

**U.S. Election Assistance Commission
Voting System Testing & Certification Division**

Unified Testing Initiative and Cost of Testing Meeting

Miami Beach Resort & Spa
2833 Collins Avenue
Miami Beach, Florida 33140

Held on Thursday, January 29, 2009

VERBATIM TRANSCRIPT

The following is the verbatim transcript of the Unified Testing Initiative and Cost of Testing Meeting held on Thursday, January 29, 2009. The meeting convened at 9:09 p.m., EDT. The meeting was adjourned at 4:02 p.m., EDT.

MR. HANCOCK:

Good morning. Thanks for coming and joining us here in sunny Florida. I'm sure about three-quarters of you, at least, left someplace that was colder and icier and had a lot of snow on the ground. In fact, we did have, unfortunately, a few cancellations from a couple folks in Kentucky, where I understand they had a lot of ice. But, I think it's indicative of the importance of this topic that a lot of you came through probably, somewhat nasty conditions to be here. So, thank you very much.

I'd like to welcome you here to the Miami Beach Resort & Spa, first of all, on behalf of our four Commissioners, our Chair, Gineen Beach, our Vice-Chair, Gracia Hillman and Commissioner Rodriguez and Commissioner Donetta Davidson. I think we have three of the four Commissioners here and that would be Commissioner Beach, Rodriguez and Davidson. Commissioner Hillman, I understand had to cancel for a last-minute engagement. So, thank you very much on behalf of them, and also on behalf of our Executive Director Tom Wilkey, who is here in the back of the room, and also our Chief Operating Officer Alice Miller, who I saw -- yes, there she is. Thank you.

A real special thanks needs to go out to some folks on our staff here, the ladies that are manning the front desk. Ah, actually one of them is here, Emily Jones, who is our conference coordinator and did an excellent, excellent job working with the hotel and all of you. And also, to Robin Sergeant, who is our administrative assistant, and Robin is probably still outside, but a special thanks to you all.

[Applause]

MR. HANCOCK:

This would not be possible without those ladies. Special thanks, also, to Laiza Otero and Matt Masterson, who do the bulk of the day-to-day work here and if we look good at all, it's probably mostly their -- it's their doing that that happens. Also, to our technical reviewers that are seated to the left of me here, and they'll introduce themselves shortly. And also, especially to the hotel staff. They've been great, to the folks that have been working real hard all morning to get the audio and video up. The folks that have done the set-up, they've been awesome. So, we really appreciate their help, as well. So, thanks.

As most conferences go, I think the first obligatory thing that we need to do, is to do some introductions for the participants here for this meeting. So, we'll start at the table and then go around to the people at the tables with the red cloths on them, because they

are the participants here. And if you could take the microphones there when it's your turn and just pass them down, just let us know your name, where you're from and who you're representing. We'd appreciate that.

So, Laiza.

MS. OTERO:

Well, thank you. I'm Laiza Otero. I'm Deputy Director of the Voting System Testing and Certification Program and I'm with the EAC. Thank you for coming.

MR. HANCOCK:

Brian Hancock, Director of the Testing and Certification Program.

MR. MASTERSON:

Matt Masterson. I'm with the Testing and Certification Program, and I'm not sure what my title is.

MR. HANCOCK:

We're working on that.

MR. WATSON:

Tom Watson, technical reviewer.

MR. CADDY:

Tom Caddy, technical reviewer.

MR. BERGER:

Steve Berger, technical reviewer.

MR. SKALL:

Mark Skall, technical reviewer.

MS. MEHLHAFF:

Dawn Mehlhaff, technical reviewer.

MR. FREEMAN:

Steve Freeman, technical reviewer.

MS. SMITH:

I guess it's over to me. Pam Smith, I'm not a technical reviewer. There's already a lot of them. I'm with Verified Voting Foundation based in California in, you know, San Diego, sun. No problem getting here at all.

MR. IREDALE:

Tab Iredale with Premier Election Solutions.

MR. HOOVER:

James Hoover with Dominion Voting.

MR. HIRSCH:

Bernie Hirsch, Indianapolis, with MicroVote.

DR. KING:

Merle King, Kennesaw State University.

MR. CUNNINGHAM:

Keith Cunningham, Director of the Board of Elections in Allen County, Ohio.

MR. THOMAS:

Chris Thomas, Director of Elections, State of Michigan.

MR. PEARSON:

Steve Pearson, Election Systems & Software.

MR. BRYANT:

Brad Bryant, State Election Director in Kansas.

MR. DRURY:

Dave Drury, Florida Division of Elections.

MR. LONG:

Keith Long, State Board, North Carolina.

MR. TAILOR:

Wes Tailor. I'm the Elections Director for the State of Georgia.

MR. FAUMUINA:

John Faumuina, American Samoa Elections Office.

MR. GALE:

Erick Gale from the Ohio Secretary of State's Office.

MR. FRANKS:

Dave Franks, Oregon Secretary of State's Office.

MR. WENDLAND:

Justus Wendland, Montana HAVA coordinator.

MR. MAERUF:

Mohammed Maeruf, Board of Elections, Washington, D.C.

MR. KAPSIS:

Jim Kapsis, Precise Voting out of New York.

MR. HANDY:

Nick Handy. I'm the Director of Elections in the State of Washington.

MR. HULSHOF:

My name is Jacques Hulshof. I'm from the "Nedap" in the Netherlands.

MS. COGGINS:

Carolyn Coggins, iBeta Quality Assurance Voting System Test Lab.

MR. PADILLA:

Frank Padilla, Wyle Laboratories.

MR. KELLNER:

Doug Kellner, Chair of the New York State Board of Elections.

MR. STEVENS:

Anthony Stevens, New Hampshire Secretary of State's Office.

MR. BEIRNE:

David Beirne, Executive Director of the Election Technology Council.

MS. MANLOVE:

Elaine Manlove, State Election Commissioner from
Delaware.

MR. ORTIZ:

Chris Ortiz, Unisyn Voting Solutions.

MR. HEADLEE:

Jennifer Headlee, South Dakota HAVA coordinator.

MR. HEIN:

Ross Hein, Wisconsin Elections Division.

MR. POSER:

Gary Poser, Elections Director for Minnesota.

MS. NIGHSWONGER:

Peg Nighswonger, Director of Elections, Wyoming.

MR. AUMAYR:

Paul Aumayr, Maryland State Board of Elections.

MR. SILRUM:

Jim Silrum, Deputy Secretary of State in North Dakota.

COMMISSIONER RODRIGUEZ:

Rosemary Rodriguez, EAC.

MS. GRIFFITHS:

Ann Griffiths with CIBER, from Pennsylvania.

MS. BACA:

Anita Baca, Secretary of State's Office from New Mexico.

MS. FELTS:

Diane Felts, Illinois State Board of Elections.

MR. RODGERS:

Andy Rodgers, Hart InterCivic.

MR. GILLERMAN:

Gordon Gillerman, National Institute of Standards and
Technology.

MR. GILES:

Al Giles, the Voting Technology Coordinator for Virginia.

MS. MILLER:

Alice Miller, Chief Operating Officer, EAC.

COMMISSIONER DAVIDSON:

Donetta Davidson, EAC.

CHAIRWOMAN BEACH:

Gineen Beach, EAC.

MS. CEGIELSKI:

Stephanie Cegielski, Colorado Secretary of State's Office.

MS. LAYSON:

Jeannie Layson, spokesperson at the EAC.

MR. COLON:

Nestor Colon, Puerto Rico Elections Commission.

MS. DeWOLFE:

Kathy DeWolfe, Vermont Director of Elections.

MR. MAURO:

Michael Mauro, Iowa Secretary of State.

MR. JONES:

Douglas Jones, stand-in for Dave Wagner who is the IEEE representative.

MR. FINLEY:

Lowell Finley, California Secretary of State's Office.

MS. MAPPS:

Traci Mapps, SysTest Labs.

MR. RAPOZA:

Bob Rapoza, Director of Elections in Rhode Island.

MR. HIGH:

Ryan High, Nevada Secretary of State's Office.

MR. KING:

Brad King, Co-Director of the Indiana Election Division.

MR. ALAMPI:

Dave Alampi, Avante International Technology Company.

MR. HANCOCK:

Well, thank you very much. And I know we have a number of observers in the back of the room and I welcome you, as well.

This is a considerably larger meeting than the initial cost of testing meeting we had in Denver almost two years ago. A number of you were there for that, but we're very excited that we have a lot more participants here this time. I think, at least, before we had

some cancellations we had 40 states represented, which, I think, is excellent. We have all of our test labs represented. All of the major manufacturers are here. We have advocacy group representatives. So it's wonderful. And I also should say, you know, that we had no EAC Commissioners at our last meeting in Denver, so we're very happy that they're here as observers for this meeting. So, once again, thank you all.

With that, we'll do some of the usual housekeeping items that we need to know about for us to have a successful meeting. And for that, I think Emily will talk to you about those.

MS. JONES:

Good morning everyone, I'm glad to see you made it. I got your flights and hotel correct. That's good.

Just to go over a few things here, the restrooms are going to be located down the hall to the left. We do not have wireless available in the meeting space. There is a business center down the hall, as well. If you have any questions about travel, I will be outside at the registration table, if you have any questions about reimbursements. Also, I did send a memo. The POV mileage reimbursement rate did change. It's now 0.55. And for tomorrow we do have several break-out sessions, and to help organize that, on the back of your name badge should be a working group number sticker. You'll be one, two or three. If you're in group

number one, you will start off in this room here for the first session. If you're in group number two, you will go upstairs to the Balboa room and start there. And if you're group number three, you will start off in the Madrid room. And then you'll rotate accordingly, group three coming back down here to start session one, two going to the Madrid room for number three. If you have any questions, staff will be around in the rooms if you have any questions about where to go.

As far as lunch, there's a cafe downstairs. There's also a restaurant outside by the pool area if you want a nice view of the ocean. And if you have any other questions, Robin and myself will be outside. Thank you.

MR. HANCOCK:

Thanks, Emily. Let's talk a little bit before we get started about some of the rules of engagement for this meeting over the next two days.

First of all, as we always do, please turn off or silence your cell phones or PDAs, just out of respect for the people sitting next to you. We appreciate that. The speaking is, as it was in the first cost of testing meeting, limited to participants and those would be those of you that are sitting at the red cloth tables in front. Try to keep your comments on point. I'm sure you will do this, but as you know we have a very limited time and we have a lot to get over, a

lot of items to cover over the next two days. So we would appreciate that.

We will have specific time for questions later this morning during the 11 a.m. session, and I'll talk a little bit about the agenda in a few seconds. But that's going to be the time for specific question and answers, both about the initiatives that we'll present here this morning and other items about the testing and certification program, other questions you might have.

Just so you know, a transcript of this is being recorded and all proceedings over the next two days will be made available on the EAC Web site within a couple of weeks, usually. Jeannie is that fair? Okay. And that includes all the presentations, all the PowerPoint presentations and any white papers or other papers that have been presented to us here. So those will be on the EAC Web site.

If anyone has questions or comments that they are not somehow able to get today or get up to the microphone or if we run out of time, we'll have our email addresses at the end of the presentation. So, please get on your computers and by close of business tomorrow, go ahead and send those to us and we'll be sure and get back to you as soon as possible with answers to any questions that you may not be able to talk about today or have time today. So we will do that for you.

I just wanted to remind everyone, you probably saw the big table outside this room. We have a number of publications out there, including, in addition to the publications that were on your seats here this morning, we have the Election Management Guidelines document. We have our Quick Start Guides. We have the EAC Annual Report. Actually, that was on your chairs. And we have a number of other documents that the EAC has put together. We're very proud of them and proud of all the EAC staff that have gone and put a lot of hard work into those. So, they're out there if you'd like, and we certainly encourage you to pick those up over the course of the day.

Let's, very quickly, go over the agenda for today. This morning I'm going to be talking about, in a few minutes, an overview of our initiative and some other things. We'll have a quick break after that. And then, as I said, the 11 to 12 noon session will be for comments on my discussion this morning, as well as questions that you might have about our certification program. We will, as you see on your agenda, have Secretary Kurt Browning speaking today, after lunch. So, we're very excited about having Secretary Browning here, Secretary of State of this great State of Florida. In the afternoon Matt Masterson will talk about the EAC's new threat assessment project, which is very important and certainly has a bearing on costs, which is, obviously, what we're

talking about here. Finally, after that we will have a call to participate. After you hear what we have to say this morning, those of you state representatives will have a chance to, sort of, digest that and see who would like to participate in our pilot program. And then, finally, we'll have some other discussions at the end of the day.

Tomorrow is going to be a little bit different set-up, but we'll talk about that tomorrow. As Emily said, we have the break-out sessions in the afternoon to talk about very specific topics related to the cost of testing, so we're excited about that. And I do want to thank the people that have volunteered to moderate those, David Beirne, Steve Pearson, Steve Berger and Mark Skall. So, thank you to you all.

With that, first of all, any questions about anything housekeeping or anything else this morning? No? Good, we got through that session.

I just wanted to start out by saying as a preface to any other remarks that any of us -- I think certainly any of us up here in the front table make today, I want to assure everyone in this room that contrary to some reports, certainly that we've heard and I'm sure that you've heard, the EAC recognizes the urgency of bringing certified voting systems through our process. Moreover, as those of you that follow our program know, we've already issued an initial

certification to MicroVote Corporation and are expecting other voting systems to receive certification probably within the next 120 days or so. We also recognize the new certification program and its associated requirements have put a significant stress on election officials, on our test labs and on the manufacturing community. The EAC has and will continue to be committed to constant maturation and improvement of its testing and certification program. We're going to learn from our own mistakes, and we certainly have made some of those. It's a new program, it was to be expected and we've already begun to do that. And I'll talk about that a little bit this morning.

As I said, we've already addressed, during the short life of this program, many of our mistakes and many of the mistaken assumptions, I should say, that we had when we were first developing the program. For example, technical review. I think we under-estimated the magnitude of hands-on work and communication that would be necessary with all parties in this process, when we were first developing this concept. To address some of these issues, we have recently instituted regular teleconferences between the manufacturers, the test labs, EAC staff and our technical reviewers to verify the progress of testing and to discuss outstanding issues related to the testing.

Kick-off meetings. To familiarize all parties with the details, components, capabilities and architecture of the voting systems entering testing, we've initiated a kick-off meeting to be attended by our VSTLs, the EAC, our lead technical reviewers and hardware and software engineers from the voting system manufacturers. We feel that these meetings will have and will, in fact, save valuable time and answer many questions that may not come up until much later during the review process, during the review of the test plans or the test reports. And, again, this is something we think will save valuable time and associated money.

Lab accreditation. I would say that at the beginning of our program we had an imperfect and perhaps unrealistic expectation on the level of review that NAVLAP could provide for our voting system test laboratories. This was especially so given the fact that the labs had no voting systems to test during their initial NAVLAP review and, therefore, no test methods or test cases, except in a very general sense, to be reviewed. We, unfortunately, had to get fairly well along in the testing process before these deficiencies became really obvious. We're now working much more closely with our colleagues at NAVLAP, and we will continue to do so during follow-up lab reviews for our current laboratories and during the reviews of any laboratories that might come into this program in the future.

The GAO audit. I don't know how many of you know this, but our program was audited twice last year by the Government Accountability Office. One was specifically on the testing and certification program, the other was on our lab accreditation program. It did take up quite a bit of staff time. I think Matt, Laiza and I spent, I don't even know how many hours dealing with them. They came in with a team of 11 auditors to look at our program that at that time had three staff members. So, it was quite a challenge and we certainly did get through that. And during the report that came out specifically on our testing and certification program, GAO offered specific recommendations in three areas. The recommendations instructed the EAC to prepare, approve and implement plans to do the following:

1. Develop detailed procedures, review criteria and documentation requirements to ensure that voting system testing and certification review activities are conducted thoroughly, consistently and verifiably.

2. To develop and implement an accessible and available software repository for testing laboratories to deposit certified versions of voting system software, as well as procedures to review and evaluate the manufacturer provided tools required by our program.

3. We were told to develop detailed procedures, review criteria and documentation requirements to ensure that problems with certified voting systems are effectively tracked and resolved, and that the lessons learned are effectively used to improve the certification program.

As I noted earlier, the EAC has already begun efforts in all three of these areas. The EAC has initiated the development of standard operating procedures for each of the major tasks outlined in the testing and certification program manual. The primary purposes of these SOPs is to provide the EAC with the framework and specific procedures to follow in administering the testing and certification program. Development of these procedures will allow the EAC to better:

1. Define procedures and establish criteria for performing all of our evaluation activities.
2. Document evaluation steps and related decisions.
3. To develop benchmarks and quality assurance plans for measuring program performance.

These procedures will help ensure compliance with the policies and procedures that we set out for ourselves in our program manual.

Separate SOP chapters will be dedicated to EAC review and manufacturer registration, voting system testing, applications and

the voting system testing itself. In addition, other chapters are going to deal with internal procedures for the grant or denial of certifications, decertifications, for our quality monitoring program and request for interpretation of the voting system standards. At this point, we expect that those standard operating procedures will be adopted in final form sometime in late spring or early summer of this year. We're working on those, again, as we speak.

For the second GAO recommendation, earlier this year the EAC notified voting system manufacturers that the testing and certification division would temporarily act as the official repository required in Section 5.6 and 5.7 of our program manual. To meet its responsibilities during this time, the division procured secure storage and will implement interim internal procedures dealing with keeping the certification documentation safe. The October letter also noted that EAC would be contracting with an outside repository later this year for professional services. We will be doing that. The program had that money in our budget and I would expect that we will have that again by the end of the fiscal year.

With respect to the EAC's efforts to track and resolve problems in systems it has certified, there are a number of program elements in our manual which touch on these issues, including the informal inquiry and the formal investigation procedures in Chapter 7. These investigations and their resolutions will be the primary

tools that the EAC uses to determine system non-compliance and to require an appropriate remedy to that non-compliance.

Additional program elements that deal with voting system problems may be found in the quality monitoring section of Chapter 8 in our program manual. These elements, just to remind you, include manufacturing site reviews, field and system review and testing, and field anomaly reporting. These programs provide additional means for the EAC to identify problems, so that it may initiate, investigate and resolve those problems.

Finally, regarding the development of internal procedures for the utilization of lessons learned, the EAC has from the very beginning been committed to creating a program which identifies problems and solutions and shares this information with interested parties. The EAC believes that the information it collects and the lessons it learns should not only be used to improve its certification program, but should be shared with other organizations to improve voting system design and to improve election administration nationwide.

So, now that we have seen some of the things that we're learning, that we're learning from our mistakes, let's just talk a little bit about learning from others' mistakes.

Okay, just to start out, here's a few quotes that people -- everyone tries to learn from other peoples' mistakes. As you see,

one of those people up there may not have learned from his mistakes quite as well as the others, but in any case everybody knows the value of learning from their mistakes. Here's a little example we'd like to share, and maybe the folks at Wyle actually know something about this, but the Genesis space craft that NASA launched in 2004. They launched it and its mission really was to retrieve solar wind samples, to do, I don't know, whatever NASA does with that kind of stuff. And there's the Genesis spacecraft as it looked in space, and from all the accounts that I've read, it did its job; collected the wind samples perfectly and the mission was certainly successful, up to that point. And that's where the problem obviously came in. Not a perfect mission, unfortunately, for NASA. And so, like us, NASA looked into things and decided how they can learn from their mistakes. And here's their post-mortem on this flight. What was supposed to happen was, during re-entry deceleration, should have caused this parachute to unfold and gently bring the craft into a landing and not embedded in the sand like you saw in the pictures up there before.

The avionics design was based on a simpler hardware package called Stardust, which flew for NASA and flew perfectly; had a very complete mission, very successful. Apparently the Genesis designers cut and pasted the Stardust schematic into a new more complex hardware design for Genesis. The Stardust

hardware design had been tested. They did the spin test on it, it passed, but the new hardware design was very difficult to test and more expensive to test, as you might expect. So, you know, given what had happened before with Stardust and believing that their design was flight proven, the engineers simply verified an assembly by visual inspection and assumed that the assembly would operate as it had in the Stardust program. Unfortunately, nobody knew that a pair of the deceleration sensors were direction sensitive. When they were installing them they were turned sideways in the new hardware layout, and as a result, it crashed.

So what do you learn? Never assume. Right? And I think that's some of the things that we have learned here and that we're continuing to learn from other programs.

All right, let's talk about the Unified Testing Initiative. So, we have two main objectives for our Unified Testing Initiative. Objective one is to increase communications between federal and state partners. And not only with state partners but, really, with all the partners that we have in this program, and certainly not limited to states. We're talking about local officials, the advocacy community and, frankly, everybody. What we would like to propose is a small, and by that I mean six to nine-member, EAC working group to facilitate discussions on how we can better

communicate in order to change perceptions, attitudes and expectations.

Perceptions. We have to change the old NASED ITA paradigm, and I'm sorry, I hate that word but I couldn't think of a better one in this case, to fit the new era in which we find ourselves. We have to change attitudes; that delays in certifying products are the result of cumbersome and arbitrary administrative processes and procedures. And finally, and perhaps most importantly, expectations; that every system submitted for testing deserves to be certified.

Our job in our division is not to certify systems, really. It's to test systems and to make sure that systems deserve to be certified; the ones that come out deserve to be certified.

This working group, I think, should be very diverse, as is reflected already in this room. It should include, at least one state election official, one local election official. And Keith, since you may be the only local here you may be pirated into this. Certainly one representative from our voting system test labs, one manufacturer representative and I would say one advocate representative. And guess what? We're going to have you choose the members of this working group. There's the 3:15 p.m. session on the agenda this afternoon. At the beginning of it we're going to allow you to break up into groups -- Keith, you'll be a group in and

of yourself -- and provide us with a list of potential volunteers. Okay? Depending upon the interest, if there's a lot of interest in this, you know, we may need to limit the list of participants or we may need to nominate some additional volunteers for this program, which we will do.

All right, let's talk about the current process. As you see up there, one single manufacturer has, essentially, to go through three processes. The processes are all-expensive to some degree. We know the federal testing is most expensive, but some state testing is expensive, as well. And there's certainly a cost to doing local testing, we know that.

So, objective two, in the broadest terms possible, would be to unify and combine federal and state certification efforts to the largest extent practical. We know that there are a lot of impediments to doing this, but we think it can be done successfully. But we need your help, and we need a lot of discussion on this, and that's what we'll be doing the rest of the day. And here's the result, or what we hope to be the result anyway. We're going to have happy voters, happy election officials and we'll, at least, hope to make the manufacturers happier in this process.

All right, I'm going to give you several examples now, and these can be debated, but just some general examples that I pulled out from different states. But as far as general applicability is

concerned, in all instances we would like to search for a state partner, or partners, with the most rigorous test requirement in a specific area. We would like to then work with the state to outline acceptable or existing test protocols and ask the other participating states if they would accept this testing method to meet their state certification requirements. If so, state certification officials could work with the EAC voting system test labs and be present during testing, if required by state law, or if desired by the chief state election official or other parties within the state.

Let's use California as our first example. We know that the California volume testing is very expensive, very rigorous. This is just basically an outline of it. It says the volume test shall be deemed successful for DREs. If no more than one percent of the machines experience a failure that affects the record of the vote on the DRE or the VV pack, and if no more than three percent of the machines experience a substantive failure. And there's a whole list of substantive failures that California has and I'm not going to read them all, but you can see them. Here's what they have for the testing of precinct ballot scanners. A minimum of 50 machines will be tested, each equipped and configured as presented in the application for certification. The test is based on the standard California primary test election. And there's some other differences. A minimum of 400 ballots are going to be scanned

through this, premarked. A minimum of ten persons are assigned -- or California has to be assigned to scan the ballots into the test readers and none of the test voters may be a direct employee of the manufacturer. That's California's rules. Again, here is how the machines, the scanners would pass the volume test. Again, very similar to the DREs. Even though they're not up here, there are a lot of other specifications listed by the California Secretary of State related to video recording of these procedures, related to error handling, related to observers, related to security and related to the confidentiality of the process.

Example number two, from Florida. While I know that Florida is not currently part of the federal testing and certification program and that David and his folks do an outstanding job here, I thought this may be a good example if other states had a similar requirement as Florida's sand and dust testing. You can see there there are a lot of steps to their process, but, essentially, the procedure is similar to the standards for blowing dust. And essentially it's intended to evaluate the ability of the equipment to survive exposure to dust and fine sand that may penetrate into cracks and crevices from the wonderful beaches that they have here in Florida. The equipment shall be in a non-operating -- this is kind of important, in a non-operating, stowed configuration and a protective cover shall be in place if the system configuration

includes one. We thought that this might be a candidate. And, again, just more of the steps that Florida requires to go through. Obviously, 21 separate steps, fairly detailed here.

We use New York as our third example. They have some requirements specifically for noise level. Very interesting, it says voting systems or equipment to be certified shall be constructed in a manner so that noise levels of the system or equipment during operation will not interfere with the duties of the voting public and of the election inspectors. Noise level of writing components of the system or equipment shall be so minimal it will be virtually impossible, under normal conditions, for someone at the table used by the inspectors of election, to determine that a write-in vote is being cast. Very interesting, but also something that we thought might be included. Here's a very important one, also from New York; usability testing. As you know, usability testing is required in the federal program, more extensively, certainly, in the 2005 VVSG than in the past. And for those of you that have been part of the process for the next iteration of the VVSG, you know that the usability testing will be further enhanced in that document, as well. But here you see what New York does, as far as usability testing. And we think that there's a very good connection between those two and it could be something that we could certainly help out on.

North Carolina is certainly more broad, but as you see here, it talks about state election boards, shall review or designate an independent expert to review all source code made available by the vendor pursuant to this section, and certify those systems compliant with state and federal law. And at a minimum, the state board review shall include a review of security, application vulnerability, application code, wireless security, security policy and processes, security privacy and program management, technology infrastructure, security controls, security organization and governance, and all these other things that you see listed here. And the vast majority of these things are done also at the federal level. So I think a conversation with the State of North Carolina would be beneficial to see, if all of these, if some of these, hopefully, the majority of them could potentially be brought into the testing at the federal level.

That's what we're talking about, is a very general concept. As I noted earlier, if you guys have questions, please write these emails down so you can, at any point over the next two days or so, send them to us if we don't have time to talk about them. I'm going to open this up for discussions about some of the things I just said regarding our Unified Testing Initiative. But I really often don't have a bully pulpit here and I don't get to be in front of a big group like this with some speakers' prerogative, so my last slide will be rather

personal. In any case, I knew Matt would not like that. That's for Matt who's a Cincinnati. It's very unfortunate.

MR. MASTERSON:

Discredited himself.

[Laughter]

MR. HANCOCK:

All right, questions. I know there has to be some questions, those of you, particularly, from the states that I pointed out in that slide. I would like to hear from our technical reviewers, some of whom work in various states, to see what they think of this concept. So with that, I will open it up. If you all want to use the microphones, again don't forget to say your name, where you're from before you ask your question, for our transcriber.

Come on.

MR. JONES:

I'm Douglas Jones, and I'm speaking at this point as a former chair of the state voting systems panel in Iowa. And thinking about my experience on that panel, although it was under the old regime, I note that the combined initiative does pose some threats. And the specific problem is that the EAC standards have always been described as minimum standards and the states have always been urged to -- have always been told we can set higher standards if we want. And in many cases, I found, in my

experience on the state board of examiners a decade ago, we were doing that and we were finding significant holes in the federal standards that existed at that time and plugging them. This Unified Testing Initiative does not set an EAC standard of any kind. It's not the guidelines. But on the other hand, I can imagine it being a step down a slippery slope to preempting the state's ability to move beyond the federal standard when we find shortcomings in that standard. And I'm concerned about that because of my own experience, where we did find shortcomings and we did block them from coming into play in our state. So, this is something that we have to keep in mind. And we have to avoid the Unified Testing Initiative becoming -- or coming to be seen, for example, by the Justice Department as a definition of sufficiency, that if it passes this, this system is, by definition, sufficient, and the states must accept it, which is -- there have already been some Justice Department decisions that acted that way, about machines that were certified under the new regime's transitional form.

MR. HANCOCK:

Well, I can certainly see what you're saying, although I think, really, the aim of this program is not to supersede state testing. In fact, if a state would decide to go well beyond those examples, the California volume testing for example, if a state decides to go well beyond that, you know, certainly we'd have to look at it, but it's

something that I think we would work into this, you know. We're not saying that the federal testing will take the place of state testing, but more that they will run along parallel tracks, okay, and that a lot of the work that might be duplicative, you know, expensive, redundant, whatever, perhaps can be done at the federal level and be done at one time rather than to be done separately at two different locations, with the associated expenses.

I'd just like to ask some of the folks at the table that have been testing in other states or have, like Mark, have tested in other areas to make some comments, if they would.

MR. BERGER:

I'll point out one advantage. I'm quite enthusiastic for the potential in unified testing. One of the things that it effectively takes care of, is the problem that happens at the state level when you find something you want changed. If EAC certification is complete, and then, at the state level you find something that doesn't function the way you want it to in your state, some other point of concern, the choice to the vendor is, they can go back through certification. That's not a very appealing option. With the unified approach, those kinds of issues can be identified early, modifications can be made while the system is going through the certification process, which I think allows much more efficient response to any functions

or features that may not be operating the way a state wants them to.

MR. HANCOCK:

Thanks, Steve. Merle?

DR. KING:

Merle King, Kennesaw State University. I'd be interested in the response of the technical reviewers of the potential impact of the unified approach, not so much on the cost, but on the time to complete the testing and improved functionality, which, I think, from the jurisdictions' perspective, the time issue, the time to market, and all of the constraints that are imposed at the jurisdiction level, on funding, the time, may actually be, at least, as much importance to us as the total cost of the system. And then, also, I think following what Steve said, the improved functionality; ensuring that the certified system will conform to all of the needed and planned functionality in the jurisdiction.

Thank you.

MR. HANCOCK:

Thanks. Anyone?

MR. FREEMAN:

Merle, I'm not sure I'll answer your questions directly.

MR. HANCOCK:

Steve, just state your name.

MR. FREEMAN:

Steve Freeman. Sorry.

MR. HANCOCK:

Thank you.

MR. FREEMAN:

Being involved in the testing as long as I have, I saw some of this stuff come through on cycles, and I want to make reference to one of the examples, is Florida's sand and dust test. That was an initial 1990 standard. The testing was conducted, but we ran into some interesting issues with that, and when it came through on a later voluntary voting system guidelines, it was dropped out. The earlier issues, the test was being done along with some of the others and we discovered that the systems that were being delivered to the laboratories, under the particular clause and the descriptions of that test. quite often were configured in such a way that the test really didn't serve any benefit. In particular, I remember one that was not included was a rain test. It was a real interesting test. There was a bucket that was suspended over the equipment, water was put into the bucket, and it was allowed to drip on the equipment for a certain amount of time at a certain density on the droplets. But the particular requirement said that the equipment was to be presented in a manner in which it was stored and used. and all the vendors had to do was put a plastic sheet

over it and it passed the testing. This is one of the issues we run in to with some of the testing, is that although it looks like, on the surface, the test is beneficial, satisfies a particular purpose, we sometimes find, in terms of the way the test is conducted, the way it's been set up, the way it's being presented and the way it's being interpreted, that it's really not achieving the purposes it was intended for. Now there may be some sort of avoidance of the problem, there may be some weakness within the test or something else. On some of these tests that we're talking about, this is going to be where this issue, I think, what you're talking about Merle, in terms of some of the -- is this test is going to be beneficial, it's going to have to recognize that as we go through the test, if we see a problem like that, we need to identify, as early as possible, that there is an insufficiency as far the state requirements, the state needs, the local jurisdictions, and be able to pick up and adapt the test, so that it's performing something meaningful and worthwhile for the time, in a timely fashion.

The second part of it, one of the benefits out of this unified approach, I've been deeply involved for a period of time with the California volume test/reliability test. I know quite a bit on the history of it, being a person on site when the thing first started being tested. That test is a nature of a set of tests that Roy Solman originally identified in his initial reports that led to the federal testing,

that it requires expertise, materials, resources that's not appropriate to be expected at the level of the states. Now, that doesn't mean a state can't invest in it, develop the resources to do so, but we would hope that the federal testing would involve the people, the technology, the equipment, the resources to be able to do a credible test of something very difficult. It may be very resource intensive, very time consuming. In particular, that volume reliability test has a great potential for other states besides just the State of California. And one of the primary benefits is in getting that early enough in the process that, number one, the equipment that's being tested, that we've already verified at the time that the volume testing is going on, that there is not any known outstanding problems that would cause a premature failure in that test. You don't want to go into that test knowing you've got a problem, that's going to fail in the first five to ten minutes of operation. And that was something that should be handled under the federal testing, and the earlier testing on that should reach the states, so that by the time you get to the volume test, you have confidence you're not going to have a premature failure on a massive test like that.

The second part of it is, if we can go ahead and get that done in a timely fashion in that regard, then it's not a matter that the vendor has to go out and try to repeat that in multiple states. At one time there was two different states, and I think there was a third

state, that was considering trying to do a similar type of volume test at their state level. That results in extensive delays for the vendor, expense, cost, a certain amount of risk that goes along with it, when that test should be done in a rigorous enough fashion that it would benefit everyone that's going to be using that equipment; that they know that equipment is going to be expected to come reliable, that there's not some sort of outstanding problems that apply to it. But again, that requires some input, some feedback.

The third part of the statement is that one of the key points, in terms of the model and where we do the federal testing and the state testing, is there's enough complexity with the voting systems, particularly, in variation between state laws, that there is no practical way that the voting system test laboratories are going to be able to test all variations of functionality for every state in a reasonable and timely fashion. For many of the states, what the federal testing does will be sufficient to satisfy your local requirements. But you may have some particular features, requirements, changes in laws, regulation, practices, concerns over a previous election that may require you, for due diligence, to want to do additional testing in the follow-up. When those opportunities come up -- and I say opportunities, needs may be a more appropriate term for it -- those need to be addressed at the state level. If it turns out that there seems to be substantial basis for it,

something like that may be appropriate to be picked up in the federal, so, again, everyone benefits from it, not just a single state. But that level of testing at the state level is still there. There needs to be some sort of a continuing, ongoing process, where you're checking against your own state rules, state regulations. But it doesn't have to be a massive test. It shouldn't have to be a massive test involving hundreds of machines. It shouldn't have to be a special test requiring additional test equipment, test technology and everything else that couldn't be done by a master laboratory that's familiar working with the equipment.

The real question that I think is probably coming up in a lot of these isn't, necessarily, whether the test labs can do it and do it in a timely fashion, but whether you feel like you're getting credible results from those labs. And that's the other part of the feedback. If there's something that's not being satisfactory, if you're not getting the information you need, we need the feedback coming back into the federal testing to make sure that we're making the necessary changes on that testing and the reporting of the changes, so that you're getting the information you need.

Does that satisfy your questions, Merle?

DR. KING:

Yes.

MR. KELLNER:

I'm Doug Kellner from the New York State Board of Elections. And I guess, my comments really do follow-up on your prior comments. I strongly endorse the concept of centralizing the testing at the federal level, because the costs are substantial, and it makes no sense for each state to be doing separate costs, and, in many cases, repeating the same issues that should be resolved once at the federal level.

But what are the key problems, right now? And I think you've identified, first of all, there is the issue of whether the federal standards are sufficient; that certainly New York has a number of standards that go beyond the voluntary voting system standards. And the -- the feedback is...

MR. HANCOCK:

We're working on that.

MR. KELLNER:

Okay. And then the problem is, is the federal testing reliable and trustworthy? And certainly, our experience in New York, when we reviewed the test plans that were being submitted for the two systems that are being certified in New York, the test plans that had originally been approved by the EAC for those systems, when it was reviewed by our own independent authority, we saw that the test plans were only testing about one-third of the standards that were contained in the voluntary voting system guidelines, so that

there were huge gaps in the testing to confirm that the equipment actually complied with the VVSG. And so, where does this lead us? I think certainly the EAC has shown, in the last year-and-a-half or so, tremendous improvement in responding to that particular issue, but in order for this to be effective, the two key things of the testing program are, that it should be transparent and verifiable, so that if we can centralize testing at the federal level, we need to be able to be assured that the testing is reliable, so that it doesn't have to be repeated again at the state level; that the states can accept the results of federal testing and not require that that testing be repeated. And in order for that to happen, you have to increase the transparency and verifiability of that. And as long as test plans remain proprietary and confidential and the test results remain proprietary and confidential, I think that that's an issue, because you can't reasonably rely on those test results when they're not subject to scrutiny by outsiders.

So the long-run plan is for testing to be centralized at the federal level, for test results to be subject to scrutiny, so that the states can then rely on those tests and then add whatever additional tests are necessary to meet additional state standards. And I think if the program could be designed that way it would be much more efficient in the long run.

MR. MASTERSON:

Thank you. You know, your comment sparked a thought in my mind, and that is this idea of transparency and verifiability. And one of the things that the EAC is focused on, and I think -- God I hate to plug our Web site over and over again -- but if you go to our Web site you'll see all the test plans and test reports are posted on our Web site, and that includes draft test plans and draft test reports. Now there are portions of those test plans and test reports that are not published because of proprietary information, and that's a federal law that we have to follow with the Trade Secrets Act in commercial information that way. But I can tell you having looked at the test plans and test reports, that the vast majority of those test plans and test reports are posted on our Web site, and will show you how the systems are tested to the standards and the results of those tests. So, that's one of the things that we've really focused on, and I know the labs and the manufacturers can tell you that stuff submitted to us, as part of our testing program, goes on that Web site. That's one of the things we've committed to doing and made very clear in our manuals.

And that's, I guess, the other part of this, is, all of you received both our test lab manual which explains why things are trade secret or not, and our testing and certification program manual, which also goes into that. And I encourage all of you to read it, because I know there's been questions about us looking at

fielded systems, and us looking at anomalies. We do that with EAC certified systems, and that's in the manuals as well. So that's the other part of that. But we agree that openness and transparency in this testing process can only help the states evaluate what testing is going on and how best to use it.

MR. SKALL:

Brian? This is Mark Skall. You asked before about parallels in other testing areas. And I've been thinking about that, and the thing that comes to mind is, you know, maybe 15, 20 years ago, it was huge, just bringing things up another level, huge inconsistencies among the way different countries tested against standards in harmonization of test services in different countries. And one of the issues had to do with harmonization of the standards themselves. So you had an international standard, but there would be an ANSI standard that would be slightly different in the U.S., a DIN standard in Germany, slightly different, and a different standard in the U.K. So, the first thing that was necessary was to try to come up with the harmonization of the requirements in the first place. And, at the same time, you had testing services which were going on in each of these countries, which were testing for, essentially, the same thing, but in slightly different ways. So, I guess, what I, sort of, bring from this, is the first issue, is to make sure, and I think, one gentleman said that before, that the federal

standards are sufficient. So, that might mean that we need to look more at some of the state requirements and see, you know, if the federal standards can be expanded a little bit to include further requirements. But the whole idea of having a consistent testing service, which has happened internationally, nowadays, you have one testing service which is shared among different countries. And it's much, much more efficient. It's much more unified. But the key is transparency. Those test reports are shared among all different countries around the world. So, the parallel, I think, here, is very striking. But you need to take a quick look and make sure, and maybe a more comprehensive look, that we have the right requirements in the federal standards, whether they need to be expanded, and that, in fact, you can harmonize the testing and share the information. So, transparency, clearly, is a key.

MR. HANCOCK:

Thanks, Mark. And I just wanted, Steve, before we call on you, one just, sort of, follow-up to the previous question, in that, you know, if there are portions of test reports or test plans covered by the Trade Secrets Act, that we do not put on our Web site, I would think that the states should demand to see that information from the manufacturer, before they do any looking at it themselves.

Steve, I think, and then Chris.

MR. BERGER:

A couple of comments. First of all, I would applaud what Mark was saying, that harmonization of international requirements is a longstanding effort. It's difficult, but it bears a lot of fruit.

Two things I'd like to point out. First of all, on the scheduling issue, in my experience of state testing, right now, up to half of the time is spent on things that are completely duplicated state to state. Everyone has to unpack the equipment, set it up, confirm that it's operating correctly, confirm that the right software is loaded, those sorts of things. And, if under the unified effort we can have that done by one person, and then the state personnel come in and do their specific testing on the issues of most concern to them, potentially it doubles the effective time they can spend on the issues that are a specific concern to the state. So, I think that's a significant cost savings, plus the schedule and cost savings of having to schedule an individual state. So, I point that out.

I would like to bring out one fact on the comments from New York on test plans only covering up to a third of the -- or only as much as a third of the requirements. That was spotted early on. The EAC developed a matrix of all of the roughly 1,000 testable requirements in both the VSS and VVSG, and that's now a required part of a test plan that the labs return, so that we know exactly where in the test plan each one of the approximately 1,000

requirements is addressed. And also, there's a section for test method so we know what test method they'll be using.

MR. KELLNER:

With respect to the test plans, at least our consultants in New York who just quickly looked at the MicroVote test plans in the letter that, you know, was approved on December 31st for MicroVote, said that it seemed to follow the old model rather than the new current standards. And I'm just wondering if your view is that that's correct. In other words, that the test plans that were recently used for the MicroVote certification still have a number of those omissions in them that did not cover all of the standards under the new matrix that had been put in place with SysTest for the Dominion and ES&S certifications.

MR. CADDY:

This is Tom Caddy. Your observation is correct and partly that's timing, exactly as Steve said. So, the test plan was approved a long time ago. What that matrix was used for, is to itemize through each of the requirements for the report process. So, you're correct. And at this point that's been implemented to the earlier phases, including the test plan.

MR. BERGER:

One other comment. On the new test plans, we're requiring that the labs incorporate, by reference, the matrix. So, it is a

committed part from the test lab that they will test all requirements and specify to us where they tell us how they're going to test each of those requirements.

MR. MASTERSON:

I can tell you, though, without exception, every requirement in the 2005 VVSG that applied to the MicroVote system was tested. It was absolutely tested.

MR. KELLNER:

That's not true.

MR. MASTERSON:

It is true, because we used the matrix on the test report to review every requirement and make sure that it was tested. The test plan that was originally issued does not reflect the use of that matrix, but the test report and the matrix reflect that every requirement that applies to that MicroVote system was tested. The matrix was used on that test report.

MR. BERGER:

Matt, was the matrix released with the test plan? Or has it been released subsequently?

MR. MASTERSON:

With the test report.

MR. BERGER:

Okay.

MR. MASTERSON:

I know the blank matrix is up on our...

MR. BERGER:

There may be a timing issue because the test plan was approved, the matrix was developed and used to make sure that we had complete coverage. So, I guess that will be released later.

MR. MASTERSON:

It is true. Absolutely every standard in that 2005 VVSG that applies to that MicroVote system was tested.

MR. HANCOCK:

If there are further questions, we can talk to New York, off line, about why they think that's so.

Chris?

MR. THOMAS:

Chris Thomas from Michigan. I guess a question I have -- I'm listening and listening to Mark's comments and Steve, and Brian, your initial introductory comments, about what some of the other states are doing in their testing. Have you all looked at what those tests are, and discerned whether there's anything unique about a particular state for the test that they are actually conducting, and whether or not those tests are included in your process? I mean, it seems to me what I heard you say about California, it didn't sound like there's anything unique about

California voting requirements that would necessitate those types of tests. Those may be tests that could well serve, generically, across the country. So, you know, there's one side that says, yeah, if a state has some requirement that's so unique to its own law that it needs special testing, that's one thing. But what I'm sensing, there are states, California, Florida, that may have gone out over and above what your process is doing. And so, is there a process to see which portions of those tests should be incorporated in the federal testing?

MR. HANCOCK:

Well, we haven't done that yet, you know. Once we get a couple states that want to do this pilot, that's when we would have to go in very carefully and work with those states and see exactly where this would work, you know. Are they exactly what the federal test is? Does it go beyond it? Does it not quite meet up to that? And see where we'd have to go there. But we haven't done an exhaustive look at all 50 states just yet, no.

MR. FREEMAN:

This is Steve Freeman. Let me try to answer a little bit of that question. I probably should have clarified it. In the California test, the basic concept of the test is something that could apply to any state. However, they do use the California primary. There is some unique coding in the California primary that, potentially, can

cause a difference. In any of the tests I participated in, a volume test, I have not seen that to be a factor yet, okay? But there is a point to be made, that there are variations within the states. You may have a particular rule or a particular practice that is not necessarily getting exercised under the federal testing, that you may have a responsibility and a need to perform the test. I would hope we could limit that to a very small set if we were trying to do the uniform. And I wouldn't expect, for something like the volume test, that would be that critical of a factor.

MR. HANCOCK:

I think Doug, and then, Steve.

MR. PEARSON:

I'm Steve Pearson with Election Systems and Software. Pertaining to that topic, one of the concerns that I would have is, the California volume reliability test is unique, but it's also very expensive. One of the things that we would like to propose, is that a test of that nature, that's only required for one state, be optional. If you're entertaining bringing that into -- including that into a unified testing plan we would like to make that optional, because, for instance, we have systems that are not targeted for the State of California, and may only be targeted for states that don't require that level of testing. So, to add that additional cost for, not only the cost for that testing, but also the extensive delays that it would take

in achieving that if a system isn't targeted for a state that required that level of testing, we'd like to see this program, at least, have options so that manufactures can select which options that are required to be tested based on their marketing and deployment strategies. Does that make sense?

MR. HANCOCK:

Kind of.

MR. CADDY:

Steve, this is Tom Caddy. I was going to comment on this, with regard to Doug's earlier comment and Merle's question. I think that one of the things that we've looked at, with the test plan and the testing, is exactly what Doug said; that the federal testing is, let's say, a minimum in this case, and that some states may go beyond that. There's nothing that's prohibited from us from doing one test that satisfies both of those. And it is at the discretion, in my view, of the vendor and the lab, to determine if they're going to go beyond that and do a test that satisfies what market you're targeting in those states. And it may satisfy multiple other states, as well as the federal testing, in one pass. So, I don't see anything that I know of that would prohibit us from satisfying that in the current program.

MR. PEARSON:

Okay. Hi, this is Steve Pearson, again. On that same topic, moving that testing to a test lab is -- one thing. At least, within the State of California, we don't pay extensive fees for lots of lab folks to be doing that testing. They do have consultants and we pay for those consultants' fees and we are required to bring in and pay for temporary folks. But those expenses and costs are far cheaper than taking tests of this magnitude that involves a lot of very expensive and costly test personnel. That's something that we would ask that you be very sensitive to, as well.

MR. JONES:

This is Douglas Jones again. I'd point out that there are two Dougs here, so when you say Doug, you have to be careful. Doug Kellner and I have been confused on occasion.

But Steve Freeman and Mark Skall both mentioned issues of state differences, and I think there is some opportunity here. I've been frustrated on occasion by the fact that there are so many different state requirements. I think the vendors know more about that than anyone else because they actually have people trying to meet the requirements of all of the states. When you look at the differences between state requirements, you find some of them that are there for a reason. Someone actually thought about it and put that difference into the state requirements because they had a good reason. But there are state requirements that are quite gratuitous

and there are state requirements that I find really strange. Looking at the wording of the law on straight party ticket voting in, say, Pennsylvania and Iowa, as near as I can tell, the law is worded the same, but Pennsylvania has a completely different interpretation of that law that requires different actual implementation in the voting machine. This is a real cost. It costs the vendors a lot to meet this requirement. It costs the states a lot to test these requirements to figure out whether the machine is conforming to their eccentric interpretation. And I think we have an opportunity when we get together people from the different states to think about whether we can simplify those requirements. I think that could have a big impact on the cost of voting equipment by bringing down the number of different flavors that each vendor has to support. And I don't know how to get that started. It's not clear that EAC can stir that pot directly, but, at least, meetings like this can get people together to start talking about these kind of things.

MR. HANCOCK:

Yes. Thank you, Doug.

MR. FREEMAN:

Steve Freeman. Both of the Steve Pearson's and Doug's comments came together in my mind on something, and it's an observation talking about this. First, in terms of the specific example that Doug was talking to, in terms of straight party, I'd like

to mention that a little bit of research I did several years ago, I was trying to sort out some issues, in terms of straight party testing. I happened to take a look at Colorado's straight party testing policy, and they had a particular policy, a particular pattern and that looked fine and everything else. But then I happened to notice that there was a report that there was a change, and I went back and took a look at the change. The previous year they had changed it from a different standard, a different practice. And I took -- happened to notice by this time, I was sensitized, and there was a change listed on that. And I went back to the previous year and they had made another change. In a period of about three to four years they had gone through three changes in the straight party regulations and practice. And, I don't know, someone from Colorado is here, right? Maybe they can confirm this. I think the current status is, you don't have straight party in your state.

MS. CEGIELSKI:

Correct.

MR. FREEMAN:

They got rid of it because of the problems that they ran into. But that demonstrates one of the problems that we do face because your state legislatures, for various reasons, it may be something that occurred in the last election or whatever, will make changes, they'll add new requirements and everything else and this

will come in. This is one of the things that increases some of the testing costs and some of the variability that occurs. And again, the federal testing is going to be in a reactive mode to this type of thing. In many cases, you may have that state law that's a particular practice that occurs may be there for a year to two years before we actually can pick it up and handle it on an adequate basis at the state level. In some cases it's not worth picking up, because the third year it gets taken out completely because it didn't work, whatever the reasons.

You're all aware of this, you know this, you're familiar with the legislatures, the action of working with them. But this is one of the things when we start talking about trying to provide a uniform testing, that we have to be aware of; that there is always going to be these little changes going on, that you, at the state level, are going to have to try to work with and try to deal with until we can pick up -- there's enough stability in what we're doing, to see that this is appropriate.

The second part that I wanted to refer to also goes to what Steve Pearson was talking about wanting to tailor the -- being able to tailor the testing as being optional. And we've had some issues and problems over the period of years over that particular type of concept. I think Steve was probably right on that. I'm not denying it, but one of the things that's happened is, we may have four or five

versions of a system being tested, because it's being aimed at different marketing and this is taking up testing resources, lab time, delaying processing for other testing, that some of your other states may be concerned about and wanting to do. And this may be a target area that we need to take a look at, if we're really seriously talking about reducing delay in testing and the cost to see if there's some way we can kind of reduce this going on. I'm not saying that there isn't a need to be able to kind of tailor the testing a little bit more practical to the market, but we also need to be thinking about the cost of doing so, because of the additional testing incidents; the testing campaigns that may occur because of that.

MR. HANCOCK:

Actually, sort of related to that, Matt actually brought up a very good point, and sort of, a question that we were wondering. For the state representatives that are here, I just want to know how many people have these requirements imbedded in your state law, which the legislature would have to change. Or are they laid out in, you know, the Secretary of State's policies and procedures? Just raise your hands if they're in the state law.

[Indicating by raise of hands.]

MR. HANCOCK:

If they're in procedure.

[Indicating by raise of hands.]

MR. MASTERSON:

Is there any that have a mix of both?

MR. HANCOCK:

Okay, interesting.

MR. WATSON:

Tom Watson. In my mind, the consolidated testing effort is most applicable to what we call the system level testing, and that's testing accuracy, security, volume, stress, usability and error handling. And those are tests that are very expensive, require a lot of resources and time. And so, if we can get those nailed down at the federal level, I think the states -- the states should never abandon their own testing programs, because of the difference and the functionality required. Another thing, the source code review could be done at the federal level. Anyway, those are the type of items that I see as a technical reviewer that are most expensive and beneficial to consolidate. And, therefore, the states -- like I've been doing inspections in Texas for a long time. We don't have the resources to do the volume testing, and yet, it's very important. But we never accept the federal -- we haven't accepted the federal testing completely, because there's all these idiosyncrasies with Texas law that we have to check. Plus, the more eyes that are on this equipment and the process, the better we will all be.

Thank you.

MR. KAPSIS:

Jim Kapsis, Precise Voting out of New York. Interpretation is a two-way balance. One is, it could be expensive when looking at state law statute in relationship to election law functioning. On the other hand, it could be time consuming and could drag out the system in unification. For example, in New York, as Doug would know, election law 7208 took us a year to figure out that source coding, okay, on an operating system would have to be inclusive of all external software. So, if we were to use Microsoft and we would have proprietary software, as we do, called Vote Right, we could escrow our software into the system, but Microsoft would say, "Well, we're not giving you our source codes." And why would they? That became a problem. Those type of statutes, those type of laws are not easily determined, because statute, in some perspectives, are interpreted by word. States, sometimes, interpret statutes by phrases. So, Microsoft, maybe, is not a voting machine manufacturer, so, therefore, it wouldn't be applied to the statute. But nobody has made that kind of a determination, so this dragged on for awhile and caused our particular company to, you know, take a back step on this. The point I have here is, what is the Election Assistance Commission, on those type of statutes, willing to do or able to do in order for manufacturers like us to jump over that hurdle?

MR. HANCOCK:

Yes, I mean, you know, again you said it. It's state statute. I don't know what we can do, other than working with state election officials, you know, to change those things. I mean, we're not -- we don't have any control over what your state legislature is going to do. I mean, that was brought up earlier.

Let's get Tab, and then we're going to take a break shortly. But I want to hear one group we haven't heard from, specifically, is our test labs, and this is going to be related to them, so, I want to see if they have any ideas this morning.

MR. IREDALE:

Tab Iredale with Premier Elections. This is very much along the lines of what Steve Pearson, what was just mentioned here. Trying to do a unified system, the goal is definitely to try and make it more cost effective, and hopefully, as Merle was pointing out, faster through the system. That's a big, big issue. The downside, as we try and get more people involved, is trying to make these interpretations. Right now the RFI process is a struggle. I know the EAC does their best, but you need a lot of people's input on trying to make decisions. If you are potentially adding states in, that may become non-manageable, that process. So again, we have to look at that and maybe even -- you know, it's great to have a unified system, but what Steve Pearson was saying, "Hey, we

don't think this is worthwhile. Can we just not deal with this issue? Put it in the report that says, this was not tested," that may be the best we can do, in trying to make unified balancing time/costs, because in some places, you know, volume testing in California is very expensive. Rain testing for Florida might not be so expensive. If we feel Florida is the only place, or we're not interested in any places at all concerned about that, they have consciously said, "We don't care," then we should be able to say, "Look, that's not a market we're looking at for this certification. Get rid of it." Because a lot of times, what our goal in certification is, to solve an issue for a customer or a group of customers. We're not trying to address the rest of the United States. And so, we need to be able to focus on that and get that through and get that done. And getting it through, timely, through certification, is going to become and is a critical factor. Cost is a byproduct of that, but time, not just for us, but for the customers. They have issues, they need them resolved, they have changes in laws, we need to get systems certified. We need to get them through quickly. So, sometimes this unified system is just not going to work and we need the option to say, "We don't need this stuff."

MS. MEHLHAFF:

Tab, before you sit down. If you're doing redundant testing in several states, wouldn't it make sense to have those particular tests tested at the federal level?

MR. IREDALE:

Absolutely, if we are planning on targeting that product to those states that are requiring that, which it generally would be. But if there's a particular -- let's say a state changes a law, one state, and all we want to do is get through that change for that one state, you know. That's the sort of issues that we need to think about. Okay? And again, you know, we have to definitely focus on, you know, once we get through this baseline, hopefully going through and doing minor changes will not take as long. But we need to be able to respond. States change laws. Issues are found. We need to be able to respond to them quickly and get them out. We know and we totally support the desire to make sure that the system is working the way it's meant to, but we need to balance that. And this holding on and dragging out working for the perfect system, not getting anything out there, that's the balance. And that's sort of the core of this whole two-day meeting, is the cost, cost also being time. We need to try and balance those together.

MR. HANCOCK:

Thank you. Do we have any? Carolyn, all right.

MS. COGGINS:

This is Carolyn Coggins with iBeta. I think one of the aspects -- the focus seems to be that we're looking for one-size-fits-all and looking to expand to one-size-fits-all. And is the issue that -- look at what is the real core that is the commonality and is -- maybe it's going back to that concept that there is much of what is in testing under the current standard that is optional functionality; that is, if we're testing straight party, as an example, you can test multiple methods of straight party based upon different state laws. What if there was a concept where we actually went to what is the core functionality that hits 50 states, and then we change the program, so that if you want to go beyond that you're hitting optional options that are state specific? Now that is a huge endeavor to identify that, but the way that this perspective is looking, it sounds like everybody is looking to make it bigger and bigger and bigger, and I should be thrilled to be having to do all the volume testing to the State of California. Well, I'm not. I'm not thrilled to over-test. And for systems that are being used in Wyoming or Denver or Los Angeles, I don't know what is the appropriate -- I don't think the Los Angeles testing is appropriate for the entire country. And that's a balance. But maybe this perspective that we're looking at is, keep trying to add more into it, but maybe there's something -- if we could get the core system through, because part of this process has been set up that it's

supposed to be able to take what you've got and build on it, so you can make a change. And the theory is that if you need to change your system -- if the voting system is 99 percent unchanged and we're only going to change it for the one thing in one state, then if we can reuse what has already been done, that's optimal. But we haven't gotten to a process where systems have been accepted and we can build off of those changes. And that just seems to be getting further -- perhaps it's getting further and further away, I don't know. I'm just saying that the perspective, here, seems to be expand the testing, but is it really -- keep -- reformat the testing. Format the testing to what can get us the greatest benefit and then look at what is optional. You know, let's take an example. Is there any difference between an open and closed primary? Most people would say "yes," right, in politics but not necessarily in a voting system. If you don't make the decision inside the polling booth, if you declare it to the poll worker, you know, "I want to vote in this," it's the same as a closed primary. There's no difference, because somebody hands you a ballot or somebody activates the right ballot on your voting system. It's not something the voter does. It doesn't have to be accessible. It doesn't have to have certain requirements that you would if the voter made that selection. So, I mean there may be -- there are a lot of definitions that are different and yet they're the same. But it's politics versus actual functioning of the

system. So, I guess that's maybe more of my perspective, is there may be a value in unification, but is it going to a greater level? Or is it maybe -- let's use the concept of the minimum and then the add on, that can be appropriate. And then, I can make a decision if they want to test for the add on themselves or if, you know, they can provide the information. And, oh, by the way Iowa and Nebraska and five other states, really, are almost in common with what they're doing. So, now we can group that test and call that the, whatever, five grouping test. So, maybe it's just an idea of reformatting what we're doing and looking at it in a different way.

MR. MASTERSON:

This isn't for you. Thank you, though.

MS. COGGINS:

Okay.

MR. MASTERSON:

A question I have, I guess, is, I can only think of one state that I know of, I don't know all 50, is there any state requirement that the testing must take place in your state? Does anyone? Just one? Two. California has that, too?

MR. FINLEY:

The volume testing.

MR. MASTERSON:

The volume testing has to take place in your state. And that's a state law?

MR. FINLEY:

No.

MR. MASTERSON:

No? Oh, good. So, it's an easier change than the law would be. Okay, that's good.

MR. HANCOCK:

And, I think, Carolyn, just to respond real quick to you, you know, I think the concept is is to make things more efficient and not expand, you know. I think you did hit on a good point,, though, and it's really important to get, you know, the buy-in from the states, as much as possible, on whatever level of testing is done at the federal level. And some of the examples, you know, I pulled out, you know, whatever, the New York usability testing for example, you know, if we did the testing like that or similar testing, how many other states would be willing to accept that as their usability testing or, you know, with some little tweaks that New York would then accept as well as all the other states? I think that's the concept we're trying to get at.

MR. PADILLA:

This is Frank Padilla from Wyle Labs. Being we're worried about state law, we've got to be careful of your guys' law and the

government law. How easy is it going to be to change this manual if we decide to do that, to add state requirements that we can monitor that way? So, we have to keep that in the back of our mind.

One of the questions that came up earlier, and I'll bring up some of the tests, was one thing what the labs do, is, you've got to look at is, we're looking at the standards and how the manufacturers state the equipment is supposed to be used. Traveling around the country, I go to a lot of states and it's used different, stored different than what's in the manual's recommendation. And then, they wonder why it doesn't work. We can only test to a certain thing currently that says you're going to store it, as Steve brought up, in a plastic bag. If it says it's got to be in a plastic bag, that's how we test it. If you choose to take it out of that plastic bag, then it's a problem with -- it's not a problem with the test, it's a problem with the perception of how we're doing the tests. And I think that's where we're at. And I agree with Carolyn. We don't want to get bigger, but we do need to find the core areas and put some options in there, because there are a ton of tests, I've done the research, with a lot of states that we're doing the same test for a different state and we'll do the same tests for five different -- for one vendor for five different states. Yet, they'll pay us five times and we'll send five different test reports out and it's the exact

same test, which makes no sense, but they -- whether they want their own test report instead of the same. So, I think there is a lot of gain in this that we can look at.

MR. HANCOCK:

Thank you, Frank. It is, by my clock, 10:43, so we're just a tad past the break point. Let's do about a ten or 15-minute break and be back maybe no later than 11:05 or so.

Thank you.

[The meeting recessed at 10:43 a.m. and reconvened at 11:11 a.m.]

MR. HANCOCK:

Thank you. Those of you that are interested in lunch or will be interested in lunch later, Emily just told me that the Sea Breeze restaurant -- thank you. I don't want to take away from your beach time later, so I'd like to keep this as close to the agenda as possible. Thanks. I was saying Emily was talking to the hotel and the Sea Breeze restaurant, down by the pool out there, will have the capability of seating this number of people for lunch if everybody wants to go down there. Certainly, you're still welcome to find lunch wherever else you would like to look for it, but the capability is here in the hotel. So, just to let everybody know that.

Also, I'd like to recognize our guest speaker this morning. I

see Secretary Kurt Browning of the State of Florida has just joined us. Welcome, Mr. Secretary.

SECRETARY BROWNING:

Thank you.

MR. HANCOCK:

We'll continue during this next session with some of the discussions and questions we had about my presentation this morning. But something else I'd like to, you know, just remind you of, this is on the EAC's Web site and it's just a quick and dirty sort of step-by-step process about how the EAC gets a voting system certified. And this morning, we'd like to give you opportunities, not only to continue discussing our morning's topic about the Unified Testing Initiative, but also to ask any questions you might have about our certification program, in general, things that you don't understand or other questions you have. So, those topics are all on the table for the next hour or so.

So, with that, I'll open it up to any questions or comments anybody has. Thanks. No questions? No comments?

DR. KING:

Thank you, I'll make a comment. Merle King, Kennesaw State University. In listening to the comments this morning, two things came to mind. First, is the potential for scope creep on state certification standards, since, as you saw by hands raised this

morning, states have some combination of statute, rule and reg, for the protocol for state certification. If it doesn't cost the state anything to add more tests, I think that's a potential. So, currently, if they're not doing a volume test, like California, there may be an unintended incentive in the program for states to begin adding test criteria that may have a marginal impact on the performance of those systems in the state, given their code.

I think the more important issue that I see, is the issue of concurrency with state certification testing with the federal certification. When Carolyn was speaking this morning and was talking about identifying what's common between states, looking for a 90 percent fit or a 95 percent fit, or whatever, if a system is 99 percent compliant with state certification requirements, it's still a failure. And if the state certification is done in a linear fashion after the federal certification -- and usually, at the state level, we're looking at the functionality of the system, the stuff that's pretty hard to derive in generalized models -- if the functionality is identified as being deficient and that requires software review, code modifications and it drives the whole system back through the federal certification, that would be my concern, is that states may not fully realize that probably the best way to manage this is with concurrent state certification testing, so that the anomalies are

identified concurrently, where's there time to fix before the systems pass through the federal certification.

So, I think those two things come to mind. One is scope creep, the unintended incentive for states to just say, "Well let's add the California test, the Florida test, even though we don't currently have them. What can it hurt? What does it cost us to do that?"

And then, also, the issue of concurrency on state testing.

MR. HANCOCK:

Thanks, Merle. I think the concurrency thing is a really good point. Years ago, and it may be as long as two years ago, I had some conversations that sort of started out as part of the root of this whole concept, with the State of Pennsylvania, and they, in fact, were asking why it was not possible, or if it was possible for them to run their state certification concurrent to the federal certification, just because a lot of the things that Merle just enumerated. And, you know, we talked about it then, and I said there was -- from what I could see, there was really no good reason that that could not be done. And I know some other states, since that time, have also expressed some interest. And that's really, definitely, going to the heart of some of the things we're trying to do here. So, that's a very good point. And Matt just said our manual specifically allows for that, so it's -- I think somebody asked earlier what changes would we have to make to the manual, and I don't really think we'd

have to make any changes to the manual for this. So, that's always a good thing.

MR. HANDY:

So, is this kind of an open mike session? Is that what this is here?

MR. HANCOCK:

Sure.

MR. HANDY:

Just general comment? This is my opportunity? Great. My name is Nick Handy. I'm the Director of Elections in the State of Washington. And I'd certainly like to thank you for assembling us here, today.

Just to give you a little bit of perspective at which I am coming at this, I'm probably one of the most low-tech people in the room, so I really wanted to talk about it from a bigger picture and a policy kind of perspective but just to show my particular bias. From our perspective, voting systems work great now and they have worked great for many, many years. We have a system in the State of Washington where we do logic and accuracy testing on everything that's going to count a ballot. We've done it for years and years and years and years. We have audits after. We do recounts after. We do five to ten recounts of races after. So, we've got a 15, 20 year experience built up with voting systems where

we're regularly recounting, regularly auditing. And guess what? Every darn time the system works perfectly and it always has.

Where the problems are are voters that are not marking ballots properly, election officials that are not properly reconciling ballots, and various local procedural safeguards that are not in place. So, we're starting from a perspective where the voting systems are working great for us and have not been any kind of an issue, and from the perspective that the NASED program worked really well for us. It was efficient, it got systems out, got them to us, we were able to test them, we were able to put them in to place and those systems worked great. And it was a very responsive system. If you had a patch or an upgrade or an issue or a problem that came up, you could get it back in, you could it back out, you could get it back in use. And we had the systems that we needed for the elections that we did.

This may seem strange in this particular context, but our perspective is that in some way there's almost been too much attention and too much focus on getting perfect voting systems certified at the national level. I know there's a sense of, it would be almost like a catastrophe if the Election Assistance Commission certified a system that somewhere down the line developed some kind of an issue or some kind of a problem that needed a patch or an upgrade. But, I think I would make the case that you could have

a vendor develop a perfect product, you could test it perfectly, you could certify it perfectly, and we could put it in the hands of a local election jurisdiction that could create an absolute catastrophe with that system, given a lack of training, lack of security, lack of safeguards, lack of everything else, it could be a complete disaster. And I would take the opposite case, that you could have a less than perfect system that you would certify, you could put out in the field and a local jurisdiction with good testing, good audit procedures, good accountability and good measures are going to find those problems and they're going to, still, run a perfect election with that system. So, that's just a perspective at which we're coming at.

And, you all know that there's a system in your process that has created really a big issue for the State of Washington, and that's our largest county needs a system desperately and really cannot meaningfully run a fall election this year without that system. It's been in the process for a long time and it hasn't gotten out, so there's a sense of frustration.

But, I'm leading up to a general comment is that we sense that the EAC is viewing the program as a -- that you're really, really "the" critical component and it's really critical that you get perfect systems out. And we see you as a part of a larger system. It's very important that the vendors produce good products, the testing labs have good test plans, you do a good testing process, you get it out

to us to do our functional testing, and then the local jurisdictions have got to set up policies and procedures. It's an entire system. We don't see you as more important or less important than any of them, you're just a piece along the way. But, right now, the failure to get systems efficiently and cost effectively, and I know you recognize that, and that's why we're all here, but to get efficiently and cost effectively through the system is really causing a lot of states and a lot of counties, local jurisdictions. So, when you talk about a program which we're going to take on more testing and we're going to expand it out a little bit broader, but we think it's going to save you, it might cost more money, might take more time, that's not the direction that we'd like to see the program go. We'd really like to see the energy in this program go towards figuring out how can we, more efficiently and cost effectively, get a good solid testing program and get these products out. But we need a dynamic system that's going to allow for problems to be found and patches and upgrades to be done, so that we can have a dynamic system that goes through the process.

If anything, I guess I'd like to see the EAC Commissioners themselves -- my final comment -- I know I'm taking a lot of time and I thank you for your patience -- my final comment would be, it feels like the focus of this program is certifying perfect systems. And I really feel like that if you took a bigger picture of this program,

it is looking at your role in a larger system that begins with vendor development and ends with the local usage, how you fit into that system and how you can provide your resources and your role in a way that makes the whole system work. Because, if it takes so much time and so much money to get products and vendors, they're not going to develop products anymore and the local jurisdictions are not going to get it, the system will have broken down. And I think the reason most people are here and that most people are frustrated with the system is, we don't have an efficient, cost effective way to get this thing through, so that we can make the whole system work.

Thank you very much for your patience.

MR. HANCOCK:

Thanks, Nick. Appreciate it. Just a couple of things, you know. We recognize that no system -- aside from our program, no system is ever going to be perfect. So, I don't think any of us have deluded ourselves with the fact that we're going to ever certify a perfect voting system.

The fact that we're more important? No, we certainly have never said that. In fact, in most of our publications, you will note that we specifically say that we are part of, sort of, a three-legged stool, which includes federal, state and local testing. We constantly say that. We have been saying that all along. And, we also very

much recognize the importance of election management in this whole process. We have continued to do so, and we would not be working as hard as we are with our Election Management Guidelines right now, as an adjunct to this program, if we didn't think that that was an important part of the process. So, all of that said.

We have a bunch of people lined up now, which I love to see. Lowell, please.

MR. FINLEY:

Hi, Lowell Finley, California Secretary of State's Office.

Well, first, just to follow-up on some things Mr. Handy said. It may be because California, we're in the same time zone, but we're in an area that has a lot more earthquake activity, and maybe the shaking has caused problems with equipment, that they've found no problems with, but in our testing we have not been fully satisfied with equipment and systems over the years. And indeed the volume testing, and this occurred before I came to the agency, has failed some equipment. And I think that that's something that should be of concern to any state, whether they have the clout to force manufacturers to pay for testing like that or not. We have seen, in actual elections, including in last November's election, significant levels of equipment failure that have led to significant lines. And I think we avoided a disaster in the November election,

in some locales, because people were so motivated to go and participate in early voting, because so many people went to voting by mail. But our experience has not been that voting systems are perfect when we tested them under controlled circumstances, not involving incompetent local officials or voters, and I use that term advisedly. I don't think a lot of these things are caused by incompetent local officials or voters. But when we've tested under controlled circumstances, we found that there were actually problems with the systems, both hardware and software. And I think anyone who looks seriously at the history of the last eight to ten years with these systems, and the number of patches and changes and modifications that have been required to make them serviceable, has to acknowledge that.

My second point concerns the idea of concurrent testing. I think this may actually become something that's possible in the next -- in this sort of current round of development of systems. But I don't think it was possible in the past, in any meaningful sense, and I think that was because vendors were submitting what were, essentially, beta versions of systems to the federal testing regime. And a lot of changes had to be made, in most systems, as they went through the federal process, which meant that they would be a moving target for any state that was trying to concurrently test that same system. I think vendors are now adopting much better

development standards, much better Q & A programs, internally. And I hope, at least, that that's going to mean, both that, as your system settles in, it's going to take less time, but also that there are going to be fewer of those kind of adjustments that are necessary, just to get the system to the point where it can meet the federal standards.

I just want to, finally, follow-up on the point that Doug Jones started out here, on today. There's always attention in federal/state government relations, between using the states as laboratories and setting a single federal standard that's going to preempt all of the states. I think we are very far away from the point where it would be desirable or acceptable to many of the states to have a single federal standard and testing regime that preempted any other higher standards or additional testing that the states may believe that they need to perform, to be confident in their voting systems. And I think this is a field where given the wide variation in state law and the way that elections are conducted, in particular, I think this may not ever be a field in which a single federal standard that preempts state laws would ever be something that's reasonable to consider.

MR. HANCOCK:

Thank you.

MR. JONES:

This is Douglas Jones again. On the idea of concurrent state and federal certification, in Iowa ten years ago, we did some of that and we had one particularly bad experience, which ties in, beautifully, to the story we were given at the beginning about the Stardust and Genesis spacecraft and the failure that resulted there, except this was a voting system failure. We had agreed to allow Fidler and Chambers to come before the State of Iowa while their system was undergoing the testing under the ITA regime, and Fidler and Chambers, at that time, had one of the early touchscreen machines running, just like the global election systems machine of the time, running Microsoft Windows. And they came to us, saying, “Our system has essentially completed all the federal tests, but we haven’t got the ITA report yet.” And we asked them about configuration and they said, “Oh, but it’s a new version of Microsoft Windows. The old version had some bugs in it. Microsoft issued bug fixes and cosmetic upgrades. The ITA said no additional testing was necessary, because of the COTS exemption, and because there was no change in the application program interface, which is what matters to the relationship between Windows and the voting application.” So we said, “Okay, we’ll look at this machine and our certification will be contingent on positive certification from the, then, federal process.” I don’t see that the current rules would be that different in this case. What ended up happening was, and

this is a case where you can't point to malice anywhere, that the voting machine we were shown, violated the requirement that the voter have a secret ballot. And it was a violation caused by a cosmetic enhancement to Microsoft Windows that had no -- that was not visible in the applications program or interface.

Specifically, the voting machine was one, where you touched the check box by the candidate's name and the box would mark itself, just like most touchscreen machines. And, someone at Microsoft had this brilliant idea that most check boxes are used in office forms, where it would be nice to have the machine remember, from one session to the next, what boxes you had checked and give you a hint to help you navigate the menus faster. And the hint was very subtle. It was subtle enough that we didn't understand what we were getting, voting test ballots until about halfway through a stack of test ballots, when I began to wonder why some candidates' boxes were slightly highlighted. And it took several more test ballots before I realized it was always slightly highlighting the candidate's box from the previous test ballot that I had voted. You can't point a malicious finger anywhere in this. It was Microsoft doing a reasonable enhancement to Windows that didn't require any changes to documentation or anything else, but had this horrible consequence in the voting application.

This was a case where we were lucky to see it in our parallel state -- in our concurrent state testing, we were lucky to see it after they'd made the upgrade and not before. They could have made that upgrade before we -- we could have done our testing before they did that upgrade and then it would have gone to the counties with this defect in it. So, we were lucky to catch it. This both demonstrates risks in the whole COTS exemption area and the whole question of which COTS components need to be tested how much, and it demonstrates potential risks and benefits of parallel testing or concurrent testing between the state and federal level. But it's a story which, I think, we can learn from.

MR. HANCOCK:

Thank you, Doug.

MS. SMITH:

Hi everybody. Pam Smith from Verified Voting. Thanks for putting this together, Brian, and everyone who worked so hard to make it happen.

I want to start out by concurring a little bit with Nick. I think it's easy enough to make a catastrophe occur, even when you've had a rigorously tested system that's as close to perfect as you might be able to make it. You know, I think from our perspective, it may not matter how much testing gets done. It's not going to guarantee a secure system at the local level, in the end. From an

advocacy perspective, what we'd like to see is auditable systems everywhere and robust audits being conducted. Failing that, however, and in the interim, I think that's one of the reasons why a lot of people have focused so much on security testing because there are places that don't have an auditable system that is being audited. So -- but I think that the most bang for the buck is in doing things like volume testing and usability testing, where those are other pieces that have the biggest impact on a voter on Election Day. And so, I would strongly support seeing a combined effort where more volume testing can happen, not just in my great State of California, but for voting systems that are going to be used elsewhere. And I think from the market standpoint, it may be that a small market state that has maybe fewer voters in it than even my county has, you know, may not be in a position to demand some of the kinds of testing because a vendor can just say, "No, we're just going to market elsewhere." So, seeing something like that be incorporated, benefits some of the smaller markets and the voters in those markets, as well as everyone else.

So, I want to also ask a question, though. You gave great examples in the beginning of your presentation where you chose from California, from Florida, from other states. And those examples have come about because those states have gone through the testing processes themselves and found these things to

be useful or necessary. If these things are now going to happen at, sort of, a combined federal -- through a combined federal initiative, do you foresee any kind of different or additional channel for states or for jurisdictions to recommend such testing that they may not previously have gone out on a limb, and to the expense and time and resource to do themselves? You know, in other words volume testing is a good idea, but if California hadn't been the state doing it, would that good idea have a channel to come in for this combined testing initiative?

MR. HANCOCK:

Well I guess that's -- I mean, are you asking, should it be in the federal testing or additional state testing? I mean, the federal process is pretty clear. I mean, that's the VVSG process; the process of updating that document, you know, and we have extensive public comment periods for that. So, if it needed to be brought in the federal process, I would think that is the pretty obvious avenue for that. You know, otherwise we're certainly always happy to talk to states, you know, about experiences that they've had. As I said before, lessons learned, you know, we can learn from other people's mistakes as well as our own. And so, I think there are various avenues that we could bring that forward.

MS. SMITH:

Thanks.

MR. HANCOCK:

Thanks, Pam.

MS. SMITH:

And thanks for putting this on.

MR. KELLNER:

Doug Kellner from New York State, again. I wanted to follow-up on Nick Handy's comment on the issue of striving for perfection. I agree with the main thrust of what Nick was saying, is that we shouldn't do nothing just because we're unable to get a perfect system. And indeed, we should recognize that, right now, if we accept the proposition that the NASED certification is, essentially, worthless at this point because of all the disclosures that have been made in the last couple of years, that we're all using uncertified equipment now. My main issue is, do most people understand why the equipment that they're using now does not comply with the 2005 Voluntary Voting System Guidelines? In other words, what are the features that are missing from the equipment that everybody is using now? And, of course, the current EAC process doesn't really address that, but it's something that I think as state election officials and local election officials we should at least be charged with the knowledge of what are the deficiencies in the current systems that we're using. And then, with the federal certification process, the federal process should be a

testing process and the goal should be to identify what the issues are in the equipment. I think, in general, the EAC has been doing a good job in that, because of its efforts to strive for transparency. So, for example, and because it's the only system that has been certified so far, I have to keep repeating it, in MicroVote, at least, in releasing the final analysis, they do show the steps that they went through and they show where the areas of concern should be and they list out restrictions and guidelines that should be used with respect to that system, even though that it's been certified.

The one thing, though, that I think we should avoid doing, is falling into the trap of the old Henny Youngman joke of, "If you can't afford the operation, let's just touch up the X-rays." And if there is a problem in a system that the testing shows we shouldn't certify it, as ignoring that problem just so that somebody can use it, but we should make it clear what the restriction and limitation is. And for states, you know, I don't know if Washington, Nick, is a state that says it has to be federally certified in order to use the equipment. Is that the issue in Seattle?

MR. HANDY:

It does have to come out of a federally certified testing lab. We have to have the report from the testing lab. We don't have to have the EAC certification. We're just trying to get a test out of a lab.

MR. KELLNER:

All right, well, I don't know. Okay, I guess I should say, I can share that since we've been doing testing for three years and still haven't finished. But, obviously, there's always the option to the state, even though, that it doesn't pass certification, that the state can still authorize the equipment to be used. And, you know, the California model I think is a good model. In other words, where they identified lots of problems with the existing equipment in their base and then set in a series of ameliorative procedures in order to use that equipment notwithstanding the issues that they discovered that would impede certification.

MR. HANCOCK:

Thank you.

MR. GALE:

I'm Erick Gale from the Ohio Secretary of State's Office. I, also, am the legal staff for the Ohio Board of Voting Machine Examiners. And just to give you a -- well, thank you, first, for putting this conference on, because Ohio would be very interested in the initiative.

A little bit of a different perspective. In our state we don't -- we're a larger state but we don't have state testing and our statute requires an EAC certification number for all new equipment. So, we're, basically, locked in to the EAC program. And I think, it's

great that the EAC took the lead on this. And -- because just to give you some background, within the last two years our office did a study and found what we considered a lot of vulnerabilities with some of the currently certified equipment and one of the consequences of that was that, well, for the next wave of equipment we want to have better equipment with higher standards, make sure those higher standards are met. We quickly learned that creating the higher standards is very technical and it would cost a lot of money, and we don't have that. So, we think this, sort of, unified initiative would be great and we'd be very interested in it. And I don't know if there's other states like this, but we just don't do our own testing, at this point, and this is a great idea.

MR. HANCOCK:

Thank you, Erick. Appreciate it. We'll hear from another Ohioan now.

MR. CUNNINGHAM:

My first reaction, guys, was perhaps that you were spreading the weight bearing here. I'll remain open-minded, but it seems to me that perhaps the load is getting a little heavy and you're looking for some additional support pillars underneath it.

And I would say to you that there is a certain amount of, I

don't know if you call it state snobbery or what going on here, I mean, for instance, with all due respect to the folks from California, it's always got to be different there, no matter what it is. New York, I mean what's going on up there? So, I think what the -- hey, I took the local election official thing, okay? I think what people are expecting from you, and I think what the people that put you in the place you're in, i.e. the United States Congress, is expecting from you, is a base set of standards that say, "This equipment meets a certain level of performance and capability with the understanding that if a state wants to go beyond that, they're more than welcome to and that's pretty much between the state, it's treasury, the vendors and so on and so forth." And, you know, it's probably likely that, at some point, some vendor may say, "We're not going to do business in that state because they've added these other add-ons."

I'm concerned, not to, kind of, sound like Jesse Jackson here, but I'm concerned with the paralysis of analysis; that we have reached the point where this is being analyzed so much that we are never, ever going to come out of it. And I know you've heard this from others before, but I believe it's time that something be realized from all of this, and I believe what needs to be realized is a set of base standards. You know, sometimes you just got to -- I've got a buddy that says, even if you fall on your face, you're falling forward. So, you know, that's okay. And sometimes that's just how you're

going to have to go. So, I'm not sure that I'm in favor of expanding this into a bigger program that continues to push results off into the future. I think we're at a point in time where those results need to be -- as Erick said, Ohio is completely dependent upon what you do. We have no testing authority. We have no testing organizations. We follow what you do. And I think you have to be very keenly aware of that.

Thank you.

MR. HANCOCK:

Thanks. Well, we certainly understand that and I don't think, in any way, we are pushing the time limit out. I think, you know, we have heard calls to try to figure out ways to make this process more efficient, to try and make this process cheaper. And that's why we're all here, to try to figure out if that's possible. I mean, if it's not possible, you know -- what we're trying to do here, today, is a pilot, you know. States that want to participate can certainly do so. If it works, great. If it doesn't, that's why it's a pilot and we'll look for something else to do. But I don't think it's pushing things out, and that certainly was never our intention to do that.

Chris.

MR. THOMAS:

Thanks. It's Chris Thomas, again, from Michigan. Again, I thank you for putting this on and I was privileged to participate in

your Denver seminar a couple of years ago. And I thought the beauty of that was that you had the square table and you had all these factions, and by the second day, as election officials, we sort of stood back a little bit and really enjoyed this interaction between your testing authorities and your designers and your office and the reviewers, because it was illuminating. And I thought we really seen some stuff come out of that. I would really urge you to renew that type of endeavor and that type of discussion with these groups, in a collective, congenial way, so that we -- kind of following up on Nick, we need to see systems come out of the other end of this system. And I'm going to be real result orientated here. We're sitting on a lot of systems that absolutely need improvements. We're not looking at brand new systems, new devices. In many cases, it's just upgrades to existing systems that we've already found the problems in the real world, and so we're trying to get those things out of the system. And I would urge you to work with that entire group that you had in Denver, or something similar to that, to really come up with a way that you can set a date-certain as a target for this calendar year at some point, and work backwards from that date, to come up with a plan as to how you're going to move this stuff out that's in the system now, by that time. We've got another major election cycle coming up. We really, to go through that cycle sitting on systems that we can't use, because

they haven't passed certification, is really reached the point where it's not acceptable. And I think you guys have put a good program together. I think you've done your due diligence to make sure that it's thorough. And I think the vendors, as Lowell indicated, it seems that it's not quite so beta, in terms of what's being presented for testing. If that's the case, with the cooperation of the manufacturers and the testing labs, I think that you ought to really be able to move a lot of systems out this year. We're in dire need for them, particularly the enhancements as opposed to new products. And I think it's a reality, a lot of these manufacturers, it's at least, rumored, that financially things are not great. We don't know if they're lining up for a stimulus package or not, but they've got to have products to sell. And, you know, they're the stuckees to some extent. Now they bear some responsibility, you know. There's a lot of talk in the community out there that, you know, often, you know, they're the ones that drag their feet. I don't know where all that sorts out. I would just call on everybody that's involved in this process to try to buckle down and really see what we can get out this year. And a lot of the things we're talking about today obviously aren't going to happen this year, but -- so the short-term thing is, we've got 2010 coming up, and on the heels of that, 2012 not far behind. We just need to get systems out there.

Thanks.

MR. HANCOCK:

And you're right. And we certainly, you know, appreciate that and know that they need to get out. As I mentioned in my earlier remarks, I think we will have some movement in the next 100, 120 days or so, and that's good.

The reason I would hesitate to ever put a hard and fast date on something, is because in that instance we'd have two options; we would certify their system, or say the system is not certified and it's not getting out. And I don't think you -- we don't want the latter option, if that's ever, at all, possible.

MR. THOMAS:

Well, I think that -- I agree. I mean, I don't think you just do an absolute and deadlines you can't move because of circumstances. It just seems to me that if this group of those involved can agree on what it would take to reach a deadline. In other words, for each system here's what needs to happen, what the procedures are and what each player has to do in order of performance, then, at least, folks have an idea what they need to live up to. And if they drop the ball, fine, that's public record. Because, I think all of this stuff needs to be documented in a transparent way in the sense of when they submit things, when test plans are ready and when you turn stuff back to them. In other words, if you make a decision that they haven't given you what you

need and you're shooting it back to a vendor, that ought to be on the public record.

MR. HANCOCK:

It is.

MR. THOMAS:

Okay.

MR. HANCOCK:

It's all on that Web site that I showed you.

MR. THOMAS:

All right.

MR. HANCOCK:

It's all up there.

MR. THOMAS:

But, I think people ought to be able -- must be required, then, if you can set at least a framework. I understand, you know, you don't just get to a point and you say, "Hey, we're out of time, we've got to flip a coin now." I'm not suggesting that. But it seems that everybody ought to come to an agreement of what it would take to meet some specified deadline and then everybody endeavor to get that done.

MR. HANCOCK:

Thanks. And, yes, the other thing to remember is, and someone said this earlier, what we're trying to do now, is baseline

these systems. And somebody asked this question before, and I'll give you the answer right now, but for modifications and things going forward, engineering change orders and things like that, if you look at our manual, the process is much simpler and it will be as efficient as we can make it in the future. And I think we're talking about a fairly short-term issue here. Yes, thanks.

MR. SILRUM:

My name is Jim Silrum and I'm from North Dakota. I'm the Deputy Secretary of State there. And I represent a state that has 53 counties, 29 of which have a population, a population of 5,000 or less.

But that being said, there isn't a state in this country that doesn't need to have secure voting systems, reliable voting systems working for them. We all need to have that. Even in my county that has 900 people in it, they need to have a voting system that is working for them, that they can count on, that they can rely on.

As has been stated earlier today, legislatures are great for coming up with all kinds of new things that need to be added to a system. For example, I pray to God that there is one thing that our legislature will not pass on this year, but they're currently wanting for us to bring our rotation of candidates -- maybe some states have that, some states don't -- but rotation of candidates, so that

every ballot within a precinct, and within a precinct split, is rotated, so that every candidate has a chance to be on top equally enough. I have commented to our legislature -- in developing the fiscal impact for that, I've commented that there isn't another state in the country that's going to want to pay for a solution -- a voting system that does that sort of thing. And so, our system happens to be from ES&S, and so, in creating the fiscal impact, I've said all of that cost is going to be ours, including the certification of that system, because ES&S is going to pass that directly on to us. They're not going to pass that on to California, like may have happened with what California did to us.

But what I really want to get to, is that I wonder how things would change if we determined that who pays for certification is different than what it is right now. And I happen to be our HAVA coordinator, and I happened to be looking at the law recently, the HAVA law recently, and we came across subtitle (b) testing certification, decertification, recertification of voting system hardware and software. And real quickly, without reading it all, it says, "The Commission shall provide for the testing, certification, decertification, and recertification of voting system hardware/software by accredited laboratories." Now in North Dakota -- I am not an attorney, although I have written more legislation than a lot of people, and I can tell you that under that

definition, if that were written about us, we would have to pay for that. The state would have to provide some sort of an appropriation for that to happen. And I'm wondering if a revisit of HAVA doesn't need to be made to determine whether this language mandates that the EAC, that the Commission, that the Federal Government, must pay for the certification of these voting systems. Then I think the conversation is going to change as to what is appropriate testing to be done? Is it appropriate, for example, to mandate that a system be able to rotate candidates all the way down ballot by ballot? Probably not. I hope not. Is it the responsibility of the certification to make sure that the system is secure? Is it the responsibility of the system to make sure that it can stand up to dust and sand? Florida may have the beaches, but North Dakota acquires the dust and sand, because we only drag our voting machines out twice every two years and they collect dust during that time. So, we have to have procedures in place to take care of that. But I would encourage this group to, and the EAC, to go back and take a look at this language, and say, maybe, it does mandate that the Federal Government pay for the certification of these systems.

MR. HANCOCK:

Thank you, Jim, and good luck with your state legislature.

You know, the EAC will allow Congress to do what it's going to do. But, I think the one thing that everyone recognizes, is, that no matter how much money we can save, testing is more expensive now than it has been in the past and that trend probably will not change any time soon, so some infusion of money, from wherever it comes from, I think, would not be a bad thing.

David and then -- we are getting very close to lunch, so David, you will have the last word this morning. How's that?

MR. BEIRNE:

Excellent. David Beirne, with the Election Technology Council. I just want to, first off, applaud the EAC for hosting this. In my representation of the trade association for the voting technology industry, my primary concern is with the market dynamics. And I hear a lot of concerns that typically come up in these types of discussions, about the role of federal versus state. And what I recognize, unless I'm mistaken, is something that with a shared cost initiative is separate and distinct from the current federal testing efforts that you're doing. So, it's not something which we are wholly thinking of expanding the testing that is done, but much more in line with Steve Pearson's comments, that perhaps it's something we can look at to allow for the industry participants to select what options they might want to choose from, so that they

can achieve state level certification and avoid this redundant testing.

And to your point Brian, about the cost of certification, you know, we have been well publicizing our concerns about the increase in certification costs upwards of 400 percent from the old certification days. And those costs are going to trickle down to the marketplace. That's an inevitable fact. And, as we see a rise in state level certification, that also is going to be trickling down to the end user; both the local jurisdiction, but inevitably, the taxpayer. And so, from a marketplace perspective, we certainly support the idea of building in as much cost efficiency as possible, but it needs to be done smartly. And as much as we -- we certainly understand the duality between federal and state governments. Inasmuch as we don't want to see federal standards trump state standards, California is also a recent example of how a state standard can trump federal standards. And so we don't want to necessarily see that as well. So it's going to come down to the implementation. If it's done smartly, you're going to be establishing a common denominator and the burden will be, therefore, on the states to say, "This additional testing regime is responsive to my needs, and I think that if a manufacturer selects that testing protocol, that we would allow it in our state and recognize it." And I think that's the fundamentals that we should not lose sight of, and

recognize the fundamental benefits that would be coming along with this initiative, which is, inevitably, there would be the idea of cost savings as well as the potential for increased competition within the marketplace; that if a manufacturer is looking to take their product to market and they know they can come to the EAC and select additional testing, beyond what is set aside in the standards, that they can market their products in multiple states, as opposed to a handful, they know that they have an increase in the potential for reward from their risk.

And with that, I'll leave it at that.

MR. HANCOCK:

Thank you, David. And I think you're correct. I think perhaps, you know, the title of this whole subject, a unified concept, is maybe making people a little nervous in the fact that we're trying to unify state and federal processes. We're not trying to do that, you know. We're trying to, maybe, combine testing initiatives, would be a better title for it, or integral testing initiative, something like that, but thank you.

All right, well, we are right at lunchtime. So, that's great timing. Thank you. As I said, lunch on your own either outside or elsewhere. And we would like everyone back, as close to 1:15 as possible, so we can hear from Secretary Browning. Thank you.

[The meeting recessed for lunch at 12:00 p.m. and reconvened at 1:19 p.m.]

MR. HANCOCK:

I think the staff at the Sea Breeze did a pretty good job of getting us in and out of there for lunch. Hopefully, you all got a little nourishment and are energized for the afternoon conversation. Once we all take our seats, we will get started.

All right, to start off the afternoon session, we have a guest speaker, as you see on your agenda. It's always wonderful to have the Secretary of State from the state that we happen to be having our meeting in, come and speak with us, but we're very fortunate, today, to have Secretary of State, the Honorable Kurt Browning, speaking with us, and particularly pleased, because it's not all that often that the Secretary of States have been a state election official and a local election official. I think those are very important positions both, to know, not only from the state end but from the real nitty-gritty end where the rubber hits the road in elections. And so, Secretary Browning has that and we have him here to share his thoughts with us this afternoon.

Secretary Browning.

[Applause]

SECRETARY BROWNING:

Well, thank you, and good afternoon. It is great to be in Miami Beach today. How many of you come from places where there's white stuff all over the ground? Really? Wow. Well, welcome. The only white stuff you'll find around -- well I shouldn't say the only white stuff. I hope, the only white stuff you find around here is the sand on our lovely beaches. Wow, the Chamber of Commerce just took note of that.

I think this meeting was initially scheduled last August and we were postponed or delayed because of Tropical Storm Fay, and I will assure you we will have no tropical storms, either today or tomorrow. But it's a great place to meet. It has an awful lot to offer. And I just want to take a personal minute and recognize Lester Sola, who is the supervisor of elections here in Miami-Dade County. Lester does a great job for Florida. We often say that he is the state's chief election official for the State of Miami-Dade, because Miami-Dade is very unique; multi-languages, very different diverse population. And he just does a great, great job for us in Florida.

I'm honored to speak to you today to share a couple of things. I wanted to talk a little bit about Florida's experience this past year about converting from touchscreen to optical scan. And then I want to talk just a little bit about some of my thoughts about certification of voting systems.

I've been an election official in the business for over 33 years. I was a local elected -- I was the supervisor of elections, the same as Lester, in Pasco County, Florida, which is just north of Tampa. I was elected to seven four-year terms. And in Florida, your election officials are elected on a partisan basis, good, bad or indifferent. That's just the way it is. Lester happens to be appointed, and the only appointed supervisor in Florida.

But, in my 33 years in the business, we have -- I have experienced quite a bit particularly, with voting systems and different voting methodologies. And I'll talk about that in just a moment. I've gone through three voting systems conversions as supervisor. In Pasco, I implemented changes from lever machines to punch card, and then we went from punch card to the touchscreen voting systems in 2001, right after the year 2000. And then, as Secretary of State, my department coordinated the conversion from touchscreens to optical scans in 2008. Florida became an all optical scan state on July 1 of 2008. 15, many of our largest counties in Florida, representing over half of the registered voters in Florida or over half of the 11.2 million registered voters in Florida, made the transition from the touchscreen to optical scan voting systems. And we've conducted two successful statewide elections on the new equipment, including the November 4th general election. That did not happen by accident. I will tell you it

did not happen by accident. So, how did we do it? Well, I attribute it to two things. One is planning and preparation for the event. And, secondly, not taking anything for granted. If it's a possibility that there's going to be an issue, you need to have a response to it.

In February '07, Florida Governor Charlie Crist announced his voting system conversion plan. In 2006, during his campaign, he made the statement that we need to move away from touchscreen voting systems. Now, I was an ardent, and continue to be an ardent supporter of touchscreen voting. I make no apologies for that. We found it to be a very efficient, reliable, secure system. And I'm sure that there are those in the room that would debate me on that, but that's not the purpose of my comments today. The Governor and the legislature, at his request, said that we need to be able -- or have our voters in Florida have a high level of confidence that their ballots are cast and that they are counted. And it is tough defending touchscreen voting systems, when there isn't a piece of paper involved with the process. I like to think that I am pretty progressive, but there is just something about taking one of these and giving them a ballot, although, in and of itself, there are inherent problems with that. There's just something very, very sacred about marking that ballot and putting it into either a box or some type of tabulation device.

Through the 2007 legislative session I met with the impacted counties supervisors of elections and kept them posted, as to the progress, as other proposals that moved through that process. When the Governor signed the legislation in May of 2007, the Department of State set a timeline, as well as some benchmarks, for conversion and began working with the supervisors to implement the system change. We met or exceeded every benchmark that we had set. It's bad enough that you have to change voting systems. It's worse to do it on a Presidential election year. For those election administrators in the room, you know exactly what I'm talking about. But I will tell you -- and I have given credit where credit is due and it goes back to the local supervisors. That is where the rubber meets the road. They're the ones that saw to it that those systems were certified, and in place, and ready to go, well in advance of our early voting period.

The most important benchmark was certifying the new systems in Florida, and I believe Florida has one of the toughest certification programs in the nation. And over the last two years we have expanded that program to include an in-house source code review. Oftentimes, we contract that out and now we actually do that in-house in the Division of Elections, the Bureau of Voting System Certification. Florida does not require federal certification of voting systems, so our Bureau of Voting System Certification

under the direction of David Drury, who is here today, was the first to test and certify the latest optical scanners during the past election cycle. We certified the ES&S DS-200, the Premier OSX and the Sequoia Insight Plus. We only have three vendors, in Florida, that we deal with when it comes to voting systems. It's not that there haven't -- others haven't desired to come in. It's just that these are the three that have gotten through the certification process.

Our Bureau -- David's Bureau, has worked tirelessly to test all the equipment and enhancements, so that they could be certified in time for the deployment. In the year preceding the transition, the Bureau tested and certified 15 different systems, configurations or upgrades to voting systems, including ballot-on-demand. Keep in mind, when you're leaving touchscreens in these large counties you have early voting, so how do you accommodate the multiple ballot styles. Lester, how many ballot styles did you have, 200?

MR. DRURY:

Around 200.

SECRETARY BROWNING:

200 ballot styles -- 200 different ballot variations, in 20 sites, across Miami-Dade County, alone. So, you can either pick and pull, as we call it in Florida, or you can implement ballot-on-demand. And I will tell you, ballot-on-demand worked so well for

us, that I actually forgot that we had even implemented ballot-on-demand in the counties.

The Bureau conducted functional testing and source code review for the Okaloosa Distance Balloting Project. This project established a secure distance balloting environment for approximately 100 overseas electors. This was -- I'm sure most of you know Pat Holleran, the supervisor of elections, the former, retired now, supervisor of elections in Okaloosa County. This was her project. We gave it a provisional certification status for 2008 only. We are -- if they want to do this again, they need to come back in for a certification event. We put that project through a certification process just like ES&S, Premier, Hart InterCivic, Sequoia, whomever would come in for system certification.

My staff and I, actually, made site visits to all the conversion counties in the spring of 2008 to assess the progress of the conversion. The visits had a two-pronged approach. The first one was to sit down with a supervisor and talk about training. I think it was Nick that had said earlier, that you may have the best system, but unless you have, and I call it the three Ps, people, procedures and processes, around that system, you're bound to have problems with it. And so, we wanted to know from the supervisors, how are you training your staff? How are you training your poll workers? How are you training your voters on using this new system?

Obviously, voter education was very simple. You're now darkening in an oval. Pretty much, that was it. But what did I say earlier? We did not take anything for granted. Don't assume that they know how to darken in an oval. We wanted to make sure that we were ahead of the curve, when it came to identifying those issues, and more importantly, coming up with a response on how we were going to address those. We also wanted to know what the counties were doing with their education plans, how they were approaching their voters and their poll workers and their staff.

The second prong to this approach, was that we discussed technical issues that involved the deployment of these new systems. And we discussed that with the technical staff, usually the supervisor -- I was one that was not very technically savvy, I knew just enough to be dangerous -- but the technical staff, the ones that are, actually, in the trenches, that are going to make this thing work. In addition, we followed up with conference calls to track the county's progress on a very regular basis with these counties. Prior to each election, we met with voting system vendors to discuss technical support for counties, and where vendor staff would be deployed on Election Day and Election Night. I require our vendors to have folks in our state on the ground. We need to know cell numbers, we need to know where they're going to be, we need to know where they're hanging, in the event that we have an issue

that we need ready access to those folks, in a state our size. We have a system in place to track voting system performance during both, early voting, and on Election Day.

I'll tell you that when I became Secretary two years ago, we expanded -- I requested that our Conduct of Election Report, that is a report filed with the official returns, be expanded to include the types of information that we could track. We had no way of knowing if we had scanners that were being pulled out of the polling places on Election Day, and replaced by ones that were working. We didn't know how many didn't even work that morning. And now, this report is a little more comprehensive. And the purpose of the report was not to rat out voting systems manufacturers. The purpose of the report was to see if there were trends with voting systems, and what those trends were. Were they the same in Pasco that we're finding in Miami-Dade? Was Palm Beach County the only county where we had that particular issue? We could now do that, I think, with a higher degree of accuracy than we could before that form was updated.

As is Florida's practice, we work with vendors to identify problems and find solutions and then analyze whether those issues are a localized event or one that has a statewide impact. Thanks to the hard work of the supervisors of elections and their staff, Florida had a very successful system conversion on a Presidential election

year. And we were all prepared and had plans in place to deal with any situation that we thought we would be faced with.

I've heard it said before already, but I'll say it again, elections are not perfect and they never will be as long as people are involved with the process. Where you have elections officials, candidates, poll workers, press, voters, advocates, all of which all are unpredictable pieces of a much larger puzzle, you are not going to achieve perfection. But -- and I've told supervisors, that failure is not having a problem during the election, failure is not having a solution for the problem. There's nothing worse than having a problem, having cameras on you and you have that, deer in the headlights look, like, "Yeah, we've got a problem but we're not quite sure what it is or how we're going to fix it." We continually stress to supervisors of elections the need to have a plan in place to react to those problems.

Our role as elections administrators was, and continues to be, that of risk mitigators; identifying the risks involved with any given Election Day and then coming up with a plan to address those risks. And it's just not voting systems. It's poll workers, it's polling places, it's media relations. It's the whole gamut.

Our actions as elections officials influence voter confidence, and not just your voters. Voting systems issues have a ripple effect across the country. Do we need to tell you about that with what

happened in Florida? How many times have you had to answer questions about your systems, raised by press reports in another jurisdiction? Voters shouldn't be reading stories about problems with their systems, they should be reading about your solutions to those problems. It's my philosophy that voting system vendors are partners, they're not adversaries. I use, and it's already been mentioned today, the three-legged stool analogy. Our three legs on our stool are made up of local supervisors of elections, the state Division of Elections, Department of State, and the vendors as the third leg on that stool. I have said repeatedly, and I will say it until I draw my last breath, that if any one of those three legs fail, the process fails, and we will not have good elections, unless all three of those legs are supportive. If our certification team identifies issues during testing, vendors have a seat at the table to resolve those issues in Florida.

One of my first priorities, as we began planning for the 2010 election cycle, was to hold a joint meeting with our voting systems vendors. I did that last month. I gave them a little bit of time off for the holidays, and then I called them all to Tallahassee, which was unprecedented. It's funny, because they don't want to talk about proprietary issues in the same room with everybody in there, and we did not talk about proprietary issues. But we wanted them to be at the same table, to hear the same message, and to work together

to improve elections in Florida. We discussed the issues that we encountered during the 2008 election cycle, and then we set a game plan for resolving those issues prior to the 2010 elections, as well as being prepared for what 2010 is going to hold for Florida. At that meeting, I was pretty blunt and straightforward, as I usually am, with the vendors about my frustration with the lack of quality control in the manufacturing process.

Despite our rigorous testing in Florida, we've noticed that what we tested is, generally, not the same quality of equipment that arrives in the field. Not only must we ensure the systems are secure and that they're reliable, but they also -- that they work as promised. But how do we accomplish this? Simply put, the industry, that is, the field of elections administration, has got to settle down. It's got to take a deep breath. I used the analogy with the vendors, when it comes back to the manufacturing standards of their equipment, is that most of you flew to Florida. And I think that you probably had a pretty high level of confidence that when you boarded that plane in your respective hometown airport, that it was going to taxi down that runway, it was going to gain altitude and it was going to fly to Miami, and then, more importantly, it was going to land safely. If you had any reservations about that, you would not have gotten on that airplane. My point to the vendors, last month in Florida, was, why is it that I, as the state's chief election

official, have to hold my breath, along with 67 supervisors, as to whether or not your equipment is going to work, or even come on, on election morning? We've got to look at the standards by which we are producing voting equipment, and we need to be able to have a high level of confidence that this system is going to perform, very much like that jet aircraft that you came down here on.

Elections, and more specifically, the voting systems industry, have become knee jerk reactionary. And it's not necessarily their fault. We must be deliberative and we must be proactive in our actions. We need to look at the future of the industry, and I will even say, we need to look at the future of this industry with some great dose of common sense. We need to plan and prepare for the development and employment of new technology. We must strike a balance between academics, activists and elections administrators. There's got to be the balance. If you have a tire on your car that is out of balance, you don't want to be in that car very long. And we don't need the elections administration industry or field come out of balance, because one is overshadowing the other.

We all want high standards for voting systems, but to what end do we want those high standards? Machines are rushed into development to meet constantly changing standards or requirements from jurisdictions, and then rushed into production to be deployed into the field to meet aggressive deadlines. At some

point, and I think, probably sooner than later, the “improvement” of these systems and the costs of these “improvements” will come to a point of a diminishing return. Before you know it, because the requirements are going to be so stiff, there’s not -- we can manufacture it, but there’s not a jurisdiction in this country that will be able to afford it, because of all the changes and the bells and the whistles that are perceived that we need, on these systems. For the voting systems vendors, trying to meet the moving targets of federal requirements, much less 50 unique states’ requirements, is like trying to change a tire on a car going a hundred miles an hour down the highway. In other words, it’s just impossible to do.

So where do we go from here? I believe that the future of voting system certification is a multi-layered process, because I am of the school of thought that one size does not fit all. On a federal level, I would advocate federal testing of firmware, software using reasonable minimum standards, security standards and minimum hardware testing for durability, dependability and environmental conditions, such as water and temperature and dust exposure. States should have the option, in my opinion, to test equipment using their own state standards and state certification programs, or to utilize a secondary testing program established by the EAC for those states that do not have a certification program.

I think we were very strategic, whether you agree or disagree with this, but I think it was very strategic, in Florida, that we did not adopt the federal standards. Florida is a very big state, and there's a lot of needs. When you go from Pensacola to Jacksonville, down through the center of the state to Miami, to Key West, you have all sizes of jurisdictions, and each one of these jurisdictions has different needs. Our concern was, and still continues to be, the ability to respond to those issues, very timely. And we believe we can do that much better with our certification program in Florida.

That program could be more in-depth. That secondary -- if a state does not have their own certification program, that secondary program could be more in-depth and modified to test for specific requirements for those states. I believe there should be a quality assurance program on the federal level to track the manufacturing of the equipment, and as well, track the incident -- have some type of incident reporting system. When I served on the ES&S Advisory Board when I was a local election official, I had stressed to ES&S -- and I was an ES&S customer, and I'm not one to bust on ES&S, but I speak from my own experience -- and that is, is that users need to know what the issues are with those systems. And we're getting there, I think, to some degree in Florida, with our Conduct of

Election Report, but I do believe that the incident reporting system should be, somewhat, on a federal level.

Let us not forget the end user, the people on the ground who program, maintain, and deploy this equipment. In Florida, I'm changing our program to include beta testing at the county level, to run parallel with the official certification event. That way, the firmware, software and the hardware can be run through its paces in the field, during the official certification event, rather than after. It takes a great deal of time to get through a certification event in Florida. I do not want to have this process, unnecessarily, protracted, when we could be running parallel. And we've done that to some degree, but I would like to formalize that process in Florida so that -- there's nothing like a sterile environment to test a piece of equipment, but I think it's already been stated here today, you put that same piece of equipment into the field with end users and you may come up with a totally different result. And what we want to do is, we want to identify those issues as quickly as possible, and work with our manufacturers in resolving those issues while that is going through the certification process, so that Florida voters will be better served and have higher levels of confidence that their systems count ballots that they cast on Election Day.

Working together, on a multi-level approach to certification can restore calm to the industry, and the Federal Government can

guarantee consistent products produced across the country, and states can retain the rights to set standards for their own respective communities.

It has been an honor for me to be here today. Just some thoughts that I wanted to share with you today. And I know that the issues that you're dealing with, are ones that, it's like nailing Jell-O to a tree. I'm not sure we will ever come where everybody is going to be one hundred percent happy about where we go with this. But, I think that we, oftentimes -- and what I try to do is, put myself in the spot of the voter, and that is, although, we may believe they are not connected or engaged, I believe that voters are much more engaged and connected into what's going on than we give them credit for. They want to make sure that when they cast a ballot, that it gets counted the way they voted it. This is not tough business. On the other side, we need to make sure that there are systems in place that protect the security of those votes and the software packages that do the tabulation.

But my hope and desire would be, is, we don't make it so overly complex and complicated that we do put the perfect system into a polling place, that those poll workers can't figure it out. Can't figure it out. The average age of my poll workers, in Pasco County, was 70 years of age. We did it. We looked at it. 70 years of age. And I think you'd find that, pretty true, across the United States.

And, I've seen a lot of changes in the 33 years I've been doing this, from lever machines, when nobody even asked questions. And I'm not saying that's good. But it was interesting, we would actually ask our poll workers and our voters, when we were looking at changing voting systems to punch card, and many of them said, "Give us the lever machines. Give us the lever machines." And I said, "Where is the paper in that, you know? Where is the paper in lever machines?" But, it's I think, what they're comfortable with. It's what they can associate with. And it's a huge job that election administrators have. It's a huge job that the testing authorities have, and the EAC has, but we need to strike some balance and not lose sight of the fact that what are the voting systems -- or who the voting systems are there for.

I've probably taken just about as much time as I have. I need to go catch a plane. It's nice knowing I have to catch a plane and I can just leave this room without any questions. But I'll tell you what, are there any quick questions? Anybody else, other than Lester, that has a quick question? Ola.

MR. SOLA:

Ola, Mr. Secretary. I'd like to, obviously, welcome you to the beautiful State of South Florida, because we include Broward and West Palm, not Monroe, but -- and all of you, really, for participating in this wonderful event.

My question, specific to you -- by the way I should start, the white stuff that you were talking about on the floor is, you were talking about our hair, right,...

SECRETARY BROWNING:

Yes, that's exactly what I was talking about.

MR. SOLA:

...recovering from the 2000 election? The truth of the matter is, where do you see elections in the State of Florida? We went from lever machines to punch cards, and then it looks like the pendulum just swung in the complete opposite direction to touchscreen voting. We know what happened in 2007. Do you ever see touchscreen or any type of electronic voting coming back to the State of Florida?

SECRETARY BROWNING:

Real quickly. Somebody said to me -- during the legislative session, when we were shepherding the Governor's proposal to shelve touchscreens and go with optical scan, someone came up to me and said, "Mr. Secretary, you know, we just think this is a great interim step." And I looked at them and I said, "There is nothing interim about this." There really isn't. You know, unlike a lot of other things that we do, in the course of our lives, there's just something, I believe, inherently sacred about marking a ballot and putting it in a box. And I just don't see where Florida, after we have

gone through three systems changes, some counties, the larger counties, have gone through three systems changes, in the last six or seven years, that we're going to be making any types of system changes any time soon.

I think what you will see is, you will probably see the structure of elections being -- changing in Florida. We had 8.4 million voters cast ballots on November 4th -- or for that election. We had half of those, 50 percent, cast ballots between absentees and early voting. 2.6 million people cast ballots early, in 15 days. What I would think and what I would advocate, is, moving more towards an expanded Election Day scenario, where you would have polls open for, like, seven days 12 hours a day, and if you want to, for the traditionalist, close at 7 o'clock on Tuesday. But, that way you're going to a voting center-type concept. I think Colorado, kind of, has it right, and thankfully, they have, kind of, worked the bugs out, I think, in large part of that process. But why is it so difficult for us to start changing our thinking on that? It's because, it's far from what we know as Election Day. And you think about the -- and I'm not a big advocate that says you're going to save a lot of money doing it that way, but certainly, I think you're able to control your equipment better, you're able to control your poll workers better, you're able to control the process. You're able to mitigate the risks a lot better, when you'd have 900 precincts in

Miami-Dade County, where you would, let's say, go to 100 or 120 sites across the county. It's a lot easier doing that. So, on its face, I don't think Florida is going to be making any systems changes. What we need to do is make sure that the systems we have in place are top of the line, top of the line, and dependable, and secure, and that voters have high levels of confidence and the process is transparent.

With that, thank you very much. I'm off to frigid Tallahassee.

Thank you so much.

MR. HANCOCK:

Thank you, Mr. Secretary.

[Applause]

MR. HANCOCK:

All right, with that, we thank the Secretary, again, for his words. It was great having him here. And Matt will now talk to you about the EAC's threat assessment project that I spoke of, very briefly, this morning, and give you an overview of that. Matt?

MR. MASTERSON:

Well, thank you all for being here. And thank you, Brian, for giving me the opportunity to talk, very briefly, about the EAC's threat assessment project. When I saw my time slot following Secretary Browning, and after lunch, I didn't feel very good about it, but actually, Secretary Browning had a nice segue for me into this

threat assessment. So, you know, I really appreciate the opportunity to talk about this.

As Secretary Browning said, you know, election officials have, basically, become risk evaluators and risk assessors, and what the EAC is attempting to do with this risk assessment, is help aid that chore for election officials.

But, before I get into, sort of, what this project is, and how it's going to help do that, I kind of wanted to use a movie clip, and I think this, sort of, represents how a lot of election officials across the country feel, a lot of the times. So, just real quick. The train wreck. It could have been that, too. But this is the famous scene from the Fugitive, of course, where Harrison Ford is stuck in the dam and Tommy Lee Jones is chasing him down, and he's left with a decision between getting shot, turning himself in, or jumping off, you know, an obviously very high, very dangerous point. And he's got to decide what's best for him. And we all know what happens, he chooses to jump. And I think, and I don't want to speak for election officials, but I think a lot of you feel that way; that you're stuck in the, almost impossible, position of deciding whether to turn yourselves in, whether to get shot or whether to jump. And so, the goal of this threat assessment is to help you make that almost impossible choice.

So what is it? What are we talking about when we say, threat assessment or risk assessment? And I know -- I've had scientists tell me I shouldn't jumble those two words together, so I apologize if I use risk instead of threat. I'll try to stick to risk assessment. First of all, risk assessment is a typical part of information technology, design and testing. And the kind of evidence of that is NIST's instructions on the development of risk assessments. They've taken the time to help computer scientists or developers assess risks and how to properly go about assessing risks. And the idea in doing this, is to decide the level of risk that's acceptable, assess those risks, and then develop policies and procedures to cost effectively reduce the risks to that acceptable level that you've selected. And I think that's the important point, and actually one that Secretary Browning hit on so well, is that we can't come up with a perfect voting system that is perfectly secure, perfectly usable, and perfectly implementable. But what we can do is make cost benefit analysis to try to determine what works best for my jurisdiction, what can I do best, and what do my policies and procedures do. And that's the point of this risk assessment, is to help you all, the election officials in the room, make that call to help legislators in the room, make the decision on how they can help the election officials carry that out, help the manufacturers in the room better implement their systems and mitigate those risks in their

systems, and help in the testing of these systems by taking those risks and making sure that those risks that pose the highest level of threat and the highest level of danger are tested, and can be accounted for in the testing process.

So, this risk assessment project, the EAC contracted with the University of South Alabama, and its Dr. Yasinsac is the lead on this project, for the creation of this risk assessment. And just as a little background about how this came about, as many of you know and many of you have called for, a complete and detailed risk assessment of all voting systems has never been done. There's been some that have looked at DREs, even some that have looked at op scan. But what we envision, is looking at everything from hand counted paper ballots to remote electronic voting and Internet voting. It's going to cover the gamut of voting systems that are used, or considered for use in the United States. And we thought this was important, because so much of the focus has been placed fairly, or unfairly on the DREs, but no one has ever taken the time to look at the threats to paper ballots, and no one has taken the time to, objectively, look at the threats to the op scan, or even the Internet voting that could possibly be used down the road. And so, we wanted to make sure that we didn't just single out one form of technology, but instead explored all the forms of technology that are used in voting.

As it says, the team consists, not just of computer scientists, but one of the core strengths of this project, we think, is the use of election officials, computer scientists, and even the manufacturing community and test labs, in getting buy-in. And that's been our big call to our contractor, is this risk assessment is of no use to anybody, if no one believes it. If no one will buy into this risk assessment, we've just wasted our time and our money on evaluating nothing. So, we've had a heavy, heavy focus, and I'll talk a little bit about what we're doing to create that buy-in, on creating buy-in in development of this risk assessment.

So, I'm just going to, very quickly, walk through the phases of this risk assessment. And the first, this Phase 1, is the creation of the reference models. And we're, actually, in that phase right now, and actually, almost at the end of it. And in creating these reference models, the goal here, is to outline the processes that we're talking about here. What risk to what are we evaluating? And so, the contractor is creating models of election functions of general election processes, so that we can delve into, okay, you have this DRE. How is it used? Where does it come into play? Ballot design. Where is ballot design done? How is it done? How are jurisdictions doing that? So, you can talk about the risks that then come about from that.

Just to kind of scope it a little better for you, as well, what we're not talking about is something like poll worker training. We didn't include poll worker training in this risk assessment. We had to draw a line somewhere, in order to get a risk assessment that, you know, would come about in the next year -- nine months as opposed to, you know, six or seven years down the road. So, we did have to scope it a bit, but the way we looked at the scoping was to say, basically, "Track this ballot from the time that it's being created to the time that it's voted and audited. What happens to this ballot and where are the risks?" So that's the thought process on the scoping of this risk assessment.

Currently, most of these models have been done. There was a review in Atlanta of the threat models, by a review panel, that's built into the contract that has, like I said, manufacturers, election officials, and advocates on it, to look at the review panel. They're taking the feedback from the review panel, and the next step is the Standards Board -- the EAC Standards Board is going to get a presentation on the modeling, at their meeting at the end of February, to further evaluate it. The Board of Advisors will then get an opportunity to evaluate it, and NIST is going to get an opportunity to evaluate the modeling for its usefulness that way, as well. So, again, another attempt by us and the contractor to create buy-in to this project.

So, after the modeling is complete -- I did want to say the literature search mentioned above is just talking about the previous efforts in risk assessment that have been done, and looking at what the previous efforts determined and how it can be used in this. So, we didn't ignore the work that was already done. We wanted to take the work that was already done and help it to inform our process as we go.

Phase 2 is, sort of, the meat and potatoes of this entire project. This is the risk assessment. This is where the threats will be looked at, the mitigations. The procedures that are used will be looked at. And a tool will be developed for use by election officials, or legislatures or manufacturers to look at their systems, look at their processes and, basically, do a cost benefit analysis, say, "Okay, I think my chain of custody procedures go through this, they're pretty strong. I can use a little" -- and it's going to -- we haven't seen it. The way it's proposed is using, basically, matrix, drag a little tool bar up saying, "Okay, strong use of chain of custody procedures. What threats am I mitigating? How well am I mitigating those threats?" So, it's something that election officials -- and one of the key cogs to this risk assessment is ensuring that it's usable for people other than computer scientists or, as we affectionately say, geeks, you know. It doesn't do you any good if it's unusable to you. And so, we want to make sure that you all can

use this risk assessment as election officials, legislatures, manufacturers, in working with your systems. How can I better improve my procedures? Where am I spending my money on my procedures? And is it being effectively used to mitigate? Am I mitigating something that's not really seen as a large threat with something that's very expensive? And so, that's the point of this Phase 2, is the development of that. Again the Boards, Board of Advisors, Standards Board, will get a review. The review panel also, will get a chance to review it, as well as NIST. So, again, attempting to create buy-in by bringing it to as many people as possible.

The final phase is, sort of, the cleanup and validation phase. This is where the contractor will make a recommendation that will have to go through a panel of experts regarding what is an acceptable level of risk for the different forms of voting. This is a tall order. This is something that's been talked about a lot, as far as no one wants to talk about, you know, the fact that there is a give and a take here. Everyone wants to envision a perfectly secure system, but as we've all talked about, one, there's no such thing as a perfectly secure system; and, two, if there was, no one could use it. So, that tradeoff needs to be made, and there's got to be a determination on what's an acceptable level of risk with these voting systems. They also will document and come up with a plan

on how to update this risk assessment as technology develops and as voting systems change. We didn't want something that was only good for this snapshot in time, but instead could continue to be updated and developed as technology and new voting systems are introduced to the marketplace. And then, finally, they're going to give everyone -- make public all the documentation for this project, so that everyone knows what built the risk assessment; the modeling, everything else, so everyone can understand how the risks were assessed and what risks, you know, were evaluated. So, that's the third phase.

So, the goals for us, and I've pretty much touched on them as I've gone along, are to assess the risks of all forms of voting systems that we know of, right now; to cover everything from hand counted paper ballots to remote electronic voting, to decide the acceptable level of risks to voting systems, and then to create this buy-in that I mentioned before, amongst the entire election community. You know, a lot of times when risks are talked about, in regards to voting systems, election officials immediately kind of scruff up, because they say, "I have procedures in place for that. I have a way to mitigate that risk." Well, the goal of this is, as best we can, to capture those mitigations and to allow you to take those into account when you're assessing your own voting system.

So, what's the point, as we talk about cost of testing, and reducing and creating efficiencies in the process? The point is to help all of us make better informed decisions. And what brought this about, initially, was the VVSG roundtables that we had, in developing the voluntary voting system guidelines. The number one point of agreement amongst all of the roundtables was, we need a thorough risk assessment. Someone needs to take the time to look at the risk to voting systems, to look at the risk to all voting systems and determine how those are affecting our voting systems and how they can be mitigated. Also, it helps policymakers make better informed decisions on their proposed legislation. We hope that it's something that, not only Congress, but your state legislatures can use in creating legislation. Maybe, it's a lofty goal that will go unnoticed, but that's certainly our goal. We also want to allow you all state and local officials to better determine the strengths and weaknesses of your system and your procedures, allow the manufacturers to better improve their systems, and finally, as I mentioned before, allow the testing labs to assess the risks and make sure that the standards that we create and the testing that they're doing, assess those risks.

So, how does it save you money? Well, for election officials it allows you to look at what the biggest risks are. Can some of those risks be tolerated? What risks are currently being mitigated

by your procedures? What mitigations are costing the most and are those mitigating the highest risks? What kind of testing needs to be done further? And what better efficiencies can be created in the process, while not creating new risks, or hopefully eliminating the risks that we're talking about?

So, as I mentioned before, there's no such thing as a perfectly secure voting system. We all know it. And there's no way, and I think this was mentioned this morning, and this perhaps is a larger point, there's no way to test out all the risks. It's just impossible. All the testing you do, you cannot eliminate all the risks. And so, we want to be sure to assess those and give you a tool that you can use, to look at those in an objective and fair manner.

This assessment creates a more efficient use of money by making the testing more affordable, by creating standards that test the vulnerable areas, instead of threats that are non-existent, or low, and making better informed decision making. So, hopefully, with this assessment, as I said at the beginning, you all will be better able to make the determination, whether you want to, you know, jump off the cliff, or turn yourselves in, as it were. So, that's a basic overview of the threat assessment. Like I said, it's a nine-month timeline that started right before the end of last year. And, we plan on hammering this thing out and getting it out to all of you,

so that it's a usable, functional tool to be used in your conducting of elections.

So, I'm happy to take questions on the threat assessment process, where the contract is, what's going on, anything, at this point.

MR. HANCOCK:

Awesome. Good deal.

MR. MASTERSON:

I assume I either...

MR. HANDY:

Yes, Matt, thank you. It was very interesting. Could you just give us an example of something that might come out of this, a finding that might come out of this and how you might be able to put it to use? Just make it a little bit more concrete for me.

MR. MASTERSON:

Sure, make it more tangible? I could try to give you...

MR. HANDY:

I'll tell you again, I'm the lowest tech guy in the room. Okay?

MR. MASTERSON:

A good example -- I mean, I guess a good example would be, I'm trying to think of a simple threat that would be mitigated. I mean, there's -- you can look at any of the threats that have been

posed in some of the studies. So, for example -- I'm drawing a blank on an easy threat to do.

Go ahead technical reviewers, throw a threat out there. An easy one, Steve. An easy one.

MR. FREEMAN:

I think I got an easy one.

MR. MASTERSON:

Okay.

MR. FREEMAN:

In my past career, I was in charge of the security for the Pacific Air Force, and had to do a threat assessment like this, and had to deal with some of the issues. For a simple example, I'm going to mention one, and it is a simple example, I want you to realize that, talking about the coverage, in terms of secure access control, in terms of passwords. If we seriously take a look at the passwords, they serve a valuable purpose and they're useful, but in practice, most of you already know what some of the basic problems are. If you go into some of your offices, you're going to find that password taped to the front of the screen on a yellow sticky note. The interesting thing that comes up about the passwords, is that in many cases, some of the passwords we're fighting for, to enforce and establish, probably aren't really that useful. If you go ahead and you're performing all your functions on

a system where it's being observed by a television crew during the Election Day, the actual programming software that's being used for that is installed under that television crew, they turn the power on, optical scan, they run the ballots through, they get to the end, they produce a report, they produce off of it. What purpose does the password serve on that system? This is the type of example, it's a very simple example, in this particular case. There may not be any use for that password. If there is a use, it depends on some factors that are not necessarily included in that model, and it becomes a factor, in terms of what we're enforcing and how we're using that password, about what we need to do to provide decent password security, access control, or some other substitute. In many cases, this may be just physical access or, like I said, the presence of the TV cameras at the time that the system is being used. Again, it's a very simple example. There's a lot of cases where you want to use passwords, there's other issues that has to do with them and the processes and the practices. But why use a password if the password serves no purpose? And this is the type of thing we'd be looking for, in terms of the risk assessment.

MR. MASTERSON:

Does that answer? Is that helpful? No?

MR. HANDY:

Yes.

MR. MASTERSON:

Yeah?

MR. GILLERMAN:

Hi, Gordon Gillerman from NIST. Is this assessment going to focus on the equipment? Or is it going to focus on the entire voting system, inclusive of the equipment, including the processes and procedures that the staff go through?

MR. MASTERSON:

Absolutely. It's going to focus on all of it, you know. I guess, the core focus is the sense that at the heart of it, is the equipment, but absolutely, it's going to focus on the processes and procedures, in the sense that those help to serve as mitigations to these threats to that equipment.

MR. GILLMERMAN:

Okay, I guess, my only thing is, I would say, is, holistically, you really need to look at the equipment as a device in a system, rather than as the system itself.

MR. MASTERSON:

Uh-huh.

MR. GILLERMAN:

I do a lot of work in the homeland security space, and we do a lot of this kind of thing. And, you know, one of the questions you always ask is, should I buy 12 more guards, or should I put up the

best bomb detector I can buy? And there's a tradeoff between your resources, between purchasing and maintenance and upkeep, and then, you know, using that equipment, versus having five more armed guards at the door.

MR. MASTERSON:

Right.

MR. GILLERMAN:

And you have to decide, based on what your threats are, and what the conditions of the particular facility are, in that case, what the best use of those resources are. So, my only comment is, I would focus, to make sure that the outcome of this isn't equipment focused but...

MR. MASTERSON:

Yes.

MR. GILLERMAN:

...that it's entire process focused, so if people need to make tradeoffs that are outside of the equipment space, that it gives them some understanding of what that does for them.

MR. MASTERSON:

Exactly, what you just described is the focus. You described it much better than I did, so, thank you.

MR. KELLNER:

Matt, I think this is another good program that you're doing. You had one chart up there with three points. One was assessing the threats, which was good, and then the second was assessment of an acceptable level of risks, and then the final was the buy-in. Now the first and the third are relatively objective, but how do you go about figuring out the values or the weighting, to decide what an acceptable level of risk is? Perhaps I could start with what I regard as the biggest partisan divide in risk analysis in elections today, you have on one side the threat of double voting. We all recognize that that's a possibility and a real threat to the system, is that people could vote twice. And you also have another recognized threat, which is, that voters can be disenfranchised because they are unable to meet some documentation requirement, even though they might otherwise be eligible to vote, and that that is a threat. And yet, how to deal with that has certainly been a topic of major debate for the last decade, and there is, clearly, a partisan divide, because people value those threats differently. So, how do you account for that in doing this process?

MR. MASTERSON:

That's a good question. The decision on the acceptable level of risk is, sort of, importantly, left up to the election official, in that when they're assessing, you know, the different mitigations and the different risks that are there, they're going to have to create that

tradeoff. With that said, what I'm talking about here in bullet number two is, there's going to be a recommendation from the contractor on this, in deciding what is an acceptable level of risk. And when we talk about this, it's not a percentage. It's not this machine needs to be 90 percent secure, this machine needs to be 75 percent secure. But instead, it's a decision to say -- I don't even know how to quantify it. It's objective. You might be able to quantify it better than me, but it's a suggestion, basically, to say that there is a medium level of risk, there is a low level of risk, based on this, and that is acceptable level of risk. You're not going to get a quantity. In many instances, and Mark harps on this all the time, it's a bit of an objective call on that. But, it's something that we felt was important, because of the constant struggle over the non-acceptance, I guess, that there's always going to be risks involved with voting. And so, therefore, there needed to be a call on what level that reaches. And that level, as a whole, will be, you know, is it very low? Is it a low level of risk? And the risk we're talking about is, you know, the stealing of votes from, you know, a huge conglomerate of people, or something of that nature. It doesn't relate back to a percentage in that way.

And I guess, to kind of, follow-up on your point about, you

know, the debate of voter I.D., thankfully we've dodged that, because that didn't fall under the scope of this risk assessment.

So, that was safe.

MR. HANCOCK:

But, one other thing, and let me just add, Matt, that we have to remember, and Matt said this earlier, but seriously, this is not only for election officials, but it's also for policymakers. And, perhaps, in the states, you know, those are the folks that really need to be looking at this and making the decisions, you know, do we need to appropriate money to buy a more secure voting system? Or do we just need to change our procedures, to mitigate, and then we won't have to, you know, use that? But it's the policymakers that will benefit from this, as well as election officials.

MR. MASTERSON:

It's a lot like what Mr. Gillerman from NIST said, in that, you're trying to decide whether to have, you know, guards or, you know, purchase that piece of equipment, you know. Exactly what Brian was saying. We're hoping to aid that by outlining these risks and talking about what level of threat they pose, and the mitigations that could possibly help with those. So, that's the idea.

MR. JONES:

This is Douglas Jones from the University of Iowa. I want to first point out, that this is a third generation in the risk assessment

efforts. NIST sponsored a workshop on risk assessment for voting systems, that I helped run several years ago in Washington, D.C., and we put together a catalogue of threats. And then, following that, the Brennan Center for Justice at New York University put together a task force, following up on that, and producing a fairly interesting document. And, I was also involved with that. But one of the conflicts we came up with in that process, which I think, is very relevant to the questions that are being asked, here is, in what risks do you consider important? A very large number of people were saying -- in fact, the Brennan Center report was explicitly structured around, let's assume that we're worried about a statewide race in a midsize state, and we'll deem a risk insignificant, if it was unlikely to be able to swing a statewide race. And I disagreed rather strongly with that, because, if you look at the history of vote fraud in the United States, or I should say, election fraud, to make clear that we're speaking broadly, our history is pock-marked with municipal fraud. That seems to be the single largest historical pattern, where you get a crooked county machine, or a crooked big city machine, or a crooked sheriff, who ends up deeply involved in crooking local elections, to keep the local machine in power. And to write that off and to say that only the statewide races matter, is a very dangerous thing. And Alec Yasinsac and I have been arguing about this, continuously, for the

last several months by email, so, we'll see where it goes. But there is this really interesting question, about relating the risks that are deemed significant, to the risks that have been historically significant, in the abuse of elections in this country.

MR. MASTERSON:

Yes. And just to follow on this, and I know this -- Alec and I have had similar discussions, and our instructions in the statement of work probably don't please you immensely, but we had to stick to federal elections, because of the nature of the contract and our respect for, you know, states, you know, need to be...

MR. HIRSCH:

Matt, I'm Bernie Hirsch with MicroVote. At some point, I'd like to talk a little bit about our certification.

But regarding the risk, I didn't want to put Secretary Browning too much on the spot, I really wanted to ask him, sir, do you have a checking account that you use online? It gets back to the whole paper-DRE debate. At MicroVote, we manufacture and sell a DRE. It's not a touchscreen, in the fact that it has rubber buttons, so it's tactile, but it does have an electronic display. And I was happy to hear Secretary Browning, you know, give the kudos to the touchscreens that were accurate and secure, and no one had any problems with them. I was happy to hear that. With regards to risk assessment, I think it was interesting, Matt, that you brought up

the risk of paper. And, of course, there are risks of inaccuracy, disenfranchising voters because there aren't enough ballots available, things like that, but I think the greatest risk of paper is that it's bucking history, you know. We see, sort of, a generational move away from manual paper methods of doing business, to electronic methods. And, you know, that's why this week we read that the United States Postal Service is, perhaps, going to go to a five-day delivery, from six. It's not just to save money, it's also because fewer people are mailing out statements and, you know, your credit card is -- it's all done online, and it's all done electronically, and that's just the way things are going. I understand he's from a state, not only where the poll workers average 70 years of age, but perhaps, the voters too. I know this because my parents live over in Naples, you know, and that's just the way Florida is. But I'm not sure that that necessarily reflects the rest of the country, or necessarily, where Florida will be ten years from now.

From our standpoint, we think that it would be healthy to do a risk assessment of electronic voting, to really ascertain its viability and security and accuracy, compared to paper voting. We've been involved in other conferences where it's been said that the electronic voting is somewhere in the neighborhood of a half a percent error rate, and that paper voting was as much as eight

percent. And I don't know how accurate or not those numbers are, that I've heard tossed about. We do have a paper component to our election systems. At the county level, we have a central count scanner that's used for absentee early voting. And I can tell you that our electronic panels are consistently more accurate, more easily used by the voters, you don't get the overvoting problem, you don't have stray marks, you don't have a number of issues. So, I do think that this all relates to the risk as an industry, that we have of continuing to hold onto a technology -- in deference to my competitors who might want to market that technology, and some of the jurisdictions that have bought that technology -- of holding onto a technology that is really 1900s level technology, when we see the rest of the world is not going that direction.

MR. MASTERSON:

Thank you, Bernie.

MR. HANDY:

Just to add a quick follow-up to my earlier comment. Not to take us too far off here, but after the Exxon Valdez spill in Alaska, I had the pleasure of administering an oil spill prevention program in Puget Sound, back in the early 1990s, and we were tasked with figuring out which ships coming into Puget Sound posed a greater risk of an oil spill, than other ships. And we contracted with some universities, and we spent a half a million dollars doing a risk

assessment to help identify which of the ships were going to be a higher risk than other ships. About a year-and-a-half to two years later, and all the academic minds in the world came together, and they told us that older ships were a bigger risk than newer ships, that ships that had a single hull were a higher risk than ships with a double hull, and that ships that were flagged in the third world were a higher risk than ships that were flagged in the United States or Europe. Bottom line being, basically, we all sort of had a good laugh and figured, you know, if about 12 guys and a case of beer sat around a kitchen table for a couple of hours, you know, right at the beginning of the process, we probably could have come up with most of that information and built our program, and we wouldn't have been too far off with what we came up with, like two years later. Now, I don't mean to belittle what you're doing, because I think it's very valuable. What the benefit of it was, was that later, when we made decisions, we knew we were making decisions that had a scientific background, and were grounded in truth, and it's a good process. So, I don't mean to suggest. I am suggesting you might buy yourself a case of beer and get a dozen of you, go out, sit around a kitchen table for a couple of hours, and do the exercise, put it in an envelope and compare it with what you've got at the end.

MR. MASTERSON:

I'll take that, you know, under advisement. And I support it. And I do want to say, real quick, because both of your comments, sort of, suggest that this assessment's goal is to pass judgment, one way or the other, on any voting system, and that is not the goal at all. It is not going to say, "This system is the most secure. Use this system." That is not the goal. The goal is to assess all the risks to the systems that we're evaluating, and let you all use that information to do exactly what you just described with the boats, and say, "What serves me the best? What are my risks? What are my procedures to be able to do that?" So, it is not a judgment on any form of voting system, whatsoever.

MR. CUNNINGHAM:

Matt.

MR. MASTERSON:

Hi, Keith.

MR. CUNNINGHAM:

You know how the police use ex-criminals to assess your house and determine its vulnerability? I would say to you, in this process, don't overlook the value of the local official, because, quite frankly, they are the people that do know how. Anybody that has operated a system for a period of time -- you can put all the scientists you want in a room -- but anybody that has operated a system for a period of time, knows better than anybody. Now the

issue is going to be getting that out of them, because they'll be granted immunity or something for giving you that kind of information. But anybody that's operated a system for awhile understands where it's weaknesses are, and if you wanted to manipulate it, here's how you do it. It's not too difficult.

MR. MASTERSON:

Well, I can assure you that local election officials have been used from the beginning and will continue to be used in the process. So we agree. We absolutely -- and local election and state election officials that use a variety of systems, as well. We're not, again, focusing on one form of system.

MR. IREDALE:

Matt, you actually just, sort of, addressed what I was going to ask, because that was one of the things I wasn't sure about, is the purpose of this risk assessment. If its going to be -- whether it was going to be used during a certification process to establish what was required; minimum requirements, things like that. One of the things that's been stated a couple of times here, is that it's very hard to determine, you know, the acceptable levels of risk and therefore, you can't suggest any task or any certification and say, "Here's what you have to meet," because that might be appropriate for one location...

MR. MASTERSON:

Right.

MR. IREDALE:

...and not appropriate for another. So, I gather from this, this is really more a tool for election administrators, policymakers, et cetera, for evaluating, perhaps for certification processes, to make comments, but it's not a pass/fail type thing.

MR. MASTERSON:

No. No.

MR. IREDALE:

Okay.

MR. MASTERSON:

And we're still going to test to the standards.

MR. IREDALE:

Yes. And I was, sort of, I guess, coming out of some of the discussion on the 2007...

MR. MASTERSON:

Sure.

MR. IREDALE:

...or the next iteration standard, and some of the issues about risk assessment and how you -- how that was going to be done...

MR. MASTERSON:

Sure.

MR. IREDALE:

...and some of the discussion about open-ended vulnerability testing. And part of the discussion from that had been, "Well, we have no risk model." And so, I, you know, assumed that part of this is trying to build that risk model. But at the same time, there has to be this acknowledgement that there are varying levels of acceptable risk and, therefore, you can't just, sort of, say, "Here's what your minimum security needs to be," because that might be appropriate for certain people and not appropriate for others.

MR. MASTERSON:

Yes. And open-ended vulnerability testing is something that, quite frankly, is a policy decision the Commissioners are going to have to struggle with, with the development of the next iteration. This certainly will inform that, and that's part of the reason we're doing this, is to inform the creation of that next set of standards. So, that's the goal.

MS. SMITH:

Hi, Matt.

MR. MASTERSON:

Hi.

MS. SMITH:

Good job. I just wanted to get crystal clear, because I'm not sure I understand for sure, the goals that you have up here, are

your goals as part of the contract? I mean, you said, earlier, that it's not you who will decide, or the contractor for that matter, who will decide what's the acceptable level of risk; that that's something that would be decided in a jurisdiction, by their state workers and election officials and...

MR. MASTERSON:

Right.

MS. SMITH:

...lawmakers and so on.

MR. MASTERSON:

There's, I guess, a subtle distinction that I didn't make very well. And so, this will allow election officials to make those calls on these individuals risks that are identified in here. So they can look at these risks and say, "How am I mitigating? Is this important?" So, that's the call for them to make, what's acceptable with this threat or not.

As part of the contract, and as part of a procedure for the development of a risk assessment, you assess what's an acceptable level, and that is part of the contract. And like I was attempting to answer Mr. Kellner's question, that isn't a percentage as much as it is -- and NIST has guidance on how to do this on how you -- not how you make that determination, but the levels. And it's not a percentage, more so than it is a low, very low, sort of high.

MS. SMITH:

So we could refer back to the NIST chapter that you mentioned...

MR. MASTERSON:

Yes.

MS. SMITH:

...in the early part of your slides? And I see that.

MR. MASTERSON:

It's 800-53.

MS. SMITH:

Yes.

MR. MASTERSON:

And John may speak to this to clarify it better than I can.
He's a former security guy.

MS. SMITH:

And the other question I had is, who's on the multi-disciplinary panel that's reviewing the different pieces?

MR. MASTERSON:

The review panel?

MS. SMITH:

And, you know, I'm not necessarily saying who, specifically, but stakeholders.

MR. MASTERSON:

Absolutely. It's election officials, representatives of the manufacturing community, computer scientists. I'm trying to think if -- and election officials, both state and local. A testing lab was invited, but didn't participate in the first panel, but will, certainly, be invited again. And that's the same as the team. The team is made up of the same kind of demographics of election officials, computer scientists and those representatives.

MR. WACK:

My question was going to be on usability. Hi, I'm John Wack from NIST. So, one thing I've gotten a better appreciation for, over the years, is the role of usability. And, you know, you can have people voting more accurately, via paper, than they can touchscreen, depending on, you know, the layout of the ballot and, in general, usability-related issues. But I wondered how you would factor usability into a threat assessment, or whether you'd consider usability a threat. And -- just a general question about that. How do you plan to address that or can you address it? And could you do anything more in that area, other than, you know, highlight the importance of usability testing? Thanks.

MR. MASTERSON:

That's a tough question and it's one that's being struggled with right now, in the creation of the models. Certainly, security is "the" focus of a risk assessment. The usability we've attempted to

take into account, in areas such as ballot design, which is addressed in this risk assessment, that has usability implications, that you just suggested as part of your question. It's a hard thing to take into account, in doing this, and we've attempted as best we can. It can always be better addressed, and I think that's a fair question. We've attempted to, but it's not the focus.

And with that, I guess -- I appreciate your questions. If you have further questions, I'm happy to answer them. I really hope you all find this as useful as I think it will be.

MR. HANCOCK:

Thank you, Matt. Appreciate it.

[Applause]

MR. HANCOCK:

Before we take our afternoon break, we have one final item of business here. As I said this morning, the EAC would like to get a working group together, of somewhere between six and nine individuals, to talk to us about a lot of the things we will discuss here over the next two days, but very specifically, how we can do a better job of communicating issues about the program, with all parties involved. So, if we can take maybe the next five or ten minutes, have say, election officials meeting on this side of the room, have our labs and manufacturers on the other side of the room, and see if we can, at least, get some names together to

throw to us, you know. We'll finalize, and be in contact with you folks, and all the details of how the working group will be put together, you know, we can discuss that with you, as well, but at least, get some names.

And the other thing after we're done with that, I would like to see if we can get a few volunteer states that are willing to discuss with us the concept of bringing together and consolidating state testing, at the same time that the federal testing is going on.

So, those two things, and then we'll take our break.

MR. KELLNER:

Brian, could you just explain the time commitment that you're talking about, with the first? And then, with the states, I mean, exactly what are you proposing? I mean, it's not clear to me.

MR. HANCOCK:

Okay. For the first, you know, we just need an initial group to discuss communications issues. You know, whether the membership in the group rolls over over a period of time, you know. The details of what we're going to do, we can talk about that once we get there.

MR. KELLNER:

One meeting for a day in Washington or a couple of...

MR. HANCOCK:

Where would you like to meet, Doug, New York, Miami? It's not going to be a huge commitment of time, or meeting, or traveling to different parts of the country or the world. Most of the work, I would suspect, we can do over the telephone or via email or something like that. Okay?

MR. KELLNER:

And then, for the states to get into a program, just what are you talking about? What is it that you want the state to do to work with you?

MR. HANCOCK:

If you're going to volunteer here, we would get together with you, or whoever else volunteers, to discuss what, specifically, you require in your state testing, whether you think it's met or not met by the current federal testing, and see if you would like to run additional state testing on a parallel track, okay. What we're trying to do is, you're not going to come out with one federal certification that's going to deal with this. What we envision coming out are federal certifications, just as they are now. That wouldn't change. But what we would also have is, okay, this system that received federal certification has also received certification, done testing, in states "A" through whatever. Okay?

MR. KELLNER:

I'm sorry, I hope I'm not holding up everybody else, but Brian, how does that differ, say, from like, New York and the EAC have been doing over the last year, for example, with the two systems that both are certifying right now?

MR. HANCOCK:

Well, I mean, it's somewhat similar, and maybe goes a little bit beyond that. And certainly, what's happening in New York and what we've seen happen in California in the past, you know, with the volume testing. Those were things that really gave us this concept. What we'd like to discuss with states who would volunteer is, how we can do it better, how we can perhaps do a little bit more, work a little bit more closely with you all to get that done.

All right, well let's just take a couple of minutes and let's see if we can get some volunteers for the working group. And then, we'll talk to the states and see what they think.

[The meeting recessed at 2:44 p.m. and reconvened at 3:14 p.m.]

MR. HANCOCK:

All right, thanks for coming back here. We have some important announcements. All right, appreciate all of you getting together. And I'm not sure whether some of the volunteers were browbeaten or hijacked or pirated, or whatever, but we do have a

few names of folks that they're willing to, at least, begin some initial discussions about how the EAC can better communicate various aspects of its program to all the participants.

What I have here, at this point, are the state representatives, will be Nick Handy from Washington and Wes Taylor of Georgia and Doug Kellner from New York, as an alternate. For the testing labs, we have Frank Padilla from Wyle. For the manufacturers we have David Beirne from the Election Technology Council and Bernie Hirsch from MicroVote. And, let's see, who is the alternate? Oh, no. James Hoover and Bernie, as the alternate for the manufacturers. Keith Cunningham, who is not here, who has apparently ran away, will be the local election representative. And right now, Pam Smith has volunteered, although we may -- she had suggested some other names as well. So, that's a pretty solid group. I count about nine folks, or so, in there. We will be contacting you, that is, the EAC will be contacting you over the next week or so, perhaps, to set up an initial teleconference, and put an agenda together for discussion topics, to see where we would go from here. But I, very much, thank all of you, you know. We take very seriously our responsibility to communicate to all of the participants everything that's going on in our program. We try to do that through a number of mechanisms. As we said today, through our Web site, through blast emails, through the EAC's newsletters

that go out. But, again, we're always willing to see how we can do this better. So thanks to those folks.

We also are very pleased that we have a set of states that we will work with, to see where we can begin the pilot project. Those states right now are New York, California, Ohio, North Carolina, Georgia, Pennsylvania, and perhaps one other state that needs to do a little checking, but has promised they would get back to me very shortly. So, that's six solids and one potential. That's approximately six or seven states, and I think that's a very good size. In fact, I don't think we could manage a much larger group for this initial round. Again, we will be communicating with you, discussing what initial steps we can take. We will need to see the state procedures for certifying voting systems, and then we'll have some discussions on where we go from there, how we can best and most efficiently coordinate these two processes, and how we can get it done as fast as possible. So, we appreciate all those folks there.

We want to make sure that whatever we're doing here is able to be scaled, and that's something that the group of states will need to discuss, and see, because, as you noticed when I read from this list, they're all, essentially, very large states. In fact, probably all our largest states are in this group. But we want to make sure that folks, like Peggy in Wyoming, and states like West

Virginia, and Jim's State of North Dakota are not forgotten here. We want to make sure that whatever we're doing can work for you, as well. So, we may be giving you phone calls from time to time to make sure that whatever we're doing is not leaving you in the lurch, or doing a disservice, perhaps, to what you all are trying to do in your state. So, even though, we have the big states here, we're also cognizant of the little guys, believe us. So thank you on that.

And we'll see, you know. Again, this is a pilot program. This is not committing anybody to anything for the long-term. I think you've heard what we've had to say today, and we think it will have a number of benefits for the future, so, we think it is a good thing. But we'll see and we will let you know. And I'm sure your fellow state representatives will let you know how this is working, and we'll see where we go, you know. Again, we're hoping to make this work and we will do everything in our power to do so.

With that, I just thought I would go, again -- I know some of our reviewers have had -- we've had some discussions earlier today on different topics. I just want to go down the line -- I know some of them have been fairly quiet today -- but just to see what final thoughts they might have this afternoon on this Unified Testing Initiative, or perhaps some additional answers to questions that were posed to us during the back and forth this morning.

Mark, why don't you start for us. Mark's the new guy, so he gets the unhappy task of starting first.

MR. SKALL:

Thank you. It's the initiation, kind of like a college initiation?

MR. HANCOCK:

Exactly.

MR. SKALL:

I think there was a little bit of confusion about the objective of the Unified Testing Initiative. I don't think that it was ever the intent to add on more testing, more requirements. And I think, from a "geek" standpoint, as Matt nicely called all computer people, the differentiation is, sort of, between looking at the union of all requirements, and the union of all tasks, versus the intersection. I think what we really want to look at is the intersection, to look at what's common among everything, take the common elements and try to do those once, rather than the union of trying to add things together. I think, in doing that, obviously, one can streamline the process and create some consistency.

And I think the other, sort of thing I heard, was again, trying to look at state requirements and see where the commonality is among the states, among the federal requirements, and among the testing to those requirements, with the possible, sort of, addition of looking at the way different states, sort of, treat the same thing. I

think there are a lot of similar requirements that are done differently, and the issue is, just trying to get some consistency and some consensus among everyone, so that things can be done the same way, when it makes sense. I think that's going to require a lot of discussion, a lot of talk, a lot of negotiations. But I think it's fruitful negotiation. I think understanding each other's requirements, as well as federal requirements, and where they're similar, where they're not similar, and whether, in fact, they should be dissimilar, is a very, very important set of things that need to be done. And when things, really, are saying the same thing, but in different ways, it's just incredibly important to know that and be able to describe them in the same way, and test them in the same way.

So, that's kind of what I got out of it.

MR. HANCOCK:

Thank you, Mark. Steve?

MR. BERGER:

Well, I just think we sit here, today, observing that the way history has unfolded, what's being asked of the vendors is, fundamentally, different from what it was six or seven years ago. If you look at how election systems were bought, going back before 2000, a vendor had to go to every county, had to please that county. They needed systems that were very adaptable and could be personalized for individual jurisdictions. We all know what's

happened and today, we're looking for a very different kind of system. The vendor requirements have fundamentally shifted. And I think, we're at the maximum expansion point, where the requirements that grew out of that, the testing that's necessary to have unified minimum expectations of all voting systems assured to high levels of assurance, we see what that's become. But now, I think the process will start to contract. I think it has to contract to where we understand more clearly what the causal underlying dynamics are, we focus on taking care of those, and I think we're going to see significant reductions in both time and money for certification, as a result.

MR. HANCOCK:

Thank you, Steve. Tom Caddy.

MR. CADDY:

I guess -- I think that the initiative, a lot like Mark said, I think that there's a real opportunity to consolidate the testing. There's certainly, from my understanding, been no thought of expanding the testing process, but more consolidating, facilitating more productive testing that meets all the goals, with fewer number of tests, actually.

The other thing I was going to mention, briefly, is on the risk assessment. I think that that's going to be a very valuable exercise for us, for a couple of things. One, of its intent, I believe, is to provide a set of tools that help us all understand these things, so

we can optimize both the hardware side of the process, as well as the processes that the people use, associated with it, and for it to be dynamic to handle technology changes and different system modes, whether it's DRE type, or optical scan, or Internet, or whatever, so that the models are flexible enough to go in whatever direction technology goes, and people be able to understand the impact to them, by going in those directions.

And I think the last thing is, I think we all have the same objectives, and I think we've all been trying to move to improve the testing and the processes, and I think we need to figure out the best ways to work together better, as a team, to move together on the process.

MR. HANCOCK:

Thank you. Tom?

MR. WATSON:

There's not a whole lot I can add, but I would just like to encourage the states to continue their certification programs, not just to rubberstamp, because no matter how good the testing is done at the federal level, things will slip through the cracks. And the more eyes the better. And that's pretty much all I can add.

MR. HANCOCK:

Steve Freeman, do you have any final thoughts for us?

MR. FREEMAN:

Actually, I have several, but I'll try to keep them limited. The one thing that keeps coming into mind is, that when the federal testing program first started, based on Roy Soloman's report, one of the big things that was identified was that, most of the states, most of the election officials, did not have the resources to test, to validate, to check, to perform some of the functions necessary to confirm that the voting system that they were using was going to be reliable, trustworthy, accurate, and although it wasn't much of a concern at that time, secure to some degree and level. As part of that, the concept for the federal testing laboratories, was to move that testing that was beyond what most states could afford, or want to do, into a single lab, to be able to perform, so that it could be done at one time, one location, and not necessarily repeated, under different theories and practices, and different representatives from the technical society, to provide a uniform, consistent testing that would be recognized and could be accepted by the majority of the election officials that needed to use those systems. In some ways, I kind of feel like we may have drifted apart with it, partially, because we have requirements, different people have different requirements, they're looking for different things, they're wanting to go ahead and test other things, additional requirements, issues that have come up in elections that have become hot topics. But I think what we're trying to do here is not, necessarily, grow the testing

further, but try to go back to that concept where the federal testing takes care of some of the really high level, technical, the intelligent testing that would be beyond the resources most of you could be able to support. So, that when a system comes in, yet there is something that you need to do, to go ahead and complete your confidence in terms of doing a local testing, you're not having to worry about hiring additional experts, special equipment, going into some sort of research effort, to try to find out what's going on, what's within the system, that you can depend on that input, from that testing by the federal, as a basis for being able to perform some reasonable tests at your level, that will give you the confidence with lower risks on your election process.

With that regard, some of the tests we have will probably increase a little bit of testing, while we sort out the details, work out the protocols for them, to make sure we've got something that's a reliable system. But you should be seeing a reduction in the amount of testing, and the amount of time it's taking, if the approach is to go ahead and approach more intelligent testing. Too much of the current testing is done, just strictly, at a functional level. I guess running mock elections against your systems, and just because the variation between states, some of that test is more appropriate at a particular state level, particularly, if you're a state that does have unique features.

One other aspect of it, is something we've been trying to get happening, doing a better job of it, is to include within the testing and the test reports, the information to you at the state level, to let you know what testing was done, what testing was not done. We've heard some comments about the idea that some of the testing be optional, that we shouldn't have to repeat all the tests. But that causes a problem. When you're getting a system into your state, they present it, "Now this was tested by such and such a laboratory," and you don't know, for sure, whether they've tested your particular law, your particular feature, or if there was some other aspect that wasn't tested, for whatever reason. We want to see that information be part of that report process, so that you have that available, it's in a form that you can identify and recognize, and has been done to the level that you will not have to worry about some of the high level, technical details, but you could reasonably do some sort of reasonable validation or process, against your local procedures, without breaking the bank in the process.

MR. HANCOCK:

Thank you, Steve. And since, in my life, ladies usually have the last word, I think we'll let Dawn have the last word today.

MS. MEHLHAFF:

I was wondering how you were going to end it. Are you sure?

MR. HANCOCK:

Yes.

MS. MEHLHAFF:

I mean, there's not a lot more that I can add to what you haven't already heard. I mean, my -- I come from a state oversight role and that was my life before this. And so, I spent 11-1/2 years at the state level, and vendors who worked with me back then, probably think, that this process feels a little bit kind of the same. When I was in that role, we did things differently than we had done it in the past. And we changed the testing protocol, and we changed procedural processes, and so, it was that whole, "Well, this isn't the way we did it before. Why are we changing it?" And so, we had a lot of growing pains back then. But you know what? We got through it. And I look at this process in a very similar manner; that things are changing, things are different. And, you know, we all hear your frustration and we understand it, and we are doing our best to move things forward. And that is our goal. We want to get voting systems out there, and we want to get them certified. We just want to make sure that we're working within the process. And sometimes, that process needs to be refined and changed, and so, we are working through it. But our goal is to get you stuff out there, and we understand that. And I understand that coming from a state role, where I know you guys need stuff, and

I've been in a position very similar to yours, where you're dealing with the media, you're dealing with the public, you're dealing with your local jurisdictions. So, I just want you guys to know we are working together. We've changed it. We have regular communications with the vendors and the labs trying to move things forward. So, we have opened that dialogue up, and you know, when we find concerns or questions, we have those one-on-one discussions to try and resolve things and move it along. So, I mean, if I leave you with anything today, just know that we are working in that interest to get things certified, and then move it along.

MR. HANCOCK:

Thanks, Dawn. You never know how these things are going to go, and so the last 45 minutes or so, we sort of built in some time here today. We can take some questions for the remainder of the day, but if you don't have any questions, I certainly wouldn't want to hold anybody back from enjoying an extra hour at the facility here. But questions at the end of the day, if you have them, please.

Ed?

MR. SMITH:

Good afternoon everyone. Brian, one of the things I haven't heard today is a lot about timelines, timelines for the work products of the risk assessment, expected timelines for this unification

program. If you could elaborate on that, I think it would be helpful to everyone.

MR. HANCOCK:

Sure.

MR. SMITH:

Thank you.

MR. HANCOCK:

Thanks, Ed. I'll let Matt talk about the timeline for the threat assessment, but essentially we're looking at about a nine-month period. Is that correct, Matt?

MR. MASTERSON:

Yes.

MR. HANCOCK:

And we wanted this to be done very quickly, and I think Matt hit on this in his presentation, because it's really an integral part of the EAC's look at the next iteration of the VVSG that we received from NIST last year. We needed this done as thoroughly, yet in an expedited a manner as possible. So, what's the due date on that for the contract?

MR. MASTERSON:

Nine months from...

MR. HANCOCK:

From December...

MR. MASTERSON:

...last December.

MR. HANCOCK:

...from last December. So, you know, certainly, before the end of this fiscal year that project will be done.

I think we will know a lot more about the unified testing Initiative, once we have a couple of initial meetings with the states, and can get a better handle on the types of issues that they're dealing with in their state testing, and to really ask them what they think we can bring to the federal level, how we can dual track the certifications to assist them in getting systems to market -- the manufacturers are getting systems to market quicker. So, I don't necessarily have a preconceived notion of how long that will take but, I mean, I think it's obvious that if it's something that will save time and money and make the process more efficient, we want it done as soon as possible.

Nick?

MR. HANDY:

I was just reviewing my notes, Brian, and I just wanted to report on my favorite part of the conference so far today. And they were your opening remarks this morning, where you announced that you did have the first certification out. That was the favorite part of the day for me. And the next favorite part was when you

said, we've got more coming out in the next 120 days. I found that to be very, very exciting. And I appreciated your assessment that you looked back at some of the mistakes that you felt had been made, and some of the things you wanted to do about that. That was really helpful.

You mentioned two areas, two specific strategies that you'd come upon that you thought was going to make the process more efficient, faster and less costly, and that was these kick-off meetings, in which everyone was coming together, you were going to try to get everybody on the same page and work together. And then you talked about regular teleconferences along the way, to make sure that people are on the same page.

Are there any other strategies that you can share with us, today, that you've been talking about collectively, about how you can make this process be a little bit more efficient, and maybe a little less costly?

MR. MASTERSON:

One of the ones that sprung to me, right off the top of our head is, the development of the internal policies and procedures for us. And I forget what the timeline is on that, but that's a way to hold ourselves accountable on things like test plan review, test report review and give ourselves a timeline in that respect. I think one of the things that the manufacturers and the labs correctly complained

about when we started, was that our review times were inconsistent and the times too lengthy. And I think that was a very fair criticism of our process at the time. So, part of what we want to do is document those timelines for ourselves, and make sure we hold ourselves accountable with that.

MR. HANDY:

And I think that's a great idea. One of the things, as we've just had anecdotal conversations with vendors and testing labs, has been this idea that, you know, we put information in, and then it's quite awhile before we get it back, and then we put it in and maybe you put it out, and it's longer than it should be for it to come back in, or whatever. Are we talking about some kind of standardized expectations and deadlines, internally, about how long you're going to have something before it goes out, and how long they're going to have to get it in just to push it along?

MR. HANCOCK:

Exactly, exactly. Matt has something and then I have something.

MR. MASTERSON:

I was just going to say, also part of what that will do -- and one of the things I think we need to do better, is to give a fuller picture of the testing process. And actually, Jeannie brought this up and Brian brought up on our Web site, that there's a very small

outline of what an ideal testing process looks like, from the time that a manufacturer registers to the point where certification takes place. And one of the things we've done a poor job of outlining is what's happened in that time period, because, one, these review periods, like I said, took awhile in the beginning, and we've worked very hard to get those dates down, but that's something we should be showing. But another we can show is that with some systems, and it doesn't matter who or what, it took nine, ten months to get a test plan. Well that's something you all don't know, and it appears as though there's a problem there. And maybe there was a problem, or maybe that's just the pace at which, you know, the manufacturer wanted to work on the test plan. But that's not evident to you all, and that's something we need to work on, is documenting.

Another example is a change in application. With some systems there's been multiple changes in applications. That's fine That's part of our process. We put the change of applications in there, but that has tangible effects on timelines. And so, that's more information that we need to make evident to you all, so that we give the clearest picture possible of these deadlines and what's going on. So, that's another area that we can work on.

MR. SKALL:

Matt, can I add one more thing about the reduction in cost? One of the things we haven't talked about, it's a little indirect, but it will have a huge impact, is the whole idea of development of test cases, test suites. One of the things that's always been the goal, is to have a uniform set of test suites. In this retro fit of the 2005 standard, one of the main motivations is to have requirements that are clearer, and requirements that already have test developed by NIST. So, the goal is, when the 2005 is redone, is to, essentially, have a complete test suite. That test suite can then be used by all the test labs, which will dramatically reduce the cost in developing test cases and inconsistent test cases. So, that is going to be a big cost saver, down the road.

MR. HANCOCK:

Right. And not only will it be available to the labs, this is public information, it will also be available to the manufacturers to use during development of their system. Correct?

MR. SKALL:

Yes. Exactly, exactly.

MR. HIRSCH:

Again, I'm Bernie Hirsch from MicroVote. I'm kind of dressed this way, because I think my team for two years has really put in such a hard effort, that this is the time for me to just relax for a couple days, and I thought I'd get in the Florida look of things.

As I listened to the various people from the states talking about certification, I'm hearing remnants of the old way of doing things, which is so far from where we are now, it's a different world. And I think from MicroVote's standpoint, we've tried to adapt to the way things are moving, rather than the way things were. And my attitude, leading the team for development there, has been, let's get with the program rather than to fight it. Let's be totally transparent with what we're doing. Let's be compliant. And because we're in such a highly regulated business, we felt that even if our software and our hardware all works perfect for an election, if it's not legally compliant, if it doesn't meet all these requirements legally, then it's broken, even if it works. And so, our attitude all along, has been to fix the part that's broken, and that means that, as much as possible, we work with all these people; with the testing labs. We bent over backwards as we went through the process to get ourselves through the process. And so, now, fortunately, we're in the position of having been the first people to have been granted the initial certification. And when I hear people talking about, "Well, you know, we've got to get this stuff out, we've got to get this stuff out," well, we, as much as anyone, wanted to see it expedited at a lower cost. And I heard one person estimate it was 400 percent more the cost this time around. For us, it was over 1,000 percent more. I want to assure the people at the state level, speaking from all the

manufacturers, but certainly from our personal standpoint, that the testing we went through this time around was nothing at all like the testing that has ever been done in this country to election systems. And so, when you talk about federal testing being, sort of, the minimum standard, and then the states are going to come and do, sort of, all this extra intensive testing, well trust me, the federal testing has been extremely intensive and thorough. And that's why it's taking this long, and that's why it takes so long to develop a test plan and execute it and everything else that goes into getting where we've gotten. So, we now have an investment that we've made, and some of the manufacturers have pulled out, and some have stayed with it, but we've made this large investment in the certification process to become legally compliant for you. And so, we've done all we can do and we're able to provide equipment that's 2005 certified. And you might say -- I mean, at the time we did that, everyone else was pretty much, except for maybe one exception, applying for 2002 standards. We did that a year before they expired. And the reason was two reasons. We had a very mature product that we thought would work well, even under the '05 standards, and we looked at the differences between the two and they were somewhat minor. The big difference between where we are now and where we were, is that even the '02 standards are so much more strictly being reinforced, that it's a paradigm shift from

the same 1990 standards. So, we went to '05 because we knew we could, with very little changes, pass those standards. But we also went because we wanted to be flexible after we got the certification, to be able to adapt to the various states, because we knew there would be a lot of different states with different needs, and we didn't know where the future lies. And for us, the '05 standards, we can still change things. So, now that we have our certification, or soon to have it, within a week or two or whatever, we're done, just to let you know that. What is the EAC's plan to get the information out? I know that you put out an initial letter, saying you're going to, sort of, highlight the high points of the certification of a vendor, of their product. How do you get that information out into the states' hands, so that they know the depth of testing that was done, the quality of testing that was done? You're trying to be transparent and I understand that you're publishing things on your Web site. I still don't think there's the appreciation for what it takes to get an EAC certification. And then, what is the timeline for getting the information out to the states to say, "Here are the systems that are certified, that are available for sale, that can meet your state regulations, and here's what they do and here's what they don't do?"

MR. HANCOCK:

Well, you know, that's something that we can work with, you know, the group on, the volunteer group that we just had. We will -- as you said, all of that information will be put on the Web site. We can work with the manufacturers, you know. If you have particular states that you want us to blast that information to, we can do that, as well as put it up on the Web site, you know. I think we're pretty flexible as far as how we can get that information out there, and you know, we can work with you on it.

MR. HIRSCH:

Okay.

MR. HANCOCK:

Sure.

MS. OTERO:

Actually, if I can respond to that. That's something that we have thought about and we have developed a step for assistance that EAC will be publishing, a Quick Start Guide. Some of you are familiar with the Election Management Guidelines and all those brochures that we have on the table. And just to put a plug for them, please take them, because we don't want to take them back with us. But we have developed with our technical reviewers, at least, a draft, and I know we've put it out for you, like a scope of accreditation for your particular system. And we'll do this with everyone that's certified. And want to put it in a brochure format

that we can easily -- we have a mailing list of all the people that we send out these publications to, that we want to make available. So, that's, at least, one way. And I know we're working with the media department hard on making sure that we increase our email distribution list, so that whenever, you know, the press release is sent out that, you know, there's a certification that information is instantly made available. And we also have some videos that we want to produce on the certification process, so that people -- local election officials, in particular, and state election officials, learn to appreciate the depth of the testing that goes with it. So, just as an FYI.

MR. HIRSCH:

I think that would be great, as much information as you can get, you know. I think my -- the owner of our company, and I'm sure, the other manufacturers, we all are wondering what the return is going to be on this investment, you know. And unless there's money and interest and excitement over what's happening, then all of that time and effort is for naught. And I don't want to see that happen, because it truly is an improved system, and all of us are going to benefit from what this program is bringing to the election business.

I just want to make sure that the investment that's been made, you know, gets out, in a way that does some good, because that will make all of our jobs, you know, worthwhile. Thanks.

MR. HANCOCK:

Thank you, Bernie.

MR. PEARSON:

I'm Steve Pearson with ES&S and I feel compelled to, at least, represent ES&S here, and I guess, share our position on this matter, at this point.

I think today's meeting has been very encouraging and I don't -- I've taken several pages of notes, and I think that just about every concern that ES&S has had about moving into another initiative has been addressed, you know. So, that's been very encouraging.

We recognize how important the role that state testing plays in the overall certification process, but for a variety of reasons, at this point, although we fully support and encourage an initiative to improve the certification process, we're not in favor of this initiative if it's going to add additional burden to the already constrained EAC certification and VSTL testing process. That would be the, at least from ES&S's standpoint, and I think I can speak for a number of the vendors, I think we're all kind of in the same position on that. So, Mark, when you said that that wasn't the intent of this program, let's

hope that we can keep that, and protect that, because it's very important. These delays that the certification process has undergone has had a significant impact, not only on us, but I know the other manufacturers and the states and counties as well, and that's been evident by the testimony today.

And we recognize that everybody's going through a lot of growing pains. We started this in March of 2007, so we are 22 months into this. It took 12 months to get a test plan developed and approved. So that's, you know, significant and that's very frustrating. But we've seen tremendous progress, and I'm hoping that we're through the worst part of that.

The investment that the initial adopters into this program, though, has made, is something that I think needs to be recognized. Because of this learning curve and the growing pains, we were, pretty much, on the sideline for a great period of time, watching the dynamics play out, because testable requirements weren't defined when we came into the program. Acceptable test plans weren't defined when we came into the program. We didn't know this, so we had to take the risk, make the investment, and significant amount of testing. We've invested almost 20,000 hours of testing to this point, and really don't have anything to show for it. So -- but we're close and we're encouraged by that.

I do want to comment about, there's been a lot of comments about why, what do we think, you know, has caused the delays, how can we improve it. I think it goes back to, there's one policy that the EAC took on when you published the lab manual, where you issued a directive that the manufacturers could no longer be involved in any aspect of the test process, which was in direct conflict with the NIST Handbook 150. What we saw, by pushing us completely out of the room, is, we saw timeframes double. And I've asked my colleagues, you know, and they, you know, pretty much share the same concern with that. So, the test process became significantly slower. Our costs began to escalate, significantly, from that point on. We saw more errors in testing, that would take us weeks or months to unravel, when a discrepancy is written up from something that was done maybe two, three weeks or four weeks, sometimes it doesn't surface for -- that error doesn't surface for weeks down the road, and then it's, now, a set of discrepancies that we need to unravel. So, I think probably, the one thing that you could do to improve this process, and to get it back on track, would be to lift that ban on any of us manufacturers from, at least, monitoring what's going on, so that we can monitor the quality of the testing that is taking place, because we've all seen around the country when testing is done in a vacuum by people that don't have

election knowledge and election experience, we see the ramifications of those certifications and they're not positive.

So, I hope people listened to Secretary Browning today, when they talk about their program. They've got the best program in the country, and it's because we work together. It is a partnership and it's a very open dialogue. And I think that there's some real lessons learned. So, I hope that you can reconsider that, look at the NIST handbook, and why it was developed, and allow the vendors back in. Let us, at least, observe and monitor. We're not trying to influence the outcome. All we're trying to do is, keep the testing on track, so that it's good quality and effective testing.

A couple more comments I would like to make. Matt, you talked about matrix, and I'm glad Ed brought that up. By putting some measurable matrix -- one of the other frustrations we had was, there weren't timetables for the reviews to come back, and due to a number of reasons, I would guess. And I think, it's workload. Maybe you're constrained with resources. There were many times, where it would take weeks to get a response back on any of the open test plan issues. We would like to see tighter project management for each vendor, for each manufacturer, from the EAC, and with the tech reviewers. And maybe you need to lift the cap on the amount of hours that a technical reviewer can work on your project, or add additional resources, because it just moved

way too slow for a lot of very intelligent, smart people to not be able to get a test plan developed in 12 months, after, after all the testing -- essentially, all the testing was done. We were already completed with the majority of our testing at that point, and we still didn't have a test plan, and it took 12 months to the day for a test plan to get approved. So, those are things that, I think, if you allow your tech reviewers to be assigned and take ownership, and take accountability for meeting the timeframes that we need. We're, really, very dependent on that.

So, there are a lot of things that we are definitely in support of. I've talked with a number of our customer state representatives, here, today, about the value -- or the disconnect, in understanding the value of the testing programs. A lot of them really didn't understand and appreciate the value of the NASED program. I did, and I think that -- I know, certainly, our company did, because of the elections that were run -- the very successful elections that have been run over the last couple of years. But, I don't think the states are close enough to understanding what's really going on behind those doors. So, I think that the closer you can engage, just like you're doing today, to educate, I think, once the states really see the level of testing, and the accomplishments, they'll appreciate the value. That will minimize a lot of this retesting that's going on.

Anything we can do to reduce redundancy. I will give you an example of where we completed a certification -- qualification under NASED, got the report, went into a state certification the next week, the state had in their election code that they had to submit the code -- the source code to an independent authority, to review the code. So they submitted it. They contracted with the same lab that just got done reviewing our code, which we spent about a quarter of a million dollars getting reviewed and approved. They resubmitted the code back to the same lab the next week, and we had to pay for the same code review, again, by the same lab to the same standard for the same \$250,000, again. Those types of things, those are the things that we need to protect, you know, the manufacturers from, because that isn't right. I think we can all appreciate that.

We think it's also important -- and I really appreciate, this room is full of the experts in the industry, it really is. I think there's a lot of state consultants that states hire, and they depend on those, and we think they bring tremendous value. I think it's important -- I'm glad to see all the people that are on this board, and there's others in this room that are state testing consultants. We'd like to see all of them get onboard and support this program, make it a better program, be part of this solution. I think that's

really important from a vendor standpoint, when you're trying to accomplish state certifications.

And I think the last point, and I'm really glad to hear, it's the value of states accepting any state testing, that has been accomplished already. For instance, if testing has been done in one state, there might be -- and this is the exact goal of what this program might be all about, I'm hoping it's all about -- maybe there's six or eight states that can accept the testing that was approved at that state. Or, if there's specific tests tested up in New York, or California, or any other state, maybe the other states can accept that, rather than make us go through another test on that same component. So, it's a reciprocal acceptance of testing, is what we would like all the states to entertain, so that we can make the process much more efficient. Because, in our case, we have -- we certify in 41 states, and if it takes us 12 to 18 months to develop a release, two years to get it through the federal process, and then it takes us roughly 18 to 24 months to get all of the states certified, and then another nine months on top of the certification to get products rolled out, I mean you're talking, from the time that the development was completed, to the time it gets in the field, it's generally four, five years before they see those changes. And that's really what we've got to find a way to improve on.

So, thank you.

MR. HANCOCK:

Thanks Steve.

MR. MASTERSON:

I just wanted to add, real quickly, just for clarification, and it's not for debate or defensiveness, the section in our lab manual that Steve referenced, at the beginning of his comments, Section 211, on laboratory independence. And it speaks to -- I guess the sentence that he's referring to says, "It bans participation in testing by a manufacturer" and it defines participation as "includes, but is not limited to, the observation of testing by the manufacturers." So, just to clarify. You all can read the section, you all have it. But that's the section that he's referring to.

MR. HANCOCK:

Jeannie?

MS. LAYSON:

Hello, everybody. I'm Jeannie. I'm the spokesperson for the EAC. And I get a lot of these questions, myself, so, I did want to clarify one thing. One question that I get, a lot, from the media, from the public, from congressional staffers, is, when are you going to certify such and such system? And my answer to that is, always, you shouldn't take it for granted that we're going to certify any system. It's not a given just because a system has applied for certification that they're going to get certified. And, you know, I

think, that's an important distinction to make, you know. We may deserve to get thumped over the head for taking too long to make a decision, but it's important to remember that just because a system applies for certification, does not mean -- it's not a guarantee that they will get certified. So, I think that's an important distinction to make.

And also, as Laiza mentioned, we are going to work on a video to try and explain the three-legged stool we've heard about today, which is the federal role, the state role, and the local role, and how those three roles work together. So, I'm hoping that the people, who signed up to give us input on communications, will be willing to review that video, perhaps the script, and let us know if you think it will help get that message out, because, quite frankly, there's still a lot of confusion about those three roles. So...

MR. HANCOCK:

And Jeannie, thanks. Thanks for saying that. You know the other thing that I would just like to reiterate, especially for the state folks that are very interested or very concerned with the process, is please, read our manuals, both the testing and certification manual and the lab manual. Many of the questions we get are answered in that manual. If it's something that affects you, you know, it's certainly important to be familiar with the process, and the entire process. It's not light reading. It's not, necessarily, fun reading,

you know. I don't think any of us are Steven King here, but it's something that, I think, is important to take a look at, if you haven't done so already.

Anybody else? Okay, sure.

MR. HOOVER:

James Hoover from Dominion Voting. You started off the brief discussion and I'm just wondering -- we talked about state and federal testing. Is there anything which is not on the table, in terms of unification? At previous conferences, we talked about unifying some of the testing lab procedures. We didn't talk about that, but is there a scope for this testing initiative that hasn't -- maybe you could just fill in a bit of the blanks for us.

MR. HANCOCK:

Well, I think that project is, really, underway as a separate project, and I think Mark hit on it a little while ago. And NIST is, in fact, working on, and is fairly complete, I think, at this point, with having, at least, a draft of test protocols -- standard test protocols that all the labs will be using in the future. So, I really think that will mitigate a lot of the cost, and make sure the testing is being done in a more similar fashion, from lab to lab, and will, actually, be a very beneficial addition to the process. Thanks, Jim.

Anybody else? Sure? Okay, well, with that we really appreciate the input, today. Thank you. We will be back here,

again, at 9 a.m. tomorrow morning. And have a great evening in
Miami.

[Applause]

[Whereupon, the meeting recessed at 4:02 p.m. EDT.]

**U.S. Election Assistance Commission
Voting System Testing & Certification Division**

Unified Testing Initiative and Cost of Testing Meeting

Miami Beach Resort & Spa
2833 Collins Avenue
Miami Beach, Florida 33140

On Friday, January 30, 2009

VERBATIM TRANSCRIPT

The following is the verbatim transcript of the Unified Testing Initiative and Cost of Testing Meeting held on Friday, January 30, 2009. The meeting convened at 9:03 a.m., EDT. The meeting adjourned at 4:23 p.m., EDT.

COST OF TESTING

MS. OTERO:

Good morning. Thank you, everybody, for coming, again, to our second day of meeting. I hope you all had a great time last night, that you got to go to South Beach and walk around, or just check some of the other highlights of Miami. I personally love this place. So, thank you once again. I know there are a couple of people who may be a little bit delayed getting in, but we'll keep track of them.

As you know, today the focus will be on the cost of testing, and how we can identify factors that impact the current costs, and we're also going to brainstorm solutions, together, about how we can help address them.

But, before we get into the meat of the program today, there are a couple housekeeping things that we would like to remind you of. First of all, please turn off or silence your cell phones or Blackberries. Thank you. When you come to the front to speak, we have one mic, today, so to avoid any feedback or any problems, be sure to remember to state your name and your organization for our transcriptionist. If you have a question, comment or a concern that we did not get to today, or you just thought about it, belatedly,

remember that you have until 5 o'clock, today, to submit them to us, via email. And you can send it to Brian Hancock, and I think most of you have his email, but, just in case, it's bhancock@eac.gov or you can always submit it -- I know you have Emily and Robin's emails that you can send to them, as well. Also, as a reminder, we'll be posting all presentations, PowerPoints, handouts and transcripts on our website. So, make sure to keep it on your favorites, so it should be your homepage. And, we'll also send you an update, as to when all of the material has been posted. After lunch today, you will be going to breakout rooms. And if you'd take a look at your agenda, Brian mentioned this yesterday, on the back of your name tag, you have your working group. So, straight after lunch, group one, you come here to the Mediterranean Room, group two, you go to the Balboa Room, group three, you go to the Madrid Room. And, these are upstairs, one floor above us. So, just go straight there. The sessions will be 45 minutes, then you rotate and go to the next one. So, group one would then go to the second session, and so on and so forth. After that, you will come back to this room and we'll finish, have some closing thoughts, report back on what you had on the breakout sessions. And if we end early, that's a plus, one more extra hour to get a good mojito or a good rum punch, on your way out. If you have to travel before the meeting concludes today, please see Robin or Emily if you have any

questions about how to get to the airport, or any questions related to travel. Any questions about those items? Okay. If not, please remember, we have some refreshments on the side. Feel free to keep yourself -- your level of caffeine up and we'll try to keep you motivated throughout the meeting.

As you know, and as was mentioned yesterday, back in 2007 on April 30th and May 1st, we held the first Cost of Testing Summit, and we held it in Denver. We had about 43 participants, and there were representatives from manufacturers, there were voting system test labs, there were EAC staff and technical reviewers, there were election advocacy groups, and we also had members from NIST.

On the first day of the -- the setting was also a little bit different. On the first day of the meeting, what we did is, we gave each of the groups a set of questions prior to coming to the meeting, and we set it up more as a panel. So, they had questions they addressed, and then, once they gave their presentation, the rest of the crew, they responded to those, and we worked it out in that way as a free-flowing discussion. So, it was very -- it was much more intimate, and it's something that, you know, as the meetings continue throughout the years, we'll continue to expand and work on.

The second day, we also had a representative from the Nevada Gaming Commission, who gave a presentation on their testing of gambling machines, and just how the process was somewhat similar, in terms of the challenges and successes that they had to work with, with their own manufacturers and stakeholders. And, we have a copy of that presentation, and we're going to give that to you during your break, so that you have it. And we'll also put it up on the website.

Now, just to give you a brief overview of some of the concerns that came out two years ago, which, not surprisingly, came out yesterday, and will be, in my opinion, coming out again, today, for example, during the election official session some of the themes that came were the duplication of testing at the state and federal levels. Many of the election officials felt that there was that constantly moving target of developing federal standards, and there was a lot of increased scrutiny of the election procedures, and this had led states to develop their own more rigorous testing, and there is just a disconnect between the two.

Second, there were differences in what the concerns between jurisdictions that were smaller and had more limited resources were, with those who were either larger or had more, and so, we had to keep those things in mind and how we're going to make them work together. So, that's something as you talk through

your breakout sessions, today, please keep in mind and with the working groups that we have developed, how you're going to resolve those issues.

The third topic that election officials agreed with was they need to fully fund HAVA. Many of the states did not have the money necessary to meet the growing demands of federal certification, and they knew that money -- even if we give you a big pot of money, it would not fix all the problems, it would help some. But they wanted to make sure that we understood that they knew that the elections improvements that HAVA had brought were good, but they needed to be fully funded so that they could be properly implemented. So, it's just a reality.

The voting system test labs, we did have Carolyn and Frank, and representatives from SysTest. Some of the items that they identified as factors that were impacting cost, were the duplication, again, of testing across federal and state effort, the number of documents and lines of codes that needed to be reviewed, and also, how ready the product was for testing, when it was brought to them. They felt that the more mature the system or product was, the less hours must be spent on it, and therefore, the cost of testing would be brought down.

Manufacturers, some of the items that they identified, again, was amount of documentation, very similar to the voting system

test labs, poorly worded standards, which we heard yesterday, and in particular, those related to source code review, duplication of effort, a need to streamline the process, and a decision to not grandfather NASED's systems.

Election advocacy groups brought a different perspective. They wanted to make sure that we kept our view that, you know, the end user of this were voters, and we needed to keep them in mind, and that their trust in our process, the trust in the system, needed to be built into this process, so that they had that buy-in and transparency, and all parts of the process was credible.

Finally, our state and federal reviewers, they pointed out, for example, the need to look at duplication of efforts, acceptance testing procedures, especially at the local level, and the confidence and the collaboration between state and federal levels needed to be built upon; communication, streamlining the process and increasing efficiencies.

And the final suggestions, which you'll see in the report that we'll hand you during the break, these are the recommendations: Greater efficiency needs to be created between federal and state testing. They also suggested that a matrix between federal testing requirements and state testing items, needs to be created so that the overlap can be remedied and the amount of duplication be lessened.

Now, just to put, as a caveat, I know that, for example, we, the EAC, conduct the survey, which the state election officials are aware of, the Election Day Survey, and we'll collect information regarding Election Day statistics, NVRA questions and UOCAVA. There is a hesitation for us to necessarily go ahead and conduct another survey, but if you do think that this matrix is something that you would like, please let us know, and let us know what method, or what would be the process for collecting this information, in a manner that would not be cumbersome/burdensome to you. So, if we need to put information together, we need to collect it from you. So, how can we build partnerships, in terms of collecting data?

Also, cooperative agreements, between states for state testing, would save a great deal. So, again, this was more related to the relationship between large states and small states, and how - - whether regional or size-related jurisdictions could come together.

Software coding requirements need to be looked at to make sure they are efficient and effective. And, some of these items are being addressed in the next iteration of the VVSG, and through, also, interpretations.

It is in the best interest of everyone to make as much of the testing and certification process open and transparent, so that voters can have confidence that their vote will be counted.

Also, as the EAC's testing and certification process matures, the EAC should work to develop best practices for state testing and certification, with an eye towards reducing cost, while maintaining an effective process.

And the final suggestion was, that the EAC needs to continue to work with all stakeholders to keep the lines of communication open and active, so that all of the major stakeholders involved in the program have a voice, and so that we have commitment from all parts, because, as Secretary of State Kurt Browning mentioned yesterday, there are many legs to this, so we need to make sure that we're all working together, because if there's one leg that's broken or just a little bit off, it just throws the whole system off. So, we need to take a holistic approach to fixing the system.

So, that's just a quick overview of the first Cost of Testing Summit. Again, we'll be handing out just the results of that, if they haven't been placed already on your table. And based on that information, we want to move forward today, whether it's some of those same issues we haven't resolved yet, whether there are some new ones. And we'll be hearing from Merle King, from Kennesaw State, and he'll be identifying some of the state-related issues later on today. And we just really need your voice. So,

again, it's open mic during certain times, so feel free. And, if you don't feel comfortable, please submit questions by 5 o'clock today.

So, thank you very much and I'll pass it on now to Mr. Hancock.

MR. HANCOCK:

Thank you, Laiza. Good morning. We thought we'd just give you this brief update about what happened in Denver over a year ago now, just to, first of all, see that some of the initiatives that we proposed yesterday were reflective of some of the discussion items that Laiza noted in that meeting. So, we are moving forward in that direction, as a direct result of the input that we got during that time period.

What we wanted to talk about this morning -- and again, it is going to be pretty free flowing back and forth, as it was at that Denver meeting. Yesterday we talked more about the future, I think, than the present. But what we'd like to do today is, once again, get into what today, right now, is affecting the cost of testing. And I want to move beyond testing at the federal level to discuss what the issues are with your state testing, as well, and where the big cost items are there.

I know it's a little bit early for some, and people need to have one or two cups of coffee before they really feel juiced up, so, I think we'll start with our technical reviewers this morning. A lot of

them have experience at both levels and can share with us some thoughts on things that they've seen over the years that impact the cost for both programs.

So, gentlemen and lady, whoever feels like being first this morning. Steve?

MR. BERGER:

I'll lead off and try and stir the pot a bit. Let me start with, perhaps, the most controversial thing I can say, but I believe is absolutely true, and that is, building on some remarks made yesterday. Voting systems were designed to be modular and configurable, which there's lots of good reasons in the market why that would be done, so that they'll support multiple jurisdictions. What happens to the testing is, it grows not in linear fashion, but geometrically, and that's being seen in other areas like wireless cell phones, that sort of thing. So, when you go from being able to support one type of election, to two, to three, what happens to the testing? It goes up from one, not to two, to three, but to four, to eight. And I think we're experiencing that. That's an underlying architectural issue, and it's pretty much, I think, a fact of engineering. There's some ways that you can fight that. It's been fought in other industries by going to more of an industry-wide definition of key test points, that are consistent, common data

record formats. So, I throw that out for thought, but I think it's an underlying factor.

Another thing I'd say, is, that we, for a whole lot of historical reasons, have gotten into testing that's very labor intensive, very brute force. And I think as technologists, we can do better than that. A classic way you address taking labor intensive testing down, is by introducing automation. I think source code review and volume testing are ripe targets, to be reduced in that way.

And the other thing I don't see a lot of, and I think it's very ripe for picking, is to introduce hybrid testing concepts, where we build up lines of evidence, using different kinds of testing, so that at the end we get a high level of assurance, with lower levels of cost, so that evidence from simulation, evidence from component testing, adds to full system physical testing, so that you get a composite picture, doing more in total, with less total effort.

So with those, I'll pass the mic.

MR. SKALL:

Good morning, let me take my shot at this. We're in a really unique industry, because in information technology, no matter how much you test, you're never finished. You try to test an implementation, and if you find errors, you know the voting system does not conform. If you don't find errors, unfortunately, you know

nothing. You know either that the voting system works correctly, or your tests weren't thorough enough.

So, in designing tests, you already know that you will never come away with a knowledge that, in fact, you were successful in proving that the voting system works. So, you have to come up with a strategy as to when you stop testing. You can test forever and you still won't know that the voting system works correctly. Clearly, you want to test every requirement. The question is, how thoroughly do you test that requirement and how many combinations of requirements do you test? These are strategic decision points you have to consider and you have to look at. And, you have to figure out when is the point of diminishing returns. When are you doing additional testing, which is costing you a lot more, and buying you only a slightly greater likelihood that, in fact, the implementation works if it passes a test?

I definitely agree with Steve about automated means. When I worked at NIST, we were probably the pioneers in coming up with automated techniques to develop tests. We cut down, I would say, almost by magnitude the time it takes to develop tests. So, there are two aspects of automated techniques. You can use those to develop test cases, you can use those to run test cases, the operational. I think we need to look at both of those.

So, it's really a difficult problem and the real issue is, exactly how many ways of combining requirements do you look at? What level of source code review do you do? What is it buying you? When can you stop and feel that you get almost the same level of satisfaction? So, these are challenging questions. There are no scientific answers. And they're things that I think we just need to explore.

MR. FREEMAN:

I want to start off with, basically, restating some of the things that both Mark and Steve had mentioned, and that is in terms of something called the operational profile. There's a study field, called Software Reliability (ph), that took a look at this a number of years ago, and it was looking at the issue about testing cost, effort, effectiveness in doing the testing. And, basically, it said that in any type of complex system the testing gets to a point where it's counterproductive, in terms of the time and effort that gets involved. You get to the point that the testing just is not effective in finding the type of problems, and the cost becomes astronomical or gets to the point where it just is not doing the job at all, because you just can't get there. We're in that state with testing the voting systems, mainly, because of some of the very strong variations that occur within state regulations and practices, creating complexity in the code, creating a problem for the vendors trying to deal with multiple

state requirements in balancing out this large source of where some errors occur.

The answer that worked out on that is something called their operational profile testing, and it's that you focus the testing on the common factors, the ones that are most commonly used, the most often seen as the system is actually being used. And we've been trying to build testing over a period of time. That language was actually built into the voting system standards that we're using. There's places in the language that deliberately came from that particular area. What the operational profile does is says that you do the testing to check those common factors where the testing can be very efficient and to go ahead and go beyond. To get the reliability you need, the accuracy, so that we can trust the system you may have to introduce other methods of verifying. This may involve more focus testing. It may involve specific source code review, and I'm not talking about the general source code review for security reasons. I'm talking about going in to take a look at that portion of the code, the portion of the program not getting exercised within the operational testing and doing -- focusing testing against that particular piece of code, that particular area to make sure that you don't have problems that are hidden that will come up and surprise you. This has proven to be very effective in reducing some

of the costs and the effectiveness of the testing, and we're trying to work towards that.

But, we seem to be hampered by this idea that our testing has to be in terms of doing mock elections. This mock election approach is something that's well within your purview, in terms of running a mock election to verify the system will work within your state, dealing with your operational operations, but becomes very difficult to manage and control when you move it up to the general level where we're trying to cover the requirement for everyone. So, we need to be more intelligent. When I talk about intelligent testing, this is what I'm talking about. We need to have those simple mock elections that represent a good operational profile for almost all the requirements, the common requirements, that provide a good tool for doing the other tests, perform those tests, make sure we've got everything covered, and then doing something smarter about testing some of the others.

One of the problems we keep fighting against is the term "volume." Volume testing, depending on who you're talking to, could be a number of different things. There's, at least, three different volume tests that I know and they're different concepts, they're different requirements. And the tendency is to throw a big election at those, to test those, and that's not necessarily the best way to do it. There is a need to do a large election test as part of

the integration testing of the system, to make sure everything is working together when you do run a fairly large election, but we shouldn't have to run three, five, six large elections testing various factors to do that. Trying to get some of the other volume issues, in terms of what's sometimes called volume and stress. What's the system behavior when a particular limit in the system is reached and exceeded? In some cases designs try to design that so that it's very, very high and the position is that they're not necessarily an issue or concern. There's been history in terms of the election industry where there has been some rather spectacular failures, because those high limits turned out to be triggered by unexpected events. That requires intelligence testing. And you're not going to hit that by doing a large election and running it for hours and hours and days just trying to reach those limits. Along with that, there's volume in terms of just the aspect of sustained operation which would apply long-term. I was talking with someone, earlier during this week, about some situations about what happens to a system that's being used for two or three years, ten, 12 elections. There's some things that occur and that circumstance can relate to reduced performance and possible failure of the system. That's another type of volume that gets in there, but you can't do that as a test, as a functional test, as an operational test. You have to do something

intelligent. You have to go out and do a focus, to go and look at those. That's some of the things we need to be doing.

This doesn't help you all a lot, but this is the type of thing that should be being done at the federal level, so that you don't have to worry about it at the state level.

In terms of trying to deal with some of the state problems, there's a couple of things that I want to draw attention to.

Something that I've always referred to as, "the election is next Tuesday." And I know this has been a concern to a number of you. I've talked with some of you. You've talked with me. It doesn't make any difference how perfect the system is. If you've got an election coming up in one, two weeks, maybe a month, and there's something with a particular voting system you're using that's not right, that has to be changed, you need to be able to get those changes put in, taken care of and confidence you're going to do. That, I think, is probably one of the biggest issues for a number of you. That's probably one of your biggest concerns. Unfortunately, some of those "the election is next Tuesday" were last year and the changes didn't come through. And what we do to go ahead and get there is a difficult path. It's not something that the EAC is going to be able to take care. It's something that's going to have to be a cooperative effort, either deliberately or accidentally, between state, federal and local and the vendors.

In the past, one of the practices has been that the vendor will come up maybe a month before the election and say, "Oh, we know of a problem that may come up in an election. We think we have a fix for it. Here's what we'd like to do and suggest." We get in the situation there's not enough time to go through a federal certification test, or it may be that they can do the testing, but they can't go through the full cycle for it, and so you get into something that's sometimes called emergency change procedure. Typically, the best way to do that is that you go ahead, you take a quick look, in terms of the actual election that you're faced with, you run enough of a test, basically a logic and accuracy test, a more thorough one, not necessarily running against all your equipment, to verify that that change will work for that election. And then, the assumption that comes up is, after the election you'll go back and make sure that that change is appropriate and will work for all the subsequent elections. And unfortunately, it's not unusual for that not to be true, that it won't work. There's some sort of problem, something else has to be done. The change may allow you to go ahead and do the general, for example, but it fouls up a primary.

Historically, one of the problems that we've been faced with is, we go through, we do those emergency changes, that follow-on testing, for whatever reason, doesn't get done, doesn't get completed. The next election comes up, you're faced with this

emergency change that occurred. Do you allow that system to run on your system for the election because it still hasn't tested? Do you have to test again depend on your logic and accuracy to do it for that election? And this cycle gets repeated and repeated. You've been through the election, you took care of the problem, it seemed to work, and you're not concerned with it until something blows up in your face. That is one of our challenges to try to make that work.

One of the things, from my understanding, is what the EAC has been doing for the past year or so is, we're trying to establish the baseline, so that the more rapid response testing can have a baseline to work with. They don't have to necessarily repeat, redo everything, we got the background, everything is documented, we know what we can work with and go through there, and then be able to handle the faster changes. We haven't got through and gotten those baselines. It's still an ongoing process.

The third thing that I want to mention is an aspect of trying to do that and it's called di minimis changes. The program manual has di minimis changes in it, but there still may be some issues on that. A de minimis is a minor change. It doesn't make a lot of difference in the system, and it may not affect it functionally at all. A competent professional engineer, for example, could take a look at the change documentation, review it and determine that there is

no real benefit to do additional testing with it, can potentially sign off and say, "Okay, this is okay. You can probably go ahead and use it." The problem with that concept is, number one, who qualifies the professional qualified engineer? Did he have complete information? But more than that, has that change been documented so that you know about it? If you're one of the states that has to do an integrity audit, in terms of the equipment, to make sure that you're working with the same equipment that was certified, do you have enough information to recognize those de minimis changes, the changes that were made to those, so that you can complete your audit and know that you're working with a system that has been subject to some sort of review and the review is adequate? The second problem occurs is a de minimis change, itself, may be relatively minor, may not make a functional difference, but the accumulation of one, two, five, 20 reaches a state where the initial change, although it wasn't affected, becomes an issue; there's something wrong, that something doesn't work, they don't work together. And there's no good clear answer on that. When you're doing a de minimis change, you need to consider that de minimis change in terms of all the rest of the de minimis changes that have been made since the last certification test. Again, we're dependent on the baseline, an established base of documentation, so we know what we're working from, and we

can actually evaluate these. Right now, we don't have criteria for dealing with that accumulation of de minimis changes, and that's something that needs to be worked and followed through on.

The third problem that comes up that goes along with that is that even though it's something that looks like it's a de minimis change, it does not affect you functionally, sometimes the effects can be very surprising when they're not considered. And this is why that professional engineer is so important to have the expertise, the knowledge, understands some of the different issues that can occur. A de minimis type of change that has occurred in the past that's actually resulted in a problem, although the problem probably won't concern you all directly, is one voting machine that I know of, they changed the paint, and the paint changed its electrical characteristics. It could no longer pass some of the EMC testing that is required. Now that doesn't concern you very directly, in most cases, because you're not particularly concerned about the EAC, that's a procurement requirement, to make sure systems in some cases don't interfere with local TVs. But it does become a concern if that particular change affects the ability for your system to be affected by electromagnetic noise or electrostatic discharge. That's a real subtle change. You take a look at it and say, "Oh, well, this doesn't make any difference. I don't care about the change in color," but the effect of that. One of the things, in terms

of these de minimis changes is, there needs to be some sort of mechanism, and the EAC program manual, kind of, addresses it in terms of doing regression testing, to make sure the changes don't have an unanticipated consequence when they're taking a look at them. And, again, we get into this issue about multiple changes and the effects, and at some point in time there needs to, probably, be a repeat of some testing to make sure that we have not crept into a new problem. But the de minimis change provides a good mechanism for being able to go ahead and make some immediate changes, particularly if it is something that is not operationally significant. It's just the control process on that to make sure that you're not creeping into a situation where you have a subsequent failure at a later time.

That's all I had.

MR. HANCOCK:

Thanks, Steve. Anybody else? Tom.

MR. WATSON:

I agree with my colleagues. I just want to add a couple things. I again stress the difference between what we should be accomplishing at the federal level versus the state; the federal being where the hardware testing and the system-level testing, the states doing the more functional testing. At the state level, I've only had experience in Texas, and some of the things that I observed

over the years is, and this applies to vendors, come with people that are prepared, that are experts in this equipment and if -- and I know you can't bring your gurus that are security experts or what not, but at least have somebody available back at headquarters, you know, if a phone call is needed, so that we can get an answer, because a lot of times we have questions regarding security and the people that are demonstrating the system really don't know the answers. So, that delays.

At the federal level, we've already improved this, and I think we need weekly communication during the review process to make sure that we're not fumbling around waiting for somebody to respond, and we're getting these issues resolved quickly. And, we've really made vast improvement on that, and occasionally we need to have face-to-face to push through an area that may be difficult to do over the phone.

There needs to be more analysis, I'm just more or less reiterating, more analysis as to what are the heavy hitters as far as the testing. I think too much testing is wasted on relatively trivial matters. They may be easy to do, they take a lot of time, but there's no bang for the buck there. So, we need to really analyze where our vulnerabilities are and make the bulk of the testing in that area.

And then, something that would help in testing, whether at the state or federal, is to renew the effort to create standard formats for input and outputs to these systems, because then test decks or test elections can be created, and they can be used across all the vendor systems, so states could reuse that same test deck for mainly the federal testing effort. The labs could have these standard election formats, plug them into the election setup system and then have a test deck of ballots. And through the standard format it would apply to any vendor's system and they could, you know, jam in tens, hundreds of thousands of records to test the volume very quickly, stress the system. And once we have those standard formats, it would be easy to really test these systems, from a software standpoint. The hardware, that's a different matter.

MR. HANCOCK:

Thanks, Tom. Anybody else? Tom Caddy, do you have any comments?

MR. CADDY:

I guess from a different tact, I think -- based on the old adage, in my experience in both developing products, as well as in lab environments, and so forth -- I think one of the things here that's talking about cost of testing, I think the real issue that drives cost in most cases is schedule. Time is money, and the more time that goes by, the cost just escalates no matter what the process is. It

takes people time to relearn, get back on projects, they go to other things, they come back. The efficiency drops, significantly, as there's gaps in the process by different team members. So, I think the cost of testing is greatly affected by how stretched out the schedule is. So, I think every effort that can be made to consolidate the effort and compress it over a period of time and work together to identify and work those issues in a technical fashion, or whatever fashion, is necessary to keep the process moving expeditiously, will necessarily lower the cost by a lot.

MR. HANCOCK:

All right, thanks. If nobody else at the table has anything, a couple of things during this discussion sort of sparked ideas, and I want to hear from specific folks in the audience about them. And I think a very interesting, and I think, promising, perhaps, one is the item that Steve Berger first mentioned, and that is automating testing. I'd like to hear from the VSTLs about their thoughts on potentially doing more automated testing. And also, perhaps from everyone, their thoughts, specifically the labs again of, you know, when is testing finished. The concept of how much testing is enough, and what are your thoughts on that, and anything else that sprung up in your minds from this conversation so far.

Frank, you seem to be the...

MR. PADILLA:

Frank from Wyle Laboratories.

MR. HANCOCK:

Frank had more coffee than anybody else this morning.

MR. PADILLA:

No, not enough. Automation is always brought up at these meetings in key points. And, yes, in the test world automation will eventually make things more cost efficient. The problem in this world is, look around at how many manufacturers there are today. Look at the amount that to automate every different -- as we brought up, everybody's system is unique. There aren't any out there, off the shelf automated tools we can buy today, that's a one-size-fits all. And the tools that are out there, and I'll use software as one, security tools, are really expensive. The average security analyzer costs about \$150,000 for a lab to buy. And I don't think any of the manufacturers want to pay us for that. The EAC hasn't offered to pay us for that. Which leads to cost of testing. If I go out and buy that tool, we have no choice but to pass it on to our customers, whether it's the voting machine customers or the rest of our customers. So, it's that weigh of cost-gain. What gain are we getting out of those tools?

There are other tools -- I was just talking with Tom and Steve -- out there, you know, automation tools for doing mass ballots using -- every vendor here does have simulation tools that they've

developed that we do use, to help speed up so we don't have to. And most of the states use those with the simulated elections to do some of your volume testing and everything else. So, we don't actually have to count -- push a million ballots. We do a percentage of those. And that's a major cost savings. Some machines -- systems you can't do that with. There is no automation for them. So, that's a major concern.

We're looking at automating some of the other areas of hardware testing, but we're also looking at -- we don't have a light switch that we've just got to turn on and off. Every system is different, the buttons are in different locations. It would be a great idea to say to everybody, "The same inputs and outputs." But I think that stifles invention and their ability to come up with different designs, a little. But we have to look at that. Are there tools that we can find using, maybe, robotics? But, once again, we're looking at the cost to develop that. Is it -- what's the cost-gain analysis? Later on, we'll be, I'm sure, working with the government saying, "If you really want to do this, buy these tools and we might be able to save money." But who's going to buy these tools to start with, with the marketplace what it is? And that's one of the big concerns I know from the labs.

MR. HANCOCK:

Well thanks, Frank. And, you know, I'd like to hear Carolyn or Traci, or anyone else who has any other comments, but it's a good point. And I think what I heard you saying is, it's a great idea, it would save cost in the program, but it's the up-front costs that are the issue. And, you know, we do have some congressional representatives in the back of the room, and since, certainly, Congress is concerned, and have told us they're concerned about the cost of testing, perhaps this is an area that they may want to look at in the future.

MS. COGGINS:

Yes. And well, I think the issue of automation, I agree. Your value from automation really occurs down the line, it doesn't occur at the very, very beginning. And it's, generally, when your system is mature enough that you're not making substantial changes, so that you're not in a process of continually maintaining your test, because even over time, even small changes can impact test maintenance. So, automation has its good points in specific applications, but it's not always across the board.

I think, also, there's the fact of tools. There's so many languages that are being submitted in voting systems. I mean, there are a lot of older systems that still are using, you know, languages that are 20 years old. And so, those tools -- are there

tools for those things? In a lot of cases there are not tools for the automation.

I think, in terms of the source code review, and I know I'm not the person in our organization who speaks to this, usually, but probably it's a visiting of the standards as to, are we getting the most bang for our buck for the process of the review. There is a lot of less critical review that takes up a significant amount of time, and that would be a lot of the issues involved with the commenting and other aspects of it. That's one of the areas that I think may have a possibility.

But, there's also the aspect of, there are certain things within the requirements that say we can't automate a test, you know, that you can't install something on the voting system that isn't the way it would be hooked up in the polls. So, that has some impact on it, too. Do we have conflicts within the requirements that, you know, would allow us to put certain automation on? So, those are things that need to be looked at in that case too.

MR. HANCOCK:

Thanks, Carolyn.

MS. GRIFFITHS:

Again, thanks for putting this whole event on, because I think it's important to get the information out on the table. And I think I have to go back to one thing that Carolyn said, yesterday, as well;

that part of this whole thing, the basis of, if we have some core functionality or core things that we're testing, no matter what you use with automated tools if you have automated tools but everything is still unique, you're only using a tool to help you do something that you're going to have put in a unique automated method and process to go through with that. And just as Frank was saying, that cost of the automated tool up front. There are many that we use outside of the voting system and the same challenge you have here is what we're facing there as well; that the tool itself up front is pretty expensive, no matter what tool set that you're looking at, and you're not going to see the benefit up front. And maybe, this is a time if you're talking about the whole thing of trying to have some of this unified testing and the group that's going to be working on that to say, is it the time to agree there is going to be some base/core functionality that we're going to agree to that, that's got to be what's tested one time that can then be shared and accepted? And I realize there's state legislation, federal rules, everything that changes that, but if we don't do that, I don't think we're going to solve the problem, and we'll still be talking about this the next time we get together.

Thank you.

MR. HANCOCK:

Thanks, Ann.

MR. JONES:

Tom Watson suggested standard test decks so that we could use them again and again. And one serious warning in this area is that ballots used in real elections are designed to be scanned once -- maybe rescanned once if a pass through the scanner causes trouble, scanned again and maybe rescanned again in a recount. And that's all a normal ballot will see is from one to four passes through a scanner. I had an experience in Maricopa County, where I ran ballots 24 times, six scanners. Each ballot was run head first, feet first, head up, face up, face down through six different tabulators. By the end of those 24 passes, there were tire tracks on each ballot from the paper feed mechanisms. And, fortunately the design of that scanner put the tire tracks so they didn't cover any voting positions. But they were getting black and these ballots were not really suitable. They were getting dirty from this. They were not really suitable for continued testing. And, in fact, I think this is not inappropriate, because real ballots don't have to be run through scanners 24 times. If we ask our vendors to build voting machines, in terms of volume testing and reusable ballots which can be reused hundreds of times, I think we're going to see a noticeable increase in price on paper feed mechanisms and things like that.

But, standard test deck designs and standard election configurations that we could use again and again can have real value. But that would require that the vendors start engineering in terms of standard data formats, not on paper, not in the layout of the ballots, where there's still plenty of room for innovation, but in the interfaces between the components. I think, in the short run, that's a real expense. In the long run, the payoff could be significant, particularly because I think the election management systems that we have today have become something of an albatross, containing bits and pieces of code that date back into the 1980s, in some cases, that would be really nice to be able to get rid of.

MR. HANCOCK:

Thank you, Doug. Tom?

MR. WATSON:

I just want to clarify that I didn't mean reuse the same media -- or the same paper multiple times, but just have standard, large volume, complex election results and election setups that you can reuse. So these are digital files that you -- for instance, if you want to see if your ERM machine is going to be able to handle the load, you can just pump in this huge file that you already have sitting on the shelf. Nothing is going to change, it's digital.

Now, as far as voting optical scan, obviously, you would have to regenerate the ballots. You can't constantly use the same ballots. But if you use the same ballot -- a brand new ballot and you run it through the same machine three times and you get three different results, you've got a problem.

MR. HANCOCK:

Thanks for that clarification, Tom.

MR. GILLERMAN:

Another sector that's using this approach, very well, is the biometrics sector. In biometrics, it's very important that the equipment is able to inter-operate, and that digital messages that come out of one piece of equipment are understood by the next. The term that's typically used is conformance testing, and a lot of the work that, I think, Mark is talking about, that's been done at NIST in several areas, and one of them is biometrics, the one I'm familiar with, is where they have actually created digital format standards that are a requirement for the vendors to conform to, mostly because in biometrics you don't buy a whole system, you buy pieces and integrate the system at the site. So, the access control system has to understand the biometrics acquisition information coming from the readers, and so on. And they have really managed to, over a very long period of time. So, the message here -- this is not a tomorrow fix, this is a long-term

perhaps tool -- is, if you can get a consensus on what the digital messaging should look like, you can set the stage for the development of these tools that can rapidly evaluate use cases in the digital messaging requirements, and determine at least that characteristic of the product conforms very, very readily and very efficiently.

MR. HANCOCK:

Thank you. Steve.

MR. BERGER:

A couple of quick comments. One, and I'll be interested to see if the vendors agree with me, but most of the vendors in the room got involved on a Standard Committee to come up with standard data formats, and IEEE 1622, also, I think the vendors were involved in an Oasis effort. The Oasis standard is published. The IEEE standard came out of committee ready for ballot. So, I'm not sure if the vendors like that work product, but it appears that a lot of that work has been done, and is potentially ready to move forward. I throw that out.

The other thing I'll point out, I think it was said, but I'd like to highlight it, in this area there's lots of places that systemically, we find the cost one place and the benefit another. And I think we've got to find a good answer if we want to reduce costs as to, in one case, exactly why would a lab invest, so that they can charge less

to their customers? I actually think they would want to automate, but from a business standpoint that doesn't make a lot of sense.

MR. HANCOCK:

Thank you, Steve. Traci.

MS. MAPPS:

Just in regards to automation, I guess, one of my thoughts is that NIST, right now, is developing some methods that will be applied across the labs. And so, maybe that's an opportunity there where we can look at, you know, if automation is something that can be used, maybe with the methods that are being developed by NIST, they can work with the VSTLs in coming up with, you know, a subset of functionality that automation actually makes sense.

You know, I think, to Carolyn's point, some of the systems that come in, they're not in a maturity level and we're finding a lot of problems up front. And if we could, you know, bring systems in that are production ready, that makes a big difference in being able to do any automation.

That's just a couple of points I wanted to throw out.

MR. HANCOCK:

Thank you, Traci. Appreciate it. Something that -- go ahead, Steve, yes.

MR. FREEMAN:

I wanted to make one more point, in terms of the automated tools. The concept is good in theory, but the practice tends to be where some of the problem is. But particularly, I want to make a response to something that Carolyn said. As far as I know, there's nothing in the standards that disallow the use of simulation and the automated tools. What there is, is a requirement that if simulation is used, is provided for the system, and usually this is something that the vendor has to develop, it has to be validated to make sure it works and does what it says. And that is the key point, in terms if we're talking about automated tools and simulations, is that validation process. You don't want to go ahead and put in a package of automated things and say, "This is great. It will take care of my time and everything else," and find out that it's not generating the results you need to see. This validation requirement is fairly important, but that becomes another cost factor and delay, in terms of going ahead and implementing it. And one of the experiences that labs have actually had, trying to look at some of these tools is, they can bring in three to four tools -- I can't remember which lab it was, but one of them I talked to, looked at five different tools and none of the tools was adequate. They all did a partial job, they didn't find things that they should have, they gave false results. They could put the tools together, and, sort of, get a better feel for what it was, but when you put the entire combination

together, again, it wasn't cost effective, like has been said. But there is no barrier, that I know of, to go ahead, in using simulation or automated tools. The problem with it, is validating that those tools are appropriate, and it's cost effective to use them.

MR. HANCOCK:

Thank you, Steve. Something that I haven't heard anybody mention this morning, but certainly we have heard it in the development, both, of the 2005 VVSG and the next iteration document, is the cost that usability testing will bring to the process. I know we have some folks from NIST here, as well as some of the labs that are sort of getting into this process. And everything we've heard of, is, it will be a somewhat expensive process. So, if anybody has some comments on that, I think we should hear those as well.

MR. PADILLA:

I want to go back to Steve's comment, though, real quick.

MR. HANCOCK:

Sure.

MR. PADILLA:

One, the labs aren't against using automation so we make less money. I know that didn't come out like you said. It goes back to the point that there is no one tool that does this. I mean, Steve sort of touched on this. Using tools to help come up with results, as

we've said earlier, is a piece of the puzzle. The labs want to do that. We've got to get the cost-benefit analysis. If I go out and buy all these tools, yes, we'll probably have a better product. But who is going to pay for them? And if we pass it onto the manufacturers, they're going to go out of business. If we buy them all, we're going to go out of business. If the cost goes to the states, well, you're not going to buy the systems. We've got to get a hold of those costs, and find out what tools are the best for us to use. And I think that's the answer we're getting to, to find that combination. Hopefully, NIST has come up with some ideas. We're working on some ideas, I know the labs are, to try to come up with one, or a combination of.

On this reliability testing of the future, it will be cost expensive. I went to the reliability workshop in Gaithersburg.

MR. HANCOCK:

Usability?

MR. PADILLA:

Usability.

MR. HANCOCK:

Yes.

MR. PADILLA:

It was about two summers ago, Matt.

MR. MASTERSON:

Yes.

MR. PADILLA:

Last summer? If everybody is not aware of what that is, that's in the room, they want to turn, what's currently done is, the manufacturers do a lot of the usability tests and give us a report. And we take that report, review it and, basically, give it to the EAC as part of our final test report. Now they want the labs to take over that portion of testing and say, "It's our responsibility to make sure all the tests are done." The problem that comes into that, if you look at usability experts in the world, there aren't a lot of them, they're very specialized, and usually in certain locales. And with -- once again, I don't want to say this in a bad way, I wish there was a ton more manufacturers, and they could all sell a ton more systems -- but with the marketplace, how many can you support doing one usability test a year before you have to get this Ph.D. on staff to do this test and run, maybe, one test a year? The problem with the current manuals and all, that is a core requirement, which means a VSTL has to do it. You cannot outsource it. I can't go out and hire a company that specializes in that type of work to work for me and do it. I have to do it. So, once again, we have a little program area that if we don't address the costs are going to go be prohibitive. I mean that is one area that the costs will go up greatly, in the next iteration, unless we find a way, either to allow the VSTLs to go out and find those experts, or continue how we're doing it now.

MR. HANCOCK:

Thanks, Frank.

MR. WACK:

You just stole my thunder, but I'll say it anyway. With regard to the usability testing and some interesting things about it, one thing, having worked in security, I think that, you know, it seems to turn out that a lot of the problems people have with voting systems that they allege to be security issues, oftentimes turn out to just be usability issues. For example, in the last election, a lot of the allegations of vote switching and things of that sort, in which, you know, people were claiming that, you know, had some far out claims that, you know, code was put in systems to switch votes. And it turned out to be just usability issues, with the way in which, you know, basically candidate choices were aligned on the touchscreen. So, I think usability testing is very important, and good usability testing will probably, in my opinion, get rid of a good number of the things that people, generally, think of, as security issues, security issues in voting systems.

Now NIST, with what's known as the TGDC recommendations that were written in 2007, laid out the beginnings of a usability testing protocol in which, essentially, there was supposed to be some performance metrics and, you know, you'd basically conduct a mini-election, of sorts, and gauge how

accurately people vote on different types of voting systems. If people vote, you know, to a certain accuracy level then, you know, that user interface is deemed to be good; you pass the test. And the estimates of cost for that did not appear to be prohibitive. And one point would be, that it seemed that the manufacturers, once they, let's say, got it right with one particular user interface, wouldn't necessarily have to continue to retest that if that interface is reused on other models, or if it's updated, and the updates are minor, it wouldn't necessarily mean a full-scale retesting effort.

The other thing is, the other point made previously, that the NIST/NAVLAP program does list usability testing as a core competency of a test lab, which, given the relative posity of usability experts, probably is not a good idea. Changing that and allowing labs to contract that out, probably, would result in, perhaps, more usability testing, at a better rate.

Thank you.

MR. HANCOCK:

Thank you very much John. Doug.

MR. JONES:

I'm a bit worried about the hope that the VSTLs and the federal process can solve our usability problems, because, ultimately, ballot design is in the hands of the counties and the state approval of the ballot design. And I'm convinced, after my

experience with elections these last 20 years, that when given a chance, no matter what the technology is, you can figure out how to design a bad ballot on it that will have serious usability problems. And so, I think this is an area where there's an extraordinary job in the hands of the EAC to promulgate best practices in ballot design, because I've seen too many systems that had the potential to be very good, where little tiny mistakes in ballot design had big consequences that you could measure in thousands of votes.

MR. SKALL:

Can I respond to that? We've all been to, I don't know, a half dozen roundtables, and one of the things that came out of that was performance requirements rather than design requirements. And the usability testing that's in the next iteration is performance based, so it is divorced from the design of the ballot. You get to find out, whether in fact, it works or not, whether it is usable. Performance requirements, up front, are a little bit more costly, but you have the huge advantage of having a performance based standard. You're not constraining design. You're not telling someone what to do. And I've heard a lot of discussion over the last hour or so, and there's a lot of contradictory things going on because, you know, I've heard cost benefit analysis mentioned by at least two or three labs. But I guess, my question is, has anyone sat down and put pen to paper and actually done a cost-benefit

analysis? This is -- you don't reduce costs as a one-time thing. You don't snap your fingers and costs are reduced by tomorrow. A cost reduction is over a period of time. Performance requirements versus design requirements, automation versus non-automation, this is all part of the equation. And you have to look at a timeframe of a few years out, you have to look at what the costs are, what the up-front costs are, what the benefits are, and you really have to sit down and do the numbers. So, I guess, my question is, has that actually been done? I know I've heard a lot of talk about it, but have any of the labs sat down and looked at this and come up with numbers?

MR. HANCOCK:

Thanks, Mark. And one other thing I just wanted to respond to Doug, is that the EAC has already begun, and, in fact, is well into the process of assisting in the design. Our Research Department has come up with effective designs for the administration of federal elections research, and part of that is dealing with best practices for the development of optical scan ballots, best practices for the development of full-faced DRE ballots and things like that. So, there's been a lot of that information already out there for folks to use.

MR. PADILLA:

On your question Mark, yes, I've done some of the preliminary research on it at Wyle, over the years, and that's one reason I pushed heavily in the workshop. For the security analysis, we also asked for a cost-benefit analysis to be done, formally. I mean, you're right, we're throwing these words out there. What is the gain? Once again, we've got to weigh the gain. I can do it for my lab and say -- if I come out and buy a million dollar piece of software, and I tell Bernie he's going to pay for it in his first certification effort, Bernie is not coming to me. He'll go somewhere else and not use that piece of software, even if it's a good piece of software. I mean, you've got to weigh it in from our business case, and we've been in business a long time. We can look at that over our business of 50 years, and we pretty much know what we can do and can't do. So, we've done some of that.

MR. SKALL:

Right. So, it's a cost-benefit analysis and it's the business models which clearly...

MR. PADILLA:

It's a business model. You want to find ways to better your -
- I mean we're sitting here talking about how to make us more efficient, take care of these big tests and streamline them. We're looking for ways to do that to work with the manufacturers, to work with the process, but where -- you've got to do a gain on it.

MR. SKALL:

Has there been any thought about the labs getting together to share some of this information, share some of the costs, as far as start-up costs, to reduce the long-term costs?

MR. PADILLA:

I think if anybody looks at the transcripts from some of our meetings at the roundtables, I brought this up at every roundtable that, you know, Wyle would be definitely interested in doing that with all the other labs, the EAC should put it in, that we get together. We've done some meetings with the EAC and some of the reviewers, at times, where we've got together and looked at ways to do test cases. I know we brought the suggestion, instead of waiting on NIST to develop these test cases, let's all sit in a room for two or three weeks and we'll develop them and beat them out. And that would be a cost savings.

MR. SKALL:

So, you would certainly be in favor of it. So, the issue is just ensuring follow-up on this.

MR. PADILLA:

Well you've got to look at it -- I'm looking at it from Wyle's perspective. If we don't make this work, there's no manufacturers out there, the products become too expensive, we don't have a business. It's that three-legged stool, you know. Everybody has

got to pay for a piece of this stool. We're not the only ones that can just make the policies and everything else. We've got to make sure we meet everybody's needs. So we'd be all for that.

MR. SKALL:

Great, thank you.

MR. CUNNINGHAM:

Let me introduce just a little bit of reality here. In 1995, the county I represent purchased an optical scan voting system for less than \$500,000, somewhere between and 450 and 500,000. In 2005, ten years later, thanks to the effort of the Federal Government, our new system cost nearly a million dollars. And I'm sure you've seen the numbers that Kimball Brace has thrown around -- Chris and I were just talking about it -- about the size of election jurisdictions, and most of them are actually very small. There are very few large ones. We are already at the point -- a county of 70,000 registered voters cannot afford a million dollars for an election system. So, you know, my message to you is, you can't escalate these costs any higher, no matter whether it's a lab or whoever, or we're all going to end up stuck with what we have now, and there aren't going to be any manufacturers of new equipment. In fact, counties may gravitate back towards some non-electronic type of system. But when systems begin to cost a million, a million-and-a-half dollars, for counties of 50 and 60,000 registered voters,

this whole thing is going to break down on you, and you've got five years, because that's about the life left in this stuff we're running right now.

MR. HANCOCK:

Okay, I appreciate that. But, kind of, isn't that why we're here? And isn't that what we're trying to prevent?

MR. CUNNINGHAM:

Yes. I guess what prompted those comments, Brian, is it just struck me as to how far what's going on here is from what I do over here, on a day-to-day basis. I mean, I'm pretty distressed by the gap I see.

MR. HANCOCK:

David?

MR. BEIRNE:

I just want, in the spirit of dose of reality, I think it's great for an effort to pursue, you know, what are the costs to the labs and things of that nature, and develop some idea of what are the main factors. But, as someone who is well versed with concerns about anti-trust, I just want to make sure that the EAC is well versed in approaching with caution on how best to assemble that data and serve as a third-party, rather than having the labs do it themselves, with the obvious risk of price fixing and issues such as that. So, the perception, plus the, you know, statutory obligation.

MR. HANCOCK:

Steve?

MR. PEARSON:

You know, I think it's important that we share some real numbers, so that people can, kind of, put this in perspective. This is one release of our system, to date, and we're not done yet, there's been 5,648 hours in the development of a test plan and test cases. That's 5,648 hours, just in the development of a test plan and test cases on our system, and we're not done. There's been over 6,000 hours of functional testing performed, and we're not done. When you total those two, we're right at about 12,000 hours, and we're not done yet. And then you put on top of that you put the documentation review. We have -- there's 276 required documents that we had to submit and be reviewed to the standard. There's been over 2,400 hours applied to some people, some folks in the lab sitting down and reviewing, line by line, all these documents, of which, only a handful are ever used. And then, as far as code review, we've had over 3,600 hours of engineers sitting down and reviewing, line by line by line by line. So, when you total this up, and we're not done, I mean, we're over about 20,000 hours already, and that doesn't include all the hardware testing and all of the other things. I mean, it's really great we're looking at all these things, but there's some -- these numbers are huge. They're

drastic to spend 6,000 hours trying to develop a test plan and test cases for one release. It just seems to just be just out of line, in our opinion. So, I think that we've got to get control of this somehow, and we've got to find more effective and efficient procedures to get systems certified.

Thank you.

MR. HANCOCK:

Thanks, Steve. You know, I think that leads me to a point that we really need to reiterate. What we're trying to do right now, and I'm not negating what you're saying at all, the costs are real, we are trying to baseline these systems right now. There's, sort of, an undercurrent, that this cost will continue down the road forever and ever. Well, you know, assuming your systems are fairly stable and fairly mature, and you're providing, you know, just general updates, software upgrades and things like that, the cost will not nearly be the same, you know. And we're committed to doing that. I think we've said that.

MR. PEARSON:

Yes, I do understand that. But it is important to understand that this is a system that has been qualified many times under NASED, and state certified many times, that we only brought enhancements to. It's not a new system. It was reviewed to the 2002 standard, many times previously, and it's been conducting

elections for years. So, it's not like -- from an ES&S perspective, it's a new system, but from a lab's perspective and a standards perspective, it's not new.

MR. HANCOCK:

We understand that, but we also heard from folks yesterday, you know, that have told us, in fact, that testing is not the same. There's nothing the same, essentially, about what went on before and what's going on now. We need to break away from that. We're not in the past anymore.

MR. BEIRNE:

But does 6,000 hours of a test plan that's about a 40-page document, and test cases to test that, does that seem reasonable? Is that what we should expect?

MR. HANCOCK:

No, and that's what we're here for. We're trying to work through these issues.

MR. BEIRNE:

Okay.

MR. HANCOCK:

Again, this is a new program, for better or worse. It's what we're all stuck with. We are trying to do the best we can to improve the program, you know, and some of these folks up here, Steve Berger and some other folks that have worked in other programs.

And these other programs are still facing issues, 30 and 40 and 50 years in to their maturity, that people are expecting us to be at that same level after two or three years. It's not reasonable, but we're working on it. Jim?

MR. SILRUM:

If we want to control the cost of testing, we need to put the cost in the hands of somebody else, and we need to fall back on what HAVA says, that the EAC shall provide for certification. That means, the Federal Government needs to pay for certification, based on my reading of that. And my guess, my guess is that the costs of certification would go down, if the Federal Government has to pay the price tag for that, because then they would define more narrowly what must be certified, what must be tested, because they're the ones paying the price tag. In running state government, if I'm appropriated \$2 million to purchase a software system that either exists or does not exist, currently, if I have to go out and build that thing, and I have \$2 million to do that, I get what I can for \$2 million. Just because I want the Lexus version of software that costs \$5 million, I get what I can for \$2 million. I know I said this yesterday, but I'm asking for us to think about how we can ask for somebody else to pay for this. If somebody else is paying for this, then we can bring the vendors back into the testing room as well, because no longer are they paying for the testing to be done at the

labs. They can be there and they can assist with the process.

Whatever it takes, I think we need to put that into the hands of the Federal Government.

MR. HANCOCK:

Thank you, Jim. Perhaps it's something that the legislative committees of NASED -- I see the incoming president is sitting here, in the back of the room -- and all the other election organizations, too, can take a look at that. I think that's an important issue.

Yes, Tab.

MR. IREDALE:

There's a number of issues that I want to cover here. And starting with, you know, this is a second round talking about how to reduce costs, and I, sort of, want to start by saying, from the Denver meeting, certain issues were identified, some things have changed. And, you know, Brian, you had mentioned the kick-off meetings. Things like that, definitely, help to try and make this whole process more efficient.

The way I see it is, I can really break down the areas for how to reduce costs into two areas; the areas that the EAC has control of themselves, through the program manual, and then the areas that are covered by the standards. And those are going to be harder and slower to change. And I think the EAC needs to focus,

primarily, on the areas that they have control of, okay, because that's the one that, actually, in the short-term, we can do something about.

And so, focusing somewhat, on those, I'll start with just a beginning approach, and that is that collaborative effort. We talk about -- you know, various people have used a three-legged stool analogy around here, all sorts of different things. In the certification process, the three-legged stool is EAC, the VSTLs and the manufacturers. Right now, and it was said yesterday, it's not three-balanced legs, by any means, because the manufacturer is excluded from many portions of the testing process. We don't get to observe which, again, was made -- and this is in the EAC manual, was made yesterday, as a problem. It's something that the EAC can change. To just allow us to observe the testing, will go a long way to improve efficiency. Okay?

The second area, and again, I think it's been mentioned, is the time for approving, reviewing and giving feedback. ES&S mentioned that it's taken a year for them to get an approved test plan. There's no way it should take a year to get through that stuff. And I don't know what the constraints are on the reviewers, on that process, but there needs to be fast turnaround. And, again, it's something that the EAC has made some changes in that area. We are now having weekly calls during certification that do definitely try

and accelerate that process. But we need to make sure that that is pushing forward, okay? And it's an area that if we recognize it, we can improve that, that will help out.

The other one is, and I sort have seen this, even in today's discussion, varying definitions. People having different definitions for the same thing. Steve Freeman mentioned volume testing, and the fact that there's three different definitions out there. That causes a real problem. The EAC needs to, within their group, decide on, what does this mean. Okay? I don't care whether my definition is -- I can hold it and say, "Well, this is what a volume test is." No, we need to come up with standard language, so when someone says, volume stress test, we all know what's meant. When somebody says, branch analysis, we all know what that means. Okay? We can't have one person thinking, it's this and another person thinking, it's that, because that's when we go into these year long dissertations about what are we going to do. And it makes it impossible for the vendors to come in with systems that are going to meet the requirements.

Another one is the qualifications of the VSTLs, and there seems to be, and I hope, as we move forward there will be -- the VSTLs have been entrusted to do the testing. When they make a decision, the EAC cannot question every decision they make. I'm not saying you have to blindly accept it, but it's to the point where I

feel that the VSTLs don't feel that they can make any decision, they can't do their job. Every time there's, "Oh, I'm not sure about this," they're going to really get scared and not make a decision, and it leads to just, they're struck, they're frozen, they can't move forward. They can't write a new test plan or a test case, because they don't know how this is going to be interpreted. Those all lead to this year-long discussion of going back and forth, trying to get things done. These are all things that are within the EAC's control.

Okay?

A few other areas. And this is more in the standards area, and we've talked about it, and again it was mentioned in the past, and I think some of the 2007 standards started to address this, source code review. Right now, it's, sort of, done at a bizarre checklist, rather than, sort of, an overview, in thinking about how things work. And one of the other areas, just without getting too pedantic on this one, but I just want to stress it so all of you people are aware of it, within the standard the definition of a module within software is totally -- it's convoluted and it is used in all sorts of bizarre manners, such that it's non-usable. And that's one area that we need to come to clarity on. The TDPs that we put together, this leads to major problems. There is requirements for defining interfaces on modules, but when modules get defined as functions, it just all falls apart. And we end up producing reams and reams of

documents to meet standards that are being checked against, that nobody reads, nobody can deal with, and you've lost everything for this volume of data. So, again, that's an area that we really need to focus on.

And it, sort of, leads me into something, again, I'm hearing through the technical reviewers, differing opinions, as to, are we doing a focused approach on testing? In other words, do we sit down and look at a system, decide what it's doing, and focus in on where it needs to be tested? Or are we doing a checklist test? If we're doing a checklist test, nobody is focusing on the critical thing. Their job is to go down a checklist. They are opposite types of tests, and we have to think which way we want to go. My personal opinion is, you'll get your bang for the buck doing a focus testing. Is it going to test every requirement? No, because some of those requirements will be deemed not necessary to test. So we need to decide where we're going.

A final thing, sort of, focusing on some discussion that's happened, today, regarding automated testing and simulation, which are different. Automated testing is different than simulation. Automated testing is something that developers use. If you're making changes and you want to run it against your code, you run automated testing. When you go to do an acceptance test or a VSTL test, automated testing only makes sense if you're going to

be running the test over and over and over and over again, because of the time it takes to set up and maintain that test. Okay? Simulation, on the other hand, is something that a vendor develops, a manufacturer develops, and it allows you to simulate elections; provide the volume data that's needed for that. That type of testing should be allowed. But, again, we do struggle, and the VSTLs did mention this, that there is a struggle between requiring to test on the final software, and being able to use simulations. And there are places, and in some of our software, we include the ability to do simulation in the software. Some people have said that that's a security risk, but it's a tool that's used, for not just VSTLs, but for acceptance testing, for anybody who wants to run any decent simulation.

Leading out of that was also a discussion of standard formats and, you know, the XML that the IEEE has put together, et cetera. The disadvantage and the limitation in that is, that not everybody -- and you go across the states -- if everybody followed the same election laws, then maybe that would be possible. But, when you end up with California and their modified open primaries, you need different data. And, as people change laws, sometimes the only way to implement that is to change your data format. And, that's going to become a huge barrier trying to come up with a standardized system. You can come up with a core, for doing

some basic data inputs and outputs between voter registration systems and election management systems, but when it comes down to the core of it, I don't believe that it's possible to come up with a full standard. Maybe you can design it with some options in there, but it's still going to lead to issues for testing purposes. So, you know, there are real issues on that side.

But, sort of to conclude, the fundamental areas I think the EAC needs to work on, the areas that are in their control, are trying to get the vendor -- allow the vendor in, make sure these test cases that are being put together, are being put together efficiently. There's no reason that the test case for ES&S, or for us, are really that different. The election definitions should be very similar. We shouldn't have to be regenerating all of these test cases. And I know NIST has been working on them, I don't know how much money they've spent on them, I started to take a look through some of them, there's a tendency to want to develop test cases that test everything, rather than focusing in on, test what's important. Okay?

MR. HANCOCK:

Hold on, Tab. I'm going to make you represent everybody.

Sorry.

MR. MASTERSON:

Okay, so your comments led me to several questions, and I appreciate them. I know, publicly, there's been discussion since

the passage of the lab manual, and that section that I know Steve brought up yesterday, and you're bringing up now, about the observation of testing, and I think there might be some value in helping us understand -- and by "us", I mean the entire room -- what do you mean by observation? What do you want to be able to do?

MR. IREDALE:

I would like to be able to have somebody, in the room, watching the VSTLs execute their tests.

MR. MASTERSON:

For what purpose?

MR. IREDALE:

Just to see whether they're doing things properly. Also, as a chance to verify that they are actually executing the test cases, the way they said they would. People try and define the test steps, the test methods as, you know, all the details that are required. We try and review what they're doing before they go do it. But there are going to be some things that nobody thinks about, and then they start doing things that nobody thought that they would ever do.

MR. MASTERSON:

Uh-huh.

MR. IREDALE:

And so, just being able to observe that and say, you know, “What are you doing here? That’s not in your process. It’s not listed here. Why did you decide to do that?” And often, it’s because people will do things, you know -- if something is not documented, they’ll go, “Oh, well, they probably meant I should do this.” It’s things like that.

Just as an example, we ran into a situation where we had specified a security policy that said, “Allow these people.” And they said, “Oh, well, that meant disallow everybody else.” And so, they went and said, “Disallow everybody else.” Well, that wasn’t what it said.

MR. MASTERSON:

Uh-huh.

MR. IREDALE:

And that led to problems. Okay? Invariably what happens, and it’s really hard to give you specifics, but what happens is, down the road, and I think Steve Pearson said this, you know, something happens and you’re trying to trace it back. And since you weren’t there, you have no idea. And often, if we aren’t in the room and then they record down what it said, they didn’t quite record down what the error was, correctly, and then we get this call saying, “Well, you know, I had a problem.” “Well, that was the problem?” “Well, I don’t really remember.” “I can’t help you.”

MR. MASTERSON:

So, is this the product of bad testing, or inexperience, or lack of knowledge of the system? I mean, it seems to me that, and granted, I'm not testing nor am I there, but the documentation, the ability to go back and track that error is something that should be able to be done.

MR. IREDALE:

Yes, in theory, it should be. And you're right, it is probably a combination of all three; lack of experience of the testers, they don't know the systems, they don't, perhaps, know the elections, as well. It could be the test cases and test methods were not quite as explicit as they should have been. It could be that the documentation was not quite as explicit as it should have been. But we don't know which one of those was a mistake. That's our problem, because all we know is, something happened, and we don't know -- it could have been the documentation was wrong, but nobody is going to be able to say that because they don't know what the source of the problem was.

MR. MASTERSON:

So, the discrepancy only identifies a discrepancy, but not the nature of the discrepancy?

MR. IREDALE:

Well, again, sometimes it's, sort of, a consequence of something else and you're trying to trace it back. And, as I said, part of our issue has been clarity of errors, you know. What really went wrong? And that can be lack of experience. That can be just so many things going on. These are complex systems, and to take somebody and think that somebody who has never used it, and is, you know, given a week of training, can sit down and run a system perfectly, it's not real. That's why we work with our customers. That's why you don't just send them out. That's why we have support reps.

MR. SKALL:

Can I just get a clarification? What I think I heard was, you wanted to observe, and now what I'm hearing, I think, is you want to observe and interact.

MR. IREDALE:

No.

MR. SKALL:

No?

MR. IREDALE:

No.

MR. SKALL:

So, how would these problems get resolved? At the end of the day you would speak to the EAC, for instance? I mean to hear

these things -- what I'm hearing is, you need to speak to the VSTLs and talk to them about their interpretation of words and what they're doing. So, how would that occur, if you're not interacting?

MR. IREDALE:

Sorry. Obviously, if you're in the room and you see somebody making a mistake, you may interact and say, "That's not in the test case."

MR. SKALL:

But that's different than just observing. I'm just trying to see where the boundary is.

MR. IREDALE:

Obviously, if you see them doing something that's not documented in the test case, you can, if nothing else, write down in your notes...

MR. SKALL:

But I mean, you can see where that's a threshold difference.

MR. IREDALE:

Absolutely.

MR. SKALL:

Crossing the line.

MR. IREDALE:

Yes.

MR. SKALL:

And that's something...

MR. IREDALE:

Yes, but they are following a predefined case test. And if they're...

MR. SKALL:

Of course the danger is...

MR. IREDALE:

Yes, they should be following the predefined test case. Sometimes what we're finding is, they don't follow their test case.

MR. SKALL:

But you see the danger of the perception that, in fact, the manufacturers are influencing the outcome of the tests, there's, at least, the danger of that perception?

MR. IREDALE:

If we see they are not following their predefined test case, then shouldn't somebody be saying, "Hold it. You're not following the predefined test case. You did something, outside, that it doesn't tell you to do"?

MR. MASTERSON:

Isn't that where proper lab management comes in?

MR. IREDALE:

Yes, absolutely.

MR. MASTERSON:

Quality assurance in the lab?

MR. IREDALE:

Move away from your ideal environment, okay, to a real environment. That's what we are in. We are in a real environment. People make mistakes. I don't care whether it's the technical reviewers, I don't care whether it's you, I don't care whether it's the VSTLs, people make mistakes. If we get to observe and we see a mistake, we might be able to save some money, and get this process moving.

MS. COGGINS:

There is, definitely, value in having the manufacturer available to rule out tester error. There is nothing wrong with tester error, if tester error is caught. And that's basically the issue. That's what I think these gentlemen are trying to say is, there needs to be some consultative aspect that the manufacturer can look at, for tester error. The idea that somebody is in the room observing, there needs to be a balance. And, you know, in my experience, under the NASED program, you know, there are times that, you know, step away from the ITA. The lab has to have a sense of, like, "No, you're in the room as a courtesy. If you misuse that, I'll throw you out of the room, okay? So, back off buddy." Okay? And there are a few people in this room, who -- I had one person who was actually telling me to be harder, and I almost threw them out of

the room, because, it's, like, "No, I'm following the standard. Stop it." So, there is, absolutely, an aspect of consultation that is valuable, in ruling out tester error.

MR. MASTERSON:

Do you agree with the statement that -- the way the lab manual is written, right now, it allows for that consultation, but not the observation. Is there no value in consultation without observation?

MS. COGGINS:

You do need to bring somebody in to look at what it is -- I don't...

MR. MASTERSON:

That's even allowed. It's the observation of the testing, while the testing of the system is going on.

MS. COGGINS:

I think the lab should have the ability to control that. So, if -- I don't object to somebody observing our test, because, perhaps, there is. Maybe I have questions about it. "Okay, we're going to do this. Now this is how we understand the test to be set up." And, you know, Tab is right. You're working off of documentation. You're working off of an interpretation. You're working off of experience with other systems. And so, you're sitting down and you have it in your mind, "This is the way it works." And then, you

start working, and you're going, "Wait, that's not what I'm seeing on this system." And it may be that he walks in and says, "Oh, no, it's because of this and this." In the instruction, yes, that's what it says on the piece of paper, but I just didn't see it that way. So, there are some aspects where there is interpretation, and for the lab to have the license to allow somebody in the room to observe. But you're absolutely right, too, I don't necessarily want that to be their undeniable right, that they can demand to be and observe everything. It's got to be a balance. There's got to be a something that allows us to say, where appropriate, we can have them observing the test. And there are situations, too, where you want to -- is the test as it's being run, legitimate? Are we running it in the method in which this system will be used? And that's part of the process, too, that you may come up with a scenario that just is not going to happen. Now there should be protections, in some cases, that don't let you do certain things, and that's what we need to look for in cases. But there is, definitely, a benefit for the manufacturer and the labs to have some license. Prohibiting observation, totally, is too rigid, that's what I would say. We need balance.

MR. PEARSON:

Both of these folks, I think, they said that very well. We're not there to change the outcome, we're there to be able to react and respond quickly. Many times, we get functional discrepancies

that are written up, they're reported to us, maybe at the end of the week, or whatever, and then we have to go get our QA lab or our cert team, and we can't repeat those. And then, we have to get our developers involved to say, "Let's try to repeat this. I have no idea what they did. We cannot repeat that error that they're writing up." And it could be all it was, was one word was written incorrectly in the documentation, and it was a documentation discrepancy, and not a functional discrepancy. That happens all the time, and we spend weeks and months and hundreds and hundreds of hours trying to unravel these things, because we are not there to see what happened. We're not there to change the outcome.

The other thing I think people need to understand is, in ES&S, there's only a handful of people that have the knowledge and experience system wide, and those are the people that we would like to have onsite. These are not easy systems, and you have to have a lot of election knowledge to use them properly. The analogy we always use is, the manuals are not going to be able to guide an election coder, an election operator through every roadmap, that every state and every election variance that they have. Our manuals are designed like an automobile manufacturer designs their manuals. "Here's the features/functions of the systems. Here's how you use them." But that automobile manual cannot tell you that there's a pothole in this road ahead, and that

you have to look in your left-hand mirror, if there is a pothole there, and turn your signal on, swerve around it, now, look and see if you can swerve back. The documentation can't cover all those things.

The point is, just having us there to be able to observe, respond to any anomalies, quickly, as opposed to -- and we're committed to doing it. I mean we make the investment, have people on site, but having them on another floor, just sitting there, waiting to see if something comes up, is ineffective use of, very limited, and very experienced, and knowledgeable resources.

MR. MASTERSON:

I mean, what's the difference of sitting in the lab waiting to see if something comes up, and sitting in the room down the hall? I would assume you could get more work sitting in the room down the hall waiting to see something, if something...

MR. PEARSON:

What kind of work? Their job is to get a system certified. I don't know what they're doing. They're sitting there waiting for something to happen. But what happens is, errors are made that don't manifest themselves until down the road somewhere. So, when they're like, pulling in results, they go, "Are they all right?" "Well, what did you do?" "Well, we're not sure." You know, that's the disadvantage of having somebody out of the room, and down the hall, or 1,000 miles away. All we're trying to do is, find a way to

streamline and make this more effective. We're not trying to change the outcome. I mean, we have the same goal you do, trust me. We don't want anything going bump on Election Night.

MR. MASTERSON:

And I don't think any of us, having been the one working on the lab manual,, I don't think malice was the idea, more than one perception. And, too, you know, we say, "Oh in a perfect world." Well, in a perfect world, your person may not have any malice, but it's real easy to cross that line and go, "Oh, wait. You're doing that wrong." And I agree.

MR. PEARSON:

That's why you have an accredited lab.

MR. MASTERSON:

But, again, inexperienced testers are more apt to say, "Oh, okay."

MR. PEARSON:

That's not my problem.

MR. MASTERSON:

That is our problem.

MR. PEARSON:

That's the labs to manage that.

MR. HANCOCK:

And Stev, your point was well taken, in that, yes, you have few experienced people, but you want those people there, at the lab. Well, almost invariably, those folks are going to be much more experienced, much more knowledgeable about your system than the testers. And, you know, it's human nature, they have the best interest of your company at heart. And, again, as Matt said, it may not be malice, but the perception could slip into reality. And it's a real issue. We understand your -- and this needs to be dealt with, but I think there are ways....

MR. PEARSON:

So get to the root of the issue and solve the issue. Don't just, you know, throw us out.

MR. MASTERSON:

This sounds, I don't know, clinical, and I promise -- I hear what you're saying, and I think there's probably a good solution that we can work with and come up with. I know that probably doesn't mean very much right now.

MR. PEARSON:

No, I think that NIST understands it. It's in the manual. It's in the handbook. And there's a reason that they suggested that. And when you hear from the labs, as well, that there's benefit, I hope you'll listen. Please. Thanks.

MR. HANCOCK:

We are ...

MR. IREDALE:

Just one final comment regarding this, is part of the reason why ES&S and us are in this position, is because of this problem. And you guys know that. Okay?

MR. BEIRNE:

The Election Technology Council voiced its concerns about this clause within the manual. We offered a suggestion that we felt was responsive to both the needs of perception, but I really object to the characterization that a room down the hall, and sequestering, will be really responsive to the issue of perception. If no one is trusted in this model in which the accreditation is not sufficient enough of a carrot to keep the activities of the test laboratory in check, sitting in a room down the hall is not going to be sufficient either. And I think the one thing that needs to be reconciled is, you know, how this laboratory independence clause is contrary to the recommendations issued by NIST and its operation or encouragement, when working with accredited laboratories of having customers observe the testing process. It is not a situation in which one person is treated as a potential adversary in the environment, but it's a recognition of that customer relationship. And I know that Brian has voiced the opinion that the EAC is just as much a customer as manufacturers. However, the reality is, is that

the customer relationship are those who are paying for the certification. And there is a very real property interest at stake, when we're dealing with a situation in which observation is not permitted. And I think there was some very clear benefit to having observation in the past, to call into question some of the testing procedures. That was a clear benefit. And so, that's something that we have also voiced our concern about, is that if you're not having that observation, then you're certainly going to have to make sure that NAVLAP, or the accountability mechanisms, are in place to make sure that the labs are held accountable.

So, I just wanted to submit that for the record.

MR. MASTERSON:

I appreciate that. I think it's that very fiduciary relationship that causes part of the concern, and it's not by the choice of the manufacturers that that relationship exists, nor by the labs, I don't think. But it is the reality of the situation, right now. And to suggest that being in the room while testing is going on, and being down the hall are the same thing, I don't think is correct, but...

MS. SCHAFER:

From a perception standpoint, it is.

MR. MASTERSON:

I don't agree, because the lab has better control of the situation and the interaction. Now again, I think we hear what

you're saying, and we can talk about that. But again, I think perception and the ability to control the interaction when someone is down the room, whatever, being able to stop the testing, and have that interaction versus when it's going on, I think, are two very different things.

MR. IREDALE:

Just very quickly. Right now, since nobody is observing the lab testing, other than the VSTLs, who is making sure it's being done right? We are where we are. As I said, we spent how many millions of dollars, and there was a problem, because nobody was observing. That's fundamentally a flaw. Okay? The number one thing, the number one thing that can be done to improve efficiency and lower costs in certification, is to allow the labs to observe. That's the number one thing. Okay?

MR. MASTERSON:

Okay.

MR. CEGIELSKI:

Good morning, Stephanie Cegielski, Colorado Secretary of State's Office. We have a unique perspective, because we were sued in 2006 for not having good testing. And one of the claims in that lawsuit was, that we were unduly influenced by vendors and counties. So, we created a new program. We completely closed off the program to everybody -- and Steve can really speak to this

because ES&S took a big hit from Colorado on this -- we closed it off to everybody and said, "Nobody is going to come in here, because we're not going to be unduly influenced." And in the end, it hurt. It hurt Colorado, it hurt our counties, it hurt the vendors. There is value to allowing the vendors to observe the process. Not be involved in the process, per se, with a hands-on, but let them watch it, to say, "You know what? ES&S has kind of a quirky thing with their optical scanners, where it takes a certain touch." Not that ES&S is going to go in there and do that, but they have the ability to say, you know, "I don't want this to adversely affect us, because we can say, right here, today, without wasting time and money, that there's a process here." And it's not something that's going to be in the manual, because it's something that they go out and they train their customers on. So, there's value in that. And, as we move on to our next round of certifications in Colorado, we've said, "Okay, I can't have you in here, touching, but I will open it up to have more interaction with you." So, I mean, I understand exactly where you guys are coming from with the perception, with the undue influence, but we learned the hard way, twice, that you have to have that interaction on some level.

MR. MASTERSON:

Do you have written procedures, now, for how to handle that interaction?

MS. CEGIELSKI:

We're working on that as we move forward.

MR. MASTERSON:

I'd be interested just to see those.

MS. CEGIELSKI:

And that's one of the things. I mean, we learned -- we went through four systems in nine months, and learned a lot. So, I'd be happy to share with you guys whatever we have.

MR. HANCOCK:

Thank you. Sorry, Doug, that was the last question.

Actually we're past our break time.

I think we understand what you're saying. We hear you and we will work on this issue. However, to say that your companies are where they are, right now, solely, because of that issue, is stretching the truth more than a little bit, and it's not really helpful, particularly.

Let's bring us back at quarter after, if we can do that.

[The meeting recessed at 10:51 a.m. and reconvened at 11:14 a.m.]

MR. HANCOCK:

All right, we'll get started here. Thank you. All right, before we introduce Merle King, our guest speaker, this morning, since we

have the microphone, we're going to have about two or three more minutes to finish up with the discussion that we had before the break. Bernie Hirsch has a few words, and then a couple of our reviewers have a couple of words before we move on. And, Merle, thanks for being indulgent.

MR. HIRSCH:

I feel the growing pain of my other competitors, and although we did spend about ten times more this time around testing, than the last time, we've probably spent ten times less than they're currently spending. Now part of that is due to the fact that our systems are simpler, and that's not by accident. There's certainly nothing wrong with having a complicated system, but the fact that we do have a simple system, made testing a whole lot easier. So, I think, first of all, anything that can be done for design in systems, changes that could be made at this point, certainly to a 2002 system, the more simply it can be presented and explained, the better. And you'll have a lot easier time getting it certified. We've been in as many as a dozen states. Just because you have to be in multiple states, doesn't mean that you still can't keep things simple.

Having worked with Carolyn at iBeta, and Kevin and Gale, and the other folks over there, for a couple of years now, I can tell you that communication with your VSTL is, probably, the most

important aspect of keeping the costs down. And I don't know the direct experience of some of the other vendors that they've had with other VSTLs, but with iBeta, Carolyn has sent me a daily email status at the end of every day, to tell me what exactly they did that day, what they're planning to do the next day, what are any issues that are before us. And then, I could always call Carolyn and ask her questions about what's happening. And, at any point that they had issues with their testing, a lot of times, if it came to a screeching halt, they'd be on the phone with one of us within the hour, you know, asking for an explanation from us. It was still an independent process, we weren't in the room with them, but I do feel like we had the opportunity to give feedback, and to give suggestions, and to hear the issues, and find out whether this was tester error, or this was really a problem with our software, or our hardware, in being compatible with the guidelines.

And that's one thing I did want to say, I said it some yesterday, that we are in a new world, and we're moving forward, and it's not business as usual. And so, you cannot let the people under you -- if you are, say, a director of software, like I am, or you're in charge of a program, you have to be more proactive with the programmers that report to you, with the Q&A people, to let them know it's not business as usual; that you have to comply with what the guidelines say, if you're going to certify to those. And so,

several times, we pushed back with you guys, on several issues regarding Spanish, several things that we thought, well, how should we count the undervote? And so, we put in requests for interpretations and we waited, like a month, to get a review of that, and decisions, and we had to put the thing together. Carolyn had to put the paperwork together. And it, basically, came back, "Well, you know, this is what the guidelines state," and we ended up having to make the change we would have had to make a month ago, except now we delayed by a month. So, we, very quickly, decided, as much as possible, not to fight back against the system, because this is what the world is. And so, it became easier for us to catch the problems, earlier in our development, and design our changes to the system, rather than try to make the system alter to us. Like, there have been suggestions, "Well, we should have the government for testing." Not a bad idea. We should change some of the procedures in a major way. Every time we introduce changes and instability to the system, it adds more cost. I would just suggest to the vendors, as much as possible, to comply.

Another way to save money, is to test to the '05 standards. The '02 standards expired at the end of '07, and in order to make a change to your system after you're certified, you have to recertify to the '05 standards. Well that duplicates effort,, that costs more money. I know a lot of people have already applied for the '02

standards, and they're, sort of, stuck with that, but as quickly as you can start thinking about '05 for your system, the better off you'll be.

Keep your coding standards consistent. We had several outside vendors doing coding. We had several inside employees coding. Everyone seemed to want to do it what they were most comfortable with. When it came time to code review, you know, all these divergent styles didn't work. So, you have to be really careful as you're doing your coding, and as you're making your changes, and you're asking your programmers, you're going through your code review, or your functional review, and you have to make a change, every change has to be done to those standards. And, maybe, under NASED, those standards weren't as enforced as much as they are now, but they are certainly in force, now. And we are very proud that every change that we made to thousands of discrepancies, not one those changes came back and needed to be redone again, because we knew what the environment was. And so, we were very careful that all of our comments were correct and, you know, sort of crossed every "T" with the changes that we made, in order to try and get through certification.

The last thing I'd like to say is, as you're working towards certification, you have to expect scrutiny. You have to be working with the idea that what we're doing is very visible. All these things are going to be published online. The entire world is going to see

the results. So, everything that we do, we have to be very careful to do it right, get it right the first time. We've had growing pains. I do think the old system was not nearly as rigorous as this system, and there's going to be a one-time cost of getting there. And I hear what you're saying about, you know, after we're certified, it's going to be much easier. It's going to be much easier, because we've already, basically, gone through the big pain. That's why it's going to be easier, not because everyone's attitudes are changing. We all have to face reality, but the reality is, get it right the first time, and you'll get it done fast and cheaper.

MR. HANCOCK:

Thank you, Bernie. Dawn?

MS. MEHLHAFF:

I guess I just wanted to address the issue that came up before, in terms of the comments about the delays in testing, resulting from discrepancies that were traced back to documentation issues. And I don't, necessarily, expect any of the vendors to actually answer this, but I just wanted to put it out there, that as a manufacturer, wouldn't it be prudent to test your system against your own documentation, to make sure that it worked, and that your documentation is appropriate? I mean, doesn't that make sense, to try and mitigate those issues that could possibly come up in the lab? And I mean, none of you are shocked by that

statement. Those of you who have tested with me in the past, you know that that's come up with me in the past, in particular where I've gone through your procedures, I've tested to them, and it didn't work according to your procedure, and the response has always been, "Well, it's a documentation issue. Let's do it this way." And I understand that. However, you're not always going to be there, especially for those end users. And that documentation is what they have. And so, as a manufacturer, I guess my issue is, shouldn't you be making sure that your documentation is correct, and to try and help mitigate those issues, which would then not create those delays with the ITA. So, I mean, that's just -- that's kind of my perspective. So, when I heard that, as most of these discrepancies were documentation issues, okay, then shouldn't those be fixed before they get through the testing process?

MR. HANCOCK:

Anybody else?

MR. SKALL:

Yes, please. Do you want to go ahead and respond first or shall we?

MR. HANCOCK:

You finish, and then Steve.

MR. SKALL:

Yes, I'd just like to make a couple of points. I certainly hear what you're saying, and I think we all agree that there's a way to solve this problem. We have to do it right, we have to be above board.

What I keep hearing is an incorrect statement, and I think Jeannie Layson said it correctly, yesterday, the VSTL's job is not to certify, the VSTL's job is to test. Testing implies that you come up with a pass or fail decision. These have to be objective tests and they have to be done independently. The EAC then looks at the results of those tests and makes a decision to certify. So, just saying the VSTL's job is to certify, the manufacturers will help them, is really not the right thing to say, because that's not the right way to test. You can't assume certification. Certainly, most systems get certified, but the whole idea is to find out whether the system is worthy to certify. I also heard a statement like, "Well if the manufacturers are in the room, they can make sure testing is done correctly." The manufacturers who are being judged can't make the decision about whether the testing is being done correctly.

So, I hear everything that's going on. We do want to reduce the cost of testing. I think there's a way to do it, but we have to be very careful. There is a separation. This is objective testing and one needs to make sure the system is, in fact, working correctly, before a recommendation is made for certification.

I just also want to reemphasize Dawn's point, that part of this testing is to test the documentation. So, just saying, "I can explain what I meant," is okay. It helps resolve the problem, but, in fact, if there's a problem with the documentation, we need to correct it, so it does stand on its own.

So, thanks. I think Steve would like to say something.

MR. PEARSON:

We totally agree with you, Dawn and Mark. We are committed to having perfect documentation. We have tens of thousands of lines of documentation with our systems, literally, and we do test those. We go through all of our quality assurance testing. We test all of the documentation. There are times, though, and it could be something as simple as a word that, maybe, was written with the wrong phonetics, that has a different context, and the system is used in a different way, or we make errors. We miss stuff, but we make every effort to try and catch every documentation change.

The example I used was not an excuse. It was just to show you that a simple documentation, by a missing word that got looked over when you were testing it, for whatever reason, or interpreted differently, can result in a functional test failure that cost us, probably, thousands of dollars in the test, weeks to resolve it, and we have engineers trying to recreate the example that wrote the

test up. We can spend weeks and months trying to resolve it. Unfortunately, you know, that's the case. So, I think if we're closer -- we're committed and our people are equipped, so that when we encounter an error, we can make that documentation change. We want to make it, real time, right there on our systems, so that they can get incorporated into the next TDP release. I mean, we're committed to that. So, I mean, it's not like we take the documentation lightly. We don't like the voluminous documentation, because the majority of it isn't used, but we think that there are core documents that absolutely need to be in step, you know, with the functions of the system. It was just as an example, but we don't take that lightly, by any means.

MR. HANCOCK:

Thanks, Steve. Anybody else before we move on? Steve.

MR. BERGER:

Yes, I want to bring up a couple of things that I think are something of 800 pound elephants. And I think this is an easy situation to create ill will, but let me say, in my observation, I think we need to ask ourselves a question. How do a lot of intelligent, well intentioned people, who deeply love this country, get into this situation we have? What are the dynamics? And, I think, it goes deeper than that. Having said that there's an 800-pound elephant that we're all aware of, and that is, we are going through and

bringing up this process, in the face of a lot of election experience, for the systems that are already in the field, and some of that is not good. We've got credible reports of things that happen in elections, and that raises question about the systems involved. We also have a number of research studies all over the landscape that raise questions. As we look at the testing, we need to make sure that when this goes out, and it will be public, and when all of our work will be scrutinized, that it stands the test of, do we answer that body of experiences out there? Can we stand behind the systems we put out and say, "We are fully aware of all the information, we've looked at it, we've identified the problems, and we haven't let them come through again"? Or, you know, "They just weren't there in the first place."

I will say, and I think, again, this goes to the size of the industry and the underlying nature of it, we often have seen systems that, essentially, are finishing their development in the certification process, or where the pain of addressing a system design issue is so much, that they try and bring the system through. Steve, I'll pick on you a little bit. A little while ago, you said that these systems are not simple systems, and you have to have a lot of elections knowledge to use them properly. I think the numbers you gave to properly be understood, have to be received as understanding that's the cost of testing a very complex system, that

can be used in a lot of different ways, and making sure that it can't be misused, in a completely acceptable way of managing an election. That's kind of an underlying dynamic that I think we need to get our arms around, somehow.

MR. HANCOCK:

All right. Thank you, Steve. All right, Merle we apologize for putting you off a little bit here, and I think I owe you a beer or something for that, don't I?

DR. KING:

That's not a problem for me. Well, thank you. I'm Merle King, I'm with Kennesaw State University, and I've heard a lot of things this morning. I heard, if we get the Federal Government involved, it will be cheaper. I heard vendors call for more transparency. And in the theme of the theater of the absurd, I'm going to talk about how universities are cheap and cooperative partners to work with.

How many of you have been at Kennesaw State, to our Center? I'm just kind of curious. All right, a lot of people have been there. John Faumuina is here from American Samoa. He's the talking chief of the village my daughter lives in, so, I'll have her send you a tin of pisupo, I guess, when I get back home.

Anyway, this topic comes up, frequently, when people come to visit the Center, and they say, "How can you make this happen in

other states?” And, frequently, we talk with other universities. We’ve talked to the guys from Indiana. We’ve talk to people from Texas and some other states about what this partnership looks like, from the university perspective, but I think this is the first time I’ve ever tried to explain what it’s like to work with a university in voting system administration, to election administration folks and others. So, this will be, kind of, a first cut of this explanation for me, and hopefully, there will be time for some questions at the end.

One of the driving questions, I think, that drove Brian to ask me to put this presentation together, is mitigating the cost of state certification. And what we do in Georgia, is, certainly, one way to address that, and I want to talk about how that way may be adapted to other jurisdictions. And one of the first questions, I think, that needs to be asked is -- already election administrators are burdened with the maintenance of very complex relationships. And, when you look at network theory, as it applies to communications, regardless of the content of what’s moving to the communication channels, just the maintenance of the communication channels takes overhead. And we know that election administration folks, at the state or the county level, already have a very complex set of relationships to manage. So, the question would be, why add one more? Because, if you add that one more, and it doesn’t add value to the processes,

particularly, as it relates to testing, it's not only not going to bear fruit, but it's going to diminish your effectiveness, and your ability to apply resources to the other relationships that have to be maintained.

So, what I want to talk about in my presentation is, just briefly, what we do at the Center, but more importantly, understanding what it's like to work with universities in the context of these kind of programs, what makes universities unique, things that can mitigate the cost, and the uncertainty of testing voting systems, how you have that first cup of coffee with the university, to break the ice and then, finally, choosing a partner. How do you identify an appropriate university to work with?

So, the formation of our Center began in 2002, and it started with something we call, acceptance testing. I think, most of you are familiar with that process. It means confirming that the voting system unit that's delivered to the county, is precisely the unit that was tested during state certification. In Georgia, right now, we've got 26,200 touchscreen units, about 620 optical scan units, and periodically, we call it "the rodeo," we go out and we touch every one of those, we acceptance test them. What I want to do is talk about how that feeds into state certification testing. We also do auditing. In the rollout of the Center, we audited vendors'

warehouse, audited vendor invoicing. It gave us some insights into the business practices of the vendor.

We're a university and we do training. Training is very, very important as a build-up to state certification testing, because as you do training on a system, you begin to identify what are the common problems that your users keep having with the system. If you're getting constant requests for a specific type of training, that may lead you to the identification of a deficiency, in either the documentation, or a deficiency in the organization of the system that can be addressed in your next evolution of the system.

We have a call center. The call center collects, on a typical Election Day, maybe, six to 800 phone calls. We triage those, we identify the themes, the trends within those calls. That factors back into both acceptance and state certification testing.

We do ballot building for 126 counties. We check the ballots for the other counties. That has an interesting impact on your experience level for testing. In 2008, we built ballots, supported the elections for, I guess, about 800 elections in that time period. Georgia has a run-off, so we had two statewide run-offs in that same period of time. So, in a relatively short period of time, your staff gets a ton of experience in what it's like to administer an election.

We picked up an electronic poll book. That's a very complex process of integrating the state VR system off a mainframe, through some middle-ware, onto electronic poll books that interface with the voting system, and then finally server support. And then, we have this clause in our contract with the Secretary of State, whatever else comes up and needs to be addressed.

So, one of the things, if you're looking at partnering with a university, to support state certification testing, is, that there are a myriad of activities that may be done at a university that can improve the expertise, improve, kind of, the pervasive view of the system that that university team can have in looking at the issues that come up during state certification.

One of the things that I do, like, to remind my colleagues who work in the private sector, is, universities have been around and have survived a long, long time. When I talk to, again, with my colleagues in the private sector, about what they call long-range planning, universities really do have 20 and 50 year plans. We really do think that's going to happen. And, one of the things that I know about my university, that I don't know about Home Depot, UPS, all the other Fortune 500 companies that are centered in Atlanta, is, my university is going to be there in 50 years. And so, there's this tendency to think long range, at universities.

And, there's also a misperception, I think, about the culture within universities. I think, externally, many people feel universities to be very liberal. That could not be further from the truth. We are "the" most conservative institution. And if you don't believe that, sit in on faculty debate over curriculum change. We are incredibly entrenched organizations, but we're also adaptive. We know how to survive. So, a part of dealing with a university, is, I think, understanding the overall culture of universities, what they value, and we'll come back to that in just a moment.

So, at a university we do higher education, whatever that is. University means broad and perspective. So, they're kind of complex places, and I'll talk about how that complexity can create problems when you're trying to work with a university. We are very compartmentalized. What we do in a college of science and mathematics is very, very different from what's done in a college of social sciences. So, the behavior of a political science department may not look anything like the behavior of a computer science department. They have some commonalities. But, universities are organized by colleges in identifying the right interface for the kind of project you're putting together becomes important. Universities are doctoral granting. That means, we've got research going on, and we'll talk about some of the implications of that. And it says,

essentially, it's a collection of scholars, people who do research, and a collection of people who teach.

One of the things, when I orient new faculty to the university, is, I always remind them that universities are wonderful places to work because we have an incredibly small number of rules that govern how we work. They are not great places to manage work, because we have an incredibly small number of rules. And what that boils down to, is, virtually, everything is negotiated. Workload is negotiated. Things out of the private sector you may take for granted, about how to direct the activities of subordinates, don't apply to universities. Everything is negotiated. It takes a lot of time. But again, that is why it's kind of fun to work there. But when you're talking to university administrators about the rules, you will quickly get a sense that there's a lot of fluidity in how things are done, and there's a lot of want-off deals that are cut between universities and external contractors.

There's about three different flavors of universities. Two, I recommend highly, state and private. Proprietary universities are a different animal, and what you should keep in mind, if you choose to work with a proprietary, a privately owned university, is, their first mission is to return profit to shareholders. And I'm okay with that. It just makes it really quirky when you start to talk about the public

good, and some of the issues that come up in election, when you're dealing with a proprietary university.

State universities, that's also a little bit of a misnomer. If anybody in here works -- Doug I think you work for a state university -- we now use the phrase, they are not state supported, but they are state sustained. And even, state universities have a sharp need for external funding, which used to be, primarily, the private universities, but any state university will be very receptive to discussions of grants and proposals.

Land grant universities, there's at least one in each state. These are universities, that, in their charter, have a service obligation. And that may be something to look for. When you're looking for a university that values service -- which is, essentially, what we do at Kennesaw State, some research, but mostly service -- that is in the charter and the mission of those universities, not necessarily in the charter and mission of what's called an R-1, or a research one, university.

They are very, very hierarchical. When you're looking at who does what in a university, the faculty report to the chairs, the chairs to the dean, the dean to the provost, the provost to the president. But, who does what, in that chain, can be very distinctive at universities, and one of the things you want to know is, who does the fund raising. And, in a university, it used to be the

presidents, primarily, did the fundraising. That's been pushed down, and right now, you very frequently find that the deans are responsible for external funding in their colleges. Those are the guys you're going to talk to about grants; not necessarily faculty, not necessarily department chairs. So, understanding who does what in a university is important.

Another thing that makes working with universities interesting, is, the concept of the principal investigator. And, it would, I think, surprise many people who don't work in universities, that your contract with a university probably says -- in our case, it says the Board of Regents or it says Kennesaw State University. But in reality, at the operational level, the contract is managed by somebody called the PI or principal investigator. What's important about that is, that when PIs move from university to university, they typically, take their grants with them, and that's a common practice in the university environment. The implication of that is, if you're a dean and you're trying to encourage your faculty to do grant writing and research, you have to permit that. Otherwise, the faculty will say, "Well why should I do it? Why should I be engaged? It's not a normal part of a faculty member's activity." So, understanding the term of PI and co-PI, and what that implies, in terms of the permanence of your contract with that institution, and possibly the flexibility of moving it to other institutions.

Universities charge indirect costs; that's overhead to administer. That will vary, everything from 50 percent of total costs of the project, down to ten percent, or they may be waived in certain cases. But those are negotiable, and that's, certainly, one of the things you want to talk to a university about, is, negotiating costs, and then lawyers. You got them, we got them, everybody has got them, and every one of them feels like they need to add value to the process. So, that adds time and effort to the overall process.

And then, finally, I want to talk quickly about faculty research and tenure and the implications. Faculty work is, typically, episodic. Faculty do not allocate two hours a day to this project, two hours to the next project, two hours to the next project. It's not efficient. What they try to do is to cue up the work. And if the work that you're laying out for the faculty member does not allow them to compress it, and do it in efficient increments of time, it's going to be very difficult for them to schedule that into what they do. Faculty, also, are very adept at leveraging the labor of other people, and those other people, we don't typically give them names, they're called graduate students, until we get to know them and see if they stick around. But graduate students and staff do a very large amount of faculty work -- and that's something else you should

appreciate when you contract with a university -- how much is being done by faculty, how much is being done by graduate assistants.

In the election area, I know when the guys from Indiana came up and we were talking to them about some of the perception issues of universities working on projects, we asked them, did they envision allowing non-citizens to work with election data. And, technically, I see nothing wrong with that, but the perception of that may be something that has to be managed in the jurisdiction. And so, understanding that many universities have large international student populations, and if you're in the sciences, chances are, your graduate students are international students, that can be a factor.

Faculty work when they want to. Enough said. How faculty work is evaluated is very, very subtle. And, as a department chair, I've struggled for years of explaining to faculty how their work is to be evaluated. Grant work, typically, what faculty want their grant work, the kind of work that we do at the Center, evaluated as, is, did they bring in the money. That's the only criteria that they would like to be applied. And so, discussing with faculty about the metrics, the quality of the work, work product is a discussion you would not think would need to be had, but, definitely needs to be had. Professorial rank has a lot to do with how faculty work. People -- junior faculty work harder than senior faculty. Senior

faculty work smarter than junior faculty. So, looking at the professorial ranks of the people involved, can be important.

There's this big umbrella that we work under, called, academic freedom. It's a wonderful, wonderful privilege that gets abused frequently. Essentially, what academic freedom permits me to do is, within my expertise -- that's the important thing -- within my expertise, I'm entitled to express an informed opinion, without fear of retribution by my institution. That's what academic freedom means. But it has lots of permutations, and one of the permutations is the publishing of research. And, I know many of you are familiar with issues where research projects have been initiated, the faculty involved want to publish, and then they go back and they look at the non-disclosure agreements, they look at the contracts. And, understanding the faculty member's expectation of academic freedom, up front, is important.

Another problem that I see in university contracts is the arithmetic that deans and department chairs do on calculating faculty time. Faculty time is, usually, sold in thirds or halves of that faculty member's load, and it's not uncommon to take a faculty member, and parcel out their time in one-third, one-third and one-third, with the illusion that that is now only a full-time job. In reality, if you've got a faculty member with a third, third and a third appointment, they're working the equivalent of two jobs. And you're

going to see the quality of work coming back on your work products may reflect that. So, one of the things that you would want to explore with the university, in partnering, is, am I buying full-time faculty, am I buying full-time staff, or am I getting increments of people's time? And, it's even worse on staff when you're buying increments of staff time.

Academic battles are -- one of the things you don't have to worry about faculty, is, we fight all the time, so, having two or 300 activists in the cue after us, really isn't that unusual. But, there's a quote that I love to share, a faculty member had it on his door for years, "The reason that the battles are so vicious is the stakes are so small." Faculty love to debate. It's part of the culture of the institution.

There's another cultural thing, and I thought about this last night as I was watching the Governor of Illinois do his last press conference, at least for awhile, is, how culturally we've, kind of, blurred the distinction between fame and infamy. It's, kind of, the same thing now. And, with faculty, that's something that you want to talk to the faculty that are involved on a project, is that they know the difference between those two things. And I'll come about that in just a moment.

The rules of engagement; understanding how you debate things within a project, how you resolve the debate. In the

academic circle, debates have been going on, literally, for hundreds of years that are unresolved, and in the work that you do in certification, you need resolution.

This is another thing. If you work in the academic environment, the term “multidisciplinary” makes your skin crawl. What it means is overhead. It means burden. It means infighting. It means discourse. Interdisciplinary talks about a kind of a unifying approach to it. So, you might think that this is a distinction without a difference, but in universities -- when you come to a university and say, “I’m thinking about putting together a multidisciplinary project. I want some political science guys, I want some statistician guys, I want some computer science guys,” just look at the look on the dean’s face, because going back to that, everything’s negotiated, very difficult to put together multidisciplinary teams. And my analogy is, to the outside world we all look like ants, but we’re ants from different nests, and we will fight when mixed together.

Staff is an important consideration in running a center for election systems. And again, staff don’t have the same work rules. You can direct the work of staff differently, you organize the work differently. But, again, universities will often try to parcel out staff time. And you run into that same problem if, in your contract, you’re contracting for one-third of the time of a server administrator,

that's not a good thing. I'm a fan of people being wholly committed to projects.

Understanding the research that universities do, and often, they will classify the work that they do for you on projects like certification testing as research. And that, basically, means we're adding to the general body of knowledge applied, means we're looking at specific issues that have practical application. But note this, that in most universities, the definition of research means it must be peer reviewed. And so, if you are talking to a university about a research project and then you concurrently drop in an NDA that requires them not to disclose the research, you're not talking about research anymore. You're talking about something else, and that something else is important to discuss at the very beginning of the project.

One of the problems that we face in the election administration area is, publication of research is venue driven, and what we often see in academic environments is that since there is no journal for election administration, where do you publish your results? So, what you have a tendency to do is, you begin to look for opportunities to publish and then you coerce your research agenda to support that publication. And what that means is, in the vernacular, if you're a mechanic and you only know to use a ball-peen hammer, that every problem is a hammer problem. If your

venue to publish in is operations management, then you're going to transform every election issue into an operations management issue, so that you can get the research publication. So, understand that there are restrictions about where faculty can even publish research, if you give them the permission to, and understanding the difference between a service that you're contracting for and a potential research agenda. The last item in research is that universities are heavily scrutinized on how they use human subjects. So, if you contract with a university to do usability studies, you want to ask them have they completed their internal review board documentation for the use of human subjects. And, there's good reason that we're required to do that. There have been a lot of abuses of human subjects at universities in a lot of different ways. I guess you saw Ghost Busters, right?

And then, tenure. How does tenure impact this? For non-tenured faculty, that motivates everything. And one of the ways that you will see this, when you negotiate with the dean for a project at a university, and he shows up with a bunch of young looking guys and gals, they're all non-tenured and they're just hoping that this project will bring them favor in the dean's eye. But, what they have to be assured of is that this work will be valued towards consideration of tenure. A lot of people don't know, if you're not in a university environment, tenure is often perceived as life-long

employment. From a faculty member, what it really means is you're up or out. If you're not tenured at the end of your probationary period as an assistant professor, then you're terminated from the university. So, faculty pay a lot of attention to this. And what you look for are faculty in what we call the tenure run. That is when they're in the tenure run they're serving on every committee that they can get appointed to. Enormously time consuming, they're over committed, they're stressed out, they're highly motivated, but they're over committed. So, identifying kind of the professorial status of faculty can be insightful.

So, what do universities bring to the party? First, we've got a lot of really, really smart people. Really smart people. Many of them students. We bring an independence to the process. That academic freedom gives us the opportunity to speak our minds appropriately, freely about what we do and it can give credibility to the testing process. Another thing we have is continuity. Again, going back to my earlier observation about how long a university will be present, the Center for Election System we've already spanned two administrations at the Secretary of State's Office. We hope we span additional ones into the future. But it becomes a repository of the corporate knowledge. It becomes a repository of how did we do these tests in 2002? So, it creates an opportunity for continuity. Our stability becomes the vehicle for that. We're

also relatively flexible. Everything we do at a university is done in an increment of time called a semester or a quarter. We start the clock over every increment of time. So, as long as that time is coordinated with projects coming in from the outside makes it relatively easy for us to bring new employees online. Universities hire people all the time. We're very good, we have got very efficient HR departments to do that. And then, finally, the reputation. The reputation of the institution can bring more credibility to the testing process. I've spoken about universities, but I'm not convinced, and I've talked with Juanita Woods about, maybe, some things that might occur in Texas, that a community college for some of the stuff, may be just as appropriate, depending on the kinds of services. So, I'm not convinced that there's a one-size-fits-all, and I would encourage every jurisdiction to look within the jurisdiction for those resources.

So, how can this impact the mitigation of testing of voting systems? I think the first thing to do is you've got to have an assessment of where you are now. Are your existing model and your protocols for testing complete? Because if you're going to contract with a university to do portions of the testing regiment, you need to make sure you know what it is you're going to be contracting for. Are they sufficient? If they're not sufficient, getting that statement of work prepared before you go into the process, it

will not get clearer in the process. Universities are notorious for coercing projects into their own agenda. So, the more ambiguous your approach is, the more ambiguous your RFP is with the university, the more likely it will be transformed into the research agenda that the PI and the co-PIs of that project had hoped for. Does the model lend itself to partitioning tasks, and then the reintegration of those results into the model? We, currently, look at -- our testing as an integrated hole we would have trouble partitioning up ours and parceling out, for example, the usability piece. And again, one thing I did want to mention, because I heard that brought up, universities have an enormous diversity of people at them. In fact, at our Center, for about a year, we had, one of our student assistants was vision impaired, and we used him in our state certification testing. We used him to help validate some of the usability models. And, should Georgia be required to go to minority language on the ballot after the 2010 census, we'll be looking for Hispanic students who can assist us in that usability testing. So, that's a neat benefit of having that kind of diversity on campus.

What are we good at? We've got smart people. We have a fairly flexible organization. We have a lot of continuity. We're good at designing experiments. We're good at doing research. We're good at publishing. We're really good at "what-ifying." One of the knocks against academics is, we will debate how many angels can

dance on the head of a pin. It's the nature of what we do. When you sit down with a bunch of academics to do "what-ifying," it can be exhausting. It exhausts me, even with my own staff, because there's a lot of satisfaction to be taken in demonstrating that you know so much about a subject that you can conjure up all of the outlying cases to it. And then, finally, what we're really good at is organizing and retaining knowledge. And a part, I think, of what's important in this testing process is that we continue to learn from what we're doing right, continue to learn from our mistakes, but not reinvent the wheel every time we have a new change in system, or new legislation come forward, et cetera.

So, how do you have that first cup of coffee with a university or a college that you want to do business with? First, look at what's around you. Universities and colleges, they're everywhere, and I think many of you would be surprised how many have campuses very close to your offices. Certainly, we know where the flagship institutions are in our state, but look at the train. Look at who's around you. Research that university's reputation and mission. If you look at what's called an R-1 or an R-2, research one, research two university, you will usually see, in their mission statement, three words, "teaching, research and service." And what you really need to understand is, it's research, teaching, service in that order. And so, if you're going forward with a service expectation, make sure

you understand what is the mission of that university or that college, and does the proposal that you're about to put on their desk, the RPF, will it be sustained? Identify the appropriate contact person. Is it a dean? Is it a chair? Is it a faculty member? Is it a researcher at the university? Have a cogent explanation ready. I can tell you, that when you approach a university with the kind of work that we do, most of them aren't going to get it. They're going to need to understand, "Why would you want us involved in this"? So, make sure that you've thought through an explanation of why you may be approaching a university for a research project or some other level of service.

Timing is important. Right now, universities are struggling with -- if they're state funded, they're struggling with budget issues. Summer, everybody is gone. In the fall, everybody is rolling out new stuff. The best time is, really, in about a month. February, March, April are usually the times in which everybody is getting -- they've just done their own performance review and they're trying to get together initiatives for the coming year. So, the timing, right now, is pretty good for that. Google that university and the faculty that might be involved in the project.

I'm kind of old school. I've been at the university for over 30 years now, and so, I sound kind of like an old guy when I talk about some of the new trends that are occurring, but one of the things

that I've noticed in the CV of faculty, is, they will now list their media events. And that's really weird. I come from a curriculum vitae, is where you list your lifetime accomplishments in the academy; every course that you've taught, all the committees you've served on, research projects you've developed, a list of all your publications. But I've started to notice that a lot of new guys list all their media events, and I would think -- and my colleague from the Secretary of State is down there -- I think, you know, if I told Wes that I'm doing an hour interview with NPR after this session today, his pulse would go up to about 150. So, what you're looking at on the CV is what drives these people or motivates these people? Are they academics? Are they service motivated? And maybe, you're very comfortable with the media phenomena, but you, at least, ought to be aware that these are individuals and this is their history. That's what the CV shows. It's the course of life for that person. Look for conflicts of interest. Are they already working with vendors? Are they working with other states? Are they working in ways that may be contrary to the goals of your organization? So, that's the first cup of coffee.

How do you choose a partner. There's no magic here. One is, do you have shared core values? I work for -- the university that's fairly large now, it's about 22,000 students, but it started out as a very small community college, and we still have a lot of those

core values at the university. We still believe service is an important part of what we do. Have a defined goal for the relationship. What do you want to come out of the relationship with that university if you develop a partnership with them? Consider a creeping commitment. A creeping commitment, it's a term we use in modeling of information systems, and it says don't get ahead of yourself. Go slowly. Let's work on this project. Let's see how it goes. Let's reflect on that and continue to make additional commitment, if it's justified. Develop pilot projects. Pilot projects, we do them all the time in elections. It's a great way to test drive new partners. Write -- and I was talking to David Drury about the importance of writing RFPs. Good RFPs make for good partnerships, not only from a legal point of view, but from an operational point of view. And, by the way, universities will appreciate that, because in this area, there's not a lot of expertise at universities, and the more structured the RFP is, the easier it will be for the dean or the grants officer to know what needs to be delivered. NDAs, of course, are non-disclosure agreements. Will they be required in the process? And that's something you may have to really talk with faculty about, the implications of NDAs. And then, finally, sustainability. Do you want it to be a sustained relationship? Sometimes we do one-off gigs with universities. We'll contract for a project and when it's done we shake hands and

move on. If this is something that you see as something to be sustained over the long-run, then you should lay that groundwork initially.

All right, so what I've tried to do is to talk about how a state elections office or even how a VSTL might approach universities for partnering, some of the things to consider. Universities are unique places, they're special places, but the way in which they operate is not always clear to outsiders.

And I'll open it up for any questions. And I think I'm doing good on time, Brian.

MR. HANCOCK:

That's a professional, Merle. Thank you. Any questions?

That was a great presentation, by the way. No questions? Wow.

COMMISSIONER RODRIGUEZ:

I'll start. There are states with limited resources, especially now, in this economy. Do you have any ideas about where a state or a university might go to for possible funding, now that some of the foundations are in trouble? Is there anywhere to go for some seed money, to either develop the RFP, or for the university to do some groundwork in developing a program?

DR. KING:

Well, if anybody but you had asked that question, I would have said, the EAC, but I guess that's not an appropriate response.

Universities of a sufficient size have grants offices and the grants office job is to parse all the postings; NSF postings, PEW Foundation, et cetera. And what may be a good starting point for a jurisdiction is to make an appointment with the grants officer to identify funding that they may be aware of. And that is their job. Faculty, they just kind of get wind of funding opportunities, but the grants office, that's their full-time job, is to pursue that.

And also, universities have seed money. They don't talk about it, but it's laying around, and if the dean or whoever, has control of the seed money purse, identifies a research project as, maybe, being something that can be leveraged down the road, it is not unknown for universities to put up their own funds to initiate a project, if they think it will be picked up down the road. But, I think, the grants office, and asking about seed money.

Wes, I hope you didn't hear anything new today.

MR. TAILOR:

No, not really. I just thought I'd take this -- if anybody is thinking about moving in this direction, I will say, from my perspective, I became the elections director in April of last year for the State of Georgia, and some of the things that you need to think about in your relationship is, who you are dealing with individually at the university, because it does matter. It's not just the university, and I think Merle touched on this, it's the individual you're working

with. Fortunately, Merle and I have, I think, a good working relationship. I don't want to speak for Merle, he may say something different, but I believe we do. And part of that process, and the necessary process that you need to think through is, can you have frank discussions with the folks at the university? Because, like it or not, some professors don't like it when you challenge what they are telling you. Some professors, they'll take you on and it will be fine. They'll get mad, and I know Merle has gotten mad at me and I'm sure I've gotten mad at Merle, but I come from a legal background, I'm a lawyer, so I can argue, just like Merle can, and get past that. But not everybody can. And so, when you're looking at this kind of relationship, you need to decide, is this somebody that I can actually work with going forward? Will they take criticism? Will I take criticism? And can we work together in the testing phase, looking at equipment, to make sure that whatever you are doing is in the best interest of the folks in your state?

That's my only comment.

DR. KING:

Thank you, Wes. I have enjoyed working with Wes and hope we work into future administrations together. I think one of the things that I really respect about Wes, and I appreciate that he inherited a very complex project, out at our shop, and it's not really clear to outsiders, exactly, what we do, but what I like about Wes is

that he will not only ask us, can this be done, which is a technical question, but he will also ask, should this be done. And that gives us a chance to bring our experience and our insights. And then, ultimately, what we know is, the decision is his, or the decision, as the Secretary of State if he escalates it to that level. And, understanding those roles -- and we make it very clear in our certification testing that we do not certify any system. We develop a protocol of tests, those are signed off by the Secretary of State, we execute the test, we write a report with recommendation, but we make it very clear who does the certification. So, understanding those roles really minimizes the conflict and preserves the energy to debate the substantive issues, and not who is supposed to do what.

MR. KING:

I have a question.

MR. HANCOCK:

Brad.

MR. BRAD KING:

I want to thank Merle and Kennesaw for all the great work you've done, and appreciate your help in getting Indiana's program taking its first steps. We've initiated a program with Ball State University. We've looked for funding, but we don't qualify for David Letterman's "C" student scholarship, so, we're out of luck there.

I just wanted to make a couple of points, just based on our preliminary experience. The term “creeping commitment” doesn’t really seem right to me, so, I’m going to say, first date and second date. We’ve gone on our first date with Ball State University. We’re going to be looking at the results of that shortly. But it’s been an education to us, already, as part of the development of the choosing of the partner. We had some responses to our initial RFP, where it became apparent that the academics or universities involved were just as interested in making policy recommendations, as they were in doing the certification work. That was one concern we tried to address, and I wonder if you could shed any light on that.

DR. KING:

Well, yes, actually, we had the benefit of meeting with the Indiana folks twice, that came down to our Center. In the State of Georgia, it’s abundantly clear to us whom the Constitution authorizes to make policy on election, and we do not get into that arena at all. What we do do, is, we try to help Wes understand, what’s the fallout of this policy change, what will this change cost, what are the tradeoffs that have to be made. I think that’s responsible research, but it evolves from us knowing, clearly, where our bounds are. And I have a different presentation that I do to the university guys, because with them, I talk about how difficult it is to

work with politicians and those kind of things. But going back to what I said about the role of the PI, finding somebody at the university that you can look in the eye and you know their level of reliability in the process. The guys from Ball State that came down when we explained to them, first of all, how precarious it is for you to get even around the edges of policymaking, I think they really took it to heart and they understood it. So, I think, faculty do understand that message. But again, I would say, if you have a faculty member or a PI who is confused about the difference between fame and infamy, you might want to pass and move onto the next candidate.

MR. BRAD KING:

Thanks very much.

DR. KING:

Thanks.

MR. HANCOCK:

Thanks, Brad. Any other questions? No?

DR. KING:

I have one last thing that I wanted to close the loop with, Matt's quiz yesterday. I don't know if the other election officials in this room looked at his quiz, about, do you jump, or do you just surrender, and I thought, man, if I still had a loaded gun and I had a

chance. So, I'm going to propose that this go into the election official certification test, Wes, that we give.

If I can just make a closing comment and then I'm the last thing between you and lunch.

MR. HANCOCK:

Sure.

DR. KING:

I, absolutely, appreciate and am thrilled to be here today, to talk about this project that we do in Georgia. We have, probably, hosted four, five states to come down, look at what we do. We love doing that. It's a great experience for us. So, if you have people within your state, or you would like to come down and have that cup of coffee with us. We're not going to help your state, per se. We have one client and that is an important thing. A hundred percent of our funding comes from the Secretary of State's Office. Period. And we turn down money, occasionally, but we want to preserve that relationship, and as soon as we start accepting money from other vendors or other sources, I think it compromises all that. So, we will help any state get started, help them have that dialogue, help them identify those kind of issues, and share our experiences. We love doing that. We think that's part of our service mission. And I invite everybody down.

And, again, Brian thank you. Commissioners of the EAC, thank you for your continued support. And with that, I'll turn the program back to you.

MR. HANCOCK:

Thank you.

[Applause]

MR. HANCOCK:

Thanks, Merle. That was a great job. Lunchtime, same as yesterday. Lunch is on your own. Just remember when you come back, the breakout sessions will be this afternoon. We'll try to start them as close to promptly at 1:30 as we can. Remember the numbers on the back of your name tags designate where you're going. Number one, in this room, the other two sessions are upstairs in the Balboa and Madrid rooms.

Thank you and have a great lunch.

[Luncheon recess from 12:19 p.m. until 1:38 p.m.]

[BREAKOUT SESSIONS # 1, BREAKOUT SESSIONS # 2 and BREAKOUT SESSIONS # 3 concurrently held from 1:30 p.m. until 4:00 p. m. Transcripts prepared under separate cover.]

[Following conclusion of the breakout sessions, the meeting reconvened at 4:16 p.m.]

MR. HANCOCK:

All right. While Robin and Emily are passing out a few last items that some people may not have gotten, I will try to begin the wrap-up here and I'm sure nobody will complain if we get out a few minutes early.

Before I start, there are just a couple of final housekeeping issues that, especially those of you that may be staying this evening and not flying out until tomorrow morning, may be interested in. Emily made me aware that it is, apparently, "Restaurant Week" here in Miami, and you can get a three-course meal at some fairly high-end restaurants for a flat fee of something like \$36. So, if anybody is interested in that, just talk with the concierge and they can tell you what restaurants are participating in that. So, I think that's a great idea.

And one final element of housekeeping. It's a very special day today. Not only is it the conclusion of our Unified Testing Initiative & Cost of Testing meeting, but it's also a very special birthday for our Chair Gineen Beach. And while I won't request that the audience sing happy birthday, I just will suggest that you all

wish her a happy birthday as you greet her as we're leaving today.
So Madam Chair, happy birthday.

[Applause]

MR. HANCOCK:

Okay, we'll wrap this up. I think, just personally, it's been a very enlightening couple of days. We've had a good chance to share some ideas, talk out a lot of things, I think, that need to have been talked out for the last year or so. As I said during my opening comments, you know, certainly, as a start-up program, the EAC had rough going. We made some mistakes, you know, and I'm sure we'll continue to make mistakes. What we will say is that we're committed to fixing those and developing the most efficient process possible. We can only do that with your help. We had some discussions this afternoon, some very good discussions in the breakout sessions, and I think we've already talked a little bit about it being incumbent upon us to work with groups like NASED, perhaps like The Election Center and others, to work out these issues to the satisfaction of everyone. And, we're certainly committed to doing that. And we'll be doing so in the future. Communication is also something that we've, kind of, hit on in various ways over the past two days. It's extremely important. Our working group, I think, will give us some very valuable input on that, and once again, thank you, to those who volunteered to participate

in that. We have some tough tasks ahead, but I think with the help of everyone in this room, we'll get where we all need to be, because the bottom line is we all want the same thing in the end. We may have different concepts about how to get there, but we want better equipment and we want fair elections for everyone. It's pretty simple.

With that, unless anyone up here has any other comments I'd like to open it up to the floor for any final comments there may be, anybody who wants to give us their final thoughts on wrapping things up here.

MR. PADILLA:

First, thank you for having this, and happy birthday. I won't sing to you, it's really bad.

I think a lot of good things happened. A lot of comments were made and I wanted to touch on one at the end of the meeting, for everybody to take back with them and think about. There were a lot of numbers thrown out and how long testing is taking. And that's what the states care about. Where's your product? We heard that. I don't think the blame is at any one organization. It's definitely not the table up there, alone. It's definitely not the manufacturers, alone. It's definitely not the labs, alone. I think there's a lot of underlying problems with how it was presented, that maybe not everybody at the table knows. But, when I hear

numbers, that 20,000 hours, 50,000 hours, believe me, that's not the norm. I had a state ask me, as a lab, you know, "5,000 hours for that?" No, that's not the norm. What the problem was, you need to get to the bottom of it, if you're a state. You need to get to the bottom of it, if you're a manufacturer. There's decisions made every day who manufacturers go to as labs, how labs do business, how NIST accredits those labs, how the EAC conducts their business. There was review time problems. But, all that added together. So, take those statements in context without pointing fingers at certain people. And definitely, don't put the blame all up there on the table, it's not deserved. So, I'd like to leave with that.

Thank you, again.

MR. HANCOCK:

Thank you, Frank. Anybody else? Last chance. Steve?

You have to get the last word in, don't you, Steve?

MR. PEARSON:

It's all about timing. Thank you very much for this, the last two days. I really appreciate it. It's probably the most effective meeting that I've attended in the last three years, on this topic. So, there's a lot of very interested people, and we just need to work together. I really, truly believe, and I said it yesterday, I think we're through the worst part of this. There's been a lot of growing pains. But, I've seen really good progress and good movement. So, we

appreciate that. And let's just commit to doing this together, and let's get through this, so we can get these systems rolled out, because, you know, we believe that we're so close to the finish line we'd just like to, you know, implement some of these final improvements and let's get this done.

But we appreciate everybody's support on this. Thanks.

MR. HANCOCK:

Thank you, Steve. And just, sort of, I guess, my final idea is, I think Steve Berger said it very well earlier today -- Steve's in the back of the room now, because he has to catch a plane -- but, you know, there are a lot of smart minds in this room. And, if we're all, sort of, heading in the direction, or want to head in the same direction, which I think we do, there shouldn't be any reason that we all can't come together to figure out a way to get through the toughest part of these problems. I think we've made a lot of good progress, and I think, together, we can get where we want to be, fairly quickly.

With that, we really appreciate all of you coming. Obviously, we can't do it without you. And don't forget, the transcripts for this meeting, and all the presentations are going to be up on the EAC's website within a couple of weeks.

So, with that, thank you. Enjoy the rest of the evening in Miami.

[Applause]

[The meeting adjourned at 4:23 p.m. EDT.]