1   **NIST GAITHERSBURG, MARYLAND**

2   **TECHNICAL GUIDELINES DEVELOPMENT COMMITTEE**

3   **(TGDC) MEETING**

4   **FRIDAY, AUGUST 17, 2007**

5   **(START OF AUDIOTAPE 1, SIDE A)**

6   MR. EUSTIS: Well, good morning everybody. This

7   is Allan Eustis with the NIST Information Technology

8   Laboratory Voting Team. Welcome to I believe the tenth

9   plenary session of the Technical Guidelines Development

10   Committee.

11   You will notice some different faces from our end

12   because except for Dr. Jeffrey, all of the TGDC members

13   are thankfully participating and they are doing so at

14   their locations remotely. So this I think is an

15   efficient way to do the meeting but it's a little

16   different then we normally do.

17   I just want to quickly go through a few of the

18   safety issues for our EAC and non NIST attendees at the

19   meeting, and I'll just go real quickly because we've

20   held this meeting in the employee lounge many times and

21   if we have an emergency such as a fire drill or a real

1   fire, you'll exit, take a right and there's the first

2   exit, (unintelligible) on both sides, glass doors.

3   And we're going to take a break everybody at 1:30

4   Eastern Daylight Time for a half hour lunch, and come

5   back and hopefully be very efficient and finish this

6   meeting up as quickly as we can in the afternoon. We do

7   have the potential to go to 5:30 p.m. if necessary.

8   A few preliminary matters, and this is for all the

9   NIST folks too, please turn off your cell phones and

10   pagers.

11   I mentioned the half hour break at 1:30 p.m. for

12   lunch.

13   If you are calling in and you're on a cell phone

14   especially, or you're in an office area, if you could

15   mute your phone until you're recognized or unless you

16   want to make a comment, and we're hoping that most of

17   the members will use our electronic hand raising tool.

18   And this is again for all NIST as well as TGDC

19   members who have gotten very good at this, please

20   identify yourself as you ask a question or whenever

21   you're called on to answer a question. This will help

1 us when we transcribe this public meeting and make it

2 available for the public.

3   With that I will hand the meeting over to Dr.

4 Jeffrey to open up the plenary session. Thank you.

5   DR. JEFFREY: Well, good morning everyone.

6 Welcome to the tenth plenary session of the TGDC.

7   I definitely appreciate everybody's attendance in

8 either real space or virtual space, and to see exactly

9 who's here I'm going to actually turn it over to the

10 parliamentarian Thelma Allen to do the roll call.

11   MS. ALLEN: Good morning. Williams.

12   DR. WILLIAMS: Here.

13   MS. ALLEN: Williams is present. Wagner.

14   MR. WAGNER: Here. Wagner is present. Paul

15 Miller.

16   MR. MILLER: Here.

17   MS. ALLEN: Paul Miller is present. Gale.

18   SECRETARY GALE: Here.

19   MS. ALLEN: Gale is present. Mason.

20   MS. MASON: Here.

21   MS. ALLEN: Mason is present. Gannon. Gannon.

22 Gannon is not attending. Pearce.

1   MR. PEARCE: Here.

2   MS. ALLEN: Pearce is present. Alice Miller.

3   MS. MILLER: Here.

4   MS. ALLEN: Alice Miller is present. Purcell.

5   MS. PURCELL: Here.

6   MS. ALLEN: Purcell is present. Quesenbery.

7   MS. QUESENBERY: Here.

8   MS. ALLEN: Quesenbery is present. Rivest.

9   DR. RIVEST: Here.

10   MS. ALLEN: Rivest is present. Schutzer.

11   Schutzer. Schutzer is not responding. Jeffrey.

12   DR. JEFFREY: Here.

13   MS. ALLENG: Jeffrey is present. We have 11 in

14   attendance. We have enough for a quorum.

15   DR. JEFFREY: Thank you very much, Thelma.

16   So one of the things, I'll start off by saying that

17   I'm actually very excited for a number of reasons. One,

18   I'm hoping that at the end of today's session that we

19   will have an approved package that we can forward to the

20   EAC.

1   I'm also excited, both happy and sad at the same

2 time, that I've announced that I am resigning from the

3 U.S. government effective the beginning of September.

4   I've absolutely thoroughly enjoyed being both the

5 NIST Director as well as being the Chair of the TGDC.

6   I will tell you with all honesty that when I look

7 back on the time that I've spent at NIST and the number

8 of important things going on, there are a few issues

9 that bubble up to the level of importance that I think

10 that the TGDC has been working on. When you talk about

11 affecting the core of our own democracy, there's few

12 better examples then developing a system.

13   So I want to thank all the TGDC members for helping

14 to put this package together, and also from a personal

15 standpoint, for educating me as somebody who knew

16 nothing about voting systems and making this a very

17 enjoyable process.

18   So with that I will actually get the meeting going

19 and just remind people that if you have access to the

20 Internet that we're using a software package that allows

21 you to just click on Raise My Hand and we'll then be

22 calling on people in the queue.

1   If you are on a cell phone, or if the package is

2 not working, or if you just care not to use it, just

3 please feel free to just speak up.

4   And also we are very, very pleased to welcome the

5 U.S. Elections Systems Commissioner, Deneta Davidson

6 here today, who will e speaking to us in just a few

7 minutes. And it's always a pleasure to have Deneta

8 here. Another aspect of this job I'm going to seriously

9 miss.

10   I would also like to welcome a potential new member

11 to the committee, Dr. Semcaner, who has been nominated

12 by IEEE, and while the EAC is completing the required

13 vetting process we've invited him to listen in and

14 participate as an observer for this teleconference, so

15 look forward to him formally joining.

16   So at this time I would like to entertain a motion

17 to adopt the August 17, 2007 TGDC agenda. Is there a

18 motion to accept the agenda?

19   SECRETARY GALE: Dr. Jeffrey, this John Gale of

20 Nebraska. I move to accept the agenda.

21   DR. JEFFREY: Excellent. Is there a second?

22   MR. PEARCE: Philip Pearce, I'll second it.

1   DR. JEFFREY: Okay, there is a motion to accept

2   and second. Is there any discussion? Okay, hearing

3   none, is there any objection to unanimous consent?

4   Hearing no objection, the agenda is adopted by unanimous

5   consent.

6   At this time I would also like to entertain a

7   motion to accept the summary minutes of the last meeting

8   of the TGDC. Is there a proposal for that?

9   DR. RIVEST: Ronald Rivest, so moved.

10   DR. JEFFREY: Okay, a second?

11   MS. PURCELL: Helen Purcell, second.

12   DR. JEFFREY: Great. Any discussion? Okay,

13   hearing no discussion, is there any objection to

14   adoption of the meeting minutes by unanimous consent?

15   Okay, this is going to go great today. Hearing no

16   objection, they are approved by unanimous consent.

17   Since the May meeting, I must say when I looked at

18   the number of teleconferences that we held, three

19   subcommittees have put in an incredible amount of time

20   and effort to dot the i's, cross the t's, and resolve

21   all the issues, and it's amazing what you can extract

22   out of volunteers. So again, thank you on that, and I'm

1   very pleased to see the amount of progress that's been

2   made.

3   So today we're going to start going through those

4   and at the end of each of the briefings we'll entertain

5   motions to adopt those sections and to approve those

6   sections as part of the final report to the EAC.

7   Now I'll just also remind any of the public that

8   they are free to make comments and position statements

9   regarding this work on the NIST, at the votenist.gov

10   site where they will be posted, and all of the previous

11   comments are already posted there.

12   You can go directly to votenist.gov, which has all

13   of the information from the TGDC including the public

14   comments that have been provided and I recommend

15   everyone look at those. They're actually quite

16   interesting.

17   So at this time I would very much like to welcome

18   Chairwoman Davidson for some comments?

19   COMMISSIONER DAVIDSON: Thank you. Good morning

20   everybody.

21   And I want to begin by expressing my sincere

22   appreciation to the TGDC and to NIST for their tireless

 1 efforts in developing the NIST set of voluntary system

 2 and standards.

 3   The rewrite of the VVSG was no small task but we're

 4 pleased to know that the work that you have done on this

 5 document will serve to improve the competence in

 6 elections and create a stronger democracy for all.

 7   Also I want to take this occasion to thank Dr.

 8 Jeffrey for his leadership of this committee. Under Dr.

 9 Jeffrey's chairmanship this committee has written the

10 most comprehensive and thorough set of voting system

11 standards ever.

12   Dr. Jeffrey, your leadership and guidance will be

13 missed. I thank you for your dedication and service to

14 this community and this committee, and I wish you the

15 very best in the future.

16   I'd like to take time to go through once we get the

17 VVSG at the EAC, when it's delivered, and I especially

18 think this is important.

19   Now what I'm really talking about is a draft that

20 we have put together because the NIST iteration is a

21 complete rewrite of the 2005 VVSG.

1   We do recognize at the EAC that it's the

2 responsibility to conduct a deliberative and thorough

3 review of the document, providing as much time as

4 necessary to receive comments and testimony from all

5 major stakeholders before finalizing the NIST iteration.

6   Keeping that in mind, the EAC has developed this

7 draft and as I said, this draft can change, so

8 definitely this is a draft. It could take longer then

9 what we have planed as sometimes things do, but I'm

10 going to go through it as well as I can.

11   The EAC will receive the TGDC recommendations from

12 NIST and the TGDC we anticipate in September of this

13 year. Obviously this is next month.

14   From that time we feel it will take us about 14

15 days to put it in the Federal Register, and we are going

16 to put that in the Federal Register for 120 day comment

17 period, not 90 days as the law requires. That time will

18 take us from October we anticipate, somewhere into

19 probably next year, about February, and there's a lot

20 that we feel that has to be done during the present

21 time.

1   First of all, the TGDC has agreed that they will

2   give training to a select group of individuals that's

3   been chosen by the Board of Advisors and the Standards

4   Board to receive education, thorough education, from the

5   NIST individuals in October. October is when that's

6   been set up so that is an ongoing training session for

7   them.

8   Also during that time we plan on holding public

9   meetings and in these public meetings we feel that we

10   need to do several things.

11   We need to try to get a handle on when we really

12   talk about it, when we get into it, the cost of actually

13   what the laboratories cost will be in testing. NIST has

14   said they would assist in this process.

15   As we go through everything that we are gong to

16   tell you about, not only the laboratories but then we

17   also need to hear from the manufacturers, field them and

18   talk to them about in a public meeting obviously also,

19   how long is this going to take once you know what the

20   VVSG is. How long is it going to take you to design

21   your new systems, to build them, to have them tested?

1   You know, we may not know the exact dollar amount

2   in any of these areas, whether it's testing or building

3   the equipment, but what we will hopefully know is how

4   much more time because of the increased testing will it

5   take the laboratories to actually get the documents

6   through or the equipment through for testing.

7   Also we have to meet with the advocacy groups. We

8   feel that we need to bring academics in to vet what has

9   been done from the TGDC and we need to educate and we

10   need to hear from our election officials.

11   So during these public reviews we feel that that

12   information will be very useful and will also go into

13   the comments in the comment period.

14   At the December meeting we will have a Standard

15   Board meeting and that is a public meeting, Standard

16   Board and Board of Advisors again where NIST will do an

17   education to the whole group and hopefully they will

18   have comments to add to the review period.

19   At the close of the review period we hope to have

20   some input from all these different groups that will be

21   very important, and so we're going to turn around and

1 return that back to the TGDC for their comments and

2 discussions on it.

3   We feel that that will be done sometime for the

4 TGDC recommendations in probably May to July of next

5 year.

6   After that then the EAC will receive the document

7 back from the TGDC, we'll say in October or any time up

8 to July to October, and after that period then we are

9 going to put it back in the Federal Register for another

10 120 days. That 120 days is the second period that

11 people can make comments after the TGDC has reviewed it

12 after the first comment period.

13   Again we probably will be meeting with some of our

14 laboratories, the manufacturers advocacy groups,

15 election officials, and also the academic community.

16   This is a very important document. We're trying to

17 give it the time that it really needs to be put in place

18 to vet the document.

19   We feel that the close of the period of the

20 comments of the last time will be sometime in February

21 of '09, so you can see that it's taking a great deal of

22 time to actually put this through and get it vetted

1 properly as we feel it should. It deserves that, and as

2 we said, with this being a complete rewrite we have to

3 do it and do it right.

4   The Commission then reviews it, we feel like in May

5 through June, and then the guidelines would be published

6 in the Register the final time as the law requires, and

7 that would be somewhere in the neighborhood of June or

8 July of '09.

9   So hopefully you understand that we heard from our

10 election officials that they really feel that they've

11 got an election upcoming, they've got presidential

12 elections that are coming on in January and February so

13 '08 wasn't the best time to really vet the document as

14 much as they would like.

15   So we wanted to put it out initially upfront as

16 soon as possible for that 120 days. We feel it's

17 important to hear from the stakeholders, bring it back

18 to the TGDC, and obviously meeting with all the

19 individuals so that we can get more input on how long is

20 it going to take to design this equipment, any type of a

21 handle of what the cost will be.

1   So in moving forward we are trying to associate

2 everything that is in detail with this document to try

3 to come to some type of conclusion to have the very best

4 document to move forward with our voluntary voting

5 guidelines.

6   So if there are any questions I would be more then

7 happy to try to answer them but I know you want to get

8 on with the meeting, but I do want you to know that we

9 do see this as a very important start. This is the

10 beginning. We see once we receive the document, we have

11 to follow through the process very carefully. Thank

12 you.

13   DR. JEFFREY: Thank you very much, Deneta. Are

14 there any questions from any of the TGDC members? Okay,

15 thank you very much.

16   I think we all recognize that this is just the

17 beginning of the path and obviously I speak for the

18 TGDC, that as comments come in, if there are things that

19 we can do to help assess and understand the

20 implications, I think there's a lot of interest both

21 within the NIST staff and the TGDC members to help make

22 sure that this is the best product possible. And it's

1 easy for me to say since I'm leaving, so I get to

2 volunteer everyone else.

3   COMMISSIONER DAVIDSON: We're going to look you up

4 wherever you go.

5   DR. JEFFREY: So at this time with that threat, I

6 would like to call on Mark Skall to provide us an update

7 as to, what have you done since we last talked to you?

8   MR. SKALL: Boy, thank God he's leaving. I'd

9 like to start really by expressing my appreciation and

10 giving thanks to the TGDC as a whole, especially to our

11 Chair, Bill.

12   I think those of us who work here know how much the

13 NIST Director has on his plate. If you ever look at his

14 calendar, we are all just amazed that he actually can

15 make it to work the next day.

16   Sometimes it can look overwhelming, and for Bill to

17 stay up to date on the voting activities, and when we

18 brief him he's just right there, he asks such good

19 questions and he knows exactly what we've been doing. I

20 don't know, he must do it in his sleep. It must be one

21 of those machines that goes on.

 1   So I certainly want to thank him and I want to

 2 thank the whole TGDC. I know that this is a difficult

 3 task. I know there are some contentious issues and

 4 there were very short time constraints for much of this.

 5   Additionally, I know almost all of you, if not all

 6 of you, have full time jobs and you do this really in

 7 your spare time so this truly is a labor of love.

 8   And I really do appreciate getting to know all of

 9 you and I certainly want to thank you for your technical

10 insights, your dedication, and your patience in working

11 with many disparate groups, including those crazy NIST

12 scientists. So thank you.

13   Okay, I'd like to now speak about the voting

14 activities and talk about what we've done since the May

15 meeting.

16   I'd like to preface it by saying this is really a

17 historic day I believe for the election community and

18 the public.

19   In the next few hours the NIST staff will summarize

20 various sections of the voluntary voting system

21 guidelines and answer any questions you have for a

22 document that we believe is essentially complete.

1   This document is the NIST iteration of the

2   voluntary systems guidelines. All that are left are

3   some editorial corrections we need to make, especially

4   to non-normative sections like the introduction.

5   So you will be voting as Bill said on this document

6   before you, and the document I believe really will have

7   a profound affect on impacting the next generation of

8   voting systems in reliability, in security, in

9   accessibility, and usability. So I think this is really

10   an historic day.

11   Okay, so I will speak about the activities since

12   the last meeting in May, which of course included

13   continued research and the drafting of the VVSG in

14   coordination with the TGDC, and I'll talk a little bit

15   about the focus of the meeting and the strategy and the

16   agenda.

17   So in general we responded to all of the TGDC

18   issues and comments, and Human Factors and Privacy,

19   better known as HFP.

20   We completed the research for the usability

21   performance benchmarks. Although it's completed with

22   respect to the delivery of the document to EAC, we will

1 continue this research to validate many of the

2 performance benchmarks we put in. This is a completely

3 new area, we're breaking new ground, and we want to make

4 sure that we continue to do research in this area.

5   We've also made final updates to usability and

6 accessibility requirements in Core Requirements and

7 Testing or CRT. We've completed the reliability and

8 accuracy benchmarks research and made final updates to

9 EAC, and quality requirements.

10   Security and Transparency or STS, we probably made

11 more updates then the rest of the sections and it's

12 really, really in good shape now. I think it reads

13 really well but it has probably some more changes then

14 the other two sections.

15   We re-drafted the E-poll book and externally

16 networked kind of activity requirements, and we've made

17 updates to open-ended vulnerability and independent

18 voter verifiable record related requirements.

19   As far as coordination with the TGDC, we've had 46

20 teleconferences since the last meeting in May. We've

21 made numerous revisions and updates to the draft

22 material and of course we've had many individual

1 discussion with people on the TGDC, either in groups or

2 individually.

3   The current draft bill as of August 7th I think is

4 an incredibly impressive document. There are right now

5 1170 requirements, 570 pages, and a new format for

6 improved readability.

7   I have been speaking at some conferences over the

8 last few weeks with voting officials who had some

9 concerns about plain language and readability and I have

10 urged them to actually read this document. Many have

11 then looked at it and have been really surprised at how

12 well it reads.

13   It is a technical document. At the end of the day

14 these need to be precise, testable, unambiguous

15 requirements and those are very detailed, but certainly

16 all the introductory material and all the material up

17 until that point is really very readable and I want to

18 commend the staff and the TGDC for what I consider to be

19 really an extraordinary document.

20   The final technical editing we believe after this

21 meeting will take approximately two to three weeks to

22 get it to the EAC.

1   So again the aims of the meeting, this is the final

2   TGDC meeting before the VVSG delivery to EAC in

3   September, so we would like to get approval for the VVSG

4   and have final editing instructions for NIST staff, and

5   again it will take a few weeks to do these final edits.

6   So we're going to talk about the changes we've made

7   since the last meeting. These will be high-level

8   summaries. Then of course we will discuss whatever

9   remaining issues that you would like us to discuss, and

10   then ask for final approval and a resolution at the end

11   of each presentation.

12   And the order will be STS first, Security and

13   Transparency, Core Requirements and Testing, and Human

14   Factors and Privacy. I think your agenda probably lists

15   Nelson as speaking on STS. Barbara Guttman will speak

16   on that in his stead. That's all I have. Thank you.

17   DR. JEFFREY: Thank you, Mark. Are there any

18   questions for Mark? Okay, great.

19   At this point I would like to ask John Wack to then

20   present an overview of the VVSG document structure. So,

21   John.

1   MR. WACK: Thank you. I just have a few slides

2   to present and what I'll do essentially is just go over

3   some of the major changes and describe at a high level

4   what we have been doing over the past couple of months

5   and some of the final document production plans.

6   And we also received a couple of comments, a couple

7   of questions from Secretary Gale that we thought would

8   be good to discuss as well.

9   And before I start I would like to add my thanks

10   also to Commissioner Davidson. Working with her and the

11   EAC has been very much a pleasure.

12   And I think almost exactly 23 months ago we

13   actually started working on what we call VVSG 2007, and

14   that was Dr. Jeffrey's first meeting out in Boulder.

15   That was a memorable meeting in many ways. So again I

16   think his support has been vital and this project is a

17   success because of him.

18   Okay, with that, in a nutshell everybody here has

19   been working very hard and very diligently. We received

20   a number of comments from you at the last TGDC meeting,

21   directly at the meeting. We also received a number of

22   comments as well in the several weeks thereafter.

1   Everybody took those comments very seriously,

2   responded to all of them, and then we had a number of

3   telecons afterwards so we feel that we have addressed

4   those in the document before you. We've made the

5   changes you have requested.

6   We did a number of other edits simply just to make

7   the document more readable, less daunting. Many people

8   who looked at this we think may have been put off by

9   some of the previous versions because perhaps it was a

10   little too complex looking, looked a little bit too

11   complicated. We hope the new version looks better. We

12   put a few other things out there on the website as well,

13   spreadsheets of requirements cross-referenced.

14   So after today, presuming that we have just an

15   absolutely fabulous meeting and walk out of here with

16   smiles on our faces, we expect that we've got a few more

17   weeks of changes and reviews.

18   Commissioner Davidson talked to you a little bit

19   about the public review process and in a way I think

20   it's great that the TGDC version of the document is the

21   version that's going out for the public review.

1   At the same time it puts more pressure on us at

2 NIST because everybody is going to be looking at

3 something that we directly produced, and it takes a long

4 time and it is very difficult to go through the whole

5 thing and make sure everything reads correctly, but it

6 behooves us to do that so we'll be very busy after that.

7   And we plan to put out the two versions. One is

8 the final PDF. We'll have that tagged for

9 accessibility. The PDF version before you has a lot of

10 hypertext links in it but I think everybody probably

11 agrees that PDF is best for printing.

12   And so for onscreen viewing we're going to do an

13 HGML version and we'll write other introductory material

14 and so on and so forth.

15   We would also like to put out a small database of

16 requirements with requirement language and fields in

17 there that essentially would make it easier to find a

18 number of different requirements that apply to different

19 devices and so on and so forth.

20   With that, that is all I have there. I wanted to

21 bring up a couple of things here. You know, you at home

22 or wherever don't necessarily need to look at this, but

1 I am bringing up a requirements matrix. We had three of

2 these out there on the website underneath the PDF for

3 the VVSG itself.

4   And Secretary Gale sent in a couple of questions.

5 What external resources such as ISO, IEEE standards, so

6 on and so forth were generally used as a basis for the

7 requirements developed for the subcommittee report?

8   And, you know, apart from the telecons, several

9 public hearings at NIST, we went to a cost of testing

10 meeting with the EAC, a number of conversations with

11 vendors, comments to the TGDC that we posted on the

12 website. We've had a lot of consultation with various

13 different groups.

14   A lot has happened over these past two years.

15 Voting has been pretty controversial and we have tried

16 as much as possible to stay in the middle and talk with

17 as many different groups as we can, and get as many

18 different sides of the story, and learn as much as we

19 can. So we feel that we have done our work.

20   And up here you'll see that each of the

21 requirements we have in these matrices are cross-

22 referenced to a number of different sources. I'm

1 scrolling down here rather quickly. You'll see VVSG

2 2005 appears prominently, but there are a number of

3 other documents, a number of other standards that we've

4 gone into as well.

5   Has there been adequate opportunity for the usual

6 peer review of the underlying assumptions used to

7 develop the requirements? I guess I kind of answered

8 that in the first answer. We have consulted quite a bit

9 with a number of different groups and we feel that we

10 have listened to many different sides of the story so I

11 guess the answer to that is yes.

12   With that I think unless there are any questions, I

13 would like to go to another document which is the VVSG

14 itself, and so what I'm displaying up on the screen is

15 the PDF of the VVSG, and the people talking to you from

16 now on will probably be talking about certain pages or

17 certain requirements so I want to make sure we are all

18 looking at the same documents.

19   So the TGDC members, you've got some documents

20 mailed out to you on CDs. There is the PDF on the

21 website. You can also download, or if you're looking at

1   the printed copy you should all make sure that the first

2   page says draft, August 7th.

3   DR. JEFFREY: John, there's a question. Secretary

4   Gale, you have a question?

5   SECRETARY GALE: Yes, I do, Dr. Jeffrey. With

6   regard to the new document John, I want to compliment

7   you and your team. The latest revisions have vastly

8   improved the readability of the document and we're all

9   very grateful for the hard work to accomplish that.

10   Of course I grew up in a paper era so in going

11 through 580 pages with the Table of Contents it's great

12 but of course I regretted the lack of an index. And my

13 staff who are much more digitally based then I am said

14 well, that's an issue of searchability and on a digital

15 document it's not an issue of a paper index. And so I

16 obviously understand that now.

17   And I would like to encourage you at NIST to

18 continue to develop additional tools such as the

19 searchable database, which will certainly increase the

20 accessibility to that document if you're looking for

21 specific subjects or topics. That would of course serve

22 the purpose of an index but would aid the election

1   community and the public in finding specific things that

2   they're looking for. Thank you.

3   MR. WACK: Okay, thank you, and we'll take your

4   comments very seriously.

5   To make sure we're starting off all on the same

6   foot, the same page, again I just want to make sure

7   we're all talking about the draft, August 7, 2007.

8   And with that I will turn it back to Dr. Jeffrey

9   and talk to you all later. Thank you.

10   DR. JEFFREY: Thank you very much, John. With

11 that, it's time to roll up our sleeves and start getting

12 into the meat of the issues. So first Barbara Guttman

13 will be talking about the Security and Transparency

14 sections. Barbara, over to you.

15   MS. GUTTMAN: Thank you very much. I'll roll up

16 my sleeves here because my jacket actually is

17 lightweight and rolls up.

18   So the first thing you'll notice of course, I hope

19 you notice, is that I'm not Nelson Hastings, I'm Barbara

20 Guttman, and truthfully I'm not even an electronics

21 engineer.

1   So that said, let me present what STS has been

2 doing on its portion of the VVSG, the portions it's

3 responsible for.

4   I'm going to try to give out as I'm talking either

5 slide numbers, although I'm not sure if the version you

6 all have is page numbers. I'll also try to give out

7 some slide names to help to follow along, but if you get

8 lost please speak up.

9   So the first two slides that are called agenda just

10 list all the sections for which there were changes.

11 Just one thing I did want to point out is that there was

12 some reorganization of the document and that each

13 security topic used to be its own chapter and now there

14 are two chapters devoted to security.

15   The first is called Security and Audit Architecture

16 and it contains three security topics, Security and

17 Audit, Electronic Records, and IVVR, which if you're not

18 quite familiar with the term IVVR, wait, I'll get to

19 that. And the second one, which is General Security

20 topics, that includes all the other security topics. So

21 I just wanted you to make sure you were aware of that

22 before I went over them.

1   So that's what I'm going to start with, a very easy

2 topic first, which was some general modifications we did

3 throughout all the security sections, which was

4 primarily harmonizing language.

5   There was a lot of harmonizing language to make

6 sure it was consistent with the definitions, and we also

7 moved all the documentation material to the part of the

8 standard related to the documentation so that was really

9 pretty straightforward.

10   Now I'm going to move on to Security and Audit

11 Architecture, and once again this one also had general

12 changes that were primarily scoping it to fit into these

13 new chapters, which I'll talk about as I go through

14 them.

15   The first thing we did was to eliminate a lot of

16 duplicate material. There was a lot of duplicate

17 material as we were developing things. When you're

18 writing it it's a lot easier to kind of put it in more

19 the once everywhere you need it and then when you're

20 done scope it back out.

21   There was a lot of explanatory information about

22 election administration issues, which we had used to

1   explain the requirements but we now deleted that

2   material as well.

3   Also in the audit section, I'm now in Audit, Steps

4   Removed and Retained, as you recall in the Audit

5   Architecture section we describe what kind of audits

6   people might do so we could tell you what kind of

7   requirements the system needed.

8   But some of these didn't actually result in actual

9   requirements for either the system or the documentation

10 so we went ahead and removed those also.

11   So the next section is Electronic Records. This

12 one actually had probably the most extensive set of

13 changes having to do with harmonization, clarification,

14 and removing duplication, although actually the actual

15 content didn't really change that much but it looks

16 really quite different from how it looked beforehand.

17 But that was primarily to better coordinate with CRT and

18 the work they do in requirements for reports versus

19 audit records.

20   Now I'm on to a section that really is -- there is

21 sort of kind of a major difference from how the May

1 draft looked, which was independent voter verifiable

2 records.

3   In the May draft we used the term voter verified

4 paper records and what we did is we abstracted this

5 concept up one level to recognize that it's really about

6 an independent voting record.

7   And so we looked through the requirements we had

8 for IVVR and we rewrote them to address any kind of

9 independent kind of record, and in this way you could

10 have non-paper based systems that could conform to the

11 VVSG. And this is consistent with TGDC Resolution 66.

12 The (unintelligible) resolution did call for independent

13 voting records. So that's kind of an important change.

14   This change itself did not actually then result in

15 changes to the VV-PAT or the P-Call section. But if you

16 go to the next slide, the second slide called

17 independent voter verifiable records, I do want to point

18 out because we were working on this this summer, STS has

19 one change that is beyond what is in the draft you have

20 in front of you, which if you look at the slide, it's

21 slide 10, the second IVVR slide, we want to add one

1 additional requirement to clarify that all these

2 requirements actually have to refer to the same record.

3   So it doesn't particularly change the intent but I

4 wanted to call that specifically because it's different

5 from what's in the document you're voting on.

6   We also did make some clarification to the VV-Pat

7 section which we clarified that paper records have to

8 use OCR fonts, that you have t use a code book to

9 interpret the paper record, that we tried to make some

10 of the perimeters more tunable by election officials,

11 and hopping over to the next slide, to clarify how you

12 do verification for cut sheets VV-Pats.

13   We also made one change to the precinct optical

14 scan, which was before we had a should requirement to

15 support batching of paper records, but STS decided to

16 remove that because it was actually a little bit too

17 complicated.

18   So that's what I have to say on IVVR.

19   And now moving on to the slide called Crypto, which

20 is cryptography, which is slide 13. In Crypto we

21 actually only made editorial changes but there was an

22 important question that was asked and we wanted to make

1   sure everyone knew the answer to this, which was if you

2   have a machine like a DRE that's actually supporting

3   multiple precincts, are you going to end up needing more

4   the one election key, and the answer is no, you do not.

5   So we wanted to make sure that was shared with you,

6   and if any of you have other questions about the

7   cryptography chapter we are pleased to answer them here

8   at NIST, and feel free to just send us an e-mail and ask

9   for a little tutorial because it is a little bit

10 complicated.

11   Another important change was in the set up and

12 inspection chapter which is, as the architecture for the

13 VVSG evolved, and as we developed the requirements to

14 support software independence, and as we developed the

15 system integrity management chapter, we realized that we

16 do not need the requirement for a trusted interface

17 anymore, that the security goals that that requirement

18 was designed to meet are already being met by other

19 methods.

20   So STS decided to remove it and that's a sort of

21 important change. And when we made that change we were

22 then able to refocus this chapter more on software

1 inspection, and then also actually address software

2 installation which used to include software distribution

3 and the distribution were really requirements that were

4 primarily for the test labs. So we moved that to the

5 section that addresses test labs and that helped us to

6 just refocus that chapter.

7 　　　Now let me get to access control. There was a

8 technical issue with access controls which is, most

9 people are familiar with operating systems that are

10 really fairly robust but often in election systems you

11 also have systems that are built with what are

12 constrained operating systems and we wanted to make sure

13 that we addressed those within the access control

14 chapter.

15 　　　So we were working on this and we came up with some

16 ideas for how to best address this, to make sure that --

17 basically election management systems need to have

18 robust access control, but capture devices can actually

19 do what we call role base control.

20 　　　But here's another place where we continued working

21 on it after this draft was done so we actually have a

22 change that we want to make to this draft.

1   It is on what is called slide 17, which is the

2   second access control slide, list the language we want

3   to add. This further clarifies what I just explained

4   but this is the actual language we wanted to use and I

5   wanted to call that specifically to your attention.

6   And there is actually a third access control slide,

7   which actually says we actually did a lot of work in

8   making sure the scoping and language was correct.

9   Moving on to the system and activity management

10 chapter, I already extolled the virtues of it. Mostly

11 in this chapter we actually just did some re-scoping and

12 harmonization.

13   In communications we actually harmonized this with

14 the access control chapter so that neither chapter

15 allowed for remote administration of systems. We had a

16 little disconnect there so we fixed that.

17   System event logging, we also addressed this issue

18 of what happens when you have a constrained operating

19 system and we added some material to address that.

20   In physical security we implemented the TGDC

21 decision about locks and you can see the language. It's

1 actually off of slide 22 called physical security. You

2 can see the language we used for that.

3   And then in the pre and post test slides we

4 clarified when labs do what we call the Test Lab Bill

5 which was previously known as the Witness Bill, and we

6 also harmonized with CRT about how the test labs treated

7 unmodified software which is they have to acquire an

8 independent copy of it to be used in their testing. And

9 that's pre and post testing.

10   So I'm now on to open ended vulnerability testing,

11 which was an area that was not terribly flushed out in

12 the May draft so we've added a lot of material about

13 open ended vulnerability testing to address the scope,

14 focus, and priorities of the team, the team competition,

15 the rules of engagement, flip over to the next slide,

16 and the level of effort and the reporting requirements.

17   And that's the end of my presentation so I'll pause

18 for questions.

19   DR. JEFFREY: Are there any comments or questions

20 for Barbara on the STS section?

21   SECRETARY GALE: Dr. Jeffrey, this is John

22 Gale.

1   DR. JEFFREY: Yes. Go ahead Secretary Gale.

2   SECRETARY GALE: I stepped out for a minute so I

3 didn't know how to que in so I hope this is acceptable.

4   DR. JEFFREY: Absolutely.

5   SECRETARY GALE: With regard to the

6 cryptography, the imbedding of a chip, I understand that

7 that is current technology. The military uses it, the

8 banking industry uses it, but it's a whole new concept

9 for any election equipment hardware in terms of

10 imbedding an encrypted chip and what I'm concerned about

11 I guess are what are some of the consequences if those

12 embedded chips fail.

13   So I'm interested in knowing the failure rate of

14 such chips in terms of embedding that in equipment,

15 either the small equipment like VREs and optical scans,

16 precinct equipment. Do you have any sense of what the

17 possible failure rate is?

18   MS. GUTTMAN: Let me address that first by

19 addressing one of your assumptions which is you

20 described how embedded chips are becoming pervasive in

21 various fields like (unintelligible). They have

22 actually just become pervasive in all IT. This is how

1   all PCs are going to come in the future. This is part

2   of just where the entire industry is moving.

3   I don't have specific failure rates but I suspect

4   it's quite low. I am looking over at the Crypto team.

5   DR. RIVEST: This is Ron Rivest. Could I --

6   MS. GUTTMAN: Well, why don't I look over at the

7   Crypto team on the phone.

8   DR. RIVEST: This is Ron Rivest. Secretary Gale,

9   this is a great question, but in terms of technology

10 this is absolutely routine technology. This is a

11 digital integrated circuit just like all the other

12 integrated digital circuits on the motherboard there and

13 there is no reason whatsoever to expect that there

14 should be any impact on reliability.

15   Nonetheless, that said, of course this will go

16 through the usual testing and if vendors have any

17 particular insights into those issues that I don't or

18 others do, it would be good to hear that, but I don't

19 expect any issues on the reliability side.

20   I think issues that arise here are more just the

21 management side, and making sure that all these chips

1 are (unintelligible) where they are and what keys

2 they're using.

3   SECRETARY GALE: Thank you, Ron. I appreciate

4 that. This is Secretary Gale. And you understand my

5 concern because with the embedded chips it may not be

6 cost effective if there is a failure rate such that

7 there can be reasonable expectation for a precinct to

8 have a piece of equipment fail, and then the need to

9 replace that equipment, and the flexibility needed of

10 election officials to be able to move equipment once it

11 is precinct specific with an embedded chip. That

12 failure rate has a big impact on election

13 administration.

14   Secondly, it also has a big impact on cost and

15 that's who's responsible for repairing that or replacing

16 it if it even could be replaced in either precinct

17 optical scan equipment or in the central scan equipment

18 which is much more expensive to buy.

19   DR. RIVEST: This is Ron Rivest again. Yes,

20 those are good points and we'll have to see how this

21 sorts out, but my belief is there is absolutely no

22 reason to believe that this should have any impact on

1   the reliability of this equipment. As I said, these are

2   standard integrated circuit parts.

3   SECRETARY GALE: Thank you.

4   MS. GUTTMAN: Any other questions?

5   MS. DAVIDSON: This is Deneta Davidson with the

6   EAC. When you were going over the independent voter

7   verification record, and it kind of went a little fast,

8   and this is one of the areas our election community has

9   really been very interested in.

10   Right now what we have is paper, and I know that

11   we've discussed in the IVVR, does that still require

12   paper -- but I know it doesn't quite require paper, but

13   can you give us some examples of what -- I mean I know

14   there are other things that could be developed in the

15   future but is there something that you can kind of go

16   over and just --

17   (Tape Interrupted While Changing Sides)

18   **(END OF AUDIOTAPE 1, SIDE A)**

19   *   *   *   *   *

20   **(START OF AUDIOTAPE 1, SIDE B)**

21   MS. GUTTMAN: There really isn't something right

22   now that's an obvious solution to can you have a non-

 1 paper IVVR system, but just because there isn't one

 2 today doesn't mean the cleaver folks out in industry and

 3 academia aren't thinking of cleaver things and that's

 4 what the opening is for. It's for things that people

 5 haven't really figured out yet.

 6   And there's such opportunity. There are just so

 7 many great ideas out there. And I know some of the

 8 people from your office went to like Vote.com and

 9 places. People are thinking creatively out there about

10 better ways to do things and I personally find that very

11 exciting.

12   DR. JEFFREY: Any other comments, questions?

13 Okay, hearing no other comments or questions, I would

14 actually --

15   MS. GUTTMAN: It goes back to John Wack.

16   DR. JEFFREY: Okay, the Chairman is being

17 corrected. It goes back to John Wack. John.

18   MR. WACK: Thank you, Barbara. It's back to

19 Wack.

20   If I can grab that from you, just to break things

21 up a little bit, because I have a copy of my slides and

22 other people don't.

1   I'm just going to go through parts of the document

2   here and quickly I'm just going to add to Barbara's

3   answer by going to a particular page in the

4   introduction. I'm proud of this picture because I drew

5   it myself and I'll try to blow it up here. I'm on page

6   nine of the introduction.

7   So basically the way things work, the conformance

8   clause section, chapter two of part one, the conformance

9   clause chapter describes in a sense what's needed for

10 voting systems to conform to the VVSG, and to make it

11 clear in that section we say that voting systems --

12   DR. JEFFREY: I'm sorry. Whitney, I believe

13 you've got a comment or question.

14   MS. QUESENBERY: I do have a question. Chapter

15 nine, page nine -- I'm sorry what page is that?

16   DR. JEFFREY: Whitney, could you hold on just a

17 second while we turn up the volume? We're not hearing

18 you. Okay, could you try again, Whitney? Sorry about

19 that.

20   MS. QUESENBERY: This is Whitney Quesenbery. I

21 asked that when we (unintelligible) documents that we

22 give not only the internal page reference but the PDF

1 file page so that those of us who are behind the

2 (unintelligible) without any visual reference at all can

3 keep up with you. You turn to it, then you tell us

4 where you are, and you immediately begin speaking.

5   DR. JEFFREY: So you're looking for just enough

6 time to catch up, is that what you said?

7   MS. QUESENBERY: Yes, that's (unintelligible).

8   DR. JEFFREY: Okay, could you repeat what page

9 you're on and then after that let's add a 15, 20 second

10 pause to let people actually flip through to get to the

11 right page.

12   MR. WACK: Okay. On the PDF file I'm looking

13 at page number 59, and in the document itself if you're

14 just looking at the page numbers at the bottom, I'm

15 looking at the introduction on page nine.

16   And the reason I'm looking at this particular slide

17 is just in a graphical way I wanted to describe the

18 changes and the clarifications we made to the

19 conformance clause, which is simply to make clear that

20 systems that meet the definition of software

21 independence can conform to the VVSG, the draft VVSG,

22 and that we have two methods for that.

1   And to make it clear, one for systems that use

2 records, independent voter verifiable records, and the

3 other the innovation class.

4   And to iterate what Barbara was saying, new types

5 of systems using new forms of independent voter

6 verifiable records have requirements already in VVSG,

7 therefore they could conform to the VVSG. They would

8 not have to use the innovation class.

9   So the innovation class is really for new

10 innovative voting systems. Could be for end-to-end

11 cryptographic systems, things of that sort. Systems

12 that use independent voter verifiable records do conform

13 to the requirement in the VVSG. So that is the

14 clarification we made there.

15   I think I will go back to the slides at this point

16 because I think probably it's easier for people to

17 follow along there, and I'll talk about two other

18 changes and these are really in the core requirements

19 area, not in the STS chapters.

20   So the first one has to do with data export, and in

21 chapter six we used to have a section called

1   integratability. We expanded this to talk about data

2   export as well.

3   Integratability in a sense kind of means no huge

4   barriers to making two components integrate with each

5   other and sort of on the road to being interoperable.

6   So we have general requirements in there basically

7   saying that voting systems shall be integratable, voting

8   devices shall be integratable, let me correct myself.

9   But also we needed to handle the question of what

10   format electronic records when they're exported should

11   be in, and we made it clear that they should be in a

12   publicly documented open non-proprietary format.

13   Vendors shall include a source code program that

14   shows how these records can be read and we do have a

15   requirement in there that essentially is a strong

16   recommendation that a common consensus based format

17   should be used, that we have followed some proposal by

18   an IEEE subcommittee, and also the oasis election markup

19   language are two common consensus based formats that

20   could be used. So these are the requirements there

21   based on comments from the last meeting.

1   And then in the other area, which is chapter seven,

2   which is requirements by voting activity, there we for

3   the first time introduced requirements for electronic

4   poll books.

5   We had a subsection there that was on ballot

6   activation and in an effort to more clearly address

7   privacy related requirements and requirements related to

8   networking for electronic poll books, we broke these out

9   into two separate areas and added requirements

10   essentially to strengthen privacy because on an

11   electronic poll book it's basically a voter registration

12   database and we want to make sure that voter information

13   does not somehow leak over to a DRE, or a VD-Pad system,

14   or whatever system is being used, and we wanted to

15   insure that records can't be aggregated also to violate

16   privacy.

17   In other words we don't want records from a DRE

18   combined with records from an electronic poll book put

19   together to show how people voted.

20   The other thing is that we added requirements to

21   permit electronic poll books to make external

1 connections to remote voter registration databases. We

2 added some requirements to improve security.

3   In other words there must be some sort of a

4 firewall, things of that sort. So those are the two

5 areas that we added outside of the STS chapters. And

6 that is it. With that, are there any questions?

7   DR. JEFFREY: Any questions or comments? This

8 would wrap up the discussion the Security and

9 Transparency. Yes, Secretary Gale, go ahead.

10   SECRETARY GALE: I'm sorry. The lighting I

11 guess for getting ourselves up on the que --

12   DR. JEFFREY: You just popped up.

13   SECRETARY GALE: Okay. May I proceed?

14   DR. JEFFREY: Yes, sir, please do.

15   SECRETARY GALE: Thank you. I had a couple

16 questions for John.

17   Obviously your team and subcommittee has worked

18 very, very hard to develop a voting system that is

19 essentially impervious to attack and it's called the

20 Gold Standard by people in the election community, that

21 this is kind of the ultimate set of security standards.

1   Do you consider it to be impervious to attack by

2   just current standards or do you consider it to be

3   impervious to attack from methods of attack developed in

4   the future? In other words, say maybe now under the

5   standards that are being proposed is it safe for

6   (unintelligible) of the future under computer industry

7   standards?

8   MR. WACK: Well, it's sort of a short and a

9   long answer. The short answer is no, security you can

10 never guarantee that it will be impervious to attack and

11 security in a sense always plays a catch up game and you

12 tend to know about known threats, threats out in the

13 future, you can take a guess at.

14   To a certain extent in security, and I think what

15 we've tried to do is where it seems appropriate to do

16 so, we've tried to over build.

17   So for example, the designers of the Brooklyn

18 Bridge didn't let's say know enough about engineering

19 and had the materials to build a modern day bridge, so

20 they over designed to a certain extent and today it

21 carries lots of traffic and it's a strong bridge.

 1   And in the same way for example with electronic

 2   poll books, our original proposal was that it be best

 3   they not connect up to external networks. We know that

 4   external networks are difficult to secure. There will

 5   be new sorts of problems, new sorts of vulnerabilities,

 6   things of that sort.

 7   So given that there was a need to actually hook up

 8   to external networks, we then throw other things in

 9   there such as a firewall that we hope would block out

10   most traffic, most threats, and only allow the

11   information in that needs to come in.

12   But the answer is no, security is always a catch up

13   game. At the same time we do think we've done a good

14   job. We're very familiar with many of the threats out

15   there affecting IT technology, especially in the network

16   area

17   so --

18   DR. JEFFREY: And John, I think Ron Rivest would

19   like to add something. Go ahead, Ron.

20   DR. RIVEST: Yes, thank you. Ron Rivest.

21   Secretary Gale, that's an excellent question and John's

22   response is a good one.

1   I'm hearing echoes, can you hear okay?

2   DR. JEFFREY: Yes, you're coming across fine.

3   DR. RIVEST: Okay. I'd like to amplify that a

4   bit. I'd like to stress that the steps that we've taken

5   here in the Security and Transparency subcommittee in no

6   way cab be viewed as the last word or building a

7   impervious system.

8   These are reasonable security steps to mitigate

9   many of the known risks and to move us forward in the

10 security catch up game as John calls it, but there are

11 many threats that are not answered by this.

12   There are things that need to be answered by

13 procedures, and there are on the horizon, new classes of

14 voting systems that we hope the innovation class will

15 encourage our vendors to come forward with.

16   Some of those known as the end-to-end category of

17 voting systems have properties that are not exhibited by

18 any current systems and allow voters to achieve even

19 higher levels of competence.

20   So this is a major step forward in the security of

21 voting systems but it's in no way a gold plated solution

22 or one that should be considered impervious. It's a set

1 of reasonable measures to achieve a significant

2 improvement in security.

3   SECRETARY GALE: Thank you, Dr. Rivest. If I

4 could ask a follow-up question. In light of the fact

5 that these standards will become official standards for

6 this industry to design and build, again until maybe

7 2009, 2010 or later, is there enough I guess what John

8 Wack was saying, enough design built into these

9 standards to carry it to that date and beyond that date?

10 In other words, is there kind of a predicable future of

11 this covered technically for the next five or ten years

12 in terms of security?

13   MR. WACK: I'm pausing. I wasn't sure whether

14 Ron wanted to answer that.

15   DR. RIVEST: Why don't you go ahead, John.

16   MR. WACK: Well, we think yes. One of the main

17 reasons is because we have moved towards software

18 independence in this particular version, primarily

19 because of the difficulty of testing systems.

20   As time moves on and we get a better handle on how

21 to test very large complex systems such as voting

1 systems, we think that we will be able to keep pace with

2 new threats, new problems.

3   We expect to have a very good set of test sweeps

4 out, roughly 2009, 2010, that will work with the VVSG,

5 and in good testing that's where we think we will catch

6 most of the problems. So yeah, we do think that we are

7 moving along, keeping pace.

8   DR. JEFFREY: Secretary Gale, I believe you've got

9 some additional comments.

10   SECRETARY GALE: Yes, Dr. Jeffrey. I don't know

11 if that's my system or somebody else's.

12   DR. JEFFREY: It may be your system but we're fine

13 with it.

14   SECRETARY GALE: Okay. Well, thank you. I

15 appreciate you addressing that issue.

16   I also had some questions on innovation class.

17 It's been a very exciting addition to this set of

18 iteration and I compliment Dr. Rivest and the committee

19 for incorporating that, but I was really concerned in

20 looking over not only the short resolution but the

21 broader one as well because the standards that the

22 review committee is supposed to use seem very broad,

1 very subjective, and then there's really nothing that

2 defines that review committee or any suggestion on that.

3   Now maybe that's totally left to the EAC but with

4 such a subjective and broad group of criteria it becomes

5 highly critical that the review committee be a committee

6 of almost a blue ribbon panel that are very carefully

7 selected and that are going to be able to take those

8 broad standards and convert them into objective

9 criteria. So that was one of my concerns.

10   I like the idea, but however that review committee

11 is defined is going to be critically important, or

12 whether the process is stifled before it begins, or

13 whether it's going to be open enough to allow vendors to

14 move toward the prototype stage. Does that make sense?

15   DR. JEFFREY: Whitney, do you have a comment on

16 the question or do you want John to answer the question

17 first?

18   MS. QUESENBERY: No, let John answer the

19 question.

20   DR. JEFFREY: Okay, thanks.

1   MR. WACK: If I may, I was actually looking

2 over at Commissioner Davidson who wanted to add a few

3 things.

4   COMMISSIONER DAVIDSON: I just felt like I needed

5 to say that the EAC really understands the concerns, and

6 as we move forward in this we feel that definitely we

7 didn't want criteria put in to place that might keep a

8 manufacturer from designing something in the future that

9 might be the answer. Not knowing what technology is

10 going to bring.

11   Obviously we know there has to be procedures and

12 everything put into place, but if it's not in the VVSG

13 we felt that it would be better being in a procedural

14 document that has to be vetted obviously.

15   We do very open processing in our office but we can

16 change that as we move forward because this is a brand

17 new idea. We know that it's going to take vetting. We

18 know it's going to have to have that blue ribbon

19 committee, but I wouldn't want to pick that today

20 because there might be somebody to step forward in the

21 future that we think would be great.

1   So we just felt that it shouldn't be in the VVSG,

2   that it gives us more ability and flexibility in the

3   future to work and hope they come up with a great

4   product that everybody will like.

5   I didn't really give you a lot of answer, but

6   that's kind of how we feel at the EAC, is I think we

7   really want that flexibility right now and being able to

8   change the document without having to come back to the

9   TGDC and go through a vetting of a document that would

10   take possibly years to change something to keep up with

11   technology.

12   SECRETARY GALE: Thank you, Commissioner

13   Davidson. This is John Gale, Nebraska. I think that

14   answers my question.

15   I think what you're saying is the EAC will address

16   this as a procedural issue, maybe in a separate set of

17   criteria other than the technical guidelines.

18   COMMISSIONER DAVIDSON: Deneta Davidson again.

19   And yes, you're exactly right. I think if you look at

20   what we have done with our laboratories in setting up

21   procedures that were vetted in public meetings, you'll

22   understand that we'll do exactly the same thing with

1 this type of moving forward with definitely the

2 innovation class.

3   SECRETARY GALE: This is John Gale, Nebraska.

4 Thank you, Commissioner.

5   DR. JEFFREY: Whitney, I believe you have a

6 question or a comment.

7   MS. QUESENBERY: Yes, this is Whitney

8 Quesenbery. I have much the same questions about the

9 OAVT, which we went over I think in about 30 seconds. I

10 know there's some questions about how we --

11   MR. WACK: Well, fire away.

12   MS. QUESENBERY: Well, how the standards to

13 which the OAVT will be concepted, will be created, and I

14 suppose the other thing is (unintelligible) weeks is a

15 long time and does anyone have any idea what that costs?

16   MR. WACK: If I may , I'll ask Alyse Clay-Jones

17 to address that, who is really the primary author there.

18   MS. CLAY-JONES: Hi, I think that you had two

19 questions for us, one about standardizing the open ended

20 vulnerability testing, and the other about the length of

21 time, is that correct, Whitney?

1   MS. QUESENBERY: (Off microphone). Yes, this is

2 Whitney.   I mean the open endedness of one

3 (unintelligible) brings up some interesting curricular

4 questions about the (unintelligible), and the question

5 that we talked about the last one is how do we decide

6 that something is sufficient (unintelligible).

7   MS. CLAY-JONES: I don't know if you had a

8 chance to look at the specific requirements that we've

9 enumerated but we have made attempts to set up some

10 boundary conditions, some rules of engagement for the

11 OAVT team so that we get as specific as possible about

12 what it would take in order to actually fail based on

13 the open ended vulnerability test.

14   So if you take a look at the specific requirements

15 you'll see that there are some boundaries on the team.

16   MS. QUESENBERY: So this is new material that's

17 been added?

18   MS. CLAY-JONES: Yes, ma'am.

19   MR. WACK: I'll just add my two cents to that

20 too. Sometimes I think of open ended vulnerability

21 testing as a little bit like network penetration

22 testing, and network penetration testing is something

1   that evolves as various vulnerabilities are discovered,

2   and new threats and new techniques.

3   And I think the VVSG has good requirements in it

4   for the basis of open ended vulnerability testing that

5   deal with staffing and a number of basic items that are

6   kind of fair game for open ended vulnerability testing,

7   but it will probably be something that will evolve as

8   labs become better at it.

9   And we would expect that labs would cooperate,

10 share information to a certain extent on vulnerabilities

11 with voting systems to insure that as much as possible

12 one lab will do basically the same job as another lab

13 will do.

14   DR. JEFFREY: Are there any other questions or

15 comments on Security and Transparency? Okay, hearing

16 none, I believe all of you have copies of the draft

17 resolution that outlines the specific chapters and

18 sections of the areas that we're talking about for

19 Security and Transparency. It's labeled as Resolution

20 6-07, STS VVSG Sections, Final Approval.

21   And for no other reason then perhaps symbolically,

22 I'd ask whether the co-chairs, Ron Rivest and Helen

1 Purcell of the STS would be interested in proposing this

2 resolution.

3   DR. RIVEST: Ron Rivest speaking. Yes, so moved.

4 I'd like to cosponsor this resolution.

5   DR. JEFFREY: Helen, would you like to second it?

6   MS. PURCELL: Yes, sir I would.

7   DR. JEFFREY: Excellent. So let me read it for

8 the record for those who are listening in but not having

9 access to the written material.

10   There's been a proposal and it has been seconded.

11 It says the TGDC grants final approval for the Security

12 and Transparency sections, part one, chapter two,

13 section 2.7, chapters four and five all, chapter six,

14 section 6.6, chapter seven, section 7.5.1, part two,

15 chapter three, section 3.5, chapter four, section 4.3,

16 part three, chapter three, section 3.4, chapter four,

17 section 5.4 as part of its second set of VVSG

18 recommendations to the Executive Director of the EAC,

19 subject to editing as instructed by the TGDC at this

20 meeting, and final review by the Chair of the TGDC.

21   I now recognize Secretary Gale. Have you a comment

22 or question?

 1   SECRETARY GALE: Dr. Jeffrey, I do have one and

 2 I guess it concerns you. This resolution talks about

 3 final review by the Chair of the TGDC. Obviously that

 4 currently would be you and I'm hoping that would be

 5 accomplished before you were to retire from government

 6 service.

 7   I certainly have fantastic confidence in your

 8 ability to bring it all together and complete that final

 9 review but you start talking about interim chairs or

10 temporary chairs, that concerns me a little bit.

11   DR. JEFFREY: I know that my staff, and we've

12 chatted about this as recently as yesterday, will be

13 working as hard as possible to have everything to me

14 before I officially punch out and we're certainly

15 committed to do that.

16   Certainly what I would plan to do, and I would

17 encourage that if by some chance they don't get this to

18 me by the time I punch out, I think that the process

19 would entail that any changes even minor ones will be in

20 change mode, I mean even happy to glad, commas replaced

21 with semi-colons, will be in change mode and would be

22 posted on the website prior to the signature, the Chair

1   of the TGDC signature so that everyone would get to see

2   that.

3   Obviously if there is anything more then a simple

4   non-substantive change that would obviously go back to

5   make sure that everybody is on board with that.

6   So all I can do is say that the staff is committed

7   as much as possible to get to the end of the race before

8   I do, and I certainly encourage that.

9   SECRETARY GALE: Thank you.

10   DR. JEFFREY: Any other comments or questions?

11 Okay, if not, is there any objection to adopting this by

12 unanimous consent? Okay, hearing no objections then

13 this is adopted. Resolution 06-07 is adopted by

14 unanimous consent and my heartiest congratulations to

15 the Security and Transparency Subcommittee for a job

16 well done.

17   With that, we are a little bit ahead of schedule.

18 I would like to actually if the Core Requirements team

19 is prepared, I think CRT is next, right? Yes.

20   So I'll ask David Flater after he puts his jacket

21 on, if he could give us a review of the CRT section. So

22 as soon as we get the correct presentation up on the

1   screen David will start. So for those who are listening

2   in, sorry for the time delay.

3   MR. FLATER: Sorry for the delay. This is David

4   Flater of NIST going to present about changes for the

5   Core Requirements and Testing Subcommittee.

6   In a previous presentation John Wack discussed two

7   sections that were previously tagged as CRT sections.

8   This was the integratability section, part one, section

9   6.6, and the ballot activation section, which is part

10 one, section 7.5.1. Those sections do show changes that

11 were made by the STO subcommittee.

12   Apart from those sections, all of the other

13 material tagged as CRT reflects neither changes in

14 technology direction nor the addition of any significant

15 amounts of brand new material relative to what was

16 discussed at the May meeting and previous.

17   So what I'm looking at instead is a large number of

18 minor changes. In fact, because some members of the

19 TGDC made a line by line review of the spec, there were

20 in fact 282 issues within the CRT material.

21   However as I said, these were all relatively minor

22 and I can say that the vast majority of these were in

1 fact addressed head on or forwarded to the those who can

2 address them and the ones that remain are sort of loose

3 change if you will.

4   They are sufficiently minor that if in fact we

5 never get back to them it won't be a tremendous loss but

6 we do hope to clean up those loose strings in the time

7 remaining to us.

8   Next slide. Now I'm going to provide some

9 highlights, the most significant of the relatively

10 insignificant issues if you will.

11   I've been advised both to site part and chapter

12 numbers and also to wait for people to be able to find

13 those, so I am going to address these bullets in the

14 order that they appear in the document and give people

15 time to find those sections.

16   The first one in document order would be software

17 engineering practices. This is part one, section 6.4.1.

18 This section benefited from a very careful review in

19 which folks went requirement by requirement looking for

20 issues and it was found that some of these requirements

21 were over specified, some were under specified.

1   There were other minor adjustments and polishing

2   that needed to be done to these requirements so this

3   section reflects a fair number of those kinds of

4   changes, but again, no major changes in technical

5   direction or huge surprises.

6   The next highlighted issue would be back in part

7   three, section 5.1. As of May the section having to do

8   with hardware testing, otherwise known as shake and bake

9   tests, have been unintentionally omitted from the draft.

10   That omission has now been corrected.

11   The significant portions of the material from VVSG

12   '05 that were to be carried over, plus modifications to

13   that material that had been previously discussed in CRT

14   and with the full committee now appear in the draft.

15   Removed were some details that have been considered more

16   in the scope of test methods work to proceed afterwards.

17   The next highlighted change would be part three,

18   section 5.2.3. This is a functional testing section in

19   which the requirements on volume testing appear.

20   The change here was to provide more perimeters for

21   the volume testing of optical scanners. There was some

22   question left by the requirements as they were

1 previously drafted regarding the practice of re-

2 circulating paper ballots through an optical scanner as

3 part of the volume test.

4   Neither extremes seemed appropriate here, neither

5 requiring that all of the ballots be unique for a huge

6 volume test nor allowing unrestricted re-circulation of

7 ballots.

8   So a compromise was struck based on the number of

9 paper ballots that it was thought feasible to produce as

10 part of a volume test of the scope that was envisioned,

11 and corresponding perimeters now appear in those

12 requirements.

13   Fourth highlight appears in part three, section

14 5.3.1. This is the explanation of the test method used

15 for benchmarking of reliability and accuracy of voting

16 equipment.

17   The test method itself has not changed since it was

18 discussed in May. What has changed is the explanation

19 of that method. The previous draft was found to be

20 confusing so it's been rewritten in different language

21 to attempt to clarify.

1   Finally there's a highlight that I suppose is most

2   applicable to Appendix A, the terminology section, but

3   also applies throughout the draft, which is that

4   frequently misconstrued terms have been replaced with

5   more explanatory wording.

6   We had numerous discussions with the TGDC telecons

7   to clarify these problematic terms and substitute terms

8   that were found to be more transparent.

9   Finally throughout the specification, as I said

10   there were 282 issues, throughout the specification

11   there were many minor changes for those many issues to

12   change this word to that, things of that form to polish

13   the requirements that had previously been drafted.

14   And with that I will conclude and ask if there are

15   any questions.

16   DR. JEFFREY: Any comments or questions for the

17   CRT or David? Whitney, I'm sorry you just popped up in

18   my machine. Whitney.

19   MS. QUESENBERY: (Off microphone). This is

20   Whitney. David the last slide, which is open issues and

21   the notion about (unintelligible), I just wondered

22   (unintelligible).

1   MR. FLATER: We were going to skip that.

2   MS. QUESENBERY: Okay. Are these all final edit

3 things?

4   MR. FLATER: Yes, those are the minor

5 inconsequential issues that I mentioned.

6   MS. QUESENBERY: Thank you very much.

7   DR. JEFFREY: Any other comments or questions?

8 Okay, hearing none I am going to again for symbolic

9 reasons ask if the co-chairs of the CRT, Dan Schutzer

10 and Paul Miller would like to propose a motion. There's

11 a draft resolution 07-07 that's in the handout, that if

12 you want I'd be happy to read, but either Dan or Paul,

13 would you like to propose that?

14   MR. MILLER: This is Paul. Yes, I would like to

15 propose that resolution.

16   DR. JEFFREY: Thank you. So motion has been

17 proposed. Dan or anyone else would you like to second?

18 Dan may have dropped off. Would anyone else like to

19 second?

20   MR. PEARCE: Philip Pearce, I'll second it.

1   DR. JEFFREY: Okay, great. So there's a proposal,

2   Resolution 07-07 that has been proposed and seconded.

3   Let me read it for the record.

4   The TGDC grants final approval for the Core

5   Requirements and Testing sections part one, chapters one

6   and eight all, chapter two except section 2.7, chapter

7   six, all, except section 6.6, chapter seven all, except

8   section 7.5.1, part two, all except chapter three,

9   section 3.5, and chapter four, section 4.3, part three,

10   all except sections 3.4 and 5.4, as part of its second

11   set of VVSG recommendations to the Executive Director of

12   EAC subject to editing as instructed by the TGDC at this

13   meeting and final review by the Chair of the TGDC.

14   So there is a motion and it has been seconded. Are

15   there any questions or comments? Secretary Gale.

16   SECRETARY GALE: Dr. Jeffrey, I do have a point

17   of order. On the first subcommittee report, I would

18   simply request whether or not anyone had any objections

19   to the unanimous consent in looking then at who was

20   present.

21   It's a fairly slim quorum that we have and people

22   could easily step aside for any number of reasons and be

1   away from the screen when that question is asked. I

2   would ask that we do a roll call vote so we can insure

3   that we do indeed have a record of quorum voting on the

4   issue with the majority.

5   DR. JEFFREY: Okay, noted and so we will do the

6   roll call vote. So there is a motion on the table and a

7   second. Are there any comments or questions on the

8   resolution 07-07? Whitney.

9   MS. QUESENBERY: I have a question that just is

10 a coverage question, which is I don't see where in all

11 of this unless it just gets covered in the final overall

12 document, we cover things like the vocabulary or does

13 that just get covered in the final --

14   DR. JEFFREY: It's in the appendix that I think

15 we'll cover at the end.

16   MS. QUESENBERY: Thank you.

17   DR. JEFFREY: Okay, unless there's any additional

18 comments or questions I'll ask the parliamentarian to do

19 a roll call vote. This is proposal 07-07.

20   MS. ALLEN: Roll call for Resolution 07-07.

21 Williams.

22   DR. WILLIAMS: Abstain.

1   MS. ALLEN: Wagner.

2   MR. WAGNER: Abstain.

3   MS. ALLEN: Paul Miller.

4   MR. MILLER: Yes.

5   MS. ALLEN: Frank Gale. I'm sorry, Gale.

6   SECRETARY GALE: Yes.

7   MS. ALLEN: My apologies. Mason.

8   MS. MASON: Yes.

9   MS. ALLEN: Gannon.

10   MR. GANNON: Yes.

11   MS. ALLEN: Pearce.

12   MR. PEARCE: Yes.

13   MS. ALLEN: Alice Miller.

14   MS. MILLER: Yes.

15   MS. ALLEN: Purcell.

16   MS. PURCELL: Yes.

17   MS. ALLEN: Quesenbery.

18   MS. QUESENBERY: Yes.

19   MS. ALLEN: Rivest.

20   DR. RIVEST: Yes.

21   MS. ALLEN: Schutzer, Schutzer. Jeffrey.

22   DR. JEFFREY: Abstain.

1   MS. ALLEN: We have eight yes'es. We have

2 enough for a quorum.

3   DR. JEFFREY: Wait, we have nine. I count nine as

4 well. The parliamentarian is still counting fingers.

5 We've got nine. So that was nine yes'es and three

6 abstentions, and zero no's. And with that, Resolution

7 07-07 passes and again my heartiest congratulations to

8 the Core Requirements and Testing team. Job well done.

9 Thank you.

10   With that, we are still ahead of schedule. Let me

11 ask a question to Secretary Gale. Do you feel that we

12 need to go back on the STS for a roll call vote? Are

13 you satisfied?

14   SECRETARY GALE: Well, thank you for raising

15 that question, Dr. Jeffrey. I regret not having raised

16 this when we voted on the first subcommittee, but this

17 is so extraordinarily important that it's probably not a

18 bad thought.

19   Procedurally I guess someone who was on the

20 prevailing side would make a motion for reconsideration

21 and then we would take a new vote on that resolution if

22 we were to do it. It may be that when we get to the

 1 final vote it incorporates all the subcommittee votes

 2 anyway, but I think it makes a clearer record if we do

 3 have roll call vote.

 4   DR. JEFFREY: Okay, is there a motion to

 5 reconsider the vote and do a roll call vote for the

 6 Security and Transparency section?

 7   MS. PURCELL: Mr. Chairman, this is Helen Purcell.

 8 I'll make that motion.

 9   DR. JEFFREY: There is a motion. Is there a

10 second?

11   DR. RIVEST: Ron Rivest, I'll second it.

12   DR. JEFFREY: Okay, there's a motion and a second.

13 Are there any comments or questions? Okay, hearing

14 none, there is actually a proposal on the table to do a

15 roll call vote and so the actual question, just for the

16 record I will state, and if there is any objection, that

17 the proposal is that we do a roll call vote for the

18 Security and Transparency section.

19   SECRETARY GALE: Dr. Jeffrey, Secretary Gale,

20 point of order. We'll be voting first on the motion to

21 reconsider before we vote on the resolution.

1   DR. JEFFREY: Yes, sir.   The only vote on the

2 table right now is to reconsider and to do a roll call

3 vote.   So it's not on the STS section, it's just whether

4 we have another vote on the STS.

5   If there are no comments or questions, I'll ask the

6 parliamentarian -- and again the motion is whether to

7 reconsider the vote.

8   MS. ALLEN: Williams.

9   DR. WILLIAMS: Yes.

10   MS. ALLEN: Wagner.

11   MR. WAGNER: Abstain.

12   MS. ALLEN: Paul Miller.

13   MR. MILLER: Yes.

14   MS. ALLEN: Gale.

15   SECRETARY GALE: Yes.

16   MS. ALLEN: Mason.

17   MS. MASON: Yes.

18   MS. ALLEN: Gannon.

19   MR. GANNON: Yes.

20   MS. ALLEN: Pearce.

21   MR. PEARCE: Yes.

22   MS. ALLEN: Alice Miller.

1   MS. MILLER: Yes.

2   MS. ALLEN: Purcell.

3   MS. PURCELL: Yes.

4   MS. ALLEN: Quesenbery.

5   MS. QUESENBERY: Yes.

6   MS. ALLEN: Rivest.

7   DR. RIVEST: Yes.

8   MS. ALLEN: Schutzer, Schutzer. Jeffrey.

9   DR. JEFFREY: Abstain.

10   MS. ALLEN: That would be ten yes'es, two

11   abstains, so we have enough for a quorum to continue.

12   DR. JEFFREY: Yes, and thank you. I glad we

13   didn't exceed the fingers. So the motion to reconsider

14   the STS vote, I'll ask if there are any additional

15   comments or questions on the STS section. If not we'll

16   go directly to a roll call vote.

17   Okay, if you will allow me not to reread the entire

18   proposal, this is Resolution 06-07, which is on the

19   screen, and if it's in front of you it's titled STS VVSG

20   Sections, final approval. And with that I'll ask the

21   parliamentarian for a roll call vote, and you're got all

22   the fingers ready.

1   MS. ALLEN: I need a motion and a second please.

2   DR. JEFFREY: I'm sorry, I guess we actually need

3 the motion now. I thought the motion to reconsider was

4 --

5   MS. ALLEN: The motion to reconsider, but I need

6 a motion to pass it.

7   DR. JEFFREY: Okay, I'm sorry. So much for my

8 Roberts Rules. My apologies to the members. We need a

9 motion to actually consider Resolution 06-07. Again, if

10 the co-chairs would like to put the motion on the table

11 and second it.

12   DR. RIVEST: Yes, so moved. This is Ron Rivest.

13   MS. PURCELL: And second.

14   DR. JEFFREY: Okay, so Resolution 06-07 is back on

15 the table. It has been seconded, and with that if there

16 are no comments or questions I'll ask the

17 parliamentarian to call the vote by roll call.

18   MS. ALLEN: Williams.

19   DR. WILLIAMS: Abstain.

20   MS. ALLEN: Wagner.

21   MR. WAGNER: Abstain.

22   MS. ALLEN: Paul Miller.

1   MR. MILLER: Yes.

2   MS. ALLEN: Gale.

3   SECRETARY GALE: Yes.

4   MS. ALLEN: Mason.

5   MS. MASON: Yes.

6   MS. ALLEN: Gannon.

7   MR. GANNON: Yes.

8   MS. ALLEN: Pearce.

9   MR. PEARCE: Yes.

10   MS. ALLEN: Alice Miller.

11   MS. MILLER: Yes.

12   MS. ALLEN: Purcell.

13   MS. PURCELL: Yes.

14   MS. ALLEN: Quesenbery.

15   MS. QUESENBERY: Yes.

16   MS. ALLEN: Rivest.

17   DR. RIVEST: Yes.

18   MS. ALLEN: Schutzer, Schutzer. Jeffrey.

19   DR. JEFFREY: Abstain.

20   MS. ALLEN: We have nine yes'es and we have

21 three abstains. We have enough for a quorum.

1   DR. JEFFREY: And deja vous, congratulations again

2 to the STS --

3   (Tape Interrupted While Changing Sides)

4 **(END OF AUDIOTAPE 1, SIDE B)**

5   *   *   *   *   *

6 **(START OF AUDIOTAPE 2, SIDE A)**

7   DR. JEFFREY: -- Taking a break in the middle of

8 the session and then come back to that, so I'd like to

9 ask Sharon to come up and talk about the Human Factors

10 and Privacy.

11   And while she is setting up I'd like to say that

12 actually this is probably one of the sections that's the

13 most exciting because of the tremendous change that's

14 really occurred in this versus VVSG 2005, and the

15 original research has actually been folded into this to

16 really make it much more accessible and usable.

17   And so I'd like to thank the entire subcommittee

18 for really going beyond what was state of the art. So

19 with that, Sharon.

20   DR. LASKOWSKI: Thank you Dr. Jeffrey, now that

21 the microphone is turned on.

1   This is Sharon Laskowski speaking, reporting on the

2   Human Factors and Privacy Subcommittee work on the final

3   draft of the VVSG.

4   I do want to thank the entire TGDC for providing so

5   much thoughtful input as the HFP subcommittee worked to

6   pull this next draft together, and I really enjoyed

7   working with every single one of you.

8   I do have a natural stopping point so I think that

9   given the time, I think that will work fairly well.

10   So everyone should have the Human Factors and

11   Privacy report on final draft of the VVSG pulled up.

12   Title slide is number one.

13   I'm moving on to slide number two which is the

14   overview. The outline of my talk is that I will

15   summarize the significant changes from the VVSG '05, HFP

16   work, then I will review the HFP changes from the

17   previous draft that we discussed in May, and then I will

18   go over the new material that is the usability

19   performance pass/fail benchmarks.

20   On to slide number three, the significant changes

21   from the VVSG '05. I'm not going to read through them.

1   I will just note the ones that were the most dramatic

2   changes.

3   Of course the performance benchmarks are quite new

4   and different from anything we'd seen in a usability

5   related standard and I will be talking about that

6   extensively. We have added coworker usability

7   requirements and we've also added plain language

8   guidance, which support different cognitive

9   requirements. Easier the language, easier for everyone

10 to understand. So on this slide I think those are the

11 highlights of the usability.

12   The highlights of the accessibility would be a

13 requirement that accessibility throughout the voting

14 session be tested as a requirement.

15   On to slide number four, continuing significant HFP

16 changes from the VVSG '05. Here I think that the major

17 point is that we've addressed low vision more fully and

18 we've moved it to the general usability section, things

19 like font size, and contrast and different choices, not

20 just for the accessible voting station but for all the

21 voting stations.

1   That's because especially with an aging population,

2   we have people with varying degrees of vision that will

3   not want to use the accessible station and will be using

4   the regular voting station, including people that

5   sometimes forget their glasses.

6   On to slide number five. There are 14 significant

7   changes since the May plenary. Some of these, and again

8   I will just summarize fairly quickly, we've updated some

9   terminology and refined some definitions.

10   I think a big significant change especially is that

11   we've clarified the interaction of section 3.2, which

12   was the usability section, and section 3.3, which is the

13   accessibility section.

14   There was a lot of confusion and in particular we

15   wanted to make it very clear to everyone that all the

16   vote editable ballot device requirements for usability

17   also apply to the accessible voting stations, all of

18   which are in the VEDB class, and we put in clarifying

19   language in both of those sections so that if people are

20   just looking at say the accessibility section they will

21   know to go back and look at these other usability

22   requirements.

1   Of course the new metrics and proposed performance

2   benchmarks are significant as well.

3   On to slide number six, continuing with the changes

4   since the May plenary. Here we have an additional

5   requirement about making sure that failure to actually

6   cast the ballot, have some notification that the voter

7   could see, and we've also clarified discussion about

8   privacy as well.

9   Continuing on to slide number seven, changes since

10   the May plenary. I think the major issue on this slide

11   is that we clarified what we meant by poor reading

12   vision. Again, discussed a little bit earlier in terms

13   of this, is really also the placement of the poor

14   vision, low vision requirements in the usability section

15   from the accessibility section were also quite important

16   related to this.

17   On to slide number eight, continuing the changes

18   since the May plenary. We upgraded the legibility of

19   paper such as verification of the VD-Pat to a shall, and

20   we specified two sufficient techniques that are variable

21   font size and magnification for those with low vision,

1 and we refined our various response and activity time

2 and alert time requirements.

3   And finally slide nine, changes since the May

4 plenary. If you're looking for the section on

5 maintenance, we've moved that to section 6.4.5. It

6 seemed better placed there than in the usability

7 section, and some other minor changes.

8   And that concludes the changes since the May

9 plenary. So this is kind of the natural stopping point.

10 I can do a little quick intro, or first let me ask if

11 there are questions on the first half so we can kind of

12 go through those questions before we look at performance

13 requirements. We might want to consider whether we want

14 to continue here or wait until after lunch.

15   DR. JEFFREY: Any questions on the first section,

16 which are the changes? Sharon, roughly how long do you

17 think the rest of your session will take?

18   DR. LASKOWSKI: Hard to say. Probably more

19 then 15 minutes. I'm thinking 20 to 35 minutes.

20   DR. JEFFREY: Okay, well what I might suggest at

21 this point is that we take a slightly early break.

22 Would there be any objections from any of the members to

1 try to reassemble at 1:45 p.m. instead of two o'clock,

2 still keep to a 30 minute break?

3   Okay, hearing no objections, thank you all for your

4 patience in using the high tech system that we've set

5 up. It actually seems to be working pretty well so my

6 compliments to anyone who set this up. So let's take a

7 break right now and reconvene at 1:45 Eastern time, and

8 we'll see you soon.

9 **(BREAK)**

10   DR. JEFFREY: -- Meeting, and I'd like to ask the

11 parliamentarian to first insure that we still have a

12 quorum, so Thelma.

13   MS. ALLEN: Roll call. Williams, Williams.

14 Williams is not responding. Wagner.

15   MR. WAGNER: Here.

16   MS. ALLEN: Wagner is present. Paul Miller.

17   MR. MILLER: Present.

18   MS. ALLEN: Paul Miller is present. Gale.

19   SECRETARY GALE: Here.

20   MS. ALLEN: Gale is present. Mason, Mason.

21 Mason is not responding. Gannon, Gannon. Gannon is not

22 responding. Pearce.

 1   MR. PEARCE: Here.

 2   MS. ALLEN: Pearce is here. Alice Miller, Alice

 3 Miller. Alice Miller is not responding. Purcell.

 4   MS. PURCELL: Here.

 5   MS. ALLEN: Purcell is present. Quesenbery.

 6   MS. QUESENBERY: Here.

 7   MS. ALLEN: Quesenbery is present. Rivest.

 8   DR. RIVEST: Here.

 9   MS. ALLEN: Rivest is present. Schutzer,

10 Schutzer. Schutzer is not responding. Jeffrey.

11   DR. JEFFREY: Here.

12   MS. ALLEN: Jeffrey is present. Williams,

13 Williams is not responding. Mason, Mason is not

14 responding. We have nine. We have enough for a quorum.

15   DR. JEFFREY: Okay, thank you. Okay with that,

16 Sharon, if you could continue. I think you were on page

17 ten.

18   DR. LASKOWSKI: Thank you, Dr. Jeffrey. So

19 we're on slide number ten of the HFP report.

20   So in the second half of my talk, because this is

21 new material, I am going to be talking about the

22 usability performance requirements. I am going to give

1   a little bit of review material from last time just to

2   refresh everyone's memory and then go directly into the

3   pass/fail benchmarks.

4   So with usability performance requirements, our

5   goal here is to develop a test method to distinguish

6   systems with poor usability from those with good

7   usability.

8   It's based on the performance not evaluation of the

9   design, so as you see, for most of the requirement in

10 the VVSG, there are things about font size or scrolling,

11 very much design oriented.

12   But we're interested in a test that detects all the

13 types of errors one might see when voters interact with

14 the voting system because guidelines on the design by

15 themselves is not sufficient to detect those that occur

16 in the interaction and we would like this test to be

17 reliable so that we can repeat it in a test laboratory.

18 And part of the reliability is that it is reproducible

19 by the test laboratory so you trust the results.

20   One of the benefits of course is that it is

21 technology independent. You can apply this kind of test

22 method to any type of voting system. So given such a

1   test method you can calculate benchmarks based on

2   measurements of the interaction during your test.

3   So a system meeting the benchmarks has good

4   usability and passes the test. So the values chosen for

5   the benchmarks, these pass/fail benchmarks, become the

6   performance requirements.

7   Slide 11. So what we're really talking about is a

8   test method, a usability test method for certification

9   of a voting system in an accredited test laboratory

10 where measuring the performance of the system in the

11 test lab so we've got to control as much, as many of the

12 other variables as we can, including the test

13 participants.

14   So we've got a test ballot that we designed to

15 detect different types of usability errors and be

16 typical of many types of ballots. Remember this is a

17 national test so we want it to capture many sorts of

18 errors, not just the kinds of errors you'd see in one

19 particular type of ballot and one particular state for

20 example.

21   The test is done in a lab and the environment is

22 tightly controlled for lighting, set up, the

1   instructions. We do not allow assistance to the test

2   participants and the test participants are chosen so

3   that they reliably detect the same performance on the

4   same system. And they are told exactly how to vote so

5   we can measure the errors.

6   Now the test results measure relative degree of

7   usability between systems. They are not intended to

8   predict nor can they predict performance in a specific

9   election because the ballot is different, the

10   environment is very different.

11   People go in knowing who they want to vote for.

12   They can readily obtain assistance from coworkers. They

13   may have received brochures in the mail about what the

14   ballot looks like.

15   And for each election the voter demographics have

16   got to be different, and a general sample of the U.S.

17   voting population across the board can never be truly

18   representative in such a lab test because all elections

19   are local.

20   The key is we're creating a measurement device to

21   detect usability errors in the interaction of the voting

22   system.

1   Slide number 12, components of the test method. So

2   obviously the test protocol you're using has to control

3   lots of things and has to be very precise. It's got to

4   be well defined. It describes the number and

5   characteristics of the voters participating in the test,

6   how to conduct the test. We've designed the test ballot

7   to be relatively complex to insure that we evaluate the

8   entire voting system and detect significant errors.

9   The instructions to the voters are exactly how to

10   vote so we can count those errors. This test method

11   protocol, which we call the voting performance protocol,

12   has a precise description of the test environment and

13   also a method for analyzing and reporting the results so

14   that each test lab could report those consistently, and

15   performance benchmarks and their associated pass/fail

16   values.

17   So I'm on slide number 13 now. And let me recap

18   the research that you heard about in May. We did some

19   initial testing just to test the validity of our test

20   protocol. Did we detect differences between systems and

21   did it produce the errors we expected, and we did that

1 on two different systems and it did. So we were very

2 encouraged by this.

3   Was it repeatable, that is do we show reliability?

4 We did four tests on the same system, different test

5 participants each time, for a total of 195 participants,

6 and we've got similar results on that same system for

7 those four tests.

8   And the demographics we used were sufficient to

9 detect all the possible errors that we had. Imagine

10 what one could see or could do with such a system.

11   So on to the next slide, slide 14. I talked about

12 the benchmark tests, which are the new tests that I

13 reported on the planning of in May.

14   So we selected four different systems. It was a

15 selection of DREs, EDMs and P-COSS. We ran through 187

16 test participants. We took five measurements, three of

17 these measurements I'll be talking about. These are our

18 pass/fail benchmarks, and two measurements that the HFP

19 subcommittee suggests that we report on only and do not

20 use them as pass/fail criteria.

21   FEMALE SPEAKER: Sharon, if I could interrupt.

22 We actually raised this question at the last TGDC and

1 discussed with the entire TGDC, who I believe

2 collectively came to the decision that two values should

3 be only reported.

4   DR. LASKOWSKI: That is correct. So I'm on

5 slide 15 now. So what about the performance measures?

6 The names of three of the performance measures have been

7 altered slightly and we've also included a base accuracy

8 score that feeds into our measures.

9   So let me first talk about this base accuracy

10 score. That is, how do we count the number of errors.

11 Well, we've got a test ballot that has 28 voting

12 opportunities. We give instructions to the test

13 participants, vote this way, and then we count how many

14 were correct for each participant so we've got an error

15 rate.

16   And to calculate the base accuracy score, we

17 basically look at the scores for each of the test

18 participants and take the average, the mean percentage

19 of ballot choices that were correctly cast and this

20 gives us a base accuracy score, which I'll talk about

21 how we use it in a couple slides from now.

1   So we're going to calculate three effective

2 measures that we then put benchmarks on for pass/fail

3 and effectiveness in this situation. In fact, it's kind

4 of a usability term, effectiveness here, it means really

5 the accuracy with which the voters were able to make

6 their choices.

7   So first we have a total completion score. This

8 basically is the percentage of test participants who are

9 able to complete the process of voting and having their

10 ballot choices recorded by the system.

11   So examples of people that wouldn't complete might

12 be someone who gives up in the middle or someone who

13 forgets to hit the cast ballot button.

14   Our second measure of voting accuracy we call now

15 the voter inclusion index. It uses the base accuracy

16 score and the standard deviation, in other words the

17 variability that you see across the test participants.

18   Okay, so why do we like this measure? Well if two

19 systems have the same base accuracy score but you see a

20 system that has a large variability -- there are some

21 voters that do really poorly, some voters that do really

22 well to offset that, that would be a large variability.

1 That's not as good as a system that's producing

2 consistently good results with that same base accuracy

3 score.

4   I put the formula for people that like to look at

5 this and run some numbers through, but basically the

6 idea is you divide the standard deviation by the

7 variability, so higher variability gives you a lower

8 voter inclusion index.

9   Our third measure we call the perfect ballot index.

10 So you look at the number of cast ballots that contain

11 no errors and you look at the number of ballots that

12 contain one error or more and you take the ratio. So

13 the perfect ballot index is simply the ratio of the

14 number of cast ballots containing no errors over those

15 that contain at least one error.

16   Now this does deliberately magnify the effect of

17 even a single error so why are we interested in this,

18 why is it useful?

19   Well, given a system that has a high base accuracy

20 score, it might still have a common error that everyone

21 or quite a number of people are making. So this

22 suggests some design flaw that everyone is having

1 trouble with. So this measure basically captures that

2 characteristic.

3   And as I said, we have two other measures that

4 we're not doing a pass/fail criteria. We're just

5 reporting on those, and those are the average voting

6 session time and the average voter competence.

7   These are interesting and good information to have.

8 It's not as important as getting the accuracy of the

9 vote and in fact neither of these measures correlates

10 with effectiveness.

11   You can have people that take a long time or take a

12 short amount of time and they may or may not have done

13 well with respect to the accuracy of their vote for

14 example. So the HFP subcommittee suggests and we

15 discussed this in May that we're just going to report on

16 those.

17   So I've got a couple of tables here. I need to

18 show you a little bit of data but I'll just point out

19 specific items from these tables so that you get a

20 general idea of how the HFP decided to make at least an

21 initial recommendation of what the benchmarks ought to

22 be and to lead into the discussion of that.

 1   We tested four systems. These were systems

 2 certified to the VSS'02, selection of VREs, DBMs

 3 (unintelligible). So I've called them system A,B,C, and

 4 D.

 5   In the second column we have total completion

 6 scores. Notice that these are reported as an interval.

 7 When you take a sampling you always have some

 8 uncertainty so you report it with a competence interval.

 9   These are 95 percent competence intervals so for

10 example, System B has a completion score interval of

11 92.8 percent to 100 percent.

12   So the way to interpret a competence interval is

13 basically to say if I repeated this test a 100 times, 95

14 times the true total completion score of that system

15 would be in that interval.

16   And the third column is our base accuracy score.

17 Notice for example System D is similar to System C, 92.4

18 percent, but it's got a larger standard deviation of 19.

19 So when we calculate the voter inclusion index again as

20 an interval, we get quite an interesting range. For

21 example, system B has inclusion index in the range of

22 .49 to .85 where system D is much lower, .03 to .22.

1   When we determine the pass/fail benchmarks we look

2   to see whether that benchmark is included in that

3   interval or above it.

4   Okay, that next table on slide 21, if you look at

5   the second column you'll see the perfect ballot index

6   competence intervals. Again a large variety of values

7   here. System D from about 1 to .352. System C totally

8   below, an interval totally below System D. They don't

9   even overlap.

10   So going on to slide 22. So the HFP has proposed

11   some benchmarks but I have a couple of slides to discuss

12   this more fully because there's a couple ways to view

13   these.

14   So if we look at the data that I just showed you

15   and we picked a total completion score of 98 percent,

16   voter inclusion index of .35 and perfect ballot index of

17   2.33, two of the systems fail. These are VSSO 2002

18   systems.

19   What we've done in the current draft that you'll

20   see for each of these three benchmarks, we've put in

21   placeholders, that is for example, total completion

22   performance says the system shall achieve a total

1 completion score of at least XXX percent as measured by

2 the voter performance protocol.

3   So let me go on to my next slide, 23. But the

4 questions on the table, which is really a policy issue,

5 is how tough should the benchmark thresholds be. So

6 we'll point out first the benchmark data here used --

7 some interference.

8   DR. JEFFREY: If anybody does not have their mute

9 on, could you just check? Thank you.

10   DR. LASKOWSKI: All right, so in this initial

11 benchmark data testing that we did, we used 50 test

12 participants which we showed we could get repeatability

13 so this was sufficient. However, for the actual test

14 protocol for the labs we will use 100 test participants.

15   This is for statistical reasons. In order to

16 compute the competence intervals easily we need to

17 assume a normal distribution and best practice using a

18 voter inclusion index or an index of a nature of the

19 voter inclusion index, and for other kinds of process,

20 benchmarks suggest that if you have 100 participants or

21 more you can make those assumptions.

1   Okay, when you have more participants you are more

2   sure that you've captured the true value of that

3   benchmark and you can narrow the competence intervals,

4   so the test will be tougher because you'll have smaller

5   competence intervals then you saw in the two tables I

6   showed you with 100 participants.

7   But the two points of view, our proposed

8   benchmarks, do weed out poorly performing systems so

9   this by itself is a big step in terms of these kinds of

10   requirements and it is relatively easy to raise the

11   thresholds.

12   But these were VSS 2002 systems. And in the

13   standards world and conformance testing to a standard

14   tend to be in general on the conservative side. However

15   on the other side, there should be a forward looking

16   standard.

17   New systems are coming down the pike very soon.

18   For example, for VVSG '05 certification. So how much

19   higher can we put these, and also recall because people

20   are in the loop here, there is always some upper bound

21   of how high you can go because humans always make

22   mistakes.

1   So in the next slide. I think to make some policy

2 here we do need some additional data, one to say how

3 much flexibility do we have with the test laboratories

4 to get good reproducible results.

5   And we do propose to do some future, very soon in

6 fact, testing with voters with difference experiences

7 and different geographic regions, looking at older

8 populations, such educated populations.

9   I should note, benchmark thresholds are always tied

10 to the demographics of the test participants. We will

11 be collecting also for existing demographics, some

12 additional data, which will tell us more about in terms

13 of exploring the statistics for looking at 100 users and

14 we also will be looking at accessible systems to see how

15 they perform with this test.

16   So I think with that, I believe Whiney probably has

17 some additional discussion and some policy direction for

18 us in terms of the benchmarks.

19   DR. JEFFREY: Okay, Whitney, over to you.

20   MS. QUESENBERY: This is Whitney. Sharon, how

21 did you guess?

1   I'd like to speak in favor of the notion that this

2   should be a forward looking standard with somewhat

3   higher levels of benchmarks but I'm not going to propose

4   any specific benchmarks here.

5   I know that we are going to do probably if I have

6   the numbers right, at least as much data collection in

7   the next round of testing that Sharon just mentioned, as

8   we have done to date and that will give us some

9   geographical distribution, a look at some broader

10   demographics, and will give us a much richer dataset.

11   What I'd like us to do at the TGDC today is to

12   provide some direction to NIST as they do the data

13   analysis of those tests with where they should be

14   looking.

15   So for instance if we look back at the three

16   benchmarks that will be the pass/fail benchmarks, right

17   now the level that we've been talking about are kind of

18   pegged at a median.

19   They would disqualify half the systems and half the

20   systems that were tested would pass, but these are VSS

21   2002 systems and we know that there has been

22   improvements in systems since then and we can only hope

1   that changes in new systems have added to the usability

2   of those systems as well as improving other aspects like

3   security and reliability.

4   So one way to look at it is to simply say we want

5   to raise the threshold and just increase it, but in the

6   long conversations on HFP we have been given a good

7   education in statistics by the NIST scientists and

8   statisticians that you can't just say I wish it could be

9   100 and therefore I'll make the level 100.

10   So these have to be numbers that are reasonable and

11   I think we've also been concerned that we not create a

12   standard that is so high that no system can meet it.

13   However, one way to look a this is to say as we

14   look at the scores that the systems we have tested so

15   far and that we will test in the future in setting these

16   benchmarks, we could say what is the highest level they

17   have actually achieved.

18   So for instance if we look back on slide 20 at the

19   benchmark test results that include total completion

20   score and voter inclusion in that, one of the things you

21   see is that one system has a voter inclusion index range

22   interval that is higher, that is the bottom level of

1   System B at .49 is actually completely above any of the

2   other three systems.

3   So I have to ask the question, especially on a

4   standard that won't even be approved until 2009, why

5   aren't we aiming at the highest level of each of those

6   benchmarks?

7   Now I'm going to say some numbers and I don't mean

8   them as a formal technical proposal. They're just as an

9   example. So maybe 98 percent, maybe we'd like to see

10 98.5 percent. I'm not sure if 99 is technically

11 possible on the total complete score.

12   On the perfect ballot index we're currently

13 proposing 2.33, but one system achieves a 1.07 to 352

14 range, again completely above -- well not completely

15 above the others but above several of the others.

16   Why not go for something like 3.0 as pulling a

17 number out of my hat, and on the voter inclusion index

18 which is essentially accuracy plus variability, why not

19 look for something like 5.0 that gets us into the range

20 of the top systems.

1   Now I know that we can't just sit here as people

2 who neither worked on the data or are statistical

3 experts and say this is the value you should pick.

4   We really do look to the NIST scientists to give us

5 recommendations and I believe that based on our initial

6 request of them that the values that we have in front of

7 us are good values when our direction was to create

8 benchmarks that weeded out systems with poor usability.

9   The question I'd like to raise for everyone is

10 should we be raising our sights and be looking to try to

11 create benchmarks that exemplify the best usability that

12 we can reasonably achieve. Thank you.

13   DR. JEFFREY: Thank you, Whitney. This is Bill

14 Jeffrey. This is addressed to you Whitney as a

15 question.

16   What you're describing, actually the way I

17 interpret it, is a goal or an aspiration for this as

18 opposed to a hard requirement. Is that fair?

19   Because certainly in the text of the requirement it

20 should clearly state which direction -- your higher

21 numbers in certain cases is better and would indicate

22 perhaps a more robust system.

1   Putting an actual stretch goal at the moment as a

2   requirement I think would be difficult to actually embed

3   as a requirement.

4   Are you happy with specifying specific goals and

5   emphasizing in the text that literally higher is better,

6   in this case lower is better, and that may result in a

7   more robust system?

8   MS. QUESENBERY: Well, I think certainly if the

9   intro doesn't now, and I think it does say that higher

10 is better, I think we've constructed all of these

11 numbers so that higher is better.

12   I guess what I'm saying is, and I don't want us to

13 set numbers because I do think that this should happen

14 after the next round of testing.

15   One of the things that Dr. Laskowski alerted us to

16 is that when we do larger numbers of participants that

17 competence intervals will be tightened and therefore the

18 numbers will be tightened.

19   So I don't want to just say let's change 2.33 to 3.

20 What I would like and I think we can do this as

21 (unintelligible) of the meeting is to say perhaps we

22 adopt benchmark levels that have been proposed now but

1 that we know that those will be revisited after the next

2 round of data collection, and that we set the direction

3 for NIST to come back after the next round of data

4 collection with a set of benchmarks that are not

5 unachievable by any system but they reflect the best

6 scores by any system.

7   DR. JEFFREY: Thank you. Are there any other

8 comments or questions on this?

9   MR. PEARCE: Yes, this is Philip Pearce. I'm

10 sorry, I tried to raise my hand and it didn't give me

11 the opportunity to do that for some reason. Anyway, is

12 it okay if I do it at this time?

13   DR. JEFFREY: Absolutely, please do, sir.

14   MR. PEARCE: Okay. Again the question or the

15 comment that I've got is that I would like to in

16 addition to looking at the next set of tests that are

17 going to be conducted, that have been identified in the

18 slides and in the discussion so far, is to also look at

19 future tests because again things are changing and I

20 would be pretty disappointed if it looked like we even

21 tried to set standards based on the next set of tests

22 and didn't look three years, or five years, or ten years

1   down the road and to be able to conduct these tests

2   again and to see where those values maybe would sit at

3   that future time.

4   So some way or another I would like to see us

5   factor that into the discussion and also into the

6   recommendations that we make.

7   MS. QUESENBERY: This is Whitney. I completely

8   agree with Philip. I know that this puts a burden on to

9   the EAC for how these things are updated but I think

10   very much like the innovation process, hopefully the new

11   requirement in whatever version this becomes on this

12   whole thing that we're voting on now will improve

13   systems and will improve the usability of them.

14   I think one area where we're all particularly

15   concerned is the usability of the accessible voting

16   system where we've had some antidotal reports in the

17   field that are not very encouraging and hopefully these

18   will also encourage, but we don't want to say well, we

19   set a level back in 2008, and in 2020 we're still

20   accepting that as the proper level, even if new systems

21   have come along that might have improved it.

22   DR. JEFFREY: Chairman Davidson.

1   COMMISSIONER DAVIDSON: Underneath the law of

2   HAVA, it requires us to go back every four years, the

3   EAC, to review to see, not only in this area but any

4   other area, if there is a need to bring the TGDC back

5   together to revisit writing a new iteration, or

6   especially one area, arena.

7   It doesn't say everything has to be done but that

8   is really up to the EAC, and as we move forward

9   obviously we have no idea what four years will be down

10   the road. There may be a lot of changes or maybe really

11   not that many changes. It's the unknown. But the law

12   does require that the EAC review it before making a

13   determination whether they bring back the NIST and TGDC

14   to move forward.

15   DR. JEFFREY: Thank you. This is Bill Jeffrey. I

16   would also like to just add that I think that this also

17   shows, and I just want to reemphasize something

18   mentioned earlier, what an exciting area that this is

19   because this is the first time that we've actually got

20   even an inkling of what the members would look like.

21   And I really do want to applaud the subcommittee

22   for doing this research and also to emphasized that this

1 is essentially original research that actually did go

2 out for formal, technical peer review which also I think

3 adds a lot of credibility to it.

4   I'd like to recognize Secretary Gale for a comment

5 or question.

6   SECRETARY GALE: Thank you, Dr. Jeffrey. Well

7 first of all I want to congratulate Sharon. She has

8 done a very impressive and a very outstanding job

9 developing a relatively simple formula with very real

10 data to back it up.

11   I understand Whitney and Phil's position about

12 possibly raising the threshold to encourage

13 manufacturers to increase simplicity and usability, but

14 in looking at the test data it does appear the subjects

15 were probably a bit more educated then average and

16 perhaps different then other test labs we might recruit

17 so I think that the standard that Sharon has set maybe

18 be a higher standard then you might realize and we won't

19 know until there is further testing.

20   So it seems to me that it would be appropriate to

21 approve this and wait for later testing in other

1   locations to see if there is a different educational

2   level and maybe a little different skill set maybe.

3   DR. JEFFREY: Whitney.

4   MS. QUESENBERY: This is Whitney. I was

5   actually reminded just looking at my notes from

6   Commissioner Davidson's original talk, that the schedule

7   actually has a slot in there in between the two public

8   comment periods for the TGDC to review and look at the

9   comments.

10   And maybe that's an appropriate time to re-look at

11 this, and what we should do is pass the benchmarks as

12 they've been proposed and then by then we'll know

13 whether there's been new data that suggests that we

14 should change it in any way.

15   DR. JEFFREY: Thank you. Any other comments or

16 questions? Okay, if there are no other comments or

17 questions, what I'd like to do is again for symbolic

18 reasons ask if Whitney as Chair of the HFP subcommittee

19 would like to propose Resolution 08-07.

20   MS. QUESENBERY: Absolutely.

21   DR. JEFFREY: Is there a second?

22   MS. MILLER: This is Alice. I'll second it.

1   DR. JEFFREY: Hi, Alice. I didn't know you were

2 on.   I'm sorry. Okay, so thank you. So good, we've got

3 the symbolism complete.

4   Okay, let me read Resolution 08-07, which has been

5 proposed and seconded. This is the HFP VVSG Sections,

6 Final Approval, and fortunately it's a little easier to

7 read then some of the other ones.

8   The TGDC grants final approval for the Human

9 Factors and Privacy sections part one, chapter three

10 all, part three, chapter four, section 4.5 as part of

11 its second set of VVSG recommendations to the Executive

12 Director of the EAC subject to editing as instructed by

13 the TGDC at this meeting and final review by the Chair

14 of the TGDC.

15   Are there any comments or questions on this

16 proposal? Okay, hearing none I will ask Thelma to call

17 a roll call vote.

18   MS. ALLEN: Roll call for 08-07. Williams.

19   DR. WILLIAMS: Abstain.

20   MS. ALLEN: Wagner.

21   MR. WAGNER: Abstain.

22   MS. ALLEN: Paul Miller.

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 1        MR. MILLER:     Yes.

 2        MS. ALLEN:      Gale.

 3        SECRETARY GALE:     Yes.

 4        MS. ALLEN:      Mason.

 5        MS. MASON:      Yes.

 6        MS. ALLEN:      Gannon.

 7        MR. GANNON:     Yes.

 8        MS. ALLEN:      Pearce.

 9        MR. PEARCE:     Yes.

10        MS. ALLEN:      Alice Miller.

11        MS. MILLER:     Yes.

12        MS. ALLEN:      Purcell.

13        MS. PURCELL:    Yes.

14        MS. ALLEN:      Quesenbery.

15        MS. QUESENBERY:     Yes.

16        MS. ALLEN:      Rivest.

17        DR. RIVEST:     Yes.

18        MS. ALLEN:      Schutzer, Schutzer.  Jeffrey.

19        DR. JEFFREY:    Abstain.

20        MS. ALLEN:      We have nine yes'es.  We have enough

21   for a quorum.
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 1   DR. JEFFREY: Excellent. It's my fingers too. So

 2   congratulations to the Human Factors. I think you just

 3   made history actually. First time I think we ever got

 4   requirements like this, so congratulations.

 5   Looking at my agenda there is also a resolution,

 6   which would be the final approval for the entire

 7   document, which includes the appendices. It has not

 8   been formally introduced. Would somebody like to

 9   introduce it? I'm talking about Resolution 09-07 and

10   I'll read it if somebody wants to introduce it.

11   MS. QUESENBERY: I'll be happy to introduce it.

12   This is Whitney.

13   DR. JEFFREY: Hey Whitney, thanks. Is there a

14   second? This is Bill Jeffrey, I'll second it.

15   Let me read it. This has been proposed and

16   seconded. VVSG document final approval reads the TGDC

17   grants final approval for the document Draft Voluntary

18   Voting System Guidelines Next Iteration, August 7, 2007,

19   in its entirety as the second set of VVSG

20   recommendations to the Executive Director of the EAC

21   subject to editing as instructed by the TGDC at this

22   meeting and final review by the Chair of the TGDC.

1   Resolution 09-07 has been offered and seconded.

2 Are there any comments or questions on it? Hearing

3 none, I will ask Thelma to do a roll call.

4   MS. ALLEN: Roll call for 09-07. Williams.

5   DR. WILLIAMS: Yes.

6   MS. ALLEN: Wagner.

7   MR. WAGNER: Abstain.

8   MS. ALLEN: Paul Miller.

9   MR. MILLER: Yes.

10   MS. ALLEN: Gale.

11   SECRETARY GALE: Yes.

12   MS. ALLEN: Mason.

13   MS. MASON: Yes.

14   MS. ALLEN: Gannon.

15   MR. GANNON: Yes.

16   MS. ALLEN: Pearce.

17   MR. PEARCE: Yes.

18   MS. ALLEN: Alice Miller.

19   MS. MILLER: Yes.

20   MS. ALLEN: Purcell.

21   MS. PURCELL: Yes.

22   MS. ALLEN: Quesenbery.

1   MS. QUESENBERY: Yes.

2   MS. ALLEN: Rivest.

3   DR. RIVEST: Yes.

4   MS. ALLEN: Schutzer. Jeffrey.

5   DR. JEFFREY: Abstain.

6   MS. ALLEN: We have ten yes'es. We have enough

7   for a quorum.

8   DR. JEFFREY: Congratulations team. I don't know

9   why there is so much noise in the background. It's

10   probably the clapping. My heartiest congratulations to

11   the entire TGDC and the NIST support team. I think you

12   just produced a document that will be going to the EAC

13   shortly.

14   So with that, I will open it up if there are any

15   additional resolutions, or comments, or questions that

16   TGDC members have, for example Ron Rivest.

17   DR. RIVEST: Yes, thank you. This is Ron Rivest.

18   We had some discussion earlier about the innovation

19   class and I did want to introduce a resolution

20   recognizing that we've really just gotten started with

21   the innovation class.

1   We're handing this process over to the EAC. We've

2   had a number of discussions with the EAC and within the

3   TGDC and as it was noted earlier by Secretary Gale that

4   this process has really just begun. There's a lot of

5   uncertainty here and the resolution really just sort of

6   recognizes the handoff and the importance we put upon

7   the innovation class.

8   Let me now read the proposed resolution. This is

9   Resolution number 07 --

10   (Tape Interrupted While Changing Sides)

11 **(END OF AUDIOTAPE 2, SIDE A)**

12   *   *   *   *   *

13 **(START OF AUDIOTAPE 2, SIDE B)**

14   DR. RIVEST: -- Title encouragement of

15 innovation. The TGDC recognizes that innovation and

16 voting systems must take place for voting systems to be

17 usable, accessible, secure, reliable, and accurate for

18 all voters and voting populations.

19   For innovation to occur, the TGDC has directed NIST

20 to create initial requirements and a general set of

21 procedures for an innovation class as outlined in TGDC

22 Resolution 03-06.

1   The TGDC urges the EAC to develop and published

2   detailed plans and specific procedures for an innovation

3   class program so as to encourage innovation in voting

4   systems and to make clear to vendors how they may use

5   the specific procedures, steps of the innovation class

6   to achieve conformance to the VVSG for their innovative

7   products.

8   SECRETARY GALE: This is John Gale, Secretary of

9   State, Nebraska. I would second that but I think the

10   Resolution number might be wrong, Dr. Rivest.

11   DR. JEFFREY: Yes.

12   DR. RIVEST: I have the wrong number?

13   DR. JEFFREY: If Dr. Rivest would accept a

14   friendly amendment. He may be reading an old version.

15   We have Resolution 10-07, which is a slightly more

16   concise version of what you've said.

17   DR. RIVEST: Well I've got perhaps the older

18   version, yes.

19   DR. JEFFREY: Would you like me to read --

20   DR. RIVIST: Please.

21   DR. JEFFREY: And please then confirm that this is

22   the one that you are looking for.

1   This is Resolution number 10-07. The TGDC

2   recognizes that innovation in voting systems must take

3   place for voting systems to become more usable,

4   accessible, secure, reliable, and accurate for all

5   voters in voting populations.

6   The TGDC urges the EAC with technical assistance

7   from NIST, to continue to develop and publish detailed

8   plans and specific procedures for an innovation class

9   program so as to encourage innovation in voting systems

10   and to make clear to manufacturers how they may use the

11   innovation class to achieve conformance to the VVSG for

12   their innovative products.

13   DR. RIVEST: I'm happy with that as a friendly

14   amendment, yes.

15   SECRETARY GALE: Secretary John Gale. I also

16   accept that as a second.

17   DR. JEFFREY: Excellent, thank you. So there is a

18   resolution and it has been seconded. This is Resolution

19   10-07. Are there any comments or questions?

20   This is Bill Jeffrey. I'll just add a comment. I

21   heartily endorse this.

1   Any other comments or questions? Okay, hearing

2 none I will ask the parliamentarian, Thelma Allen to

3 please call the roll call vote. That's hard t say.

4   MS. ALLEN: Roll call for 10-07. Williams.

5   DR. WILLIAMS: Yes.

6   MS. ALLEN: Wagner.

7   MR. WAGNER: Abstain.

8   MS. ALLEN: Paul Miller, Paul Miller. Gale.

9   SECRETARY GALE: Yes.

10   MS. ALLEN: Mason.

11   MS. MASON: Yes.

12   MS. ALLEN: Gannon.

13   MR. GANNON: Yes.

14   MS. ALLEN: Pearce.

15   MR. PEARCE: Yes.

16   MS. ALLEN: Alice Miller.

17   MS. MILLER: Yes.

18   MS. ALLEN: Purcell.

19   MS. PURCELL: Yes.

20   MS. ALLEN: Quesenbery.

21   MS. QUESENBERY: Yes.

22   MS. ALLEN: Rivest.

1 DR. RIVEST: Yes.

2 MS. ALLEN: Schutzer, Schutzer. Jeffrey.

3 DR. JEFFREY: Abstain.

4 MS. ALLEN: We have nine yes'es. We have enough

5 for a quorum.

6 DR. JEFFREY: Excellent. Congratulations. Number

7 10-07 passes. With that I will ask if there are any

8 other comments, questions, or resolutions that the TGDC

9 would like to offer.

10 MS. PURCELL: Mr. Chairman, this is Helen Purcell.

11 DR. JEFFREY: Yes.

12 MS. PURCELL: I would like to offer another

13 resolution. We have all talked this morning, or various

14 people have talked about the good work that has been

15 done not only by the Chair but by the staff of NIST so I

16 would like to propose Resolution, I believe it would be

17 11-07.

18 DR. JEFFREY: That is correct.

19 MS. PURCELL: The TGDC expresses its sincere

20 appreciation for the exemplary leadership of the Chair,

21 Dr. William Jeffrey, and the work of this committee to

1   meet the relevant mandates of the Health America Vote

2   Act.

3   The TGDC also recognizes the superior technical

4   efforts of NIST scientists and support staff in both the

5   drafting of the VVSG recommendations in organizing the

6   activities of this committee and its working

7   subcommittees.

8   DR. JEFFREY: Thank you. Is there a second?

9   DR. RIVEST: This is Ron Rivest, I would like to

10 --

11   DR. JEFFREY: Okay, there's a second and a third

12 and a fourth. There is Resolution number 11-07 that has

13 been proposed, seconded, third and fourth. Are there

14 any comments or questions on this?

15   SECRETARY GALE: This is Secretary Gale. I just

16 want to I guess elaborate a little bit on the tremendous

17 leadership you have provided Dr. Jeffrey for not only

18 NIST and for TGDC but for the country.

19   NIST provides an incredible academic and research

20 institution that's very significant to America and its

21 future, and your leadership as captain of that ship is

22 extraordinary and you'll be missed, not only by all of

1 us but any of those who believe in the importance of

2 science and the future development and growth of our

3 economy and provision for our future. So thank you for

4 your service.

5   DR. JEFFREY: Thank you very much, sir. And

6 again, if everyone can make sure that their system is on

7 mute.

8   There's a very almost embarrassing resolution on

9 the table and it's been seconded. I will ask the

10 parliamentarian to call the roll call vote and I'll be

11 noting who says no.

12 **(LAUGHTER)**

13   MS. ALLEN: Roll call for 11-07. Williams.

14   DR. WILLIAMS: Yes.

15   Ms. ALLEN: Wagner.

16   MR. WAGNER: Abstain.

17 **(LAUGHTER)**

18   MS. ALLEN: Paul Miller, Paul Miller. Gale.

19   SECRETARY GALE: Yes.

20   MS. ALLEN: Mason.

21   MS. MASON: Yes.

22   MS. ALLEN: Gannon.

1   MR. GANNON: Enthusiastically, yes.

2   MS. ALLEN: Pearce.

3   MR. PEARCE: Yes.

4   MS.ALLEN: Alice Miller.

5   MS. MILLER: Yes.

6   MS. ALLEN: Purcell.

7   MS. PURCELL: I guess I'm a yes.

8   MS. ALLEN: Quesenbery.

9   MS. QUESENBERY: Yes.

10   MS. ALLEN: Rivest.

11   DR. RIVEST: Another enthusiastic yes.

12   MS. ALLEN: Schutzer, Schutzer. Jeffrey.

13   DR. JEFFREY: I'm going to vote yes.

14   **(LAUGHTER)**

15   MS ALLEN: We have ten yes'es. We have enough

16   for a quorum.

17   DR. JEFFREY: But that was only because of the

18   second half of that compliment was the NIST scientists

19   and staff. With that, are there any other comments,

20   questions, or resolutions?

21   SECRETARY GALE: Dr. Jeffrey, this is John Gale,

22   Secretary of State, Nebraska.

1   DR. JEFFREY: Yes, sir.

2   SECRETARY GALE: This is a final comment.

3 Obviously we're all very, very proud of NIST and your

4 staff and the work they have done, as well as all the

5 members of TGDC as voluntary members of this

6 extraordinary effort.

7   I think we need to urge the election administration

8 community, and the election equipment industry, and the

9 public, and all of the non-profit organizations with an

10 interest to really give this a very thorough vetting.

11   Obviously we've all done the best we can do but

12 we're not saying this is absolutely without some flaw,

13 or some fault, or some possible need for modification.

14   The issues of cost, the issues of the election

15 administration practicality and the reasonableness are

16 things that really deserve the same amount of attention

17 that we've given to the technical development of these

18 guidelines so no one should assume by this vote or by

19 the adoption of this iteration that it is ultimately an

20 unalterable record that is irrevocably committed in

21 stone.

1   It's certainly the best we can offer and we hope

2   that we have a very vigorous and robust debate out there

3   as to how to move forward.

4   In elections there's nothing more critical of our

5   democracy then voter confidence in our elections and

6   part of that is equipment, part of that is election

7   administration, and part of it is in the usability

8   equipment by the average voter.

9   So we have a lot of work left to be done, but we

10 certainly have made a first bold step forward. Thank

11 you.

12 DR. JEFFREY: Thank you. Actually that was

13 incredibly well put. I think that this is an historic

14 moment but it's just the first of what will be many

15 steps along the way to get to the final version and I

16 don't envy the EAC for the amount of work that lies

17 ahead. The public comment period is going to be

18 incredibly important.

19   I completely concur that this is not cast in stone,

20 that as we get comments and as we understand the

21 implications from the vendors and from the costing,

22 that, you know, I think the TGDC and hopefully NIST will

1   be standing right there to provide whatever support the

2   EAC needs in working through the issues because again I

3   think everybody's got exactly the same vision and goal

4   in mind.

5   I'll also say that I came into this two years ago

6   obviously knowing nothing about elections other then

7   casting my own ballots, so with quite a bit of

8   trepidation, but I'd like to thank all the TGDC members

9   for explaining all these things to me, the NIST staff

10 for being absolutely phenomenal.

11   I said at the beginning, this is one of the most

12 important projects that we could be working on. It

13 affects the life of every single American. You should

14 be incredibly proud. I'm incredibly humbled to be

15 working with you on this and I am very, very proud of

16 the product that we have delivered. So thank you all

17 very much.

18   And with that if there are not any other last

19 comments or questions, I officially then adjourn this

20 meeting and I would like to offer a round of applause

21 for everybody who worked on this. So thank you.

22 **(APPLAUSE)**

1   And thank you to all the TGDC members as well.

2   This meeting is adjourned.

3   **(END OF AUDIOTAPE 2, SIDE B)**

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2   <u>CERTIFICATE OF AGENCY</u>

3

4   I, Carol J. Schwartz, President of Carol J. Thomas

5 Stenotype Reporting Services, Inc., do hereby certify we

6 were authorized to transcribe the submitted cassette

7 tapes, and that thereafter these proceedings were

8 transcribed under our supervision, and I further certify

9 that the forgoing transcription contains a full, true

10 and correct transcription of the cassettes furnished, to

11 the best of our ability.

12

13

14   _____

15   CAROL J. SCHWARTZ

16   PRESIDENT

17   ON THIS DATE OF:

18   _____

19

20

21

22