type of technology that we use. It specifies the transmission standard that we use.

So the vehicle for us seeking to roll-out this new transmission standard is a Petition for Rulemaking that we filed in April asking the FCC to allow broadcasters to make voluntary use of the Next-Generation transmission standard. We need the FCC's permission to do that.

So we view this as a pro-consumer, pro-innovation opportunity for the FCC. It's wholly voluntary. We are not seeking subsidies. We don't envision seeking subsidies and we don't seek mandates either on MVPDs or consumer electronics manufacturers or ultimately consumers.

The goal again is that this would be a transition where we would begin to offer a better -- better service offerings and we would hope that that would attract people.

Ultimately, the shortest way that I can describe why we are excited about Next-Generation TV is it just allows us to do more with our current spectrum. Wireless carriers are always pushing the envelope in terms of the technology they use to allow them to do more using their spectrum offerings. We want to do the same thing.

Broadcasters currently have a 6 megahertz channel they transmit on. Next-Gen allows us to push more through that same 6 megahertz channel, that's the short version of it. That's why we can do things like offer Ultra High Definition signals using Next-Gen or offer more HD signals. The transmission standard is also highly flexible, so it allows broadcasters to make choices to best serve their market, to best serve the needs of their viewers.

So if you are in a market where rather than rolling out an Ultra High Def signal, you would like to roll-out several multi-cast streams using the current DTV standard, you could do that as well. And there are a variety of other trade-offs you can make in terms of the robustness of your signal and the throughput that you are able to achieve.

In short, we view Next-Generation TV as something that broadcasters have to do to remain competitive in an ever evolving video marketplace. We view it as something that has great potential to enhance service for viewers. It can enhance public safety. And all we are asking for from the Federal Government is permission to invest potentially hundreds of millions of dollars in our own facility to provide a better free over-the-air signal to our viewers.

The current status of this proceeding, I mentioned, we filed a Petition for Rulemaking in April. The next step would be for the FCC to issue a Notice of Proposed Rulemaking, which we hope to see in the near future.

I will pause for a second, because I know that was a lot of information. Are there any questions that I can answer?

CHAIR BARTHOLME: We will start with Mitsy, since she shot up.

MEMBER HERRERA: All right. So Mitsy Herrera. Speaking as a person who lived through a consumer agency addressing the DTV transition, the first question is -- there are two questions.

One is there is about 10 percent, 5 to 10 percent of the market that is receiving broadcast television using some type of antenna. So do you see that for the new television, Next-Generation Television? Will the broadcast reach be more or less distance-wise than the current DTV reach?

And the second is for the other 90 percent. Among the many things that -- in the last FCC Chairman's term, there were many things done, but one thing that did not get done is a new revision of the set-top box rules. And so right now, consumers cannot buy a separate set-top box. They cannot buy a device that would work with their current MVPD and allow this new thing. And you cannot buy a television which has those standards built in that doesn't require that box.

So for the Next-Generation Television, are you looking to mostly market it on mobile and non-traditional televisions or are you looking to sell televisions that carry both? And how do you address the gatekeeper of the set-top box?

MR. McFADDEN: So a couple of things. First, I will not get into an argument about the penetration of over-the-air signals. I'll note that we don't agree that it is 5 to 10 percent. We think it is closer to 15 and rising.

But to address the point about coverage, you know, the interesting thing is the -- at a pure interference level, the coverage is very comparable to the current DTV standard. So we think we can cover the same service area, but offer a much more robust service offering within that service area.

As far as devices, I guess I would say two things. One, broadcasters are interested in serving viewers wherever we can find them. That's at home and that's mobilely and that's anywhere in between. So certainly, we are envisioning this as a service offering that will be attractive to people in-home who receive over-the-air television.

Candidly, if we are able to offer a compelling service product, we think that, again, while we are not requiring, we do not seek to require MVPDs to carry it. We think they will want to, so we think that this will allow us to reach viewers no matter how they receive their signal.

And as far as the set-top box question, one of the things that I should have mentioned is that in our Petition for Rulemaking, we were joined by the Consumer Technology Association. And consumer electronics manufacturers are very excited about the Next-Generation standard. And it is hard to ask them to start including tuners to receive that transmission standard before the FCC has adopted it, but we do think that once the FCC does approve use of it, consumer electronics manufacturers will be eager to begin incorporating it.

And I should add that the United States is not alone in pursuing Next-Generation TV. South Korea is doing it right now. They are marching firmly towards broadcasting the 2018 Olympics in Ultra High Def. And to achieve that, they are using ATSC 3.0.

MEMBER HERRERA: So just quick, the standard needs to get adopted by the FCC and there is industry agreement?

MR. McFADDEN: So I don't want to -- when you say industry agreement, what exactly do you mean?

MEMBER HERRERA: I mean, is this a, what was it, Betamax versus VHS carrier?

MR. McFADDEN: No.

MEMBER HERRERA: Or is it sort of like there is a standard and it's just a matter of we need to formally adopt it, so you can use it?

MEMBER HERRERA: Correct. The standard is being finalized as we speak. We expect it will be finalized this year. We are asking the FCC to approve sort of the physical layer of the standard just from an interference standpoint, which is really sort of what the FCC does at a very reductive level when it comes to regulated radio transmissions, they regulate interference, right?

So we are presenting to the FCC a physical standard that the FCC could approve. The remaining parts of the standard will be approved hopefully this year and so, no, there will not be competing. This is not a Betamax/ VHS situation.

CHAIR BARTHOLME: Okay. We will go to Mark and work our way around.

MEMBER DEFALCO: I have really two questions. The example you gave, with you know, Krista and yourself in the same market, you would be competing based on your programming if you are covering the same geography. So as you are doing this transition, if she decides to go, I'm going to call it, old TV and you decide to go new TV or actually you flipped them around, she was going to do the new stuff, because she was the entrepreneur, but in the process of doing that, half of the programming is going to be lost, right? So --

MR. McFADDEN: No.

MEMBER DEFALCO: No?

MR. McFADDEN: No.

MEMBER DEFALCO: Okay.

MR. McFADDEN: I don't mean to interrupt, but --

MEMBER DEFALCO: No, please, yeah.

MR. McFADDEN: Let me clarify that example, because that's a really important point. Now, so in that example, where I am using the current transmission, I will be transmitting both of our programming. So I would be transmitting Krista's current programming and my current programming using the current transmission standards.

MEMBER DEFALCO: Thank you for clarifying that.

MR. McFADDEN: Actually, it's an important point.

MEMBER DEFALCO: Yes, it was.

MR. McFADDEN: Thanks for asking that question.

MEMBER DEFALCO: What happens in a rural area where there is only one broadcast, over-the-air broadcast that is reaching the, you know, very rural, the outskirts of the rural area, so to speak? I mean, if you convert it, then the people who have the old TVs are out of luck. And if you don't convert it, then you never get the benefits of the new.

MR. McFADDEN: Sure. So I think one of the issues with this being a -- one of the reasons that we envision this being a purely voluntary transition is one of the luxuries that broadcasters had with the DTV transition is they had extra spectrum, right? That broadcasters could begin operating on a channel using their DTV signal, continue to operate using their analog signal and when we got to the cut-over date, broadcasters could just turn off the analog signal, so it was a very, very easy and quick transition.

We are not going to have that this time, so to continue to protect viewers, broadcasters are going to need to cooperate and reach voluntary agreements to ensure that viewers are protected.

While our friends in the wireless industry, for example, when they seek to move from 3G to 4G and reform spectrum, that is spectrum footprint that allows them to do that. No broadcaster has a spectrum footprint that covers the entire nation that would allow them to do that kind of reforming on their own. So they are going to have to reach cooperative agreements.

I think the reality is, to get more directly to your question, that this is a transition that is going to probably begin in more heavily congested areas first and we will see how the transition unfolds. If there are specific markets where there is only a single broadcaster, we will have to address that on a case-by-case basis.

MEMBER DEFALCO: Thank you.

MR. McFADDEN: Absolutely.

MEMBER GOODMAN: I also had a question about the simulcasting arrangements. Like given your example, if I am an advertiser, currently I can go compete with Peter. You guys can compete for my dollars.

Now, if you are into simulcasting arrangement, how does that affect my ability as an advertiser to engage in that kind of behavior?

MR. McFADDEN: Totally unchanged, because the viewer will continue to receive the two separate streams of programming. So it will just be -- will be broadcasting from the viewer's perspective on entirely different channels.

MEMBER LIEBERMAN: So I also had a question about the simulcasting.

MR. McFADDEN: Okay.

MEMBER LIEBERMAN: So the 3.0 is going to be offering as well as the 1.0 for the consumers that have televisions that haven't been upgraded. Will the 1.0 version be of the same resolution and same that they are receiving prior to that sharing arrangement?

MR. McFADDEN: That's a great question and thank you for asking that. It is an important consideration. Obviously, broadcasters have every incentive and wants to maintain the highest quality signal that they can, because that is our business. Serving viewers and offering them the best picture, that's what we do.

We certainly envision doing that. Many stations are required to offer, for example, an HD signal under their network contracts, and so they will continue to do that. There may be cases during the transition where stations -- not every station will be able to continue to offer an HD signal. We think those will be extremely rare scenarios, but that is one reason that we are seeking to implement this transition under the Commission's current rules, which only require broadcasters to offer an SD signal.

There is an important caveat that I want to throw out there which is the Commission has already conceptually embraced this idea with respect to the hopefully soon to be concluded Incentive Auction under which stations can participate in channel-sharing arrangements. This -- these simulcasting arrangements would be conceptually virtually identical to channel-sharing arrangements.

So the Commission is not imposing an HD requirement or any kind of resolution requirement on stations participating in channel-sharing arrangements. Similarly, we think the same logic would apply here.

MEMBER LIEBERMAN: I just -- one follow-up.

MR. McFADDEN: Sure.

MEMBER LIEBERMAN: I want to also ask about multi-cast and whether or not that may disappear under people continuing to get the 1.0, but in terms of the end date of the transition, I understand it's voluntary, there is no end date, but there could come a time when some people just have not converted. And I understand that you are talking about you are not asking for any subsidy, but for low-income consumers who, you know, have not been able to purchase new television sets, what do we do at the end in order to ensure people aren't losing services?

MR. McFADDEN: So that's another great question, Ross, you are two for two. So one of the things that we have specifically agreed with some commenters on, such as NCTA and I believe AT&T said this as well, is that the issues around a sunset potentially of the current standard should be addressed in a separate proceeding. This is not a case where broadcasters would unilaterally decide on their own, you know what, that's it. We are done with the current standard.

Instead, the FCC would have to give people permission to stop.

To get to your question of what do we do with people who have been -- have not adopted new equipment whenever that time frame might arise, frankly, we are going to have to cross that bridge when we get to it.

One thing that I probably should have mentioned earlier is there are options for people to buy equipment that would allow them to receive the new signal without going to the full step of upgrading their whole television set. We are confident that there will be dongles, which is a terrible word, but I think you all know what I mean.

The idea that you could have a device that is capable of receiving the ATSC 3 data signal that you could just plug in to your current set to allow you to continue to receive programming. That would, obviously, be a much lower cost option than upgrading your entire set.

MEMBER LIEBERMAN: Okay.

CHAIR BARTHOLME: Ken? Ken, can you raise your --

MEMBER McELDOWNEY: Oh, I did. Better?

CHAIR BARTHOLME: Yes.

MEMBER McELDOWNEY: Okay. Yeah. I mean, I'm concerned -- I just don't see how you are going to reach a critical mass for the voluntary standard, because you are talking about a relatively small subset of people who watch TV and somehow you have to, one, convince the broadcasters to start doing the new Next-Generation at the same time. Then you have to convince the manufacturers that serve the customers out there. Plus, you have to convince the customers that it's going to be a significant enough upgrade that they've got to spend $700 or $800,000 -- $700 or $800 to get a new TV set. And I guess part of my concern is I know you are talking about it being voluntary. I just can't see how it is ever going to work without a sunset.

MR. McFADDEN: I would like to address that in two ways. First, and I don't mean -- well, let me just say I think what broadcasters are asking for is permission to take that risk and let us worry about that risk. Let us absorb that risk. We acknowledge that there is a risk. We are just asking for permission to take it.

Second, I just want to emphasize, you know, I work for the National Association of Broadcasters. We get direction from our board consisting of member stations telling us what to do. I'm here pushing for the adoption of Next-Generation Television precisely because broadcasters are excited about it.

Convincing broadcasters to be interested in the ability to do more with their current spectrum is not going to be a heavy lift. And I would also say that convincing the consumer electronics industry to begin to offer equipment with these tuners is also not going to be a heavy lift, because they are already on-board.

And again, the United States is not doing this alone. South Korea has already adopted the ATSC 3.0 standard and they will be beginning transmissions in it. In fact, I think they have already begun some transmissions in it.

And so I think the idea of seeding the marketplace with compatible equipment will happen not only domestically, but internationally.

CHAIR BARTHOLME: Debbie?

MEMBER BERLYN: Yeah, a very simple question. I was wondering if you have any fact sheets on this or information on your website that those of us who need to explain this to others could use that would be helpful?

MR. McFADDEN: Yes and yes. We do have information available on our website. I will also give you a card and anybody else who wants one and I will be happy to follow-up with you and send you more information.

MEMBER BERLYN: Great. Thank you.

CHAIR BARTHOLME: And we would be happy to funnel that. If you issued it our way, we can get it out to the Full Committee.

MR. McFADDEN: Terrific.

CHAIR BARTHOLME: One of the things that you mentioned when you were talking about this is the ability to more specifically locally target weather alerts and things like that. Is that going to come from consumer self-registering for those or will there be some sort of data location information that is being collected by this Next-Generation technology and then that makes a decision of how to send out those alerts to the consumers?

MR. McFADDEN: Yeah, so the idea of being able to offer integrated services, interactive services, advanced emergency alerts, those are things that we can do for consumers who have a broadband connection. Our signal will be able to integrate the broadband connection, so we could offer those kind of integrated services. So location information would likely come from someone's broadband connection.

CHAIR BARTHOLME: Okay. Great. Thank you. Irene?

MEMBER LEECH: So what about the consumers who have limited broadband connection and who have caps? For example, right now, at my house we are paying $225 a month for 50 gig, so that limits a lot of the choices that we could make. But that -- I keep comparison shopping and I can't seem to get it better.

MR. McFADDEN: I would like to commend to you the possibility of buying an over-the-air antenna, so that you could receive television programming for free over-the-air. The benefits to you, as that kind of consumer or to a consumer that doesn't have broadband at all, would be from an ATSC 3.0 transition, would be that the Next-Gen signal would still allow you to receive a much better picture or additional multi-cast streams that could offer more diverse programming opportunities and better sound.

Because the new standard allows us to adjust our signal in different parts of our service area, we would still likely be able to offer some degree of targeted emergency alerting based on where we know where you sit in a service area, but it wouldn't be as robust or interactive.

CHAIR BARTHOLME: Mark?

MEMBER DEFALCO: Just a real quick question. Oh, I'm sorry. Just a real quick one. Did South Korea roll the site the same way on a voluntary basis? And, you know, the way you have laid it out, is that what they did to it with their implementation?

MR. McFADDEN: So South Korea has a more ambitious goal. They have mandated that the 2018 Olympics be shown in Ultra High Definition. So the way to get there was ATSC 3.0. So they are going about this a different way than we envision. I don't know if they have yet specified a flash cut. I'll look into that.

CHAIR BARTHOLME: Real quickly, are there any questions from the phone? Irene, last question.

MEMBER LEECH: I was just going to ask whether -- just South Korea is so much more densely populated and it's not nearly as big of an area, it's a different situation than we are facing, I believe.

MR. McFADDEN: Sure. Although we have been through television transitions before. We transitioned to color. We transitioned to DTV. And so we think we can survive another transition. And ultimately, we believe that viewers are compelled by programming. If we offer a better service, we think people will want it.

CHAIR BARTHOLME: All right. Thank you for joining us, Patrick.

MR. McFADDEN: Thanks so much for your time.

CHAIR BARTHOLME: Appreciate it. So up next on the agenda, we are going to have a presentation that will provide us with an update on the Incentive Auctions. Charles Meisch, Jr. is a senior advisor for the Communications and Policy Group related to Incentive Auctions Task Force at the FCC. So welcome, Charles.

MR. MEISCH: Hi.

CHAIR BARTHOLME: Thanks for making time.

MR. MEISCH: Absolutely.

CHAIR BARTHOLME: And do you have a deck?

MR. MEISCH: I do have a deck.

CHAIR BARTHOLME: Okay. Then if you sit there, you are queued-up and you can control it right from the laptop then.

MR. MEISCH: Perfect. Okay. Well, thank you all for inviting the Task Force to speak today and provide an update. Scott, thank you for your help this week getting it prepared.

So to look back, it was just quite -- not quite a year ago that one of my colleagues from the Task Force came to brief you all on the status of the Incentive Auction and, at that point, we were still two months away from starting the auction.

As I sit here today, if you have been reading the news, you know that, you know, the auction now is nearing its end. So the timing of this meeting, this briefing really couldn't be better.

I have got four goals I'm hoping to achieve before taking your questions.

First, I want to quickly recap what has happened with the auction over the last year.

Second, I want to report to you on the Consumer and Taxpayer Benefits that we already know of as of today.

Third, we will take a look at what is happening next, what will happen with the rest of the bidding, when we will announce the results and when viewers will learn what is happening to stations and their markets.

And finally, I want to update you on the Commission's plans for a smooth post-auction transition as stations move to new channels and Forward Auction winners deploy equipment with the spectrum that they will win this auction.

And most importantly, report on our plans to educate consumers about how to retain access to the channels on which they rely.

And I think everyone here knows the Incentive Auction is really the first attempt anywhere to repurpose spectrum for 21st Century uses, using a two-sided auction: A Reverse Auction among broadcasters bidding to relinquish their spectrum rights and a Forward Auction which bidders for wireless licenses could obtain that repurposed spectrum.

The Incentive Auction is unique among the FCC's previous spectrum auctions in that, one, we didn't determine the supply of spectrum to be sold. Rather, the broadcast industry would do so based on their participation level.

Second, there would be a cost to acquire that supply of spectrum.

And third, demand, measured in the revenues from the Forward Auction, would be to cover those costs. And if they did not, then we would need a mechanism for lowering the supply to meet that demand.

The system the Commission designed at Congress' direction and with its input would offer all three of those variables. So here is what happened. Here is what has happened since last we met:

On March 29, 2016, eligible broadcasters made their initial commitments to participate in the auction at the opening bid prices we had offered them back in the fall of 2015.

Based on that robust participation, we were able to begin the auction at a clearing target of 126 megahertz. This is the highest target among the nine possible band plans adopted by the Commission with a supply of 100 megahertz of licensed spectrum.

Bidding in Stage 1 of the Reverse Auction yielded a clearing cost of more than $86 billion. Bidders in the Forward Auction put forth about $23 billion. Because the revenues did not cover that clearing cost, we moved on to Stage 2.

In Stage 2, we lowered the clearing target to 114 megahertz, 90 of which would be licensed, meaning that we would need to buy fewer station licenses in the Reverse Auction, which then lowered the clearing cost to $54 billion against the Forward Auction revenues of $21 billion.

Again, because the revenues did not meet or exceed that cost, we moved on to a third stage. In the third stage, we lowered the clearing target down one more level to 108 megahertz cleared with 80 being available at license. The clearing costs for that stage were $40.3 billion against just shy of $20 billion in revenue for this, again, reduced supply.

So we are currently in Stage 4 of the auction and, as of January 18th, we know that Stage 4 will be the final stage of the auction. At a clearing target of 84 megahertz, bidders established a clearing cost of just over $10 billion. Revenues coming in to this morning's bidding were a little over $18.5 billion.

These revenues meet the two prongs of the Commission's Final Stage Rule. The clearing of the cost component that I described earlier, as well as a fair competitive price component of a $1.25 per megahertz pop average in the top 40 markets.

So what does this mean for consumers and taxpayers? Knowing that the auction will end in Stage 4 tells us that we will have 70 megahertz of license low-band spectrum, which will be the bedrock of or part of the bedrock of America's continuing global leadership in wireless service, including 5G.

We know that we will have 14 megahertz of new unlicensed use spectrum for innovative new devices and services. We know as of right now that at least $6 billion will go to the Treasury into the American taxpayer for deficit reduction.

And finally, we know that $10 billion will go to the winning participating broadcasters who will actually receive part of the economic benefits of repurposing the spectrum for wireless use. And because they have the option of continuing to broadcast, if they bid to channel-share or move to a lower frequency, this is money that can go back to be reinvested into programming other community-focused activities.

So now that we know where the auction will end, I want to take a moment to discuss when it will end and what happens next.

As of this morning, bidding in the clock phase of the Forward Auction continues. By rule, the clock phase closes when there is no excess demand for any product in any market. In other words, if all 416 markets have settled, except for a bidding war in say Guam, we continue the rounds until that bidding concludes.

I have often used Guam as a hypothetical example, but sometimes reality kind of illustrates the point for you. As of around 10:00 yesterday morning, in the PA that covers Guam and the Northern Mariana Islands, you can see that there is actually excess demand in both of the categories of the licenses there.

So we use this as an illustrative example that when you see equilibrium against supply and demand in those -- in all of these markets, that's when bidding the clock phase would close.

So then what happens? At that point, bidding will be concluded and we will hold an assignment phase in which the winning Forward Auction bidders will have the opportunity to bid further for specific frequencies.

We will release training materials a few business days after the clock phase closes. We will give the bidders an opportunity to preview and practice with the bidding system and then begin the bidding. And we expect that process to take several weeks.

At that point, all bidding will be concluded. And the staff will prepare and release a public notice announcing the conclusion of the auction. That public will -- that public notice will contain three important bits of information.

First, a list of all the Reverse Auction winners, their incentive payments amounts and the bid option. Are they going off-air? Are they channel-sharing? Did they move to another frequency?

Secondly, a list of Forward Auction winners and by market, including the prices paid per license, number of licenses they won and the frequencies for which they will then later apply for licenses.

And third, a list of the new channel assignments for all auction-eligible stations staying on the air.

So at that point, the public will know which stations are moving to new channels and which are going off-air and their markets, if any.

The public notice will also signal the commencement of the 39-month post-auction transition period. The Task Force and the Media Bureau proposed a phased broadband -- Broadcast Transition Plan back in late September by which stations would be assigned to one of 10 phases, at the end of which they would have to cease operating on their pre-auction channel.

We proposed this to ease coordination issues among stations and limit the risk of harmful interference between stations during testing ensuring the viewers maintain clear reception.

We have received comments from the public and stakeholders and I expect that we will have the final plan actually out later today. But let me just highlight a couple of things we propose that particularly should ease the transition for consumers.

First and foremost, the plan proposed limiting the number of times that consumers in any market would have to rescan for Channel 2.

And secondly, we propose giving stations that are considered complicated, or I think the term actually is super complicated, additional time to make their transition by scheduling them in later phases of the 10. The idea here being to ease coordination, particularly on complicated tower sites.

If you are familiar with the arrangements at the Empire State Building or Mount Sutro in the Bay Area, you have got massive complexes with a number of different users. Some are stations who may be moving channels, some may not be moving channels, some may not be TV stations.

You have got AM/FM radio. You have got wireless, mobile wireless sites. The idea here is to make sure that we can very carefully, you know, give the time for those different uses to coordinate, so there is no disruption in anybody's service, not just TV.

It appears to me that I have gotten a little behind on my slide deck. Okay. So helping consumers understand all of this is a challenge that we feel can only really be met with a well-coordinated group effort, but we are taking the lead.

The Commission, Consumer and Governmental Affairs Bureau is preparing for an extensive consumer outreach effort geared toward reaching all affected Americans where they live and work. But we have already begun to do some work on this and the things that we can do.

For instance, we are recording a new PSA-style video reminding over-the-air viewers how to rescan their tuner for new or moved channels and will provide some basic instructions on how to do so.

We are preparing scripts and troubleshooting guides for our consumer call center staff. We are already providing and continue to update a Consumer Q&A on the auction, on the Incentive Auction webpage. We are preparing or updating our consumer guides, so that viewers understand the type of over-the-air antenna they may need in their market going forward.

And wherever possible, as I think most of you know, we want to make these materials available in multiple languages. We already do this first translate to Spanish. Our -- we are making arrangements right now to add our capacity to do this in other languages, particularly Asian and Pacific Islander dialects.

So we're hoping to have more to report on that by next we speak.

I recall that all the stations that are transitioning are obligated to comply with your notification requirements that were established in 2014 in the Incentive Auction Report and Order. Those obligations include -- indicate the date that they are moving or going dark, where viewers will be able to watch that station after that date, if applicable, and how to get more information.

Once the auction concludes and the restrictions on certain prohibited communications among bidders is lifted, we will be able to convene broader meetings with stakeholders to coordinate efforts nationally, regionally and locally. And we will have sufficient time to do so.

If bidding in the clock phase ended today, hypothetically, here is what we look -- here is sort of a layout of the time line we have in front of us.

As I mentioned before, we have got several weeks to do the assignment phase, both the bidder education and training and then the actual bidding.

After that point, we anticipate we would need a few weeks to finalize the channel assignment plan and the rest of the information that will go into the public notice closing the auction.

From that point, you typically, we haven't put a schedule out on this yet, but if you look at past auctions as prologue, it takes about three months to start getting payments in for the Forward Auction license winners. That is the first point at which we would be able to then begin paying the winning broadcasters.

Their obligations require 30-days public notice if they are going off the air as a result of the auction and they must be -- but they must be off by 90-days after they get paid. So, you know, this easily puts us if -- again, if the auction -- if the clock phase ended today, that puts us, you know, well close to the fall before any station would go dark. We are not there yet, obviously. So but just to give you a rough idea of the time line we may be looking at.

As we coordinate consumer outreach, I expect that this group will hear much more from us and we appreciate any guidance that you have to make this transition successful beginning right now. So with that, I am happy to take your questions.

CHAIR BARTHOLME: Krista?

MEMBER WITANOWSKI: Hey Charles, how are you?

MR. MEISCH: Good. How are you?

MEMBER WITANOWSKI: I have two questions.

CHAIR BARTHOLME: Krista, your mike is not on.

MEMBER WITANOWSKI: Oh, it's not on? I should know better. I have two questions. Can you let us know if the FCC has sent out the confidential letters to the individual broadcasters yet after this last statement to let them know where they are going to end up?

MR. MEISCH: Right. Sure. Am I on? I can say not yet. I think what we propose doing or at least what we expect to do is it would take about 2 to 4 weeks from the Final Stage Rule.

MEMBER WITANOWSKI: Okay.

MR. MEISCH: Which was just a week ago. So it -- but yeah, it will be coming.

MEMBER WITANOWSKI: Great. And my second question is, in your opinion, when do you think the quiet period is going to end, in your opinion, based on how things are going?

MR. MEISCH: So rather than give you my opinion, let me tell you, let me tell everyone what is happening. So as you know, the rules are, you know, as it applies broadcasters, the closing PN is that date and then I think for the winning bidders on the -- were all affected entities or covered entities on the Forward Auction side, as evidenced by either the long form or -- yeah, but certainly I know on the broadcaster's side when we put out the transition plan proposal, the commenters asked us to consider, you know, releasing that a little bit earlier or making some modifications to it, so that is as recently, I think, as this week we have also received comments asking us to consider that.

So that's before us, that's as much as I can say about it now, so that's kind of weird, that's where things stand.

MEMBER WITANOWSKI: Okay. Thanks.

CHAIR BARTHOLME: Any other questions in the room or on the phone? I was wondering if there had been any analysis done about the number of markets across the country that might be losing sort of unique in-language programming as a result of the auction or might have the competition in local content being greatly reduced from say maybe two or three stations down to a single remaining station?

MR. MEISCH: So in press reports, I think, I have seen other entities doing that. I think our position has been it is really hard to handicap that until we have the auction. And we will know very soon, as I indicated, you know, the release of the information of actually who has won, who is moving and who is going off-the-air will be out soon.

And then I think, you know, more particular to your point, then we will be able to tell and there will be windows for any low-power or ineligible class A station who may meet some of those, you know, contents you are talking about. We will have an opportunity, if they are displaced, to come in and have us help them finding a new channel.

CHAIR BARTHOLME: Great. All right. Well, I think we will break early for lunch then if nobody else has any other questions.

MR. MEISCH: All right. My pleasure.

CHAIR BARTHOLME: Scott, do you have some lunch announcements?

MR. MARSHALL: I do. We will be convening in our breakout sessions at 1:15. There will be a bridge for each room. The USF -- I sent you all this information last night, though but to recap, the USF, Digital Inclusion Group will remain here in the CMR. Please, speak into the microphones there and identify yourself, so that we can get good capturing here in the room. It will not be broadcast.

The Tech Transitions Group will be just down the hall to my right in TWA 402445. It's on the left hand side of the corridor right after the intersecting corridor that leads out to the lobby. And Steve and Mark will set up the call there for those wishing to dial in.

The Privacy Working Group will be up the stairs behind me and around the corner to the right, 448468. And we will be there, of course, at 1:15.

We will be coming back here at 1:4 -- 2:45 for report backs to the Full Committee. If people follow the proceedings on the Internet, you might want to check the videostream to see if we are actually back in session, but we are not quite sure how long these working groups might require. So we may, in fact, be a little earlier than 2:45.

So that's the story. Any questions?

CHAIR BARTHOLME: So really quickly, if we could have people interested in going to either the Tech Transitions or the Privacy Group ready in the room here at 1:10.

MR. MARSHALL: Perfect.

CHAIR BARTHOLME: Debbie can lead the Privacy Group up to that room and Steve can lead the Tech Transitions Group down the hall to that room.

MR. MARSHALL: That will work.

CHAIR BARTHOLME: And then everybody should be where they need to be.

MR. MARSHALL: All right.

CHAIR BARTHOLME: And able to locate it.

MR. MARSHALL: Anything else? Otherwise enjoy lunch. Thanks, everybody.

(Whereupon, the above-entitled matter went off the record at 12:22 p.m. and resumed at 2:46 p.m.)

CHAIR BARTHOLME: All right. So we are back at 2:45 and we should get started back up. I'm sure some people have planes to catch and other things they need to do on a Friday afternoon, so we will try to stay on time and on task here.

Hopefully everybody had some productive working group sessions. Thank you for everybody who stuck around and participated in those. I sat in on a couple and I felt like there was a lot of good activity going on and I'm glad that we are well under way and making progress.

On the topic of working groups very briefly, if you do have suggestions for other possible working group areas, we welcome those. We would be happy to add a fourth or fifth working group if it seems appropriate and it is timely.

You will remember from the beginning one of the things that we brought up was that in this CAC our goal is going to be to have working groups that were tied to things that were happening at the Commission and being timely rather than just having blanket broad-topic working groups that existed in perpetuity.

So if you feel like there is an issue that we are not covering that makes sense to cover, let Scott or I know and we will be happy to start a conversation about getting one up and going.

Typically, after the working group sessions, we have sort of updates from the working group chairs, so we are going to get rolling with that. And I'm going to start with Amina and Olivia from the USF and Digital Inclusion Working Group to let us know how they are going.

MEMBER FAZLULLAH: Thank you. So my update is, first, we are just going to do a lot of information sharing. The National Verifier Plan that just came out from USAC, I'm going to take a look at the Boulder Valley petition and the Microsoft petition on E-Rate.

We are passing around some outside reports. Free Press put together, I think it is called, Digital Deny. And of course, we are taking a look at Chairman Pai's Digital Empowerment Agenda.

The most recent CAF II decision for New York and then the FCC's recent release of the Digital Inclusion Plan. And then also some of the Digital Inclusion definitions, both from the FCC's Digital Inclusion Plan and also from the NTIA.

We are planning to put together a recommendation building off of the Digital Empowerment Agenda and also referencing the FCC's Digital Inclusion Plan. So we hope that will be available for the next CAC as a recommendation to vote out, but, you know, I won't put too hard of a time line on it, because it's a pretty ambitious piece of work so far.

We also suggested potentially doing a workshop before one of the CAC meetings on Digital Divide/Digital Inclusion issues. And this might be a way to allow the FCC to sort of dive into the issue that they have identified in the Digital Empowerment Plan as one of their premier issues, but would also give folks at the CAC the ability to, you know, extend a trip around their next CAC meeting and actually participate within a Digital Inclusion Workshop. So that was sort of one of our suggestions.

And then we also wanted to request updates going forward, so for the next CAC meeting, we are hopeful to get updates on USF programs from WCB and the Digital Inclusion Plan from CGB.

And last, we had a question on the Lifeline Awareness Week just, you know, when it will be rescheduled. Our understanding was that it might be rescheduled for some time in the spring, so we just wanted to get some feedback on that as well.

CHAIR BARTHOLME: And if we get feedback on any of that prior to the next meeting, we will be sure to push that along to make sure that everybody has got that information.

MEMBER FAZLULLAH: Great. Thank you.

CHAIR BARTHOLME: So next we will move to the Technology Transitions Working Group. Steve and Mark, you guys are up.

MEMBER POCIASK: Okay. This is Steve. Yeah, Mark and I, I think we had a pretty successful discussion today. We have nine action items coming out, to are presentations and seven are ideas that are still under development. I'll just list through them quickly.

In terms of the presentations, Mark, my co-chair, is going to be looking into getting AT&T as a speaker on one of our sessions to talk about the IT transition and the abrupt ending of the trials, a discussion of questions regarding Wireless Local-Loop, CAF money for rural areas and other issues such as caps on local wireless loops that might be used to replace DSL.

In addition, we are going to have -- we are going to try to get an FCC expert to present on the IP transition. Among other things, we are going to explore this concept called "unannounced forced implementation," where it may be that a particular segment of the network is converted to fiber without necessarily going IP and there is no 214 filed.

So what we are looking to do is find out if there are any issues related to that.

In terms of ideas for potential recommendations, we are just going to explore the following ideas.

One is regarding a general notion of regarding the transitions. Like including copper to fiber, the impact on unrepresented elderly rural consumers/people where English is not a second language and so on. We may even consider other aspects of it regarding people who don't connect and training.

Paul Goodman is going to take a shot at developing that. Regarding some subsidy issue on the IP transition, Ellrod is going to look a little bit into that and later, you know, we will share that with the USF Digital Inclusion Group, if it looks like it is something that will be going further.

We are also going to be looking at the potential for state and local impediments to the development of Next-Generation broadband and what we will have there is Paul, Ellrod, Irene, and possibly Kathryn might be looking into model code and guidelines.

The Next-Generation TV, the presentation we had today, I'll write up a paragraph for consideration and we have another-- I think Larry will be writing up something on spectrum and repacking.

And then so what we will do, let's see if -- I wonder if I missed anything here? Well, in any case, what we will do is when we get our presentations, the AT&T and the FCC presentations at our next call, we will probably go through these concepts and then we will go through the process of prioritizing them and seeing if there is a recommendation that we can flesh out.

So that's where we are right now. So still exploring ideas.

CHAIR BARTHOLME: Thank you, Steve. Debbie, Privacy?

MEMBER BERLYN: Thank you, Ed. So the Privacy Working Group has one action item, a fairly significant one. We have, by the Privacy Order, a task to come up with a standardized privacy notice and we are working hard on doing that.

We actually started that task back in 2016. I can't remember the exact date, Ed, but it was --

MR. MARSHALL: December 5.

MEMBER BERLYN: It was December. I knew that Scott would remember the exact date that we started that task. We have been working hard to do that. And as part of that task, we invited in a couple of guest speakers a few weeks ago: Lorrie Cranor, who until about a week and a half ago was the Chief Technologist at the FTC, and Serge Egelman, who is a professor at the University of California, Berkeley, and both of them experts on privacy issues, came in and talked to us about privacy disclosures. So that was very helpful.

We have done our own research and now we are finally starting to put pen or magic marker to paper and we sat down today as a group and started to sketch out some thoughts and we will continue to do that and I think we are going to make great progress over the next couple of months.

We will be coming to you all with a draft, at some point, and we will look to all of you with some feedback as well to meet our deadline of June. So I look forward to showing you something soon.

CHAIR BARTHOLME: And we would add to that that notice for those meetings has been going out to the full CAC, because we know that this is a topic that a lot of people have concerns about, care about and want to provide input on.

Feel free to hop on one of the calls, listen in, reach out to people that you know are members of the group or reach out to Scott, myself, Debbie directly if you have input, feedback, things that you think aren't being covered that should be addressed or have, you know, a concern about the direction things are headed. We are eager to hear that. We are hoping to collect those as the process moves along, rather than getting bombarded with them at the end, because we are under an actual hard deadline of June 1st.

MEMBER BERLYN: Yeah. As Ed says, it's an open process, so we welcome everybody's participation. All the meetings, there is a conference call open line, so Scott always shares that phone number. We welcome everybody's participation as always. So, yes, thank you all.

CHAIR BARTHOLME: Now, you are going to get out of Doodle poll to set up the next meeting, correct, Debbie?

MEMBER BERLYN: Yes, we don't have a date yet for our next meeting, but it will be some time not next week, but the week after and Scott will notice that meeting for everybody.

CHAIR BARTHOLME: Okay. I think that wraps up the report backs, unless anybody else has any working group comments or thoughts?

MR. MARSHALL: Comments from the phone line?

CHAIR BARTHOLME: Any comments from the public? I don't see anyone in the room. You did not get any in advance?

MR. MARSHALL: No.

CHAIR BARTHOLME: Okay. So let's thank CTIA again for lunch and for breakfast, because that was much appreciated.

(Applause.)

CHAIR BARTHOLME: We are tentatively holding Friday, May 19th, as our next full CAC meeting date and that would be here in this room and Irene is already looking and saying grades are due.

MEMBER LEECH: No, they are due the week before, so I will be somewhere else.

CHAIR BARTHOLME: Okay. If that is a conflict for you or you have already got some other stuff scheduled, please, reach out to us. One of the goals we were looking at in choosing that date was giving the Privacy Working Group as much time to finalize their work product as possible without running into the holiday weekend and then a June 1st deadline.

Mondays and Fridays are typically the easiest days for us to be able to secure, and they might even be the only days when we are to secure, the Commission meeting room to have meetings. So your choices are normally limited to Monday or Friday and we thought that that was a good time line, given the task that we had in front of us.

But again, if you -- if a lot of people have a conflict, we can look for another date. Please, reach out to Scott and myself, let us know and we will be happy to work with everybody.

And then I think I need a Motion to Adjourn.

MEMBER BERLYN: Before a Motion to Adjourn, can I just say, Ed, great job for a first meeting.

CHAIR BARTHOLME: Thank you.

(Applause.)

CHAIR BARTHOLME: Now, do I get a motion to adjourn?

MEMBER BERLYN: And a motion to adjourn.

CHAIR BARTHOLME: Can I get a second?

MEMBER POCIASK: Second.

CHAIR BARTHOLME: All in favor?

(Chorus of ayes.)

CHAIR BARTHOLME: So moved. Thank you.

MR. MARSHALL: Take care, everybody. Thanks a lot.

(Whereupon, the above-entitled matter was concluded at 2:59 p.m.)