United States Election Assistance Commission

Accessibility Roundtable Discussion

Held at

U.S. Access Board

1331 F Street, NW, Suite 1000

Washington, DC 20004

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VERBATIM TRANSCRIPT

ROUNDTABLE PANELISTS

1. Merle King, Moderator, Center for Election Systems, Kennesaw University

2. Dr. Diane Golden, EAC Technical Guidelines Development Committee (TGDC)

3. James Dickson, Chairman, EAC Advisory Board

4. Dr. Sharon Laskowski, National Institute of Standards and Technology (NIST)\

5. Ron Gardner, EAC Technical Guidelines Development Committee, U.S. Access Board

6. Rich Labelle, Executive Director, Family Network on Disability

7. Dr. Juan Gilbert, Chair of the Human Centered Computing Division, Clemson University

8. Lee Page, Associate Advocacy Director, Paralyzed Veterans of America

9. Deidre Davis, Director of ADA, Walmart Corp.

The following is the verbatim transcript of the Public Meeting Accessibility Roundtable discussion held on Thursday, August 5, 2010. The meeting convened at 9:15 a.m., EDT. The meeting was adjourned at 2:55 p.m., EDT.

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PUBLIC MEETING ACCESSIBILITY ROUNDTABLE DISCUSSION

MR. HANCOCK:

Welcome. We appreciate all of you coming this morning. My name is Brian Hancock. I'm Director of the Testing and Certification Division at the U.S. Election Assistance Commission. And on behalf of our Commissioners, our Executive Director Tom Wilkey, and everyone at the EAC, we appreciate you taking time out of your busy schedules this morning, certainly for the panelists and those of you in the audience, as well.

This -- as you know, the EAC is committed to improving accessibility in a number of ways. This morning we're going to mostly confine our discussions to ways to improve accessibility via our standards and through that, through the testing of voting systems that we do.

A lot of the discussion that we will have this morning stems from public comments that we received to the improvements to the next iteration and the changes to the 2005 Voluntary Voting System Guidelines that we're currently working on. We certainly hope that discussion today helps inform us and inform our Commissioners related to some very important policy decisions that we have, related to accessibility for that standards document.

We will introduce the panel momentarily, but first let me recognize some folks in the audience. First of all, I'd like to recognize our Chair Donetta Davidson.

CHAIR DAVIDSON:

Good morning.

MR. HANCOCK:

We have Commissioner Gineen Beech in the audience.

COMMISSIONER BRESSO:

Good morning.

MR. HANCOCK:

And we have our Executive Director Tom Wilkey. We have a lot of other EAC staff, and I would specifically like to thank, this morning, Emily Jones and Robin Sargent, who worked with the Access Board to help set this up, as well as James Long. And Ron, please allow me to take this time to thank you and the Access Board, personally, for providing us with this space this morning. It's a great new space. We're sure you're going to get a lot good use out of it, and we appreciate you allowing us to use it.

MR. GARDNER:

You know, last week the Access Board met here in Washington. Last week, the U.S. Access Board met here in Washington and we met in this space, and I believe it was the very first meeting ever held in this new space. We really enjoyed the meeting. It's nice to have the conference room. And for me it's just a delight to have you all here in our very own space, so thanks to our staff at the U.S. Access Board. It's a very accessible place, and the hearing system, I'm happy to say, is working perfectly.

So, in fact, I'm just going to take a second and let you know the only thing I have to do as a hearing impaired person is come in and hit one button on my hearing aid. All of the transmission, all of the equipment is already hooked up in the room. It's all here, present. All I got to do is walk in and hit my hearing aid and I'm hearing everything. So, it's just a cool place to be. So, I thank you.

MR. HANCOCK:

That's great, thank you. And thanks again for sharing the space with us.

The individual to my left doesn't need a lot of introduction. I think most folks in the room are familiar with Merle King. But for those of you that are not, Merle is the Executive Director of the Center for Election Systems at Kennesaw State University in Georgia. Merle has received a lot of awards over the years, deservedly so, for the good work that the Center does. In 2005, in fact, he was the recipient of the National Association of Secretary of States' Medallion Award for his work with elections in the State of Georgia. And for those of you that aren't familiar with the Center, the Center for Election Systems does provide technical assistance in support of the Georgia Secretary of State's Office and all 159 counties within the State of Georgia. It's a big job and it's something that they have done well over the years.

And with that, I give you Merle King.

MR. KING:

Thank you, Brian. Well, good morning everybody. It is a pleasure to be here. And in honor of the new furniture, I'm putting my cup on a napkin on this table.

[Laughter]

MR. KING:

I know Mrs. King would make me do that if I were home.

But it is great to be here. There's clearly some old friends at the table, and some new faces, which is great.

So, to get started this morning, I want to just kind of go over some of the ground rules that we've used in the past for these roundtables, and if you've been with us before, they'll sound familiar.

In just a moment, I'll ask people at the table to introduce themselves, a little bit of background to provide context to the responses that you'll be providing later. Because we have several vision impaired attendees today, I think it would be appropriate that before we speak, we each identify ourselves, at least, through the morning, until folks can begin to recognize voices and associate them with people. I would ask that everybody turn off, or turn down, their cell phones and BlackBerries. I've dug mine out so that I don't get surprised, nor you, as we go through this. When it is your opportunity to speak and you want to share a response to the question, if you would turn your tent on side, stand it up like this [indicating]. And that helps me identify the order in which to call on people and it helps me remember who is in the list.

We have, I think, 12 questions that we want to try to work through today, and I think we can make it through that. It will mean staying on task. We'll take a break this morning. Probably won't take a break this afternoon when we come back from lunch, since we're shooting to adjourn at three, but I will try to push through the

discussion to get everything covered. But please note that, at the end of the day, there will be an opportunity for each of you to summarize, not only the salient points that you wanted to make about the issues that we discuss today, but also an opportunity to add to prior discussions. If something occurs to you, as it often does to me, later in the day, I'll be reflecting back on a conversation. So, there will an opportunity for everybody to summarize their comments at the end.

With that then, I'd like to start with the introductions of people. I'll just ask you to briefly identify yourself and what your background is, relative to accessibility issues in voting. Rich, I'm going to start with you, and then work our way around the table, this way.

MR. LABELLE:

Thank you very much, I appreciate it, Merle. And thank you to the EAC for the invitation to be here today. My name is Rich Labelle, and I am Executive Director of Family Network on Disabilities. We are a grassroots advocacy organization, family led, family driven, serving all persons with disabilities of all ages and their families and professionals who work with and serve them, as well.

I have personally been involved with accessibility issues since the 2000 elections in Florida. And, I was saying earlier to Dr. Gilbert, that we are now celebrating the tenth anniversary of the 2000 elections in Florida, so it's…

MR. DICKSON:

Bring out the cake.

[Laughter]

MR. LABELLE:

…it's been an interesting time, but thank you again.

MR. KING:

Thank you Rich. Juan?

DR. GILBERT:

Good morning, I'm Juan Gilbert, coming from Clemson University, where I'm a Professor and Chair of Human Centered Computing in the School of Computing there. And what brings me here is we're doing research on accessible voting technologies, in particular, a prototype system we built called Prime III. So, I'm glad to be here, and thanks for inviting me.

MR. KING:

Thank you, Juan. Ron?

MR. GARDNER:

My name is Ron Gardner. As I mentioned, I'm with the United States Access Board. I was appointed by President Bush and my term extends over under President Obama. Previously, I've been the legal director at the Disability Law Center, which is the P&A system. Many of you in the disability field may be aware of the protection and advocacy system that's been set up for two or three decades now. I was the Director of the Institute on Blindness at Louisiana Tech University Graduate School, there, for a few years. And I've been a member and elected leader in the National Federation of the Blind for several years.

So, it's a pleasure to be here. And, again, welcome to the Access Board.

MR. KING:

Okay, thank you, Ron. I'm going to skip Brian, if that's okay Brian.

MR. HANCOCK:

Please.

MR. KING:

Okay, Jim Dickson.

MR. DICKSON:

I'm Jim Dickson, with the American Association of People with Disabilities. Benjamin Franklin once described democracy as two wolves and a lamb sitting down to decide what to have for lunch. He went on to say, liberty is a well armed lamb contesting an election. I've been involved in working to make sure that we will someday reach that day when everybody votes, mostly because I'm personally -- no, I was going to make a smartass remark, but I won't.

That's all.

MR. KING:

All right, thank you, Jim. Diane.

DR. GOLDEN:

Diane Golden, and I'm currently a member of the Technical Guidelines Development Committee for the EAC. And I, actually, am retired, but I've said a number of times, I think I'm failing miserably at retiring, but if there's something like being successful at retirement, I'm doing a number of part-time things. But I was the Director of the Missouri Assistive Technology Program office for almost 20 years, so my background is assistive tech.

MR. KING:

Thank you, Diane. Sharon?

DR. LASKOWSKI:

I'm Sharon Laskowski, from the National Institute of Standards and Technology and I've been the lead on Chapter 3 of the Voluntary Voting System Guidelines, that is the usability and accessibility, the human factors guidelines, and the associated test methods.

MR. KING:

Okay, thank you Sharon. Deidre?

MS. DAVIS:

Yes, I'm Deidre Davis. I'm currently the Director of Americans with Disabilities Act Services for Walmart Stores, Inc., the world's largest company, whose goal is to be the retailer and employer of choice for people with disabilities. I go back to this issue of voting accessibility from the days when we had the campaign, Disabled But Able to Vote, around the country. I have been a longtime grassroots advocate/attorney/enforcer/implementer of many of our federal laws and at one point served as the Deputy Assistant Secretary for EEO and Civil Rights for the U.S. State Department in President Clinton's administration. So…

MR. KING:

Thank you Deidre, very good.

Well, let's jump into it. We have 12 questions, and what I would like to do is read the first question, and then ask for responses from the panel. I want to reflect on Brian's comment this morning about the purpose that we're about today, and it's to help provide the EAC with insight and guidance regarding accessibility issues, in, not only the design of voting systems, but ultimately the standards and the testing protocols to those standards.

The first question is part statement. The disability community is diverse. The accessibility issues faced by voters are varied and the solutions to these issues require input and review from a large number of constituencies. Given the representation at this roundtable, are there viewpoints and experiences that are absent? And the purpose of this question is to assist the EAC in identifying, are there other voices that need to be brought to these kinds of meetings in the future that would be important and relevant to the identification of accessibility issues in voting systems.

MS. DAVIS:

This is Deidre Davis here. I think from my experience, the minority community with disabilities doesn't have a voice, all the time, around the table. And of course, if you're in an urban setting and access is a major issue anyway, voting accessibility, getting to the polls, understanding what your rights are has, from my experience, not necessarily trickled down to that community and those communities. So, I think those folks who live in urban areas for the most part, minorities with disabilities, have been disenfranchised from a lot of the processes that we, as a disability rights movement, have been engaged in for years.

MR. KING:

All right, thank you. I want to come back and follow along with questions on that. I've got Rich, and then Jim, I think. Okay, so Rich first.

MR. LABELLE:

Thank you, Rich Labelle. I would echo those comments, and also include the various groups of unserved and under-served persons

with disabilities, including those persons who live in very rural areas, who often face many challenges, not only in access and transportation, in getting to the polls, but the types of voting systems that they are presented with, once they get to the polls.

Our organization generally encourages the participation of panelists such as this, of self-advocacy with disabilities. This is an extremely impressive panel with representatives of a broad range of perspectives. And not by way of criticism, but I do not recognize any self-advocates with development or cognitive disabilities. And again, I say that by way of suggestion and encouragement to include the self-advocates from the full spectrum of persons with disabilities.

MR. KING:

Okay, thank you Rich. Jim, and then, Brian.

MR. DICKSON:

Jim Dickson. I want to echo the question of race. I think that's very important.

I was going to mention what Rich just mentioned, the need for folks to be here, with intellectual disabilities. The other two groups that I think are significant and are not -- in terms of size of the electorate, that are not here, learning disabilities and people reflecting the psychiatric survivors.

MR. KING:

Okay. All right, Brian.

MR. HANCOCK:

Thank you, Merle. Certainly, the two groups that I'm going to mention are not members of the disabled community, but they are

integral in implementation of the things that we're talking about here, and that would be election officials, first of all. And we actually did invite two election officials. Rokey Suleman, the Director from D.C., was invited, but was not able to attend. We also invited Nikki Trella from the Maryland State Board of Elections, who, also, unfortunately, was not able to attend. So, I just wanted to remind everybody that they're important and those folks were invited.

And I guess, the other obvious group that we're missing, outside the disability community, would be the manufacturing community. And that's something certainly -- since those are the folks that are implementing the standards directly, those folks probably should be brought in at some point.

MR. KING:

Okay, thank you. Sharon?

DR. LASKOWSKI:

I'll just add the aging population, who don't typically view themselves or identify themselves as having disabilities, but have many of the disabilities that we talk about here. And I think that there is a need for more and more testing and experimenting with their use of voting systems.

MR. KING:

Thank you. Diane?

DR. GOLDEN:

Diane Golden. And the great thing about waiting until last, is, I can cross things off my list that people have already mentioned. And Sharon just picked up the aging, but I had listed that with

combinations. That particular population, because their functional limitations are age related, they tend to be clustered. As you age, your vision tends to -- your near vision tends to deteriorate, all of us who have reading glasses. Your hearing tends to deteriorate. That's an aging issue. Even if you're not wearing aids, et cetera, you still lose high frequency, you know, acuity, et cetera. You tend to lose fine motor skills. So, the whole aging process packages a set of functional limitations that have direct implications for voting systems, and user selectiblity of features, and multiple features. So, I just think that's an important thing to keep in mind, or have represented.

And the group that, literally, I'm not seeing here, and we struggle with, in terms of accommodating with access features, are people with significant fine motor issues. And you know, we'll get into this, but that group of people is very heterogeneous in terms of what causes the fine motor limitations, whether it's cerebral palsy or multiple sclerosis, or ALS, or any. There's just this -- and they all manifest themselves differently. And I think that's a critical constituency group that somehow we need to make sure is very actively involved in any decisions about the standards for that equipment, because that's a large group of people when you combine all of those disability groups together, whether it's, like I said, CP or any of the other myriad of things that can cause fine motor problems.

MR. KING:

Thank you. Welcome.

MR. PAGE:

Thanks. Excuse me, I'm sorry I'm late. I'm Lee Page with PVA. And the traffic was an hour and ten minutes to go seven miles, bumper to bumper.

MR. KING:

Well, we're glad to have you.

MR. PAGE:

Thank you.

MR. KING:

And we welcome your participation.

I wanted to come back to a point that was raised in this first question. And I think Diane introduced this notion of the combined, if you will, synergistic effect of some of these disabilities when they're aggregated into groups within the population. And you mentioned the aging population often has combinations of these factors together. But, three members of the panel mentioned minorities as having a significant issue with disability related to voting, and I want to come back to that and try to better understand how those disability factors when combined in the minority community play out. What insights can you share with the panel and with the EAC that might be instructive to identifying these issues for future panels, or for inclusion of additional participants in panels like this? So, I want to come back. Deidre, since you brought that topic up first, if you have any insights into why the disability issues are exacerbated in the minority community, what kind of insights you might be able to provide with that.

MS. DAVIS:

Right now? It may take a significant amount of time. No, in all seriousness, you know, to be truthful, for years, we celebrated 20 years of the ADA. The ADA has not majorly impacted urban communities. The ADA has not been forced to be complied with in our communities, whether it's a matter of non-knowledge, a matter of not wanting to, you know, sue people who are amongst us, mom and pop stores, whatever it is. That's one of the things that's critical.

Secondly, the history of poverty, lack of financial resources and then, of course, our history as a people around voting issues. I mean, we know how many people's shoulders we stand on every time we go to the polls. We know what the price that was paid for us to have equity at the polls, but you still have a large segment of people that say, "What's it's going to -- where's it going to change my life? And if you're in a chair, and you have to throw your chair down 12 flights of stairs to get to a voting booth because the elevator is not working, there's an inherent disincentive to that.

So I mean, there are a myriad of issues that combine, from lack of advocates in the community who can bring the information forward, to access issues, which are really the critical -- I mean, when you talk about physical barriers in our community that prevent people from getting places to places, I don't think that we have -- in D.C. for example, and I have been out of D.C. for five years, having moved from here to Bentonville, Arkansas, where it's refreshing not to have those, Lee, traffic issues, at all. But there's other issues that come about living in rural quasi-suburban Bentonville. But transportation is always lacking, and the Para transit doesn't work a

lot of times. I met the director of D.C.'s Para transit services last week at our ADA. President Obama had us here to celebrate the ADA, and that was wonderful to see, refreshing, but normally, that's not the case, you know, where you have an advocate, a person who understands the user of it. Public transportation, you know, is spotty, at best, in urban communities. So -- and you know it's not a sense of apathy. It may be a sense of more…

MR. PAGE:

Disenfranchised.

MS. DAVIS:

And just tired of fighting, you know, just tired of fighting.

MR. PAGE:

The issue may revolve around lack of employment also, you know. We all know that people who are employed, you know, are more in the mainstream of society, are out doing business, doing whatever, and take civic responsibility more, you know. And the minority community, you know, has a lot of issues besides, you know, being disabled, but also having a disability come -- you know depending on the person's time in their life, whatever their economic eco, you know, systems all of that stuff can actually put an extra large burden, you know, on the situation. So, I would say disenfranchised.

MS. DAVIS:

Clearly economic empowerment…

MR. PAGE:

Exactly.

MS. DAVIS:

…definitely hasn't been one of the issues in the minorities with disabilities community.

MR. KING:

Okay, thank you. Jim?

MR. DICKSON:

Jim Dickson. I think this, first, a disability community ourselves has an issue with this because people of color are way, way under-represented in our leadership. That's particularly important, and I'm bringing it back, specifically to voting, these are rough numbers that come from the Census. Amongst African-Americans, the disability rate is twice what it is amongst whites. Amongst people of Hispanic descent, the disability rate is 50 percent higher than it is for whites. On reservations, it's just off the chart.

If you look at -- putting some numbers on something that Lee and Deidre said, if you look at any of the poorest Census tracks in the country, I don't care whether it's rural or urban, suburban, half of the people in that Census track are going to have a disability. This is Census data, you doorknock the street or the project and you're going to find some -- at least one person with a disability living behind every door. And we know that poverty does correlate with a lack of participation, but I think a big piece of that is the lack of accessibility.

One other piece of information regarding learning disabled folks. In many of the bigger -- the major cities, what do they call those in the education world, great grand schools, in the big city public school systems something approaching a third of all African-American children are diagnosed -- well, I don't want to say

diagnosed because that's not the right word -- have the label of being learning disabled, one out of three. And just a footnote, that isn't to say they're getting the appropriate services, or even that those diagnosed -- those designations are accurate. But if you're labeled with a learning disability as a child, and then it comes time as an adult to approach voting with -- which is complicated, where there's lots of writing, those are all, I think, factors in distressingly low voter participation rates.

MR. KING:

Okay, thank you, Jim. Diane?

DR. GOLDEN:

Diane Golden. And I just thought I'd mention, in listening to some of this conversation, this issue is not unique in terms of making policy decisions and dealing with an extremely diverse disability community. I mean, clearly, that's the name of the game, whether you're talking about, you know, Section 508 or FCC kinds of things or the ADA or anything else. I mean the -- that's part of the issue is functional limitations vary and they can be of different severities and combinations.

The community, and for those of you that are part of the D.C. community and participate in CCD, that's sort of why the Consortium with Citizens with Disabilities was formed was to try to help policymakers work with the disability community as a coalition. And, you know, those of you that are active in CCD can talk more eloquently about all of the groups that are participants and members, but that includes learning disability association and, you know, TASH, that represents people with severe disabilities, severe

developmental/intellectual disabilities. It includes, you know, all of those United Cerebral Palsy and Easter Seals and et cetera, et cetera, and down the line, NFB, AFB, et cetera. So, that probably would be a group that could help, in working through, making sure that you have touched all of the right organizations representing all of those diverse interests, in terms of functional limitations of people with disabilities. So, just a suggestion.

MR. KING:

What's the name of that group again?

DR. GOLDEN:

Consortium for Citizens with Disabilities. And, I mean PVA is a member and APD is a member. You can -- and FBA is a member. You can kind of talk to any of these folks about CCD's structure.

MR. KING:

Okay. I've got Ron, and then, Jim, are you…

MR. DICKSON:

Yes.

MR. KING:

Okay. Ron, first please.

MR. GARDNER:

Just real briefly, there is the population that's been identified here and that's the senior population, those of us who are getting up there. The problem with that population, in addition to the fact that it's growing larger, in a larger percentage of the population, is the fact that there are so many that are not self-identifying, with respect to disabilities. They have seen perfectly all of their lives. They have heard perfectly. They've not had disabilities. All of a sudden

they're getting older and they identify with getting older. They don't identify with having a disability. They're not -- they don't self-identify. And so, we go into polling places and all of a sudden it's a fine little -- you know it's either going to be an electronic screen that they're not sure of, they can't read the print, there's a little box to push, it's in a gymnasium where the acoustics are out the window, they can't hear instructions. And that's the very population that is, really, least likely to ask for assistance. And they -- they're either not going to show up, because they don't want a hassle with it, or they're going to show up and fake it. So, I think that's a population that we need to consider, the fact that they don't self-identify.

MR. KING:

Okay, thank you. I appreciate the follow-up questions.

Question number two, really, is an encouragement for those of us who were at the meeting last fall to reflect back on some of the topics that came forward. And if I recall cognitive disabilities was introduced and discussed at great length, and that was very enlightening for me. I had not given the time and thought to that issue prior to that meeting. But in the intervening time we know that there is an emerging awareness of disabilities, there is emerging trends in the diagnosis and the adaptations of disabilities. Have there been new trends that have emerged since that last meeting, that we should be encouraged to look at, and add to that list that was developed out of the first meeting?

I've got Jim, first.

MR. DICKSON:

Jim Dickson. Just to address organizational resources for the EAC and the record, regarding cognitive disabilities, there's an organization called Project Vote, not to be confused with the Project Vote that has a national reputation or does voter registration drives. I can get the contact information, but it's an organization of people with developmental disabilities who have been working at engaging the intellectually disabled community. They've developed training programs, and it is very effective.

The other organization is the Justice for All Action Network. This is a relatively new organization, and it's made up of 13 national organizations, all of which are led by people with disabilities, and all of which have a significant membership base of people with disabilities.

MS. DAVIS:

What's the name of the second one, Jim?

MR. DICKSON:

JFAAN. It stands for Justice for All Action Network.

MS. DAVIS:

Justin Dart's…

MR. DICKSON:

Right, exactly.

MS. DAVIS:

…branding?

MR. DICKSON:

Yeah.

MS. DAVIS:

They have permission to take a patented thing like that?

MR. DICKSON:

Yoshiko was a big supporter.

MS. DAVIS:

Gotcha, I know.

MR. DICKSON:

I'm sorry, that was off topic but I wanted to get it in there.

MR. KING:

I think one of the things that I heard mentioned this morning that I don't recall being mentioned at the last conference was the learning disabilities that I think is a new area. But I suspect that it's, as Diane described, it's in combination with, possibly, other factors that impact voting.

Any other issues that should be reflected on or added to the list that have not been previously identified or perhaps previously identified adequately? Brian?

MR. HANCOCK:

And this is just a thought that came to my head and this was more a question than a comment. And that is, you know, with the addition of multiple language minorities, I know with the next Census, I'm sure a lot of jurisdictions, additional election jurisdictions are going to be covered, you know, maybe that's something to think about is, the additional language minority issues for those folks that are also disabled. I don't know, is there thoughts on that?

MR. KING:

Rich?

MR. LABELLE:

Thank you, Rich Labelle. Our organization, in particular, struggles with this in a variety of contexts, particularly when we are encouraging government and other organizations across the spectrum to realize the literacy barriers in any language with which people may be faced when they're communicating with someone. So that simply translating, for instance, the ballot language into a particular language that is not English oftentimes simply does not serve the purpose intended of being able to communicate with people because of their literacy challenges. They may -- the persons at which that is aimed may not be literate in that other language, as well.

So, I think that there are strategies that are used in other countries that could be -- that have large populations that do not have high rates of literacy, such as strategies that are used in India for instance to be able to allow voters with low literacy skills to participate effectively in the election process that could be looked at and adapted to our election system. So that's something that is applicable, again, to persons with disabilities, as well as persons without disabilities.

MR. KING:

I don't think literacy was discussed much at the last meeting, either. I'll make a note of that.

Diane?

DR. GOLDEN:

Just a follow-up, definitely in my special-ed world, it's ELL community, and that is definitely a large, large growing population. Quite frankly, the beauty of access features is that it can address

those issues. Literacy is literacy whether it's caused by being a non-native English speaker or whether it's caused by some neurological issue that you have a "dyslexia" or it's caused by something -- it really doesn't matter why the literacy is an issue. The access features that provide access for people with low literacy work regardless of the cause. So, that's part of the beauty of, you know, user selectable and adaptable access features is that they can meet the needs of a huge range of people, if they're done, you know, in a usable kind of way.

MR. KING:

Okay. I want to follow-up, Rich, with a question that you -- an issue that you raised in the India system. Frequently what we have seen is when adaptations are developed to improve access to the disability community, that's the rising tide for all voters, that it improves the overall system. In the system that you described, in India, with adaptations for multi-language illiterate voters, do you see -- and it kind of ties in with Diane's point too, I think -- is there a potential there for it improving clarity, overall clarity in instructions and in ballot language?

MR. LABELLE:

Thank you, Rich Labelle. Yes, absolutely, I would think it certainly could. That's, you know, the well known curb-cut effect. It benefits everyone. And to the extent that, for instance, ballot language, that we can make, you know, that simpler, easier to understand, easier to access for everybody, I think that helps, generally, improve the quality of our democracy and would encourage participation. When voters are faced with, you know, ballot language, like for, you know,

referenda that, you know, take up a page-and-a-half on the ballot, in small print, that's often -- that's a challenge for me to get through. And I've been very fortunate to have, you know, a significant education. And so, you know, by eliminating those types of barriers, yes absolutely, I think that would help everybody.

MR. KING:

Okay, thank you. Diane, and I'd like to come back and just to get into the notes, what guidelines -- I'm sorry, what suggestions might you provide for identifying those technologies that help address the cognitive disabilities related to literacy, or other, kind of, group them together as, learning disabilities?

DR. GOLDEN:

In general, the kinds of access features, it's having combinations and user choice of things. I mean, that's kind of the rule of thumb for a lot of people with intellectual issues. Auditory, in addition to simultaneous auditory and visual is helpful. For some people, that's not helpful. They really do much better with either auditory or visual, alone, not the combination. So, the trick is, it almost has to do with, for lack of a better word, everybody's brain works differently.

MR. KING:

Um-hum.

DR. GOLDEN:

And you know, my style, and what works for me, is not going to necessarily work for the next person. So, the idea is, you know, user selectibility of features that work for me. And when you build those things in, redundancy of input and output alternatives, and

user selectibility that's why, quite frankly, electronic works so well because you can do that electronically. And that's why paper is such a problem. But, yeah, that's the end game, is, different ways of interacting with the piece of equipment; input, output and user selectibility. And that is the way to meet the most robust range of functional limitations.

MR. KING:

So, rather than a specific kind of monolithic collection of technologies, a smorgasbord for appropriate self-selection?

DR. GOLDEN:

Bingo. I said to somebody, I actually, you know, threw in the towel. I try not to bring props to every meeting, because I kind of get known as the AT person, but I brought an electronic enlarger and an Intel Reader. And the electronic enlarger is a classic example. It just -- I can show it to anybody who wants to see it, later. It enlarges, but there's selections of the size, there's selection of whether it's black on white, white on black, yellow on blue. That's critical, because one person with low vision needs one kind of contrast and size, somebody else needs a different one. So that's the name of the game, is user selectibility and, you know, manipulability to meet the needs.

MR. KING:

Okay, thank you. I've got Jim, then Sharon, then Juan, then Deidre. Jim?

MR. DICKSON:

Yeah, the question is what specifically would help people with intellectual and literacy issues, and I think it's building on what Rich

said. We need party icons on the ballots. In some cases, photographs would be very helpful. I know photographs are -- carry some controversy with them, but it would be a huge help if there were party icons that would help voters identify who's who. And that comes -- I hear that, all the time, as sort of the number one thing that, particularly, people with intellectual disabilities would like to see.

MR. KING:

Okay, thank you. I've got Sharon, and then, Juan.

DR. LASKOWSKI:

Just to elaborate in a little more detail on the past responses. Certainly, use of plain language, which is already called out in the VVSG, is critical for everyone. It's certainly most helpful for people with various cognitive disabilities, so I think it's critical to continue research and good thought and design into how you word things, as plainly as possible.

And we haven't really talked about interaction with the voting system. If you've got inconsistent navigation, the contests look different, different steps, you have to switch modes, that all is very confusing to, even, people without cognitive disabilities. So, you know, good design like that is critical.

With respect to things like party icons, NIST published a paper last year, where we did some preliminary investigation. There are -- tread carefully. Icons can be helpful, but they can -- they often mean different things to different people. There's a lot of human factors issues with respect to pictures and icons.

So, if I have to order the areas of research and prioritize, I would start with improving the plain language, and the consistency of the navigation, simplicity of interface, and then, do some additional research into icons and pictures, with voters, to see if indeed, you know, where these human factors issues occur so that we don't make things worse, rather than improve them.

MR. KING:

Okay, thank you. I've got Juan, and then Rich, and then Lee. Juan?

DR. GILBERT:

Yes, I'm going to -- Sharon kind of talked about some of the things that I was going to bring up. I'll make a note that, at Clemson University, we do have an institute for engaged aging. I'm a member of that. And so, the research that we do, we actually use seniors, more so, in our research, because of the compounding effects and because of that very problem as Ron pointed out, that they don't acknowledge that they're disabled. So, they actually turn out to be the best participants for studies, because they don't know they're disabled, and so then, they had these compounding effects.

And so, the point that I wanted to make, going back to what Diane and Sharon were saying, I think that you have these multiple disabilities or options. The question becomes, to what extent do we allow our interaction to be personalized? For example, do we walk into the polling place, and there's 18 machines, one for every possible disability? Or is there one machine that can cover all of those? And if there's one machine that can cover all of those, is it that you have to personalize it before being able to use it? Or is it

that it has a set of multimodal features that would cover most, or if not all, the disabilities, but not, necessarily, to a perfection to accommodate a specific individual? And I'm saying that as a question, not as an answer. And that's where I go with what Sharon is saying. I think there is research that can be done to examine these options. Meaning, can you have this one machine in place of 18 machines that delivers multimodal interactions, in such a way that it almost simulates the way they interact with other people, potentially, versus interacting with paper or a machine itself? Can the machine simulate a natural interaction to allow them to vote?

MR. KING:

Okay. Before we move to Rich, I want to comment on Juan's observation of the use of appropriate subjects in research, in university. To those of you outside of universities that might seem like commonsense, but the reality, in universities, is, we have a lot of students and they're cheaper than lab rats to use.

[Laughter]

MR. KING:

And so, a lot of the research that's done, is done on subjects that do not represent the target community. So, I commend you for that, I think that's good.

Rich, and then Lee, and then Diane.

MR. LABELLE:

Thanks, Rich Labelle. Party icons was exactly what I had in mind, Jim. And -- but to give you an example of how that currently plays out in real life, in Florida, every political party is required to identify

with the Secretary of State a party icon or symbol. However, it is also, at the same time, illegal to use those party icons or photographs or any other type of similar device on the ballot. And I think, you know, we can all understand that for historical reasons, and, absolutely, we have to tread very carefully, but other countries are doing it, and I think other countries are doing that well. And I don't think there's any reason that we could not also be successful.

Some other examples that are way too detailed and numerous to describe, but that could also be applicable across the board for a number of persons with disabilities, and also have that curb cut effect that we were discussing, are the extensive strategies that have been developed in the educational field for the education of persons with learning disabilities, and cognitive and intellectual disabilities. The buzz word in the Department of Education is "evidence-based strategies," things that have been proven to work. There's, you know, all sorts of stuff like that that could be easily adapted into standards.

And one of those types of strategies that comes quickly to mind is the issue of time. The Florida election code used to limit voters to no more than five minutes in the voting booth, and that was explained as, "Well, you know, we need to keep people moving. We, you know, can't have people monopolizing the voting booths, and we can't have people intentionally obstructing things." Well, that's all well and good. However, the right to vote of persons with learning disabilities, cognitive, intellectual disabilities, I think, trumps those kinds of infrastructure concerns. And so, that was one of the first things that we went after to eliminate when we

revised the voting code, and that came directly out of the experience of a number of us who have children with disabilities. And typically, in the educational context, removing time limits on performing various tasks is the first thing that is eliminated to increase educational success.

So, that's just -- that's just a brief example.

MR. KING:

Thank you. Lee, then Diane, then Sharon.

MR. PAGE:

Thanks, Lee Page. That's a whole bunch of stuff to talk about. I guess, what I'd like to say is, listening to what Juan said about his studies down there at Clemson, that sounds very interesting with the seniors, not knowing that they're, you know, having, not senior moments, but more, disability moments, or what have you.

[Laughter]

MR. PAGE:

But, you know, finding out that they were able to, you know, work through the system.

You know, as we're talking about all these issues, it's all about the main thing that will fix it, is some sort of electronic voting where you have the machine, it has the toggle switch that will rotate back and forth that you can switch languages from English to Korean to Japanese or whatever, you can do large font, small font, you can do blue color, yellow color, you can do whatever.

The other thing is, is the biggest thing has to be training and education of the poll worker to understand how to work the machine, to turn it on, and give instruction to whatever person with

learning disability, or senior citizen, or whoever, comes into the booth. And as Juan was talking about, having this one machine that does all the bells and whistles, which is great. But I'd like to see more than just one machine, because I'd like to see it as a generational, you know, change of the guard.

The thing I was most disappointed about recently, was, you know, HAVA passed back in, like '02, and then, we voted, I guess, in '04, and I vote in Fairfax County, and everything was on electronic voting and we all voted together. Well, then I came back again, and voted again at the most recent election, and Fairfax had switched them back out to AutoMark cards, and had one electronic booth in the corner collecting dust. And I was stunned. And I went in there and I said, "Well is that working or not?" And they go, "Oh yeah, it's working." I said, "Well, I want to vote on that." And they were kind of surprised. And so, I said -- what I ended up doing, I voted on the electronic machine, and there again, that just pushes me into a category of, "He's disabled, voting on a different machine."

So, the ultimate goal is one big machine that does everything. At least that's what I'm seeing.

MR. KING:

Thank you. Diane, and then Sharon.

DR. GOLDEN:

Which is a perfect segue, I couldn't have done that any better because that was exactly what I was going to follow up on.

For me, the change in -- going to the question itself. What's changed since, in most recent elections, versus 2005 VVSG, 2002

FEC? It's that we have come full circle, from electronic, all the way back to paper, almost everywhere. And, at least, the calls we get and the things we were fielding is, we had it figured out, now we're back to square one. And just the learning curve of people were out, the independent living centers in the community was out training people to use the equipment that was there. That equipment is gone, now there's something else there. The poll workers were confused to begin with. Now, they've gone through change, change, change, and they're just completely confused, you know. Until we get this thing settled down, where there is an expectation that there's going to be, you know, a type of interface, I'm going to interact electronically and this is what I'm going to be able to expect. It may work a little different from vendor "A" to vendor "B" to vendor "C," but the idea is there's going to be a way for me to input this thing and it's going to be a switch or a button or this, you know. There's going to be auditory output, there's going to be simultaneous audio visual. I mean, it doesn't matter it's kind of like that, it doesn't matter whether I walk up to an Apple computer or, you know, a Dell, I can make the interface look kind of the same and work sort of the same. Until we get that it's stable so that voters can get trained, you know, the disability community gets up to speed, poll workers get up to speed, and it's not constantly changing sand under their feet. That's been the big change, I think, from, you know, 2005 on is we're just -- we're continuing to play catch-up and trying to deal with the shifting sands rather than moving forward, unfortunately.

MR. KING:

Okay, thank you. Sharon, then Juan, then Jim.

DR. LASKOWSKI:

I put this up for a different reason. But let me, you know, agree with this notion of universal accessibility, universal usability, in terms of a design for a kiosk, and definitely a way to get the aging population.

The reason I put my sign up is just to say one more time, in a little more detail, there is a lot of research about people's reactions to pictures and hidden bias that you don't even realize, and even some studies correlating showing pictures to people predicted what the -- of an election that had actually occurred after the fact to people -- not a national election, so people didn't recognize the faces -- certain -- and rating those pictures, certain characteristics, then, correlated highly with the results of that election. So, there's a lot of bias that goes on that -- I'm not an expert in this area of research, but we need to look at that very carefully before we jump in, because there could be unintended consequences of letting pictures in.

MR. KING:

Okay good, thank you. Juan, and then, Jim.

DR. GILBERT:

Yeah, I just want to comment, piggybacking on Diane and Lee, kind of. The movement from the electronic voting system back to paper, no one has actually said why that occurred. That actually is occurring mostly because of the security issues that were pointed out with the electronic voting machine. My professional feeling is that the baby was thrown out with the bathwater in a kneejerk

reaction, going back to a system that had previously shown to have its own vulnerabilities. And there are people who have done research that have shown vulnerabilities with paper relative to electronic voting, and those people would argue, pick your poison, in a sense. The advantage that the electronic systems have is clear by giving greater accessibility to a larger portion of the voting population.

So, I think that there are some -- and then, the costs associated with paper, you know, are not much cheaper, if at all cheaper, than some of the voting technologies; preprinting, the wasted ballot, there's a high cost value there as well. So I think that move, in light of security, was a kneejerk reaction, and I think that that was not necessary. And I do think we can bring it full circle back around with the voting technologies.

MR. KING:

Good. Thank you, Juan. Jim, I'm going to let you have the last say on this question.

MR. DICKSON:

I want to address both, this question, what's different, and I think it also addresses who's not here, and that's the test labs. Because we've had test labs in the EAC certify, as accessible, two pieces of electronic voting equipment which are, how can I politely say, when it comes to accessibility, they're junk?

MR. GARDNER:

That was polite, Jim.

MR. DICKSON:

And they're not functional. They reach very, very small spectrums of the disabled population. And, you know, I conclude from that, there's a clear breakdown between the standards that are in place, their intent in the law, and the certification process.

MR. KING:

Okay, I want to ask a quick follow-up question on that, and it will be a good segue into question number three.

Regarding the test labs, do you think that was a shortcoming of the labs in the testing protocols, in the administration of the protocols? Or was that a shortcoming in the 2005 VVSG that may not have adequately addressed the accessibility issues? Obviously, one is under the control of the labs and the other is outside of their control.

MR. DICKSON:

Well, I never thought of it quite in those terms. I think it's probably both.

MR. KING:

But the net effect of the two combined factors is an inadequate system. I think that's your point.

MR. DICKSON:

Yes, and I'll think about that, but I…

MR. KING:

Okay I've got Sharon, then Diane, and then, Juan.

DR. LASKOWSKI:

Well, having had a hand in writing the requirements, actually, I do agree with Jim. There's always room for improvement clarifying the standards, but I think there was a big disconnect with how they

were tested and some clear misinterpretations that, to be frank, puzzled me.

DR. GOLDEN:

Yeah, I mean, I'm processing the same thing. I think it's both, but I think it's partly timing and happenstance too. The 2005 standards, literally, came out just as the shift from electronic to paper happened, you know, time wise. And so, the standards themselves were on the cusp of seeing the paper train, you know, that has come full bore now, almost literally. I mean, there's almost nobody that's purely electronic now, in 2010. But in 2005, that shift was just happening, so there are things that weren't addressed in the '05 VVSG that just weren't, really, issues on the table at the time, because of the timing of the sequence of that change, from mostly fully electronic to a combo, and then, 2010 we're in all paper. Because, quite frankly, many of the shortcomings and interpretations have to do with paper and how to make paper accessible, while the timing of those standards was in an awkward place to address that, I think.

So, I think it's not only the two issues you mentioned, the way the VVSG content is written could be more clear, the interpretation clearly could be -- and application could clearly be better, but I think some of that was just because of when the timing of when all that happened also.

MR. KING:

Diane, do you think, on the issue of the interpretation of the labs, that it is a deficiency of technical ability in the area of accessibility

adaptation? Or is it, for lack of a better word, an attitudinal issue, a lack of awareness or appreciation of the issues of disability access?

DR. GOLDEN:

My honest thought is that it would be like asking me to administer and judge conformance to some of the standards on, I don't know, humidity or, you know – yeah, if you'd ask me to do that I can pretty much guarantee you I'd screw it up. It's just not my background, not my expertise. I just think it's asking them, given who's there, to do so something that is so outside of their realm of expertise. I mean, that's my instinct feeling.

MR. KING:

Okay, good. I've got Juan, and then Deidre, and then Jim.

DR. GILBERT:

Yeah, my point is very quick. Is it a misinterpretation or a manipulation? That's the way I would rephrase kind of what you were asking, is, did they misinterpret the VVSG? Because I look at the VVSG and look at what was clear and I say, "How could that have been clear given this language here?" But then, you could, from their perspective, they look at it and say, "Well, we read it as this." Was that a misinterpretation or was it a manipulation to get what it is they wanted to have, clear through? And I don't have an answer to that, but I think that's something that could be researched and looked into.

MR. KING:

Okay good, thank you. Deirdre, and then Jim.

MS. DAVIS:

Mine is not at all profound. But when I go to -- recently in Bentonville there's all electronic, all digital and I didn't see any other option there at polls for machines. And that was it. So I was -- my first instinct was, "Where's the accommodation?" I mean, that kind of thing. I could reach it fine and I could read it and touch it fine, but I didn't see any other way for anybody else to vote that had any of the issues that we're talking about.

So, that's all.

MR. KING:

Thank you. Jim, this has to be the last word.

MR. DICKSON:

All right, I will be very, very brief. I think that to answer the sort of tough question and to follow up on Juan's point, you've got to have experts in accessibility who have a perspective of multiple -- of different disabilities. If you just look at it from the point of view of somebody who's paralyzed, you're going to have a problem. And I think this is a real attitudinal problem at the labs, you know. They think blind, they think paralyzed, and they think in terms of one individual's capacity. And that's just never going to work.

I also think, on the question of the manufacturers still have too much say in this process. They've developed something. They want to sell it. They want to get it by the labs so they can sell it. And I think that structural relationship contributes to, you know, let's move this quick.

MR. KING:

Okay, thank you. I'd like to do the third question now, and then after that we'll take a short break, kind of reload on the coffee.

The third question is, are there explicit or implicit expectations of HAVA regarding accessibility that have not been addressed in contemporary systems? These are shortcomings of systems that, even though they may have been manufactured, may have been adopted, may have been certified, in some way have failed to meet the expectations of HAVA, particularly in the Section 301.

Okay, Lee.

MR. PAGE:

Well, you know, the only -- whether it's a shortcoming or whatever, I mean, when HAVA passed the language we had in 301, you know, I was expecting, you know, not, you know, a dream team, but I was expecting that, you know, voting would be pretty accessible, all of the above. But as I said, when I had to vote again, just the other -- at the most recent election, and we flipped from electronic back to the AutoMark, it's handling of paper, you know. For someone who has limited hand dexterity, you know, you have to put it into this machine, it punches it or does whatever, you pull it out of this machine, then you take it over here and you put it in another machine, and then you go away. And that's just, you know, for someone who does or doesn't have a lot of hand dexterity, that's a lot of handling of paper. And then possibly, you know, someone else would take it from them and stick it in this box or whatever this machine is over here that had to into.

You know I'm -- my expectation was an all inclusive system that would, you know, I would vote on independently, you know,

check my ballot, push “vote,” it goes away and then it goes into the, you know, the counting section later in that day.

MR. KING:

Um-hum.

MR. PAGE:

So, that’s what my expectations were.

MR. KING:

Okay, so the component that requires independent casting of the ballot. Okay.

I’ve got Diane, then Rich, then Jim. Diane?

DR. GOLDEN:

For me, once the paper scheme came back, the issue that became clear -- if you read the HAVA language itself, it talks about privately and independently verifying and casting a ballot. And the whole paper game changed that. Generating the paper ballot, people sort of figured out how to mark a paper ballot in an electronic interface. The problem is verification of that paper ballot, and then casting that paper ballot, privately and independently. And if you go to the VVSG, there is precious little in there about the verification and casting part, because, again, that was written in 2005 when most people were still in the conversion phase. And that’s where the standards are lacking. That’s where the machines, you know, the R&D of the community is still lacking. And those words are only in statute, pretty much. That verification and casting piece is the challenge and what we’re still trying to, I think, address. So, I think that’s the unfulfilled promise of HAVA, at this point in time, in terms of accessibility.

MR. KING:

Okay, thank you. Rich, and then Jim.

MR. LABELLE:

Thank you, Rich Labelle. The great promise of HAVA is the very broad language that requires access for all persons with disabilities regardless of the type of disability, regardless of the extent of disability. It doesn't say, you know, "people with disabilities, except the following." That's the promise that I think has not been fulfilled. And when it was first passed, I, you know, what I expressed to people is, "Well we're on the right track, and this is going to progress." And I saw at the time, you know, a continuous increasing plane of progress to that day when we were able to achieve, through technology, complete access for all persons with disabilities.

Unfortunately, as been expressed by the other members, we've gone backwards. And, I would simply encourage the EAC to continue to push the envelope and to truly encourage manufacturers to develop and implement systems that will eventually achieve full access, so that everyone, every person with a disability can cast a private and independent ballot.

MR. KING:

Okay, thank you, Rich. Jim, and then Brian.

MR. DICKSON:

Mail-in absentee voting, that has -- since the passage of HAVA, that has grown hugely. And HAVA was written in a way when it talks about accessibility and the same time and manner as everybody else. And so, there has been no thought or very little

thought, very little research, no -- very little attempt to develop systems that would allow people with disabilities to vote, via mail, and maintain privacy and independence. And I think that this is going to become an even bigger problem as more and more election locations go to mail voting, because they believe it saves them money.

MR. KING:

Thank you. Brian?

MR. HANCOCK:

Just to put a little potentially good news, here, into a lot of, I think what we've heard is bad news so far. There's no question that I think, especially from a technology standpoint, the vision of HAVA has not, certainly, entirely been met, and in some cases, not met at all. I think the one good news is, some of the things that we are seeing on the horizon in the developmental stages and getting ready to come into the testing stages. Lee, you know, you talked about the AutoMark device. I know there's some changes to that to allow for some ease of input for folks that do have manual dexterities. And I think there are a few other things coming down the line that I think will address some of the issues we're talking about today. They're still very difficult issues that we're having to work with, and I certainly think the cognitive and learning disabilities are probably amongst the most difficult technically to deal with, you know.

And the last thing, I guess, to remember, and this isn't necessarily as an excuse, but, you know, the manufacturing process does take time. And the introduction of new innovations,

whether they're in accessibility or in other areas, does take time, you know. We hear that there's sort of a development process that could be anywhere from two to four years. Once that gets out, of course, there's a federal certification, if that's required in a State. Beyond that, there are State certification issues that need to be addressed, you know. So, it's never going to be an immediate fix. Certainly, we agree with Rich, and we're encouraged and the EAC certainly intends to push things further into the direction of meeting the full vision of HAVA. But, you know, those are just some of the realities of the situation, I guess, you could say.

MR. KING:

Okay, good. And I like the insight that was brought to this -- the concept of the unfulfilled promise of HAVA. Last night, I was talking about how I also like the EAC's approach of kind of putting a ratchet on the voting issues. And if you know about a ratchet, it only goes one way. Sometimes it goes slow, but the key is not to back up. And I think I heard some of that in this discussion, that we may have backed up a little bit on the promise of HAVA. And I'm going to think about that at break.

We are going to take a ten-minute break. The restrooms are out that door to the back and to the right.

MR. HANCOCK:

Ladies to the left.

MR. KING:

Ladies to the left.

MR. HANCOCK:

Men to the left.

MR. KING:

Well, you first got to go right out of that door. And then, when we come back, I think Diane has got some door prizes that she's going to share with us on some adaptive…

DR. GOLDEN:

I have to return them to the loan program.

MR. KING:

But let's take about a ten minute break and then reconvene. Thank you.

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[The meeting recessed at 10:34 a.m. and reconvened at 10:48 a.m.]

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MR. KING:

Okay, we're ready to begin if we can get the panelists back to the table. Okay, thank you everybody. We are committed to getting through all 12 questions, so let's get right back to work.

Question number four is, are there recent examples of transferrable technologies and other applications that should be explored for implementation in accessible voting systems? The genesis of this question really comes from ways in which manufacturers, and ultimately then, testing labs, can take advantage of existing technologies that can be adapted and implemented without incurring a hundred percent of the development and testing costs.

So with that, I'll open up the question. I've got Ron, and then Diane.

MR. GARDNER:

One thing that quickly comes to mind -- to my mind, in this area, is the fact that universal design, I think, is something that really, clearly needs to come into our area. And that's an easy thing to say and a hard thing to really do, I understand.

But for example, Apple Technology recently has come out with the iPhone that everybody knows and loves, well, unless you happen to be disabled. And then, for quite awhile, those products were not accessible to people who are blind or visually impaired and to some other disabilities as well -- people with disabilities, as well. They, now, are coming up with some, I think, exciting ways to make their technology accessible right off the shelf, which is critical, because as we have elections officials, and States, and you have budgets, and we have -- if we have to buy higher priced and more gadgets to make it work, and the budget is off the chart, plus we're not sure if it's going to have functionality and usability by a variety of people with disabilities, you know, varying disabilities, those are all places where the problems exist.

Apple -- and I'm not touting Apple, really, except the fact that they're really building some of this in from the get-go. So, when you buy an iPhone, if you do a couple of things to it, it then becomes a talking iPhone. Or then, if you do a couple of other things, it becomes an iPhone for a person with a disability -- I mean, with a hearing disability, and if you do a couple -- in other words, the same iPhone. The key is, off the shelf. And it has a lot to do with universal design. And it has a lot to do with thinking about the issues of accessibility prior to manufacturing, in other words, in the developmental stage rather than in the add-on stage,

"Oh gee, it's not accessible. Let's add something to it and maybe we can kind of bridge the gap."

So, those are my thoughts.

MR. KING:

Okay, very good, thank you. Diane, and then Juan.

DR. GOLDEN:

Like I said before, I actually did grab a few things because this question has come up before. Within the assistive technology community, the solutions are there, and they're off-the-shelf solutions, not in a generic sense, but from an assistive technology perspective. There's nothing that voting is dealing with that we already haven't dealt with, in terms of computer access and telephone access, and any other, you know, access for what you do in your daily lives. And the kinds of solutions, voice recognition technology is getting much, much better day in, day out. It just keeps improving. And that's been deployed in all sorts of environments. That's nothing new. That's, you know, those applications are out there.

What I grabbed and brought from the loan program is Ruby, which is a portable electronic enlarger. And literally, it's a small camera mounted. There's enlarging software. You plop it down and, by golly, there's my large print. And I have three size adjustments. I have color contrast adjustments. And it's all built into this little tiny thing, so the technology for doing enlarging.

I grabbed an Intel Reader, which is a point, shoot and read camera mounted on the bottom. You click, you take the picture, it

takes that digital image, converts it into readable speech, synthesized text, and it reads it to me.

MS. DAVIS:

But you have to -- for someone who is visually impaired, they have to know what they're pointing at. I'm like…

DR. GOLDEN:

There is also -- this is, in particular for people with learning disabilities, print.

MS. DAVIS:

Okay.

DR. GOLDEN:

But there is a fixed capture stand. And for voting equipment, that's what -- you wouldn't do something portable like this, anyway. I just brought this because I wasn't going to slip the capture station on the airplane.

MS. DAVIS:

I hear you, right.

DR. GOLDEN:

There's a capture station. And the camera is mounted and you just place whatever it is there, it captures it, it reads. And it's -- you know again it's a "capture station."

The technology is there to be built into voting systems. On the input side, I didn't grab a bunch of switches and switch access software. It's all there. It's just a matter of constructing, as Ron described, constructing the voter -- the voting station, so that it can use and accept all of these input and output adaptations, even if we're stuck with a paper ballot. And, obviously, that's why I

grabbed these things is because these are all designed to make paper accessible.

So, you know, my statement is, it's never been an issue of the assistive technology isn't out there. It's there. It's a matter of integrating it and doing it in a way that delivers really, truly, full accessible verification and casting. I think that's always been the challenge.

MR. KING:

I'd like to follow up with two questions. You mentioned that as camera technology. Is it also a camera, an enlarger, the Ruby?

DR. GOLDEN:

It will -- you can, yes. You can actually fix the image.

MR. KING:

Okay.

DR. GOLDEN:

Yes.

MR. DICKSON:

Excuse me, you're asking because there are laws about cameras?

MR. KING:

Cameras in the polling places.

DR. GOLDEN:

Oh and I wouldn't -- I wasn't suggesting actually using this.

MR. KING:

Right.

DR. GOLDEN:

It's just that the guts of this, you know, the functionality that it performs. But, quite frankly, in terms of auditability and doing a

second, you know, run of ballots, I mean, there probably would be a way to do that from this digital imagery technology versus some of the things that the machines are currently doing, I don't know.

The point is, though, that all of this technology is out there and, to my knowledge, that's not been used by the R&D community and the voting system vendors. I think they've kind of been on their own, developing their own stuff, as best I can tell, rather than using all of this stuff that's out there.

MR. KING:

That's my second question, is, why? If the technology is existent, if it's transferrable, why do you think we haven't seen a more ready adoption and, as Ron said, particularly adoption into the design, rather than cobbling it on?

DR. GOLDEN:

I don't know. And what's really surprised me is scanning. The scanning, you know, when you do an auditory tactile ballot you have to have scanning, because you have to, you know, for navigation purposes to go through the ballot. There have been, you know, tons and tons of people who have scanning applications on the market, and there are ways to make scanning much more efficient time-wise. And, to my knowledge, nobody within the voting R&D community has talked to the people at, you know, Medintech and I can, you know, rattle through the list of companies, Tash -- not the TASH but the Tash company. The companies who do switch access and scanning input, whether it's visual or auditory scanning, I don't think they've ever made the connection between the two communities, as far as I know.

MR. KING:

It's almost as though we need a vendor show of these technologies that would be accessible to designers and, particularly at the jurisdiction level, put some demand into the jurisdiction level coming forward to the manufacturers, because I think many jurisdictions are not fully aware of the maturity of the devices.

Let's go to Juan, then Jim, then Rich.

DR. GILBERT:

Yeah, Diane kind of said most of the stuff I was going to say; that the technology is there.

I'll try and answer your question about why. If you look at who actually develops these technologies -- and as a scientist with a background in computer science, we're trained to write software. And when we write that software, it is highly visual for people who certainly have very little disabilities, actually, no disability at all. Through the entire four years, you go to graduate another two, you're trained in an environment that is exclusive and excluding, too, people with disabilities.

So, in order to do universal design properly, that's why it's called universal design, meaning, it has to occur at the design stage. If you do it as an afterthought, ultimately it will fail. Afterthoughts never work. So, if it's not part of the original design, then you're in a problem. So, what you see is that you'll have a developer or a technologist implement a technology, and they do it from the first person. They're thinking about themselves, typically. And then, someone will say, "Well, we need to make it accessible" and the afterthought comes, but in that process of adding on, we

always consider what's the quickest and cheapest route to add on. How do I minimize my effort? That's the thought. It's not, "How do I maximize the usability or the design?" It's, "How do I minimize my effort?" And so, you have a contradiction there of a goal. The goal of creating universal design if it comes as an afterthought is conflicted with what the developers tend to favor, which is less effort and getting to the market quicker. Those two things -- those things don't add up.

So, I think that's the problem. Until it is done from the beginning, in the design stage, then you're going to keep this cycle up of just failure, after failure, after failure because universal design has to come in the front.

MR. KING:

Okay good, thank you. Jim, and then Rich.

MR. DICKSON:

This is Jim. I think if we try to put ourselves in the position of how the manufacturers think about this, they're in a silo. They're in their own little voting silo. And so far, there has been little or no effort on their part to really reach out of that silo. The accessibility piece is always the tail of the dog. In some cases, I would argue, that it's the flea on the tail end of the dog.

There are already numerous conventions and trade shows that bring together the accessible technology. The question is how do you motivate the manufacturers who are doing the designing to get off their butts and go there? And frankly, I think the answer is when the EAC rejects a device, fails to certify, because it's not accessible, that's when the manufacturers are going to get the

message. Until -- it would be a wonderful world if inspiration and encouragement and opportunity were to motivate the designers, but in the world that we live in what will motivate them is having put time and effort into a product and having it fail because it's not accessible.

MR. KING:

Thank you. Rich, and then Deidre.

MR. LABELLE:

Thank you, Rich Labelle. Going again to why, that's something that I struggle with all the time because that's a real good question. And it's not just in this area that we struggle with why aren't developers implementing universal design? Why is accessibility always an afterthought?

I wasn't going to comment on this question but, you know, I heard this again a month ago. I serve on the Governor's Autism Spectrum Disorders Task Force. And the State is developing a high profile website for families of persons on the autism spectrum. And we had a meeting of the task force and the website was being discussed and the design and so forth, not a word was mentioned about accessibility. When I raised those questions, they said, "Oh yeah, well essentially, you know, we're going to do accessibility after. We're going to build it after." And unfortunately, it is -- whether it's employment technology applications like timekeeping, like how you apply for a job online, too often it's always accessibility either isn't thought of, at all, or it's an afterthought, and it just doesn't work right.

So, a broad statement, a broad encouragement of universal design on the front -- from the front end, from the very beginning of the technology, I think, would really, really help the situation, as well, because I don't think that manufacturers, for whatever reason, are going to come to that just on their own, whether it's because their training or what it may be. Unfortunately, yeah, it's just something that, yeah, "We'll do later if we do it at all."

MR. KING:

I think that's interesting. And Jim, I put in my notes that perhaps what motivates the vendors is recovery from failure rather than avoidance of failure.

MR. DICKSON:

Um-hum.

MR. KING:

And, of course, as users of voting technologies, we would perform the former -- or the latter, I'm sorry, rather than the former.

Deidre.

MS. DAVIS:

Yes, Deidre Davis, I think that I want to echo what Jim said. But also, it is accountability. If they have shareholders, they have to make sure that there's some profit, so the shareholders will be satisfied or if not, you know -- it's got to hit the bottom line. And I think we did not fold into, like we did under ADA -- the ADA accessible guidance, some type of tax credit or incentive that these manufacturers could get at the beginning. So, you've got to have a two-pronged -- you've got to have advocates ready to sue for failure to do it, if it's going to hit the bottom line. You have EAC, who is

going to deny/refuse to give them the license to create that is not accessible. And the third thing is to have some type of financial incentive for them to actually put it on their action plan upfront instead of as an afterthought. That would be my take on possibilities.

MR. KING:

Okay, all right very good. Thank you. Any other comments on this question?

Okay, let's move onto question number five. Accessible voting systems must provide a method by which the voter can verify the content of their ballots before casting, if verification is provided to other voters. What issues apply to verification for voters with the following types of disabilities: the dexterity or fine motor skills, poor vision, blindness, cognitive disabilities, and others. So, this is an attempt to try to dig down into the weeds, if you will, and get a little more detail on some of the unique verification issues for voters with specific kinds of disabilities.

All right, I've got Diane first.

DR. GOLDEN:

And this is a general comment, not specifically about any of the functional limitations listed, the dexterity, et cetera. I love the statement. However, I would say that, as of right now, this has not been a guiding principle that everyone has agreed to. I would say, in the conversations I've had, particularly with the attempts to mandate paper ballots, this has been quite controversial. This is clearly the position I would take that, yes, an accessible voting system must provide a method by which the voter can verify the

content of their paper ballot. But that has been a real problem convincing -- that has not been a universally accepted, agreeable statement to everyone, particularly on the security side of things.

So, I guess my first point is if that's a declarative statement that we all agree to Hallelujah, because I am right there with you, I hope that is, then we need to make darn sure that the accessibility standards actually deliver that. Because right now, the standards don't and the problem has been there hasn't been universal agreement that that is what everyone agrees to.

The second general question is, it says a method by which the voter can verify the content of their ballot. What is the content of their ballot when it is a paper ballot? And that is a question of, is that the actual human readable print? Is that some sort of -- in an op scan ballot, is that the ballot layout? In other words, you know the dot and the ballot layout that they're verifying? Is it both? Is it a barcode? Is it -- what is it? What is the content of the paper ballot that they are verifying? And that's, to my knowledge, an unresolved question. And the standards don't address it. Nobody has resolved that as a policy issue yet.

So, my two points are, I love the statement. I agree completely that that is a given; a voter with a disability should be able to verify the content of the ballot they're casting, whatever ballot that is. And if it's paper, what is the content of that ballot that they're verifying?

MR. KING:

Um-hum okay, I've got Juan, and then Sharon. But first I'd like to recognize Commissioner Hillman who has arrived this morning. Good to see you here.

COMMISSIONER HILLMAN:

Thank you.

MR. KING:

All right, so Juan, and then Sharon.

DR. GILBERT:

Yeah, the security part -- well first I agree with the statement. I think it is necessary. I agree that from a security perspective that statement has been compromised from some of my security colleagues. But I actually see it in the opposite perspective. If it is -- from the research that we've done in my lab, when you have a universally designed machine, you get increased security because everyone is voting on the same machine independent of ability or disability. So, what that means is that in order to compromise a specific constituency, it's more complicated to do so. So, when you have separate but equal voting, and if I wanted to compromise all the blind voters, that's an easy target, because I know exactly the machine they're voting on, I know exactly how that's going to occur. But if blind voters are voting on the same machine as sighted voters, now that's an extremely complicated thing for me to do, because the machine doesn't know if the voter is blind or not. How do I compromise that situation?

So, I wanted to make sure that point was heard. So, I think if you are, again, coming from universal design, the verifiability would be inherently built into the system. This is a perfect example -- that

statement is a perfect example of accessibility is an afterthought. If the machine was designed for everyone with accessibility first, that statement would not exist because it would be understood that verifiability has to be in there. The fact that that statement exists supports the notion that, hey, accessibility was second and was an afterthought.

So again, my point is that if the universal design is at the core, and at the beginning, that is not necessary because it will be included.

MR. KING:

I might come back to that, very good. Sharon?

DR. LASKOWSKI:

Yes, Juan that was beautifully said.

MR. GARDNER:

That was well said.

DR. LASKOWSKI:

Yeah. Just not taking a position, just by way of explanation of, since I talk a lot to the security people, I think their definition of verification, or the reason for verification existing, was to verify -- have the voter verify to ensure security. So not -- so security works. For it to work, you don't need every voter to verify, you only need a subset. So, it wasn't key to the voting process, it was only key to the security. But that's a simplification of the security side just by way of explanation to understand.

So -- but if you look at verification as part of the voting process, HAVA clearly states that every part of the process available to voters without disabilities should be available to those

who have disabilities, you've got a slightly different definition of verification and a different viewpoint.

DR. GILBERT:

I want to interject real quick to comment on that.

MR. KING:

Okay.

DR. GILBERT:

I would recommend, and I will do this, too, because I know some of the security people, I would recommend that only women should be allowed to verify their votes.

[Laughter]

DR. GILBERT:

There's more women, right? So, if only women were allowed, that would give them the statistical confidence they need.

DR. LASKOWSKI:

I'd vote for that.

DR. GILBERT:

So, let's propose that, that only women, and see if that goes over. So, if you want to disenfranchise one group, let it be your group.

DR. LASKOWSKI:

Yep.

MR. KING:

Very good.

MR. GARDNER:

And in saying that, he's saying only women need to verify their vote because they're the only ones that ever change their minds . His

point is really a good point. Which group are you going to disenfranchise?

DR. GOLDEN:

I have to add to that whole comment, because you guys have not been privy to all the conversations that the disability community had when the amendments were proposed to HAVA, a couple of years ago, to mandate paper. We went through this exact discussion with them, Juan, and we threw out every alternative, just random voter verification, just make it completely random. "No, because that might exclude me." "Okay, well, then do it every" -- I mean, we went through every gyration we could come up with, and the bottom line was nobody was willing to give up their right to verify it; it always needed to be somebody else that gave up their right to verify. And, you know, we kept explaining to them, "Well, if the only people who can't verify, are people with disabilities, that is de facto discrimination. You cannot do that." And we could never get past that point. The security people would not budge off of, it's a hundred percent voter verification, period. So, that's where the discussion fell apart again.

DR, GILBERT:

Sorry.

MR. KING:

No, that's good. And I want to come back to you in just moment but, first, Jim.

MR. DICKSON:

Sharon, this isn't aimed at you, but I'm going to be my usual very blunt self.

DR. LASKOWSKI:

Okay, thank you for explaining that.

MR. DICKSON:

Because I think you accurately described the fact, is that, security folks are blind and did not, do not, will not, read the law. HAVA says verify.

MR. GARDNER:

It does.

MR. DICKSON:

That's in the law.

MR. LABELLE:

Right.

MR. DICKSON:

And the security people who are constantly trying to redefine the law without the honesty of going through the legislative process need to be put in their place. People chairing committees like the TGDC, when security folks bring up this idea of, "Well, the disabled don't need to verify," the chairs of those committees need to rule that out of order, because the committees do not have the authority to change the law. And this hairsplitting about definitions and the lack of a really clear, that's been debated, it's over, you've got an issue with it, go to Congress. Until that is said repeatedly to the security folks, we're going to be caught on this treadmill.

MR. KING:

Okay, I want to come back to Juan with two questions.

MR. DICKSON:

Did I make myself clear?

MS. DAVIS:

Yes, sir.

MR. KING:

Yeah, it's not how it got into my notes, but it's -- but I'll read it back to you in just a moment.

Juan, two questions. First, for the benefit of us here and perhaps other people who may read the transcript, give us a thumbnail sketch of universal design. What are some of the guiding principles? What's commonly understood to be a part of the universal design philosophy?

DR. GILBERT:

Very simple. Design once, service many. The classic case is stairs and the accessible ramp. That's universal design right there. It serves most people. You see people walking up the ramp and you see people walking up the stairs. It serves multiple purposes. But the idea is you design once and serve many.

MR. KING:

Okay. Are there precedents or examples of the application of universal design to legacy systems, that is, the ability to move legacy systems forward in time and function and still apply universal design?

DR. GILBERT:

I can't think of any off the top of my head. I'll meditate on this for a while, but my initial thought is I can't think of any. And from my perspective and what we do in our research, we never take that approach, meaning to extend an existing technology to make it usable, have a universal design. What we do is we look at the

functions that that technology provides, and then we redesign to make it -- those functions universally -- that's a big difference of whether I'm taking an artifact or a functioning system and then modifying it. Or do I look at what that system or artifact provides as a service or a functionality, and then redesign for that target? And the latter is what we tend to do. But I'm not saying it doesn't exist, I just can't think of one.

MR. KING:

Okay, the reason I'm asking is, perhaps the expectations among election officials about the availability of systems that will evidence universal design features may be more likely to come from new voting systems as opposed to legacy systems. That's where I'm kind of…

DR. GILBERT:

I agree with you a hundred percent. I think there will be new voting systems. But you know the core -- like Diane keeps pointing out, the core of these systems, pieces of existing systems, those core could be put into some universally design systems. But the shell wrapped around it will be different and there will be other components in there.

But I mean, it's obvious, and Diane has pointed out and Ron has pointed out, this stuff is there today. Just no one has taken the time to think from a design perspective, how do I put it together? You know it's somewhat like cooking. You come up with a new recipe, but you're using components that exist already and you invent this new dish that everybody loves. So, it's similar to that. You take those components and you put them together.

MR. KING:

Okay, Rich?

MR. LABELLE:

Thank you. I wanted to just follow up on that because -- particularly, with your question about legacy systems. If you fail to implement universal design going forward, you are, in effect, perpetuating those legacy systems. And, if accessibility is always an afterthought, it is always going to be hideously expensive. And that goes to the comment that Deidre made earlier about going to the bottom line. Yeah you're right, you know. If you design this whole system, and then you come back and try to reverse engineer accessibility, and do it, or tack it on or something, yeah, that's going to be a whole lot more expensive than it is the cost to implement principles of universal design. So, you know, unless that becomes the standard of practice in development, you're always going to have this -- this rolling effect of having various stages of inaccessible systems that you're going to be struggling with.

When -- again, it's like in, you know, designing public buildings or buildings of any kind. If you eliminate curbs, if you eliminate threshold barriers, if you eliminate stairs, if you go in making sure that you've got, you know, wide paths of travel and that the fixtures are accessible, you have vertical accessibility within the building, if you do that from the beginning when you first put pen to paper or start working on your computer, you know, that building doesn't cost that much more to design and build than one that has lots of inaccessible features. But, you know, if you build the inaccessible version, and then you got to come back and you

got to do ramps and you got to do all this other stuff, yeah, that's going to cost a whole lot of money. And that's where -- that's the situation we find ourselves in now with these systems, with many of these systems.

MR. KING:

Thank you. Lee?

MR. PAGE:

I was going to say that's why after 20 years you can get an antique plate for your car because, you know -- and you can't deal with legacy systems. I mean, especially for universal design, it's, you know, building from the ground up. It's brand new technology. And technology changes from today to tomorrow to the next day, you know. The same with this wheelchair I'm sitting in, you know. It -- you would think a wheelchair would be the exact same every time, but you get new models, new designs, new things every time.

And so, yeah, it's kind of disheartening that, you know, here we are in 2010, this law has been in effect for about eight years, and yet the machinery that, you know, we're dealing with, as Juan says, has accessibility as an afterthought, to a degree, in some aspects. And I know the arguments between security and accessibility go on, ad nauseam. But, you know, it's in the statute, you know. That's what it is. You know, everyone should be allowed to verify their ballot before and after casting it. So that's where it is.

MR. KING:

Okay, thank you. Jim?

MR. DICKSON:

Ron mentioned earlier of the iPhone, and I have an iPhone. Something that Apple has done -- and Ron was absolutely right. I actually planned to get rid of my iPhone but I decided to give it one more shot. Literally, yesterday, I went to the Apple store and was blown away by the improvements that were made. Those improvements exist because Apple set up a system where users could say, "Here's something that would make this more accessible to me." And they not only set up the system, but they implemented one.

There's a structural problem with voting, people with -- you know, you got the manufacturer who makes it. You got the election administrator running it. You got the voter. If there's a problem, the voter is going to most likely complain to the poll worker. Maybe that goes up the food chain, but if it does, it only goes as far as the election administrators. And there ought to -- maybe some thought should be put into a requirement or some kind of -- that would create some kind of feedback loop directly to the manufacturers.

MR. KING:

Okay. I wanted to comment on something that Diane and Jim said, in different ways, that struck me as being integral to this discussion.

In the area of ballots, I think, you correctly pointed out that when HAVA instructs that the system should permit the verification of the ballot, that there may not be consensus or full understanding of what is the ballot. And I think that's something that we've struggled with throughout the iterations of the VVSG as…

MR. GARDNER:

Of what -- excuse me.

MR. KING:

I'm sorry.

MR. GARDNER:

Of what is the ballot?

MR. KING:

Correct. Is the piece of paper the ballot -- I think the example you used is the barcode. Can they verify the barcode that's on the ballot and what does it mean to verify the barcode. And then, Jim's point is that there are other things for which the debate seems to, should have at least, been closed. For example, what does it mean to verify? And I think those two points illustrate the work that still has to be done, which is we still need to push through certain definitions and reach consensus on them. And then also, in other cases, the definition already exists and we need to be consistent in our adherence to those definitions across the board.

Diane?

DR. GOLDEN:

Yeah, I think there's a couple of issues with verification of the ballot and what is the ballot. The first is in those systems, if you are in a paper ballot only system, I think it's pretty clear the ballot is the paper ballot because it's the only ballot. So, that's a little easier scenario.

When you're talking about a system that has two potential ballots, an electronic ballot and a paper ballot, the question has always been, which is the one you verify. And hopefully, that issue was settled with the VVSG 2005, with the clarification that came out from the EAC on the verification of the secondary paper ballot,

which said, I'm paraphrasing, if that is or can be a determinative vote record used in a recount, used, you know, it can be the real ballot that's counted, then you need to be able to verify that ballot in addition to verifying the electronic. So, both of them are real ballots and you need to be able to verify both of them. So, hopefully that settled policy, although I would say that in the security community that's not settled policy. We still have knockdowns about that, but I think it's settled policy, my own opinion.

The question then, is, if the paper ballot is the primary or the secondary ballot, what is the content of the paper ballot that you verify? Like I said, is it the human readable print? Is it, you know, the ballot layout? Is it a barcode? Is it some other machine readable something or other? What do you do with write-ins? That continues to be an issue. Even with the currently deployed systems that read ballot layout and marks, they have no way of reading -- of allowing the voter to verify a write-in. What it tells you is "write-in" because it's reading the ballot layout, but tells you that dot is a write-in and it's reading the dot that says "write-in." So, that's what, as a non-sighted voter, I get for verification is "write-in." I don't get John Doe's name which is what I wrote in. I get "write-in" read back to me. Well, that tells me I got the dot in the right spot.

MR. GARDNER:

That's not verification.

DR. GOLDEN:

But, it doesn't tell me if I got the right name in and if that right name is going to be counted correctly or verified, you know.

So, it's all those kinds of nuances of figuring out, you know, what is the right way -- what is the right way -- right is the right content to verify. Or are there multiple options? And I don't know the answer to that question, but clearly it's a policy question that needs to be asked, because in terms of research and development, from the manufacturers, they certainly need to know what to build to meet that verification requirement. And right now, I don't know the policy answer, and I certainly don't think they know the answer, in terms of building the equipment.

One other point about this question, since we haven't really talked about the disability types, and I did have a note, and I would be remiss in saying this. For people with visual impairments who are using large visual display or large print, I've said this a number of times, but I just feel obligated to say, it is not appropriate to expect them to use audio to verify, if they didn't use that to generate their ballot. The vast majority of people who are low vision are older people with macular degeneration. I mean, literally in terms of numbers, you're talking about millions and millions of people with macular degeneration, who are older. And asking them to cast -- use large print to generate their ballot, and then asking them to only be able to verify that through audio is inappropriate, because they are not going to have the hearing capacity to do that because they are in their 70s and 80s, and that's just not appropriate. And yet, that seems to have been, at least in the VVSG 1.1, an acceptable alternative for verification. And I just feel obligated to say, in my mind, that's not acceptable because that -- those people will not be able to verify their ballot, period. They will

be stuck generating it and having no idea what it actually says, on the backend, after the ballot was marked, because they're not going to put on a headset and learn how to use the audio feedback just to do that verification. They're just going to say, "I'll just cast it the way it is."

MR. KING:

Right.

DR. GOLDEN:

So…

MR. KING:

Okay, good. On the question, and Diane brought up poor vision as an example, on the other examples that were given on dexterity, fine motor skills, blindness, cognitive disabilities, any insights into that? Lee?

MR. PAGE:

Thank you. Yeah, I was going to say, with dexterity issues, basically, what we're talking about is limited hand motions, hand capability of grasping, in some cases reaching, you know. They might be casting a ballot if it's on electronic machines with a pen or something, like, that punches the thing. And then, if it's a toggle switch that would have to reverse to see the ballot verified or something like that, that might be a little bit of a problem. There might be some other ways you could that, if it's on electronic.

Truthfully, if it's paper, I don't even know how that would work. I guess, probably because of the you know -- depending on how the paper comes out of the machine, where it comes out, how they have to grasp it, how they have to get it from the machine to

their lap or to their hands or what have you, there's a whole list of problems there. So…

MR. KING:

Okay. Ron?

MR. GARDNER:

Is your question pointed at the difference between low vision and blindness?

MR. KING:

I think the question was constructed to accommodate the difference between the two disabilities.

MR. GARDNER:

Okay, they're vastly different. And my comment goes back to what Dr. Golden said, over there, that having a person use one modality to cast a ballot and have to verify it in a different modality is just not appropriate.

In the area of hearing impairments, oftentimes you get somebody who wants to correct or ameliorate the disability of hearing impairment simply by giving you a knob to make it louder. Sometimes louder works, but oftentimes, louder doesn't work; it's the clarity, it's the quality, it's the frequencies. And the same thing exists with low vision, as opposed to poor vision, by the way, but low vision and blindness, you know, non-visual access. Non-visual access is not making it brighter or larger or clearer or different font. Non-visual access is being able to cast and verify without the use of vision at all. And having one or the other, excludes that other population.

So, it's clearly -- and this is, I don't know, am I sounding passionate? I can calm down. This happens to be one I'm passionate about because it happens to be mine, you know. I go back over here to the comment, you know, exclude somebody else, don't exclude me. But non-visual access, I think, is something that, you know, the Board of Advisors for the Election Assistance Commission dealt with, and we voted that, you know, put in that language simply -- specifically, not simply, but specifically to address this issue. So, I appreciate your bringing it up today. But it is one that I think clearly both need to be addressed.

Have I been responsive or have I just been passionate?

MR. KING:

You've been both, and both are appropriate. But I have a follow-on question.

MR. GARDNER:

All right.

MR. KING:

And it's really something both you and Diane have said. In my notes, here, I have, using one modality to cast and another to verify is inappropriate. Is that requiring -- is the issue requiring it?

DR. GOLDEN:

Yes.

MR. KING:

And going back to your earlier comment about creating choices.

DR. GOLDEN:

Absolutely, I was going to say, the problem is requiring somebody to -- giving them the option is great, you know.

MR. GARDNER:

The option is wonderful.

DR. GOLDEN:

Absolutely.

MR. GARDNER:

Because, there may be somebody that's just the reverse of what Diane just said that would love to cast it using low vision but would love to verify it having it read back to them because it's quicker, it may be quicker and easier for them. But the choice is what's important.

DR. GOLDEN:

Yeah, or using both throughout the whole process.

MR. GARDNER:

Sure.

DR. GOLDEN:

I meant that's the idea, yeah. It's -- the options are great. It's the idea of telling somebody you can only generate it this way, and then you got to go verify it a different way, and then you got to go cast it. I mean, I'm thinking about someone with motor limitations. So, I've got to use one interface…

MR. GARDNER:

Right.

DR. GOLDEN:

…to generate it, and then I have to learn another system to verify it, and then I've got to go use another, you know, input mechanism to cast it. You have just lost somebody, you know.

MR. KING:

I think implied, too, Diane, in your comments, is the notion that that shift in modality may occur after the voting process has begun and be a surprise to the voter.

MR. GARDNER:

That's part of it.

DR. GOLDEN:

Yeah.

MR. KING:

And they're unprepared for that.

DR. GOLDEN:

Yeah.

MR. KING:

Go ahead, Ron.

MR. GARDNER:

And the other thing that's interesting to me is that this technology again, and I hate to keep beating this horse, but this technology already exists. It's a matter of -- it's a matter of underscoring the importance, at the development stage, of using the same ingredients to make a new dish that everybody loves. I loved the example. But the technology already exists. I mean, there are how many people here, you know, 14 of us on the board, whatever, at the table, and that many cell phones, and everyone of them is different. Well, I -- you know I'm exaggerating here. But there are a lot of cell phones out there, and they do more these days than just answer and send a telephone call. I mean, we're doing everything with them, and blind guys and other people with

disabilities are using those same cell phones to send and receive text messages without looking at the screen.

You know, my point is that the technology already exists and I hope one of the things -- the messages that we can send is that we need to build it in at the development stage.

MR. KING:

Thank you. I've got Sharon, and then Lee.

DR. LASKOWSKI:

Not disagreeing, in fact, I agree with what was said, I was just -- one point of clarification. One thing we struggled with in VVSG 1.1 is that the directive was not to put in requirements that would require hardware changes. So, we were kind of…

MR. GARDNER:

Hardware what?

DR. LASKOWSKI:

Hardware, changes to the hardware. So, that posed a dilemma for us, in terms of the low vision issue and verification.

MR. GARDNER:

Why?

DR. LASKOWSKI:

Audio already existed -- the audio capability already existed in machines, but being able to…

MR. GARDNER:

I'm sorry, changes from the previous version, I see your question. I misunderstood.

DR. LASKOWSKI:

Yeah, yeah.

DR. GOLDEN:

Well, I'm thinking that through, though. If the only way to produce the audio is to do either an image capture or, you know, flatbed OCR scanning, once it's electronic, redisplaying it in enlarged visual display, the hardware is already there, because they interacted with the screen in large visual display. So, I don't think it would require a hardware change.

DR. LASKOWSKI:

It depends on how you're going to have the -- how the verification is done, if you've got paper.

DR. GOLDEN:

Yeah, what I'm saying is, the 1.1 proposed does have a requirement for audio read back of the content of the paper. Again, I'm not sure what the content of the paper is but, you know, we'll set that issue aside. In order to do, that you have to convert that content from print into something electronic to do the audio read back. Once it's electronic, it's a software issue to take that electronic and redisplay it in large visual display on the screen. The screen is already there. The hardware is all there. So, I guess what I'm saying is, in my mind, that is a software change only, not a hardware change. But…

DR. LASKOWSKI:

Yeah, it has to be thought through carefully.

MR. GARDNER:

Yeah.

MR. KING:

Thank you. Lee?

MR. PAGE:

I forgot this was off, but I'll go ahead and make a comment anyway. Talking about systems change is like changing horses through midstream here. That's going to confuse somebody with a cognitive disability, either or, and to the point where they don't -- just possibly, don't understand how to end the system which causes a little bit of embarrassment and they have to ask, you know, for help or whatever. And then, in some cases, you might have to start the ballot over again, you know, so the simpler and all inclusive of the design.

MR. KING:

Okay. All right, thank you. I think we've got time for another question before lunch. Let's go onto question number six.

The testing of accessible voting systems requires the development of metrics and protocols to measure the extent to which the candidate system complies with the standard. How can the EAC improve the development of measurements for voting system conformance to accessibility criteria?

Okay, Juan?

DR. GILBERT:

I think it starts with the best way to accomplish this would be through some kind of RFP or research to find out what are the options, and then institute an option by which it will become a standard that all the labs, everyone had to adhere to.

There's a lot of options on how to conduct a usability study, and what to measure, what counts more than other things and those kind of things. So, the question becomes, at some point,

someone has to define the usability study, the metrics and what they count for. And if you could do that, then you may be able to create a standard by which the labs could adhere to.

But, that's probably the best way to come up with metrics and what's going to be there.

MR. KING:

Okay, I'm wondering, also, the earlier discussion that the panel, I think, we agreed that many of these technologies already exist and they're mature, they're transferrable. Do those industries have developed protocols by which that, for example, the devices that Sharon brought in, is -- can we not only transfer the technology, but transfer the protocols and the testing methods into the certification process?

DR. GILBERT:

Well, the difference, here, is like Jim's example with the iPhone. They do have a standard by which they test by, Apple does, and they test. Then, they use that to inform their design, okay? Most people would do that. But then, Jim and others have a mechanism to give feedback which allows them to change that design. So, now, new order voting, we don't have that feedback loop. And if we do or if it could be implemented, what's the motivation for the manufacturers to actually adhere? Are they actually going to lose revenue? Is there a cost? Will they lose certification? You know, those kind of questions have to be answered. Whereas, the iPhone, they have to compete. You know Android beat them this last quarter in sales. So, they have a competitor and the jury, in this case, is the consumer. So, they have a motivation to actually

implement these things, whereas, in voting, what's the penalty or what's the cost there, if they -- they're already certified. What's the cost to do any better, for example?

MR. KING:

Okay, good. Sharon, and then Diane.

DR. LASKOWSKI:

Yes, well, at NIST we have been doing some research on the protocols. We do have a protocol that we're trying to experiment with. I have a couple contracts, I hope, will be let soon to -- specifically to address some of this. Now, this is for certification, which means the difficulty -- we know how to do these kinds of protocols and testing with users and enough users to make sure you've met some minimum standards.

The difficulty is in the pass/fail criteria. So, that's what our research is about, how you define what passes and what fails. To get complete repeatability of testing for accessibility is just not feasible cost wise, because you'd need so many users within so many different kinds of disabilities that it's cost prohibitive. So, our basic idea is to do testing with smaller sets of users and with experts who can then make the pass/fail determination based on evidence from the user interaction that they've observed. That's kind of our going-in hypothesis now.

However, it's a big -- it's a difficult effort. We hope to scratch the surface and get started, but I think, probably, guidance for how the manufactures should be testing in their design cycle, performance of testing what you referred to, to inform their design, is also important. We're not working directly on that aspect.

MR. KING:

Okay, Diane?

DR. GOLDEN:

I'm going to sort of follow up on what Sharon is talking about. The challenge with this metric approach is its pass/fail with the certification. And that is a very different environment than the things that are comparable in terms of, particularly, I'll use Section 508 as an example, the accessibility requirements for the Federal Government for web and software applications and electronic information technology, which kind of parallels, looks like and feels like, voting technology. They have a set of access standards. They tend to -- some of them are kind of objective, some of them are fairly subjective. And the application is a best meets environment, not a pass/fail. So it's a very different environment. The standards look and feel similar in some ways, but the application is very, very different. It's about buying or not buying and it's a best meets approach, not a pass/fail.

Over on the voting side, when you shift that to a pass/fail, that raises the bar, substantially, in terms of the standards being very clear, unambiguous, repeatable, you know. If I get five experts together, they're all going to say "pass", or they're all going to say "fail," not two of them say "pass", and three of them say "fail", where you got this, you know, professional disagreement.

So, part of it is the standards need to be as absolutely clear, unambiguous as possible, to the extent they can be fairly objective, you know, that needs to be there. In some cases that's very difficult to do. And then, you know the expertise, you know. You

have to have people that have enough expertise so that it's a repeatable judgment of, "Yes, it meets that standard," or, "No it doesn't."

So, I'm saying it's a challenge, you know. This is not easy. And, quite frankly, voting is the place leading this effort, because Section 508 has not addressed it. Although if the ADA decides to do web access requirements as an ADA requirement, that's going to up the ante there, substantially, because then it provides all those personal right of actions and things that have not been available in the past. So that field could be moving this way. But to me, that's what's unique about this, and creates a real need for these standards to be as clear and as objective as possible, so that then, you have that repeatability and consistency of the pass/fail decision.

MR. KING:

Okay, thank you. Deidre?

MS. DAVIS:

Deidre Davis. I believe that President Obama last week signed an Executive Order trying to increase the accessibility of our dot.com world.

DR. GOLDEN:

Yep.

MS. DAVIS:

Will not that move us forward in a positive way to get us to that goal?

DR. GOLDEN:

Yeah. What do they call those? What did DOJ call that? Request for information. It's not a proposed rulemaking, it's a request for information about adopting web access standards as part of the ADA. And they're looking at both the worldwide web accessibility standards and the Section 508 standards for web access.

And, yes, I mean, that's going to raise the ante substantially, if and when that happens. Now, I'm assuming that will be a long, you know, rulemaking process. But it will put those decisions -- instead of a best meets kind of place, it will put those in either you conform or you're in non-compliance with the ADA, which, like I said, that will shift that environment a little bit closer to the environment that voting systems are operating in.

MR. KING:

Okay, any other comments on strategies for improving metrics and protocols for testing of accessibility features? Jim?

MR. DICKSON:

Yeah, I know this has been a cost issue, but one of the problems is that in the certification. If you look at who's in the room, you've got the manufacturer, you've got the labs, you've got representatives of the EAC. You do not have in the room during the certification process any experts on accessibility. It seems to me in addition, and I know this isn't an easy thing to do, but no matter how carefully you write the standards, and no matter how precise the metrics are, unless there's someone with expertise in the world of accessibility in the process of certification you're going to inevitably have things coming out of the certification process that are not going to be accessible in the real world.

MR. KING:

Okay, all right, well thank you. We're halfway through our questions and I do have a request from Juan that I'd like to honor this morning. Juan has to leave right after lunch. And if you remember, I said everybody would get an opportunity to summarize their thoughts for the day, and your day is ending a little earlier than the rest of us. So, I'd like to invite you to share with us any observations that you had, if you want to make sure you address anything that you haven't already.

DR. GILBERT:

Thank you, Merle. My -- as you can imagine, my point of perspective is from a research and usability/accessibility, with an emphasis on universal design. I think it has to be up front. I applaud the efforts of the EAC in having this roundtable, and to continue to lift up the hood and keep looking at this thing and saying we're going to get it right. So, I think that's a noteworthy effort.

And I would hope that the community would understand, and particularly my colleagues -- and I call them my colleagues, my Ph.D. is in computer science, so they're my colleagues. So, I hope my colleagues on the security side would come to be a little more reasonable. And I really -- I was very serious about asking them, if you're going to exclude somebody, think about excluding yourself first. And I picked women as the audience, because there are all men, primarily.

[Laughter]

DR. GILBERT:

So, I think this is important, and from the perspective that if you can do universal design, everyone will benefit from it. If you have no disability, you can read large font just as well as you could a smaller font, probably even better.

So, my closing comments is to applaud this effort and to say that universal design is what I'm doing in our lab, what we're researching and we'll be reporting on some exciting findings and things that we're doing. And hopefully, the vendors will take note. They don't really talk to me much, but hopefully that will happen.

So thank you.

MR. KING:

Good, thank you Juan. A couple of housekeeping items, and then we'll adjourn for lunch.

Emily, if you -- I think everybody knows Emily, at the back of the room. If you need assistance logging on, she has the password information and she can help you with that.

Let's take an hour for lunch, and when we reconvene, we will begin with question number seven, and we will push through and try to get finished up by 3:00 today. And I appreciate everybody's efforts, great conversation this morning.

Jim, you have a comment?

MR. DICKSON:

Yeah, lunch options. What is -- we've got an hour, so what's close?

MR. KING:

Emily, the fountain of all knowledge.

MS. JONES:

Hi everybody.

MR. DICKSON:

Hi, Emily.

MS. JONES:

I'm just going to borrow a microphone. Okay, lunch options. Right next door to -- if you go out the building entrance, to the left is Devon & Blakely. It's a deli/bakery type place. You continue walking to the corner of 13th and F, there's M&S Grill which is a sit-down restaurant. If you take a right on 13th and go towards Pennsylvania Avenue which is South about a block or so, is Chef Jeff's. It's another sit-down restaurant. If you go out the building here and go to the right, you'll see across the street on 14th and F is Corner Bakery. Also if you go out the building to the left towards 13th across the street is the National Press building and there's a food court. And there's a couple salad places between here and 13th Street on this side of the street as well.

MR. DICKSON:

The place next door does it have sit-down space?

MS. JONES:

Shelly's Backroom? I haven't eaten there. There's an Italian restaurant, Finemondo's, which is also -- I believe it has a blue awning if you're walking towards 13th on this side of the street. It's a sit-down restaurant. Any other questions?

MR. KING:

All right thank you, Emily. All right, well, let's adjourn for an hour. Thank you.

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[Luncheon recess from 11:55 a.m. until 1:06 p.m.]

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MR. KING:

Okay, well, thank you everybody for getting back here on time. And we're going to move through the rest of the program starting with question number seven. I think one of the things that we'll notice is that there's -- some of these things have already been addressed, but it doesn't hurt to come back and reinforce points even if it's something that you may have said earlier. So let's begin with question number seven.

The VVSG requires voting system manufacturers to "conduct summative tests" of their AVS to demonstrate its ability to accommodate voters who lack fine motor skills or use of their hands. How can voting system manufacturers improve this testing process in terms of completeness, reliability and cost reduction? And how can these same improvement goals be reached in regards to vision-related disabilities and cognitive disabilities?

And with that, I see Sharon has already got her flag up, so we'll start with Sharon.

DR. LASKOWSKI:

Well, I thought I'd provide a little further explanation of the purpose and origin of this. In fact, we required these usability tests. And so, by summative it means that you're not -- you report on efficiency and effectiveness as opposed to trying to inform design, necessarily for the manufacturers, along the way of doing this test with actual voters, might discover improvements they want to make. And it wasn't just for dexterity. It's also for low vision and voters who are blind as well. So, there's several summative tests.

And the original reason for putting that in was we knew that good user centered design process and usability testing wasn't part of the way these systems were designed. And we've heard Juan talk about, you know, designing things from the ground up. So we thought, if they needed to produce a usability test, this would open the door for them and sort of force vendors to hire some usability experts and accessibility experts to actually run these tests and would uncover in-house before they submit for certification some of the issues. Because, if you do the tests properly, you will see, at least, the show stoppers in how you've implemented. So anyway, that was the background.

For cognitive disabilities, that's a wide range of people. Even for dexterity disabilities it's hard to know what range of people to use. So, that is one issue with that approach as defining the range. But it was a way to at least get the manufacturers started and getting this part of their culture…

MR. KING:

Okay.

DR. LASKOWSKI:

…amongst their designers and software programmers.

MR. KING:

Okay. That's an interesting term to use, Sharon, and I don't think I've heard it here yet this morning, and that is changing and evolving the culture of the manufacturers to better appreciate, and ultimately, more effectively incorporate adaptations to enhance accessibility.

DR. LASKOWSKI:

And by the way, it was not meant to replace these kinds of tests by the labs.

MR. KING:

Um-hum, okay, all right very good. All right, Lee, and then Diane.

MR. DICKSON:

I just want to be sure I understood what was just said, if you don't mind Lee.

Sharon, are you saying that the idea is to have the manufacturers produce a protocol for the accessibility work they're going to do, and that that would be part of the documentation that goes into the certification process?

DR. LASKOWSKI:

The documentation is -- a usability test, that is a test where you bring users in, whether they have disabilities or not, there are certain standard ways of doing that testing. So, it is a test protocol, yes. And when you're doing a summative test, the metrics are clear, you're looking at effectiveness, you have to report completely. So, it was meant for them to provide that documentation to the test lab. And by providing that documentation if they were able to run a valid up to -- and there's an ISO standard describing what these tests reports should look like and contain -- if they can run that, it means they have usability people and accessibility people on staff that ran this test. That was the point of it, is to make -- so I would hope if they discovered some, you know, egregious problem that they would correct it. And it can also inform the test labs. If they actually read the report, it might suggest areas

that they need to pay special attention to when they are doing the tests for certification.

MR. DICKSON:

Just -- is anything like that required, now, in terms of the manufacturers submitting written materials on this?

DR. LASKOWSKI:

Yes, VVSG 1.0 requires it.

MR. PAGE:

Just to reclaim my time, I'd like to…

MR. DICKSON:

Sorry.

MR. PAGE:

That's all right. I think the description and, you know, the process that you guys up there at NIST are doing in reference to this summative thing is great. I think the one problem that I've had from experience was we were contacted by a manufacturer to do test design like that and all the people we brought forward to say, yes, these people have limited dexterity, they disqualified as not having limited dexterity. And then, it was to a point where we couldn't find anybody. And I don't know what their characterizations of who, what, when or where. But I mean, I know what limited dexterity is. We've got a couple people on staff who have it, but yet they were turned away. So, I don't know where that goes or starts or ends, but that was a kind of a surprising issue. And of course, I didn't realize that these were, you know, parts of whatever was going on. So --but I just want to bring that to your attention.

MR. KING:

Okay, Diane, and then Sharon.

DR. GOLDEN:

Yeah, my comment is sort of a follow-up to that. The current VVSG does have the requirement for summative tests underneath each of the "disability" categories. So, it's one for blind, one for limited or partial vision, I can't remember the terminology, one for dexterity, one for -- anyway, so it's structured that way. The problem is, that's what it says, it's under that heading. And what hasn't seemed to happen is someone understanding that what I think that means is that you have people with that functional limitation, who require all of the access features that are part of that area. So under, for example, partial vision, you have individuals who need simultaneous audio and video. You need -- there are people in that summative usability pool who need large print, who need the largest version. There are people who need the smaller version because all they have is central vision, or all they have is peripheral vision and they need the smaller text size displayed in a way that they can use it.

I think what's lacking in the understanding of how to do this is the idea is that you have people who have real disabilities, functional limitations and need all of those access features. Not one person needing all 12 of them, but you have enough people so that I have a representative sample of people who use switches, so I have someone with spastic motions, and I have someone with very limited motion. And that just comes from understanding the community, and the only way you're going to get that range of people is a lot of partnerships. You need to know that, you know,

the ALS Society is going to know where people are who have this kind of limitation and United Cerebral Palsy chapters are going to know where all of those folks are. So, it's going to take partnerships, you know, within the disability community to be able to structure those usability tests so they actually give you the kind of feedback that you're looking for.

My experience, in looking at what the vendors who have gone through the certification process to completion so far have done, the one that we saw, they had five people with low vision and that was it. There was nobody with any other limitation. And even those folks were not terribly representative of a wide range of people with, you know, visual impairments. And the other mistake that I've seen the labs do, is, they have a non-disabled person imitating a functional limitation…

MR. GARDNER:

That's my favorite.

DR. GOLDEN:

…which is off the table. I can't say it clearly enough, off the table, you know. Having me try to do something with a closed fist is not the same as having someone with a paralysis or a paresis doing it, you know. It really needs to be people with those functional limitations.

MR. KING:

Thank you. I want to come back in a moment and ask you about partnerships, but first I've got Sharon, and then Rich.

DR. LASKOWSKI:

Okay, yeah, I think we've learned how much guidance is necessary, as Diane points out, to the manufacturers to do this properly. We did provide some templates and tips for how to run these kinds of tests. But we didn't go down to the detail like when you do the demographics they really, I thought it was obvious, that they do need to meet the demographics for that particular test. So, I think from the experiences it's probably worthwhile going through and describing in more detail, a type of tutorial in addition to that.

Dexterity, in addressing some of Lee's comments, have a wide -- there's a wide range.

MR. PAGE:

Oh yeah.

DR. LASKOWSKI:

And the systems that are out there are kind of limited of what they accommodate. So, I think, in particular, and I'm actually trying to get some research done in the coming year in this area of really outlining the range of dexterity disabilities and what you test with. So, we're trying to do a little research to address, specifically, that issue.

MR. KING:

Good. Rich?

MR. LABELLE:

Thank you. I'll address just the cognitive part of this question and expand it a little bit to include developmental disabilities and learning disabilities.

Those issues are obviously not as cut and dried as physical accessibility issues. And the couple of suggestions that I would

have is, one, and this has been mentioned many times, but involve self-advocates, involve persons with those particular disabilities as early as possible in the process, and keep them involved in the design process as it moves along, so that there aren't, you know, huge issues when you get it all done and then plop it on the table and say, "Okay fine now, you know, try to use it."

The other thing is, is that just as with assistive technology, there are a number of evaluation and diagnostic tools in the educational sphere that have been well developed to test different levels of a person's ability who is suspected of having one of these types of disabilities. And those kinds of tests and tools and assessments could be modified and could be adapted to determine whether what the manufacturers are trying to achieve can actually be achieved the way they're trying to do it for persons with these disabilities.

And then, it's also been mentioned before, and I would just echo the comment, about partnerships with disability organizations. I can't stress that enough, you know. We live and breathe these issues every single day. And no issue that a manufacturer would bring to an organization would be a new issue and we would be able to help them resolve those issues, because that's what we do. And we would be able to assist them in recruiting, you know, living, breathing folks with these disabilities to be able to really give a fair and rigorous test of the equipment.

So, that's what I have on that.

MR. KING:

Okay, I want to come back, Sharon, you mentioned -- I'm sorry, Diane mentioned partnerships as perhaps a way to make access to pools of individuals with abilities to assist in the testing. Could that also impact the cost of testing for manufacturers and labs?

DR. GOLDEN:

Sure. Actually, as I was sitting here thinking about listening to Rich talk over there, it occurred to me, and I really did not plan this, but there is a federally funded network of State assistive technology programs out there that are, by statute, cross disability. And what they do is assistive technology, thus the name.

And while my colleagues that I've now retired from might shoot me, a thought would be to say to those folks, one of your roles is to identify -- and most of them, this would not be anything new. They have connections within their States with the State NFB chapter and the State ACV chapter and the UCPs that are in the State and the Easter Seals and the parent training networks. I mean, that's what they do is work with all of those organizations; all the independent living centers, all of those disability groups and from a technology perspective. So, they understand if you were to say to them, "I want to do summative testing and I need a whole bunch of people who use switch access, you know, to run their wheelchair, to access their computer, to do their telephone," they would know where to go find those people in their State.

And I'm just thinking, some of those programs might be, you know, many of them run -- well, like I said, I borrowed these pieces of equipment from the loan program in Missouri. So, they loan this stuff out to people, so they know who's using Intel Readers

because they're loaning them out to them. So that might be an alternative, you know, to think about on a voluntary basis. Or, quite frankly, the reauthorization of the Assistive Technology Act is coming up. There could be something built into their reauthorization, if that's one of their roles, is to facilitate this summative testing. Many of them run kind of computer labs, regional centers. So, that would be a place you could even do some of this summative testing maybe.

I'm just saying that's already a federally funded network that's out there that might be a good match for helping forge these partnerships.

MR. KING:

That's an excellent point. I think, kind of imbedded in your observations is the notion that not only could it reduce the cost of testing, but ultimately, that the cost to market for the manufacturers, by shortening the iterations within the beta testing and VSTL testing. Because I think that is something that -- the manufacturers, obviously they're profit motivated, and helping connect the opportunity to better serve the accessibility community with ways to also reduce costs is a win-win that might be easier to shoehorn into the manufacturing and testing processes.

All right, we've got Sharon, and Deidre, and Ron.

DR. LASKOWSKI:

I just wanted to second what Diane said. We visited two of these in Connecticut and Maryland, and they're extremely helpful and were very interested in what's going on with voting.

And I'd also add, when you do tests with users you do pay them a range of $50 to $100, depending on where the test is and what you're asking them to do. And a lot of people with disabilities would appreciate having that opportunity to both test the voting system and get a little cash as well. So, I think it's a very good suggestion.

MR. KING:

Okay, thank you. Deidre, and then Ron.

MS. DAVIS:

Yes, I think that is a good suggestion, but you can't put that burden on the centers for accessibility that it's part of their role to be testers, if the manufacturers are not going to let them test. So, there's got to be -- I mean, yeah, that's almost an unfillable mandate unless there's something on the other side that says, "Without you using these folks to test, game off."

MR. KING:

Okay, I've got Ron, and then Brian.

MR. GARDNER:

I'm a tad uncomfortable, because I find myself disagreeing with Diane Golden, and that's the first clue that I'm wrong, with what I'm about to say.

[Laughter]

MR. GARDNER:

I don't disagree completely, but I just want to add a word of caution. I too, have seen the UATP Department -- I mean, facilities. They truly are expert. We have one in Utah. The folks that work there are caring and expert in what they do. But the very way in which

you described it Diane, you know, they know where to get a hold of these people in their State. That may be the case, but they may also not happen to have -- because by their very nature, many disabilities are low incident populations -- and they may not have somebody that can test a required aspect, and they may not even know that they don't have that person. In other words, I just am adding a word of caution. I think that we could use, and maybe even build, into the reauthorization, as Diane mentioned, the requirement of collaboration and cooperation with these UATP facilities. But, I think ultimate responsibility -- the locus of that responsibility needs to remain where it is, and that is full compliance with the law, or it doesn't get certified.

And you know I look at things, for example, websites, and so, I kind of extrapolate from that down to testing a piece of electronic equipment by somebody that may be at one of these UATP, you know, CIL locations or whatever. That makes me a bit nervous. But, you know, I think there's some real area there, maybe, to expand and really investigate the collaborative opportunities that are there.

But I really caution us that we need to make sure. I mean, we all understand the State jurisdictions. But we're talking about, you know, the VVSG. We're talking about a global situation here. And so, I think we need to just move cautiously in where we transfer the ultimate responsibility, if you will, for accessibility and testing the accessibility. That's -- I guess, that's my caution.

MR. KING:

Go ahead, Diane.

DR. GOLDEN:

I think I need to clarify, because I don't think we're talking at all about shifting the actual evaluation for conformance to the standards. This is just the usability testing that is just, literally, one standard per area. And it's, you know, getting enough people together to do good usability testing to say, you know, "This is efficient in the way it operates," or "It takes me five hours to do it." So, even though it technically is accessible you may as well throw it out the window because it's so unusable. So, no, the actual testing…

MR. GARDNER:

See, you're looking at the usability and not necessarily the technical compliance with accessibility.

DR. GOLDEN:

Correct. The test labs would still be doing exactly what they're doing, hopefully with some help and support. This was just the question about the summative usability testing that they're -- currently most of the vendors don't seem to be doing, because they just can't find people to do it. I mean, they don't know where to reach out to find those people. And that was the piece where I was saying maybe the…

MR. GARDNER:

And that aspect I do agree with.

DR. GOLDEN:

Yeah, maybe the State AT programs would -- I think what is happening now, it's overwhelming, and if you didn't work in this field for 30 years it would be overwhelming. There's a group for every

disability known to man, you know. You wouldn't even know where to start. So, I think what's overwhelming to the vendors might be if they had, you know, a smaller group of places to go, who then could be the brokers, that might help things out.

MR. KING:

Um-hum. Okay, Brian.

MR. HANCOCK:

And that was sort of going to be where I was headed for the specific question related to summative usability testing. I mean, that may be an area where we can assist, you know. The manufacturers have their primary locations in specific States. We could work with the organizations and those specific States to make sure the manufacturers have a pool of folks that they can count on in, wherever they are, in Omaha, in San Diego, wherever the case might be. And that might be a big help to them.

DR. GOLDEN:

Yeah, yeah.

MR. KING:

I think what I heard here is interesting. Lee pointed out that manufacturers may not be effective at determining who does meet the criteria. Rich points out that there are, in fact, diagnostic tools in existence that can be applied. And Diane points out that there are pools of people that can be drawn from. So, it's a neat triangulation of the problem.

All right, I'd like to go onto question number eight, if we could. As technology innovation creates more customized and one-off adaptive solutions for voters requiring accommodation, it is

possible that individual voters will have better and more appropriate adaptive devices than those provided by the jurisdiction. What issues arise from permitting voters to bring their own adaptive devices to the voting place? And should the scope of the voting system stop at the device interface or should it envelope the adaptive device?

All right, Jim.

MR. DICKSON:

This is a perennial question, and I just want to point out some dangers in this question.

You know, the thrust of HAVA was people with disabilities are treated the same as non-disabled voters. And so, you've got to be careful in putting the burden -- we don't want put burdens on disabled voters that are not placed on able-bodied voters. I want to acknowledge that this is, when you get down to the running of elections, this is difficult you know. It's relatively easy. When I go to vote, I bring my own earphone because I've had the experience, as wonderful as my local poll administrators are, in the rush of setting things up they sometimes don't remember, "Wear the earphones." But, you know, for somebody who is blind, totally blind, uses audio, I mean, I usually have an earphone in my pocket all the time. For other disabilities, that's not going to be true. And it sets off alarm bells, I think, in the disability community, particularly around voting, because for the longest time, prior to HAVA, the election -- much of the election administration community's response to accessible voting was, "Well, you can vote absentee."

MR. LABELLE:

Or curb side.

MR. DICKSON:

Or curb side. And we want to be really careful that we -- you don't set up something that would allow that kind of inappropriate and limited thinking to reemerge. There's been huge progress. I think the overwhelming majority of election officials are very committed to accessibility. But we -- to tie it back to Ron's point, we don't want to do anything that is going to shift the responsibility for accessibility onto the voter.

MR. KING:

Okay, thank you. Diane?

DR. GOLDEN:

Just to emphasize, allowing people to bring and use their own assistive technology is one thing. Requiring them to have and bring and use their own assistive technology is completely different. So, it's very different to have a standard that allows me to bring something and attach it and for the system to work with it, you know. Allowing myself to plug in a neck loop, so that I can put my hearing aids on T-coil and use it, is very different from saying, "If you don't do that, you can't use it," you know. "If you don't come in with your own T-coil and your own hearing aids, sorry, you're out of luck." So, it's just a very different situation of allowing somebody to bring/use their own, to substitute their own peripheral device for the one that's there than it is to say, "You're on your own voter. Either you bring your stuff or you can't vote." So, I think that's the big determining difference.

And so far, it appears that on the output side there's been little consternation about voters being able to substitute their own headsets, neck loop to hook to a hearing aid, whatever. It's been on the input side that there's been a great deal of consternation on the security community side of unplugging the switch, that there's and plugging in my own switch. That seems to send the security people over the edge. So the input jack is a problem, the output jack is not.

MR. KING:

Okay.

DR. GOLDEN:

And, at least in discussions I've had with manufacturers, there doesn't seem to be -- the switch it's not a USB port. It's not a port that's allowing something to happen internally. And I don't know what it will take to make the security community comfortable that that input jack is shielded well enough, or something, to allow multiple devices, voter-owned devices to be connected. I think that's the million dollar question.

MR. KING:

Okay, Sharon?

DR. LASKOWSKI:

I did ask our security people at NIST to look at this issue, so they didn't find an issue with it. So I think…

MR. GARDNER:

They did not?

DR. LASKOWSKI:

They did not, so I think that we can clear it up. You obviously can't bring your personal assistive device that requires special software to install, have that happen.

DR. GOLDEN:

Sure.

DR. LASKOWSKI:

But if it's just a switch, they didn't see a problem with it.

DR. GOLDEN:

And, honestly, I hadn't even thought like somebody bringing in their own electronic enlarger. I just assumed that would be no problem. But now that I think about it, if you have some sort of State statute or something that says you can't bring a camera device in, then you've got a problem there. So we may have some other policy issues that have nothing to do with the accessible voting system that I hadn't even thought of, which are really annoying.

MR. KING:

That's interesting. Yes, Jim?

MR. DICKSON:

If I could follow-up with Diane, it does seem to me that we could make this camera device into a great big long-term issue that would take an eternity to resolve. Or, you know, maybe by dealing with the definitions it could be dealt with rather quickly. You know, there's -- most cell phones are cameras.

DR. GOLDEN:

Yeah.

MR. DICKSON:

Polling places don't require you to park your cell phone at -- before you come in. So, you know, in terms of the devices that Diane has, they're -- and I think that's because the cell phone is defined as it's a communication device. It's not a camera. Well, why couldn't you take the same sort of practical definition and say, you know, these magnifiers are not cameras, they're a piece of assistive technology? And I would add to that the whole -- in some ways I find -- I can see where this would be a big controversy, but the idea of a blind person being able to take pictures in a room and know what they're taking the picture of without using the stand, it's silly. I mean, it just isn't going to be a real world violation of the law.

MR. KING:

That's a good point, Jim. Rich?

MR. LABELLE:

Thank you. I'm struck again by part of the predicate to this question where it says "it is possible that individual voters will have better and more appropriate adaptive devices than those provided by the jurisdiction." Again, drawing a parallel to the educational field, I think it is almost a certainty that, you know, the individual voters will have better AT than is provided by the governmental entity, for any number of reasons.

So, I think that this whole issue, I think, just simply reinforces the whole concept of universal design and the voting manufacturers -- voting system manufacturers becoming more familiar with and integrating concepts and technologies that already exist and are on the market in the field of assistive technology, so that, you know, as you said, you know, okay here's the machine, it does all these

things, it can provide these different AT functions, you don't need to bring your own along with you, that being ideal for as many people as possible. So, I think that simply just puts more force behind that whole argument rather than having a machine that, you know, has certain functions and may be able to work with certain types of assistive technology you know. The more inclusive approach, I think, is much better.

MR. KING:

Okay, thank you. Diane?

DR. GOLDEN:

Just one last reinforcer. In listening to a lot of this discussion it occurred to me that it might be helpful for people to know and for it to go into the record that there are probably, and some of you all can correct me if you think there's other places, but there are definitely some places to see assistive technology. If you want to know what's current in the field of assistive technology, there's CSUN, which happens every March in Los Angeles, which is, please help me somebody, it's been CSUN for so long, what the Sam Hill does it stand for? California…

MR. GARDNER:

California…

DR. GOLDEN:

…State University something.

MS. DAVIS:

Northridge.

DR. GOLDEN:

Northridge yeah, and it's their conference, don't ask me. Anyway, it's the technology and persons with disabilities conference or something like that. All it is, is basically, everybody goes for the exhibit hall. They have sessions but, you know, it's the exhibit hall. You can spend three days there, you know. I mean, it's just all manufacturers, very cross disability.

And then, ATIA has two conferences now. ATIA is the Assistive Technology Industry Association, so that is the trade association of most of the assistive technology manufacturers. It does not include, like Sunrise Medical, and wheelchair folks, but other than that, all the low vision people, Freedom Scientific, all of the augmentative communication companies, most of the assistive listening system companies, all of that sort of thing. They have a conference in January, in Orlando, and October in Chicago, and, again, huge. All of their members are there with all of their new products and, you know, that is their trade association.

So, that's where I would go to, you know, make those connections with the people who are manufacturing new scanning software and new switches and new electronic enlarging and all of that kind of equipment.

MR. KING:

Very good, CSUN, I've made a note of that.

DR. GOLDEN:

CSUN and ATIA.

MR. DICKSON:

We can get you…

DR. GOLDEN:

Yeah.

MR. DICKSON:

…websites and all that kind of contact information.

DR. GOLDEN:

Yeah.

MR. DICKSON:

So, it will be in the record.

MR. KING:

Any other comments on this question? All right, let's move onto question number nine.

Voting systems are submitted and tested as a complete system. If voting systems can be submitted and certified without an accessibility component, it could not be used to meet the HAVA requirement for an "accessible voting system" in a jurisdiction. Would this option of submitting the system without an accessibility solution improve time-to-market and cost-to-market for vendors? Could it encourage specialization and bring new vendors into the market space to meet the accessibility requirements? Are there unintended consequences for permitting this kind of separation between the mainline voting system manufacturer and niche manufacturers who would emerge with adaptive solutions?

Lee?

MR. PAGE:

Just responding by what I've heard from you, at least, what I think I hear, this question promotes a two-tier track for manufacturers. And my question is, why would you even want to manufacturer something, you know, that doesn't comply with the law? So, we

would -- whatever the niche market guy you're talking about, if they're going to produce something, then we're talking about an adaptive solution onto the main -- onto the larger market people. There again, you know, let's go back to what Juan said earlier. It's a universal design, starting back at the beginning, from ground zero, is where we need to start. And, you know, we just talked a legacy in the last question, or two questions ago. You know, unfortunately things change, technology changes. And with the machines that we've had over the last however many years coming out of these companies, they need to recognize the fact that what they're doing, you know, works to a degree. But in order for it to truly comply with what the needs of the law are, and what EAC, hopefully, and the guidelines are going to reflect, is some sort of universal design from ground zero. If that's what that question says.

MR. KING:

I think part of the intent of the question is to instruct thinking about the current environment of voting system manufacturing has not been effective in building accessibility into their systems. Do we continue to encourage them to do better what they don't do well? Or do we look for new vendors coming into the market space with a specialty to marry to those systems? So, I think that's the essence of the question. We've talked about universal design as, perhaps, the preferred strategy, but is this another strategy? And if so, is it one to be…

MR. PAGE:

To a degree, it's hard to marry, you know, cats and dogs.

[Laughter]

MR. PAGE:

So, you know, it's to be determined.

MR. KING:

Let me get Ron, and then Sharon.

MR. GARDNER:

I think I'd really like to follow Diane Golden on this. I raised my hand because, you know, here again, we're talking about accessibility versus usability. And if you don't have usability, accessibility is really meaningless. You can say that it technically meets the requirement of accessibility, but if a voter can't use it the voter doesn't get to vote. And that's what we're trying to avoid. So usability is critical.

So, what I understand this question to be saying -- or asking or helping us think about is, you know. And I heard what Lee said, so I'm not really disagreeing. But you know, if we let the cats over there do what they do best, as you said, and develop the voting equipment, and then allow the ones that go to CSUN and ATIA, and those people that are really, you know, the dogs over there, I mean, I'm wondering if there really is a way where we can truly improve usability without segregating and trying to do separate but equal. Plessy vs. Ferguson never worked, and I'm not suggesting that it should here.

I guess, what I'm really struggling with is feeling like there's some real potential here, but not liking the way that we're doing it. And that is separating, here, you do this, you do this, and we don't really have to do what Juan suggested, and that is universal design

from the beginning, because I'm truly an advocate of universal design because that's going to be less expensive and more accessible for everybody. And so, I'm really conflicted on this one. But I do see the benefit of having those folks who build in usability somehow being able to be drawn into the picture. Now, what I hope, I guess, is that we could draw them into the picture soon enough and cheaply enough and effectively enough that it comes out usable right from the get-go, which, of course, that and -- well that's what we all hope, but we don't have yet.

I yield the rest of my time to my esteemed colleague over there.

MR. KING:

All right, thank you, Ron. Sharon?

DR. LASKOWSKI:

Okay, I'll take a slightly different approach, but I think I come up with the same -- some of the same conclusions as Ron did.

If you're building an electronic -- so I assume we're talking about electronic systems here, so let me start with that. So if you're building an electronic system, you still have an aging population. You still have the contrast and the different font options, et cetera, in there. You want to be mindful of people who are color blind, et cetera. For a little bit more you can get most of the people with disabilities. So, I don't see that it would be cost effective not to consider it in building anything -- when you're building anything electronic.

MR. GARDNER:

May I respond to that?

MR. KING:

Please.

MR. GARDNER:

See, I agree one hundred percent with what you said except for the word “most.” Which ones do you then do, what Juan did, and say, “Unless you happen to be in these three categories, and then, we’ll deal with you afterward?”

DR. LASKOWSKI:

Oh no, I wasn’t -- the way to go the rest of the way is, say if you need -- you have your special switch and you have severe disabilities, it should be compatible so you could bring in some of, but it still should be designed for an aging population that has lots of dexterity issues. So, that’s a universal solution. There’s a few people that have more severe disabilities and they might want to prefer to bring in their own sip-n-puff switch…

MR. LABELLE:

Sure.

DR. LASKOWSKI:

…which it should be compatible with.

MR. GARDNER:

Yeah. And see, that’s where I get…

DR. LASKOWSKI:

And that’s how you get the rest of the way. But that’s my personal opinion.

And, if you’re thinking paper systems, that would be optical scans, so your people can manually mark. But they still have to submit it to the precinct count optical scanner, and in that case you

do have another -- so, either you run two separate systems in the polling location. One that's accessible doesn't make use of the optical scanner, or you're having an electronic ballot marker and you're going to submit the precinct count optical scanner. In that case -- even in that case where it's mostly a paper system, you still have to pay attention to the accessibility for that scanner because it's got error messages. It's going to let you know whether your ballot is valid or whether it accepts it or not. So, even in that case I think my logic still holds that you want to be mindful of these -- this universal design approach even in that case.

MR. KING:

Okay, Jim?

MR. DICKSON:

Yeah, I think that this question is a very, very, very bad idea. I understand why it's there, because the cost. But our fundamental problem is that the manufacturers think of disability access as the flea at the end of the tail's dog. If a policy like this…

MR. GARDNER:

Or the dog's tail, whichever.

MR. DICKSON:

If this policy were to go into effect, we could expect the manufacturers to think of us as the severed dog's tail in the room nine stories up and buildings over. I just -- this would only lead to an exacerbation of the problem.

I think Deidre's point, earlier, is really relevant here, you know. Until the manufacturers feel some kind of compulsion, we're not going to solve this problem. And to give -- in my mind the

predicate and the form of this question is simply creating a “Get Out of Jail Free” card.

And I want to, then, tell a real life story. I won’t mention the manufacturer, though if anybody wants to ask me, it was ES&S. When paper was first being discussed, I had a great many conversations with the senior designers, and the senior design team had the idea that would have bypassed this entire problem of paper accessibility for hand limitations. Their design idea was to put the ballot marking device, attach it to the back or the side of the in-precinct tabulator, which would be eminently doable. The design people struggled, pushed. Management said, “Too expensive, got to change the whole hardware of our tabulators.” Out the window.

MR. KING:

Okay, thank you, Jim. Diane?

DR. GOLDEN:

In listening to all of this discussion, it occurred to me that there may be an analogy from the, for lack of a better word, computer access field. And this is exactly what happened in that community. The big computer people, particularly, Microsoft and Apple, quite frankly, in terms of operating systems, created their environment and all of these niche companies, like Freedom Scientific and AI Squared, and all of the people that make screen readers and screen enlargement software, had their industry. And the game was this balancing act of every time a new operating system came out, the assistive technology world had to race to catch up because they wouldn’t release it up front, because that was proprietary, and they had to stay ahead of their competitors. So then, all of these

add-on assistive tech people had to race to get all of their products updated, to work with the new release of the operating system and software applications, which meant the people with disabilities were always about six months to a year behind everybody else and always stuck in old operating systems and old applications. And when you talk to those people now, you know, 20 years after, many of these -- this situation became apparent, I think, the big companies would say, “We would have liked to have built all of this in.” But at this point in time, these niche companies, the assistive technology companies, are so robust and, quite frankly, most of them were founded by people with disabilities, most of them employ tons of people with disabilities, and it’s a whole industry now that, you know, nobody wants to disrupt. So, we’re continuing to have this thing happening with these mainstream companies and these add-ons, and there’s this -- they work much better together now than they ever did in the past. But I think if you would ask them if they could -- had a do-over and they could go back to the beginning and build it in and have Freedom Scientific as a subsidiary of Microsoft, so that when that new operating system hits the market there is automatically an already built-in or available add-on that you just, like buying an app, you just add it on, I think if they had a do-over they would make it integrated and not this parallel thing. And if that’s instructive at all, I think that probably says, if we can pull it off in voting, it would be better for it to be, you know, a one-track system with it constructed together rather than anything separate. No matter how hard you try with that separate, it still doesn’t have the…

MR. GARDNER:

It's still separate.

DR. GOLDEN:

…robustness of -- yeah.

MR. GARDNER:

It's still separate.

MR. KING:

Okay, thank you. Deidre and then Jim, and then Lee.

MS. DAVIS:

So, this is Deidre Davis. And I just want to go on the record that my answer to that question would be no, no and no, period. We cannot go down that path, because we learn from experience, if you don't remember your history that you're going to be determined to repeat it. They have to be accountable now, and it can't be an afterthought, it can't be an add-on.

MR. GARDNER:

Yeah.

MS. DAVIS:

So, that would be my opinion if I had to…

MR. KING:

Okay, thank you. Jim, and then Lee

MR. DICKSON:

Yeah, I wish I had said it that bluntly, Deidre, and that directly. Because I think also a false supposition in the question, you know, a manufacturer of a voting system is going to go out and talk to Freedom Scientific, who makes JAWS. Well, that ain't going to happen because the first barrier that's going to occur is the voting

manufacturers' sacred trust, proprietary information. And I just -- I have real -- I don't see how, even if this were done, we're going to bump into proprietary information, the company's visceral mistrust of talking to anybody about what's inside the box. And so, I think it would just be -- it would be a dysfunctional solution, besides being the wrong solution.

MR. KING:

Okay, thank you. Lee, and then Ron.

MR. PAGE:

Yeah, this is my last comment. And, you know, as I recall this whole conversation about separation, you know, with the disability part being -- coming later, it kind of reminded me back to when this bill was drafted, because that was the exact same conversation in reference to some of the accessible requirements under HAVA. And that's why HAVA has so much accessibility requirements, is because we got all in at the front, as opposed to later on down the road. And so, many times, Congress passes laws or bills, or whatever, that have disability sometimes at the second level of implementation, and at the second level, never really gets implemented, never gets implemented, so it's best to, let's get it all at the beginning.

MR. KING:

Okay thank you, and Ron.

MR. GARDNER:

You know, try as I did to say that there might be some room to do it the way that the question anticipates, I'm glad my colleagues around here brought me back to my senses, because this is exactly

the issue I've struggled with, for going on 6 decades, that means I'm almost 60, you guys. It really has never worked. And I go back to my response to a previous question, and that is the responsibility needs to stay where the law put it. And to bifurcate the responsibility, like it or not, makes it separate but equal. And like it or not, it still doesn't work. I mean, I've never seen it work. And I apologize to my fellow advocates here for even considering it.

I don't -- I think my answer is no, no and no. Thank you, Deidre.

MS. DAVIS:

All right.

MR. KING:

Okay, very good, well, I have written in bold print the consensus of this group.

[Laughter]

MR. KING:

But I do think -- like Ron, I like the conversation evolved because on the surface I think it's a thoughtful question. It's a question that most people outside of the accessibility and voting community would look at and say, "Well that seems reasonable." And having that conversation to point out why it hasn't worked and why, as Jim said, it's dysfunctional, I think that's instructive.

All right, let's -- I'm sorry, Lee.

MR. PAGE:

One more comment I was going to say, Merle. I'm not against, you know, niche markets coming up with specialized ideas that, you know, redoes the wheel, that we all accept, because I'd much

rather see it that way, because that way it will be from, probably, the ground up. That way if that specialized niche market guy comes around with the solution, you know, let's buy that and leave the legacies back in the legacy land or whatever.

MR. KING:

All right, let's move onto question number ten. Currently, most fielded voting systems are legacy systems that have been in the field several years. These legacy systems contain components that are carried over from prior versions of the system and are incorporated into the current version. Once a component is no longer capable of upgrading to the new requirements, it is retired and replaced with one or more new components, better designed to fulfill the new functionality components of the system. In the past, the EAC has attempted to minimize changes to existing certified voting system components. In regards to accessibility functionality, should existing system components be required to undergo modification for accessibility compliance? Or should these criteria be applied only to new systems and new system components?

So, it's a question about backwards compatibility versus forward thinking.

MR. GARDNER:

We could probably save time if we started with Deidre.

[Laughter]

MS. DAVIS:

Shall I just repeat myself?

MR. GARDNER:

Exactly.

MS. DAVIS:

I mean, it's 2010, like you say. I mean, you know, we're disgusted when we know that there's some issues, as we started the conversation this morning, when I said, in urban communities ADA compliance hasn't trickled down and it's 20 years later, you know. We can't continue down this path. We cannot continue down -- if we are, then what's the point?

MR. KING:

Lee?

MR. PAGE:

I was going to say retrofitting, you know, doesn't necessarily work in all industries. And, you know, I'm -- like you said, voting systems last, you know, a generation in some cases. That's why, you know, in 2000, we were retiring lever switches and all of the other ones, supposedly.

Yeah, I would just say that if the machine no longer, you know, runs out and its components aren't meeting what the requirements are that it needs to be retired to, you know, the voting system graveyard, and we bring on the new one that's more accessible.

MR. KING:

Okay. Rich, and then Jim.

MR. LABELLE:

Thank you, I've spoken before of, you know, accessibility fatigue. And that's what I hear from supervisors and policymakers all the time of, you know, "We can't keep spending, you know, millions and millions and millions of dollars on new equipment." Well, you know,

I can appreciate that, but that's not because of the accessibility requirements. And again, you know, this is a basic civil rights issue, I'm sorry. No one -- no one outside of the context of the disability field would ever suggest that, "Okay, well, we're just not going to -- we're going to continue to disenfranchise certain groups of people by using outdated technology that, for whatever reason, they're not able to use." You know, in any other area, it just simply would not happen, so what's different about people with disabilities? Why should it happen here? If the machinery isn't accessible, if people cannot cast a secret and independent ballot, you know, again, if it costs a lot to replace it, I'm sorry, that still doesn't trump the right of the voter to cast a secret and independent ballot.

MR. KING:

Okay, thank you. Jim?

MR. DICKSON:

Yeah, I think, again, this question is going to wind up with -- I think no, no, no is the answer. But, I also think from the point of view of practical implementation you're talking about -- manufacturers tend to define what is coming in for certification, as, not a new system, but simply a modification to the existing system. And the way this question was worded it would exacerbate that whole thing because the manufacturers will want to hang onto the hardware that they have for ions, if they could. I mean, that's been the experience even amongst electronic systems for the past three decades. So, sending a signal to manufacturers that they could avoid dealing with accessibility by defining something as an upgrade to an

existing system as opposed to a whole new system would be a dysfunctional solution.

I also want to say there is a fundamental problem with the economics of voting system manufacturer maintenance. And with Rich, you can't, you know, we're not going to be, in any way, seen as an escape hatch on our fundamental rights, because the industry has some financial issues.

MR. KING:

Okay. I want to write down something you said Jim, if you'll give me just a second, please. Okay, thank you.

Diane?

DR. GOLDEN:

Just kind of summarizing listening to this, I think my concern is from a really practical perspective. HAVA passed, the VVSG 2005 was adopted and approved with an implementation date of, you know, when systems would begin to be certified to that standard. We're ten years into this, and from those of us that have kind of been around the start, I think, in general, what we've seen is not much -- not much broad scale movement. And I think what worries me is that any attempt to do anything other than establishing a date certain and saying, "It shall be done" and, you know, again, the promise of HAVA, there's one accessible machine per polling place and that machine meets these standards, it just seems as if it just keeps getting pushed off and pushed off and pushed off and it's always another five to ten years down the road. And I think I'm probably expressing my frustration with, you know, at some point, I really want a date certain, and I want a set of standards, and I want

a date certain so that I have some level of confidence that we actually will have one of those machines that actually meets those standards in each polling place. And so far, I just can't -- I can't get there. It's just always out of reach for some reason.

MR. KING:

Why do you think that is?

DR. GOLDEN:

If I had a solution, I'd be a wealthy woman.

MR. KING:

Brian?

MR. HANCOCK:

You know, I mean, just looking at what has happened just from a factual standpoint, you know, after HAVA was passed there was money that the EAC had to distribute to States to do a number of things. Upgrading their systems was one of those things. Many, many, many jurisdictions did that very early on, some even right before HAVA passed and they could get reimbursed. Given the fact that they had relatively new machines that didn't necessarily meet what we're talking about today, didn't meet the accessibility requirements in a large extent, and the way the economy is in the States out there, right now, they have these systems. We have certified new systems that, while they may not be perfect, are much better. And I think there are solutions out there that are better still, but the jurisdictions are still going to hang onto those, because the money is not there to the degree it was and they don't have the money within the State to purchase those. I mean, that's part of it.

DR. GOLDEN:

Yeah. And well, quite frankly, as we've all talked, the other complicating factor is that the accessibility train was moving forward in a purely electronic environment, and then got set back five years, going back to paper and trying to fix that. So the -- I think it's a convulsion of all of those things that -- all those derailed the darned train, let alone, you know, slowed it down.

MR. KING:

Okay, very good, we are -- we're making great time and I'd like to move onto question number 11.

To meet the accessibility requirements, a voting system must provide synchronized audio and video. Telephone voting systems do not meet this requirement. Do telephone voting systems, in general, fulfill the functional accessibility requirements? And are there accessibility concerns with this implementation strategy?

The question is that even though telephone voting systems may not meet the technical requirements, do they meet the functional requirements? Ron, you have a comment.

MR. GARDNER:

Well, as I think everybody in this room knows, the U.S. Access Board is currently working on new proposed regulations for Section 508. And one of the real struggles that we've had is writing regulations which take five years to write, so how much has changed during the process of writing, but writing regulations for technology and web pages, et cetera, that don't even exist. In other words, we're writing regulations for the future and that's much the same that we're doing now.

As David Baquis, from our Access Board staff, pointed out during lunch, this question really anticipates that we're considering telephone systems from the past, telephone systems that we currently use. And I don't know about you guys, but I am like sick and tired of my brand new desk phone that won't do half of the stuff that my little tiny cell phone will do. And so, I think, soon we're going to have the telephone system that does everything and that will be able to do the things that that question assumes that it can.

Now, that's not, I think, the intended question, but I think it's something that, really, we need to consider as we get to that question, and I'll stop there.

MR. KING:

Good, Diane?

DR. GOLDEN:

I will frame the question in the way I think it's…

MR. GARDNER:

I think the question was problematic, myself.

DR. GOLDEN:

Yeah, the -- I think the question is, does the current IVS system that's on the market as an accessible voting system meet the accessibility standards? And for those of you who are not familiar, the current system, it's an interactive voice, you know, software package and you go to the polling place and you use a regular phone to interact. And the phone line runs from the polling place to a central count. And you interact via regular phone, you know, typical voice response system, you know, "Press one to vote for," whomever. Anyway, you get the drift. And it prints a ballot, central

office typically, it drops into a basket, there's an Eyeball camera above it and a barcode. It scans the barcode, reads back to you your ballot from the barcode data, not the human readable print. That's what you verify, via the regular keypad, and you finish your vote and you cast it. Then later on a poll worker takes that paper ballot and converts it over to an optical scan ballot, you know, takes your vote for John Smith and colors in John Smith's box, so that then it's counted with everybody else's paper vote.

So, from my perspective, I'm going to use Deidre's answer, does it meet the accessibility -- current accessibility standards? No, no, no and double, triple no. The only constituency group for whom it meets are blind folks using an audio tactile ballot, particularly those who have tactile keypad skills, good auditory skills and an auditory tactile interface works.

For anybody with any kind of motor limitations, it's a disaster. I actually tried to interact with it using a switch activated phone. No go, won't work. We tried it. Unless you have a whole range of phones there with amplification, you can't control the audio to the point where someone with a hearing loss, unless you have a phone that's, you know, T-coil adaptable for somebody to use that, it all -- you have to take it upon yourself, as the voting jurisdiction, to have all of these phone adaptations there to make sure your phone even can work for a range of people who might need adaptations.

So, you know, was -- is it, was it an appropriate kind of stopgap measure? Yes. Does it have some potential, what Ron's describing, long-term? Absolutely. If you look at telephone remote voting as, you know, a robust way of doing things with a visual

interface and with all the things that telephones can do, absolutely it's a great idea and one that needs to be explored. But if the question is, does the current vote by phone system, an acceptable "accessible" voting as the only option, no, it just doesn't, you know…

MR. GARDNER:

Doesn't do it.

DR. GOLDEN:

Doesn't do it, yeah.

MR. KING:

Okay, and if I can just follow-up, Diane. That -- I know it was no, no, no, but it was no to, does not meet the requirements of a voting system, but more so, does not meet the function ability -- the accessibility functionality requirement?

DR. GOLDEN:

There's no visual display whatsoever, so there's no way to meet the needs of people who are low vision unless they want to do audio, you know. If they do, they're fine. But other than that, there's no way to meet the needs of people with any dexterity limitations, unless you have some very creative people trying to figure out phone adaptations, you know.

And just in terms of certification, I know the problem has been it's software. That's all it is. There is no hardware with the system that's sold. You have to provide your own user interface hardware. Well, given that, how do you -- I don't even know how you'd process that through the certification system, because it's not a complete voting system. It's merely a software package.

MR. GARDNER:

Can I ask how many systems -- how many -- may I ask?

MR. KING:

Certainly Ron.

MR. GARDNER:

How many jurisdictions do we have where that's actually being used? Is it prevalent? Or is it…

MR. DICKSON:

Maine, New Hampshire, Vermont, I think some places within the Midwest.

DR. GOLDEN:

I want to say Kentucky or Tennessee or someplace close to me, but not Missouri.

MR. GARDNER:

Well, your voice changed just for a moment there Diane, but I think I got -- I think I got your reply.

[Laughter]

MR. KING:

Jim, and then Lee.

MR. DICKSON:

There's actually fairly good evidence. Vermont is one of the States that got this and they work -- they put together one of the, in my judgment, best voter outreach/voter education programs that was put together, in terms of telling the disabled community that there's an accessible way to vote at your polling place. And the usage is tiny and they've never been able to kick it up. And I know that the Secretary of State has worked very hard at trying to drive up usage.

And I think the bottom line, why the usage hasn't driven up is because it's accessible, as Diane said, for such a very small part of our population.

I also want to underscore what Diane said. In terms of the future, I do think that telephone voting could be an answer, for instance, to the absentee ballot question. But there needs to be a fair amount of work done so that in terms of the absentee ballot, if it's going to be answer for that, it can't just be an answer for as Diane said for blind folks who are comfortable with auditory and the existing telephone you have.

MR. KING:

Okay, thank you, Lee.

MR. PAGE:

I just want to get a clarification from Diane because, truthfully, I'm not familiar with the mechanics of phone voting, at all, except for you use a phone. And you had said that the person uses the phone, you know, you push one for this answer, blah, blah, blah, all that. But it was like then the paper came out into a box and someone picked it up and then put it into another machine?

DR. GOLDEN:

Most of them and I can't -- I mean, some of them maybe do this at the precinct level, but my understanding is most of them it's a hard line from the polling place to the central office and I'm interacting via, you know, interactive voice system software. When I get done, my ballot's done, there's a printer at, you know, the central voting jurisdiction that prints the ballot.

MR. PAGE:

Right.

DR. GOLDEN:

And it literally…

MR. PAGE:

Comes out.

DR. GOLDEN:

…is printed, drops into a bin and there's a mounted camera that's scanning. And it's scanning a barcode. And based on that barcode data, it's reading back to me, auditorily, you voted for John Smith or Jane Doe.

MR. PAGE:

Right, right, right.

DR. GOLDEN:

And then, ballot has been cast and a poll worker, an election official, takes that ballot and converts it over into the real ballot that's going to be fed into a central counter. So, you have a human translation thing going on there. So, literally, what the voter verifies…

MR. PAGE:

It really hasn't been cast until that person puts it in the…

DR. GOLDEN:

Correct. The voter verified something. There are two issues. There are folks that have a real problem with verifying the barcode instead of the human readable. But quite frankly, in this situation…

MR. PAGE:

Right.

DR. GOLDEN:

…that's kind of a moot point because neither of those are counted. It's the thing that the other person translates.

MR. PAGE:

Right.

MS. DAVIS:

But can everybody hear…

MR. GARDNER:

It's not verifiable and it's not independent.

MS. DAVIS:

Sorry, Ron. Can everybody hear when it reads back, "You voted for John Doe"?

DR. GOLDEN:

No, it goes back to the voter via the phone.

MS. DAVIS:

You have to have that speaker on the phone.

DR. GOLDEN:

Yeah, via the handset of the phone or the headset yes.

MS. DAVIS:

Okay.

MR. PAGE:

That's -- when you were describing it, that's what jumped out at me, was, you've got another person picking up the ballot…

DR. GOLDEN:

Translating?

MR. PAGE:

…and then having to stick it in the AutoMark, or whatever. And that's, you know, truthfully this person, whatever he's done, he still hasn't voted yet until that person sticks it in there.

MR. LABELLE:

Yes, that's right.

MR. KING:

Okay, very good. The last question, I think we've actually discussed this earlier today and it had to do with using techniques for validating the voter's choice from how they cast it. But let's go ahead and just quickly look at this question.

The current standard requires that voters verify a paper ballot in the same style and manner in which it was generated, for example, large font, audio, et cetera. Does this standard support the concerns of disabled voters? Are there unintended consequences? Does this limit or encourage hardware/software innovation?

DR. GOLDEN:

Well, again, for me, just in terms of clarification, I agree with the statement except that the current standards should require that voters be able to. You don't want to require people to do things exactly the same way, but you certainly don't want to require them to do it differently. You want to make sure that whatever access feature they use to generate their ballot is available for them to finish the process, you know. That's the key point. And that I absolutely, positively agree with it. And I have to say though, unfortunately, the current standards don't deliver that, or they don't clearly deliver it, you know. And I think that would be very helpful if

they did clearly deliver that as, you know, a driving philosophy. If the philosophy is, we want to ensure that the access standards enable a voter to generate, verify and cast their ballot, you know, using the same access feature, that would be wonderful, because I think that is the right way to do it, because that ensures somebody actually finishes the process using the access feature that works for them.

MR. KING:

Okay. Okay, well thank you, well done. We got through the 12 questions that we were assigned. And I appreciate everybody staying on topic and being focused, great job.

The last part of our session, today, is some summary statements from the panel. And Deidre, I'll go ahead and give you a heads up because we're going to be starting with you, so you can start formulating your thoughts. I always like to do it in reverse order of the introductions. And what I'd ask you to do is to reflect back on what you heard today, and if there are any points that you want to come back and emphasize that you felt either weren't adequately emphasized, or that need to be hammered home, here, in a summary statement consider that. Or if there are things that were not addressed today, things that are important to you, important to the constituency that you represent, add those into your summary statement. But let's take a few moments, if we can, and we'll go around the table, we'll do that. And then, I'm going to give Brian a chance to make some summary statements, and then, I get the last word. I get to kind of put the finishing touch on.

So Deidre, if we could begin with you.

MS. DAVIS:

Thank you very much. Well, I think it's one that's been very educational for me, very eye opening, and I've been very pleased to be able to contribute.

As I said initially, the pockets of our community, the folks with disabilities who are least touched with all of our ADA access, with HAVA, with IEEA, with air carrier access, with any of those, are those folks who are stuck in minority urban communities, and where we clearly are not doing a credible job to get equal access to services and equal access to the right to vote unencumbered by any barriers.

I think that we have covered, I think, the whole playing field. I don't think we can add any other demographic that we have not discussed in here. And I trust that we all, as the EAC moves forward, sticks to our guns and makes a statement to manufacturers that inaccessibility is not going to be tolerated because voting is our basic right.

And so, I just would ask that we, you know, be tough advocates in what are lessons learned from this process clearly.

MR. KING:

Okay.

MS. DAVIS:

That's my perspective today.

MR. KING:

Thank you, Deidre, thank you. Sharon?

DR. LASKOWSKI:

I really appreciate the clarity of the discussion, at this roundtable, because the clearer these messages can be articulated the quicker the EAC can make decisions about how to proceed. And that gives me the information I need to do the best darned job I can writing standards and test methods to reflect those decisions. So, I was pleased.

I was particularly pleased to hear about the discussion about universal design, because I'm not just interested in voters with disabilities, I'm interested in all voters and how we can write good requirements that make it easy for everyone to vote, no matter what their circumstance. And just like curb cuts help a lot of people, universal design or thinking about the entire population gets you to better holistic designs and systems that function better and minimize voter errors.

And -- oh, poll workers, and we've mentioned poll workers a couple times. So, let's not forget about also the systems that are also easy for poll workers to explain and to help voters with.

MR. KING:

Okay, thank you. Diane?

DR. GOLDEN:

After listening, I have three issues that I jotted down as unresolved policy issues, for me, are things that are still percolating and need some resolution. One is the whole issue of accessibility with mail-in absentee ballots or again, entire voting system. That seems to be, as Jim pointed out, a direction things are moving. And right now, we have no guidance. It's just -- it's kind of like the Wild, Wild West out there, everybody is on their own, you know, doing some things.

And some of them are kind of innovative and some of them don't make any sense to me. So -- but it's -- I just haven't heard that talked about much, in terms of standards development or anything else. And I think we're going to be so far behind the eight ball if we don't get moving on it, there's going to be so many people doing it, it's going to be like the problem of, you know, closing the barn doors after the cows are out, or way too late to have much of an impact or we're going to be retrofitting.

The second issue is that whole verification and content of a print ballot. What is the content of the print ballot? Human readable, machine readable, what is it? And until we get some policy direction, I mean, the vendors are at a loss standards-wise. I'm not sure -- we need to clarify it quickly.

And then, the last kind of policy issue that I think Juan brought up is that the current standards are taking an all in one approach. It's an accessible voting system. Is that -- do we stay on that track? Or there have been people talking about cobbling together. "Well the accessible voting system does everything but this. But then, I have this thing that does that." And I think at some point that needs to be addressed head on and not left for conjecture. It's a policy decision and if what we're saying is an accessible voting station/system per polling place, then that means it's an integrated system, not something that, well, I've got these 23 different things and if I put them altogether I meet all the standards.

So, for me, those were the three kind of unresolved issues.

MR. KING:

Okay, thank you, Diane. Jim?

MR. DICKSON:

Yeah, I want to reiterate strongly something that Sharon said, "Remember the poll worker." The standard does say, when you turn on the machine all the accessibility stuff gets turned on. So, you know -- and, you know, I would argue, you know, in retrospect that that could be a hook for dealing with not certifying some systems.

I want to take a couple of minutes to just reflect on something that I think has been an undergirding of this problem, that is the lack of progress after all these years. And, yes, it's money. And, yes, it was, you know, lack of clarity and standards and certification. But I think for the manufacturers and for election officials, you know, when it comes to disability, when you really get right down to it, there are really only two problems to solve; shame and guilt. And I think that -- and those are emotional processes that people have to go through. It's not an intellectual process. And I think that part of the reason why the culture in the manufacturing side, which has been really dismal -- there's been huge progress amongst poll workers and amongst the media -- but amongst the manufacturers, you know, disability is still not there. And while I want to acknowledge that, you know, shame and guilt and fear are factors, I do think that the EAC has to do something very loud and very clear and very strong, or we're not going to see a change of the culture. So, you know, a big question for me is, we've now had a lot of conversation, but what happens next? How does what has been said become operationalized?

My last point goes back to our very first question about what's not been realized in HAVA, and who isn't at the table? HAVA had in a requirement that a foundation be created to work at the high school level with young people around voting. And that entity has never been created. And I think it needs to be. And to wrap this back to something -- to a point which Rich kept making, which, I think is -- could have a lot of solutions to some of these problems and that is, in the education world, the special ed world, there's pretty strong clarity on what the solutions are, both in terms of the technology but also in terms of the processes. And I think had we had, at this table, high school students and somebody from the special-ed world besides, that was Diane's original introduction, I think we would have been able to shape some more precise next steps.

MR. KING:

Okay, thank you, Jim. Ron?

MR. GARDNER:

Thank you. Jim, those are great things to think about it, and it gave me time to think about some of my past. I was a litigator for many, many years in the legal field and I at times had to go to our State penitentiary. And the frisking and the ID and the security checks that went on to get into the prison reminded me of what we went through a few months ago to get onto the campus of NIST.

[Laughter]

MS. DAVIS:

Really?

DR. LASKOWSKI:

We don't frisk people. Did they frisk you, Ron?

MS. DAVIS:

I won't come visit you.

MR. GARDNER:

I may have exaggerated a bit. But the reason I bring up NIST, is that they have an important -- they, I'm not part of NIST, so it is a them and us, but they have a very important role in this. And I was so gratified, and I want to bring this to the attention of this group, I was so gratified to hear the director, Patrick Gallagher, say at our opening meeting of the TGDC a few months back, you know, security doesn't get to trump accessibility. It's not going to make it out of my office, on my watch, unless we have both. Now, those are my words, but that was what he said. He said that accessibility is as important as security. And it's gratifying to know that we've reached that level of understanding with the person that can really help us make it happen.

The next point I want to make is that I'm gratified, as well, to know that the Commissioners of the EAC are here at this meeting. You know, they could sort of -- they could sort of get their staff to go over and spend the day with the little disabled folks and kind of talk in a little roundtable, so that we could mark off that we checked with the disabled community. You know, the Commissioners are here, and I think that's important to note.

Another thing that I want to include in my summary comments is the fact that we all recognize the importance -- well the roles that can be played by people with disabilities. Not -- Deidre?

MS. DAVIS:

Yes.

MR. GARDNER:

Close your ears for a minute.

MS. DAVIS:

Okay.

MR. GARDNER:

Not just to be the greeters at Walmart.

[Laughter]

MS. DAVIS:

That is a highly…

DR. GOLDEN:

Oh, if you could have seen the countenance over here, Ron.

MS. DAVIS:

That's a highly sought after position, I'll have you know.

MR. GARDNER:

But literally, to be at the table talking about these things. And I think we need to continue that type of process. In other words, if you want to know if it's accessible, get people with disabilities to test it. We talked about that. But what about getting people with disabilities to build it and to dream it and to develop it and to market it? In other words, let's do what we have to do to encourage the employment and the usage of people with disabilities as we develop these things start to finish, top to bottom, bottom to side, side to side, coast to coast. I think that's kind of a critical thing. Let's incorporate all the people who are going to be voting in creating the voting system.

And I really also want to express my appreciation for, you know, being included. Thank you.

MR. KING:

Okay, thank you, Ron. Rich?

MR. LABELLE:

Thank you very much. And thank you, Merle, it was truly a pleasure to be able to participate in a panel moderated by you. I really, really do appreciate that. And thank you to my colleagues on the panel. This has been a great experience and lots of great exchanges and ideas.

I'd like to thank the EAC for the invitation, and I too, would like to thank the Commissioners for their presence and participation. As a person who participates in a fair number of these types of things, I always wonder whether my input, you know, ever makes it beyond the walls of the room to the policymakers. And it would be easy for you not to be here, not to participate, not to take this and to delegate it to staff. And the fact that you're not doing that is very refreshing, and I greatly appreciate that.

To directly sum up, I think universal design came through, very strongly, in virtually every question that we addressed, including the early and often involvement and participation of persons with disabilities across the disability spectrum.

The necessity for manufacturers to be encouraged, required, cajoled, whatever it may take, to take advantage of the advances and the existing technology and strategies that exist for persons with disabilities in other areas, such as the educational field, such as assistive technology, you know. I was going to say that it's not

rocket science. Some of it might be rocket science, but that's okay because it's already been done and it's out there and it can be accessed and adapted.

Including strategies, AT, and means of effectively making sure that persons with cognitive learning disabilities and developmental disabilities can access the voting systems. The purpose being to expand accessibility of voting systems as far as possible, as quickly as possible, because at the end of the day, let us not lose sight of the fact that we are talking about people still being disenfranchised, of being deprived of their right to be able to cast a secret and independent ballot. And as long as one person is deprived of that, then we, as a society, as a free society, are lessened by that. So, this is not just an academic or exercise or a technical issue, you know. It's people's basic rights are at stake.

And so, I would simply urge the EAC to continue to push the envelope so that we can quickly, hopefully, reach that day when all voters can cast a secret and independent ballot regardless of their abilities.

Thank you very much.

MR. KING:

Thank you, Rich. Lee?

MR. PAGE:

Yeah, thank you. I really appreciate being here today. I want to commend the EAC and the staff and the Commissioners and the whole panel. It's been really -- it's been a good day, I think.

The questions and the outline really reflect the intent of the law basically, I think, about trying to get, you know, accessible

voting for people with disabilities and looking back at what HAVA really says. And the thing is, it's not often that an agency puts out stuff that reflects the intent of the law.

[Laughter]

MR. PAGE:

And so, I think that's one good thing.

I think the other thing that we need to look at is, you know, technology doesn't sit around and wait for the manufacturers to get onboard. It's going to move no matter what. It's going to move forward. And when technology is moving forward today, accessibility is an automatic included in those advancements. So, you know, we could talk about legacy issues all day long, but eventually that -- those situations need to, you know, change and move forward to whatever the next generation is going to look like.

And then, the other aspects of it is, you know, 20 years from now, or even less time than that, we're going to be talking about something totally different again, you know, with the Internet or some other aspects of voting. I think DOD, right now, is doing overseas Internet, either registration or voting, or something like that. And there are other aspects of, you know, other countries are doing this and that also. So -- and all those issues are, you know, accessible for people with disabilities, but it's also more accessible for everyone. And that's the intent.

So -- and I know EAC has been in a bind since its creation. And I really appreciate them, you know, not rolling over and laying down or what have you, because you are the watchdog for this industry and it's really good. And I appreciate it. And I appreciate

the staff. I appreciate today's non-manufacturer free environment for us to vent. I'm sure as soon as they read the transcript your phone will be ringing off the hook, Brian. But anyway, yeah, it's been good. So thank you.

MR. KING:

Thank you, Lee. Brian?

MR. HANCOCK:

Thank you, Merle. First, I just want to reiterate on behalf of the EAC our thanks to all of the panel members for taking your valuable time to be with us and sharing your thoughts today.

I'd like to thank Merle, once again, for doing his usual yeomen's work as a moderator here.

[Applause]

MR. HANCOCK:

I also reiterate, if you all have any additional concerns, anything, you think, didn't get out today, or some things you would like to stress, again, feel free to submit written comments to us and we'd be happy to take those.

And finally I think, you know, over the past several years we've done a lot of these sort of roundtable type discussions and perhaps some people think we've done enough of them, but from a purely selfish standpoint, I think there may be one additional one that we might want to consider having. And Matt and Merle and I were talking at lunch today, and actually, some of Diane's comments brought this up, you know. One of the big sticking points, as Diane and Ron certainly well know, are some of the

discussions between the security community and the accessibility community. So we were thinking how fun it would be to…

[Laughter]

MR. HANCOCK:

…to get a roundtable discussion…

MR. GARDNER:

The dogs and cats.

MR. HANCOCK:

…to get the dogs and cats together. I'll let you decide who's who, but perhaps it's something we may want to think about, because getting those two groups together may be the only way that we actually get some resolution to some of the questions that are still remaining. So anyway, that's something that you may want to look forward to in the near future.

DR. GOLDEN:

It's not like both sides don't know the other side's moves at this point.

COMMISSIONER HILLMAN:

Brian, Pearson thinks you're talking about have…

MR. HANCOCK:

As long as he knows he's a dog, then we're okay with that.

[Laughter]

MR. HANCOCK:

So, thank you again.

MR. KING:

Thank you, Brian. Well, ten minutes to three and we covered the curriculum.

MR. GARDNER:

Nice job, nice job.

MR. KING:

I want to take a few moments to summarize some of the things I heard here today. And first, begin by thanking the Commissioners for the invitation to come. I always enjoy doing this, it's great. I thank Brian for his continued leadership in this program that's so incredibly complicated very, very few people can wrap their minds around its complexity. Matt, thank you for your help today in getting things put together. And most importantly, thank you to Emily, because she's going to make sure that all of our travel gets paid for. And we do appreciate her. Thank you.

[Applause]

MR. KING:

I also learned from Ron, today, that that fence around NIST may not be to keep people out. And I never thought about that.

[Laughter]

DR. LASKOWSKI:

It's to keep the deer in.

MR. KING:

But what I'd like to do is take just a moment to kind of reflect back on the scope and the depth of what was covered here today. I'm always kind of astounded, from my own little special niche in elections, how much I learn when I come to these roundtables and how much expertise exists within the people that sit at these tables.

The first thing that I heard today, that really made me pause and think, was the extra complication within the minority community

of accessibility. And I thought that was very thought provoking and a great way to start out the session today. When Jim talked about the rates of disabilities in the African-American community, Hispanic community, Native American community, again, I think that was telling us that there are layers and layers of this issue that need to be understood. The disability community's own leadership may be under-represented by minorities. And again, I think that was instructive for us all.

We talked about potential resources, consortiums and partnerships that we may be able to leverage that would, not only, improve communication, but ultimately have the ability to drive down cost in terms of testing.

Minority language requirements add in extra complexity when layered on top of literacy issues. We talked about India having some innovative approaches of managing multi-language applications among communities with literacy issues.

That the ballot design issues are kind of imbedded and so hard to control and the complexity of using icons and photos which may contradict with State laws makes that a particularly difficult nut to crack.

The continued need for plain language instructions continues. And again, I think that's one of those universal design principles that improves everything. That navigation systems are another universal design piece that have to be addressed.

The implementation of a smorgasbord approach, for lack of a better word, where voters can choose an appropriate method of navigating, an appropriate method of verification and that poll

worker training is critical not only in their own understanding of how to manage accessibility, but how to communicate the accessibility features to voters that arrive.

The advantages of electronic systems may be giving way to the challenges of paper systems, in that it requires a recalibration of thinking in the accessibility community about how to not lose what was gained in electronic, and look for ways to achieve it in the paper environment.

The testing labs may have both some structural issues, but some attitudinal, some cultural issues in their appreciation of accessibility issues.

That, overall, there are concerns about whether the HAVA 301 requirement for independence of verification and casting is being met in voting systems.

The advent of vote-by-mail systems, particularly in the West, it may be outstripping strategies for improving accessibility in those environments, and if that train has left the station, how important it is to try to catch it and make sure that the accessibility issues are addressed there.

Universal design, there was unanimous support, I think, among the panel for the importance and the paramount need for voting system manufacturers to incorporate that. That add-on strategies are not effective in addressing accessibility issues.

The single machine model, where there's a single technology that addresses both accessibility voters, as well as all voters, is a desired approach.

MR. GARDNER:

You got that point.

MR. KING:

Asking voters to use audio to verify a ballot cast with large font is inappropriate. There should be options provided for voters.

There's no well developed feedback loop for manufacturers of voting systems to collect feedback from the disability community, but, in fact, there are organizations that could be tapped, there are methods of determining the suitability of individuals to participate, and there's a need to get greater participation of the disability community in all aspects of voting system design, manufacture, and deployment.

The challenge of best meets as a testing criteria has to somehow be reconciled with the pass/fail criteria that's being used in voting system testing.

Let's see, the reauthorization of the UATP may provide some opportunities for leveraging resources, permitting adaptive devices may, in fact, place an inadvertent burden on the disabled voter. And I thought that was instructive that there can be an unintended consequence of that. And there was uniform support that the accountability for delivering accessibility must rest with the jurisdiction and the manufacturer. It cannot be shifted to the voter.

And I've got down here, too, a couple of key points that I heard in the summary. Accessibility is as important as security. And I think that ties into Brian's proposal of a sit-down session with both communities. And that our goal is to expand accessibility as far as possible and as quickly as possible.

So, that's what I took away today from what I heard here. Again, I thank everybody for their participation. Members of the audience, I thank you for your time that you spent here today. And everybody have a safe trip home, and I'll see you at the next meeting.

Thank you.

[Applause]

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[The EAC Accessibility Roundtable adjourned at 2:55 p.m.]

add/bw