PUBLIC MEETING

DEPARTMENT OF TRANSPORTATION

VOLUNTARY SAFETY SELF-ASSESSMENT

Friday, October 20, 2017

10:00 a.m.

US DEPARTMENT OF TRANSPORTATION

CONFERENCE CENTER - OKLAHOMA ROOM

1200 NEW JERSEY AVENUE SE

WASHINGTON, D.C. 20590

(202) 366-1845

Reported by: KeVon Congo
A P P E A R A N C E S

Acting Administrator Heidi King, NHTSA

Nat Beuse, NHTSA

Debbie Sweet, NHTSA

Steve Gehring, Association of Global Automakers

Ian Grossman, American Association of Motor Vehicle Administrators

Brian Daugherty, Motor Equipment Manufacturers Association

Dan Smith, WAYMO

Anne Marie Lewis, Auto Alliance

Henry Jasny, Advocates for Highway and Auto Safety

David Friedman, Consumers Union, a Division of Consumer Reports

Von Lindsey, Lindsey Research

David Kidd, Insurance Institute for Highway Safety

Kevin Vincent, Faraday Future
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MS. SWEET: Good morning everybody. And I appreciate that you are able to join us today. My name is Debbie Sweet so if anybody contacted me, this is the face.

On behalf of DOT and NHTSA we appreciate you coming in today and welcome you to our headquarters.

I'm going to start before we get the show on the road, just with some general housekeeping ideas.

Everybody came in this morning through security. I appreciate you taking the time to do that and getting here early so that we could get started on time today.

If you can keep your visitors badge that will help through security throughout the day. We do need escorts so if you need to leave the conference center we will have some escorts available for you to go there.

Bathrooms: if you go out this back corner, cattycorner from here are a couple of bathrooms, you don't need an escort, you are still within the conference center. So you are fine to move about from there. And again the conference room behind us is
available. You are free to move about the conference center without an escort.

In case of an emergency and we need to head of the building we can come out these doors over here, head to the left and you go back to the atrium, back this way is the main entrance to the building. And then we would come back in that entrance as well and unfortunately have go through security again. But that is only in the case of an emergency.

As a courtesy to the others in the room and to assist in our audio we ask that you please silence your cell phones. And any time that you are speaking please speak into the microphone so that we can get it via webcast.

We are webcasting today's public workshop. It is going to be available if anybody needs the link on our NHTSA website. There is an automated vehicle site specifically and you can scroll down through that and there is a public meeting section and it is billing should be available on the public meetings part of our website. So that is available as well.

We are going to start in a few minutes and
then we'll go through to 12:00 lunch time we'll take a break. You are welcome to use the cafeteria which is just in the other side of our building, that way you don't have to go through security again. If you do leave the building, there are restaurants literally every direction that you turn outside this building. So feel free.

We'll have -- the afternoon sessions start back up at one o'clock. A reminder that you may need to come back through security so give yourself a little bit of extra time for that.

Upon returning from lunch we'll go ahead and open the mikes for that afternoon session, talk about the challenges to the self-assessment, some new ideas and improvements and then we are going to open it up to approaches to public disclosure.

If we have extra time we'll go ahead and open the mike to other topics pertaining to the voluntary self-assessment.

We do have a public meeting coming up in November. So anything that pertains to other sections of our voluntary guidance 2.0 document we will request
that we save those comments for the November 6. But anything that has to do with voluntary safety self-assessment we do welcome remarks today in the afternoon session.

Afternoon remarks at the mic will be limited to five minutes. If you go beyond five minutes we will ask you to conclude your remarks and take a seat so we make sure we have time for everyone that wants to participate.

So again we will be doing a webcast and we will have a transcript. So that will be available as well. We will have an executive summary that we will be able to provide publicly in a couple of weeks. So that will all be coming out on our website as well.

So that is it for housekeeping. I'll go ahead and hand it over to Nat Beuse, our Associate Administrator for Vehicle Safety Research.

MR. BEUSE: Thank you, Debbie.

Initially I had this nice long intro planned but working in innovation I've got to be fast-changing and adopt, so this morning we actually have the opportunity to have our Acting Administrator Heidi King
come and open up this workshop.

So Heidi joined the NHTSA family about two weeks or so ago and has hit the ground running. She has lots of experience in government, lots of experience in private industry. And we are very, very blessed to kind of have her lead the agency at this time, really at a time of incredible transformation.

So, I'm going to stop talking so you can hear from her. So please join me in welcoming our acting administrator Heidi King.

[APPLAUSE.]

MS. KING: Nat, thank you very much for the kind introduction. And thank you and thanks to all of the NHTSA team for all the work that has gone into developing a vision for safety.

Good morning everyone, it is wonderful to see you today. I really appreciate you coming to visit with us. Welcome to the headquarters of the U.S. Department of Transportation on behalf of Secretary Elaine L. Chao, on behalf of everyone at DOT, and at NHTSA and myself. I want to thank you for engaging in the process today.
I also want to thank each of you for giving us feedback throughout the development of 1.0 and 2.0. As you know your feedback is very, very important to us and to the process. Your time and comments today will help strengthen the recently released voluntary automated driving systems guidance.

As I am sure you are aware together we've embarked on a truly remarkable path. Automated driving systems offer the potential to revolutionize transportation from delivering roads that are safer, reducing traffic, reducing fuel costs, and delivering new mobility options to seniors and people with disabilities. Automated vehicles look to transform transportation.

At DOT and NHTSA, of course, our central focus as always is safety. Safety is number one. NHTSA's mission remains to help Americans drive, to ride, and to walk always safely. We know, we all know that 94% of all serious collisions and crashes are due to human factors. By addressing those factors we can reduce collisions. By addressing those factors we will be addressing the resulting deaths and injuries.
In 2016 we lost 37,461 people to motor vehicle collisions, people who our friends, our neighbors and our colleagues. Fatalities spiked by more than five percent in 2016 and that followed an eight percent increase the previous year. The ability to reverse those negative trends and dramatically improve safety is why we are focusing our work here today on automated driving systems.

To fulfil the promise of automated driving systems we must give our full consideration to safety and the testing and the development of these vehicles. That means rigor, that means being transparent, it means learning from one another. It means broadening public understanding, not just of these vehicles' potential benefits, but how safety is being addressed in their development and in their testing.

Public trust is essential to the advancement of automated technology as we all know. The 2.0 guidance and the voluntary safety self-assessment are tools to build that public trust, to encourage entities to discuss safety, to discuss the importance of insuring occupant and non-occupant safety, to protect
the public and to increase the public's safety.

Our collaborative efforts with all stakeholders will move automated driving systems in the right direction. Most importantly it is advancing these technologies safely.

Just last week WAYMO became the first entity to describe how it is addressing its safety elements contained in the voluntary guidance. By encouraging public disclosure of the voluntary safety self-assessment we look to support the efforts of other entities who wish to release information about how they are addressing safety.

I understand, we all understand that this is a new and it is an innovative approach. But a technology this new and this dynamic requires an approach that is flexible, that is adaptive and that is open. Because this is a new and different approach NHTSA stands ready to help entities implement the voluntary guidance. By bringing stakeholders together today we can share and discuss different views and approaches and together we can work through the barriers to advancing the automated driving systems together.
In addition to today's workshop, just to make sure you all know we have an additional public listening session regarding the entire 2.0 document on November 6, here at the U.S. Department of Transportation headquarters. We hope you will once again participate and bring even more voices into the discussion.

Thank you again for your time and for working with us on this effort and for your comments today. We look forward to hearing your thoughts. We look forward to hearing your considerations regarding the voluntary safety self-assessment.

Have a great day. Thank you.

[APPLAUSE.]

MR. BEUSE: Thank you, Acting Administrator King.

So I think before I turn it over to Debbie to kind of level set everybody on the purpose of today's workshop I think it is worth reiterating a couple of different things.

Number one kind of just why this meeting and not another type of meeting. So as the Acting
Administrator said we are really actually focused right now on implementation. How do we implement the guidance?

What Secretary Chao announced in September was an important step because for a while companies didn't know, states didn't know what was going on with the guidance and so that now has been clarified. We are now at the implementation stage.

And already we've heard some feedback about how do we do these self-assessments, how do we make them available to the public and as the Acting Administrator mentioned WAYMO did that last week. And so this workshop really is a chance to hear not just from one entity but from other entities about their thoughts on how to make these self-assessments useful, what kind of information to put into them, and then the whole aspect of public disclosure.

This is not a meeting to argue about what is happening on the Hill. This is not a meeting to talk about whether things should be regulated or not regulated. So I would ask folks that are commenting to really stay focused on the task at hand which is really
this narrow piece of the framework and the voluntary
guidance and disclosure of that.

The other thing to point out is really this
will evolve; right. But not in the sense that we have
to start from square one each time. What it means is
that we will make tweaks along the way, things that
need to be changed, things that need to be modified.
But really this is really now we have to get on with
the business of implementing this.

And so now I'm going to turn it over to Debbie
who is going to walk through and make sure everyone who
maybe didn't read the guidance actually knows what's in
there and what is this thing called the voluntary self-
assessment.

So Debbie, please.

MS. SWEET: All right. Thank you, Nat. And
again thanks everybody for coming.

So I want to make sure that we set the stage
for today's discussion and our focus. When we released
2.0 it contained two distinct sections. The first one
was for the voluntary guidance for automated driving
systems or if I refer to it as ADS. And the second
section was for technical assistance to states.

Like Nat said today's discussion is going to focus solely on the voluntary guidance and the 12 elements that were contained in that and a voluntary safety self-assessment or I might refer to that as a VSSA, it is a mouthful.

The voluntary guidance contains 12 safety elements. These are elements that experts across the industry agree with, priority safety elements when we are talking about developing and deploying and getting these vehicles out onto the roadways. The elements included in the guidance, I'm going to go through all 12 of them, system safety, operational design domain, object and event detection and response, fall back for minimal risk conditions, validation methods, human machine interface, vehicle cyber security, crashworthiness, post-crash ABS behavior, data recording, consumer education and training, and federal, state and local laws. So those are the 12 that we covered in the voluntary guidance that came out in September.

It is also important that we review the scope
of the guidance. The guidance and subsequently the
VSSA are not limited to passenger vehicles only. So
the expectation is that any vehicle or any equipment on
public roads under NHTSA’s jurisdiction would utilize
the voluntary guidance and best practices in industry
and that they consider public disclosure of the safety
information through a VSSA. This includes low speed
vehicles, includes motorcycles, passenger vehicles, and
includes medium and heavy-duty trucks and buses among
others.

With respect to which systems that the
guidance is geared towards we’re focused on SAE Levels
3 through 5. Those levels in which this system is
going to take over full control including monitoring of
the environment. So Levels 3 to 5.

The guidance recommends areas of consideration
and that these entities as they go about developing and
testing but we also then look at the public facing side
of the guidance and that is the voluntary safety self-
assessment. That tool, that is the opportunity, that's
the avenue by which entities can publicly offer
information about how they are achieving safety and how
they are taking into consideration the 12 elements that
we included in the voluntary guidance.

We know the purpose of the VSSA. We went
through refinements which is what we put out in
September. But we are now at the point where we want
to implement this. We want to get these tools out
there and, in fact, we've already begun with WAYMO's
introduction of their safety report last week. And
that was a month after we put out the new guidance. So
we are already moving forward.

Receded in the guidance a few points in
relation to the public disclosure of the VSSA but
really we made an effort to support industry and
innovation and understand that an entity has the best
assessment of how they're going to increase public
education, how they're going to get that information
out. So we have not set prescriptive instructions on
the VSSA or the public disclosure. Entities are
encouraged to provide the VSSA to the public but we
haven't set forth a format for presentation nor is
there for the most part any desired language that we
requested in writing the guidance.
We have recommended one statement, one direct statement addressing whether or not a safety element was considered in the product development. That is one thing that we did recommend. Inclusion of that statement though increases the clarity to the users of the VSSA. We have to think about who is tapping into this and how they are going to have access to the information as they start to understand both technology and when they consider whether or not they are going to have vehicles and equipment on their roadways in their jurisdiction.

So with respect to the content of the VSSA we posted a template on our website recently. That template shows one of our 12 safety elements. And we hope everybody has had a chance to look over that, it is in the resources section of our AV website. So we hope everyone got a chance to look at it before today's meeting.

The template sets first the premise of the automated driving system in the subject vehicle. Those vehicles and the system characteristics we would expect be discussed in the VSSA so that the users can
understand subsequent information and the ADS in general.

The template includes the types of information, I have to emphasize that, the types of information that an entity could include in the VSSA. It is not actual content. So for the safety element we used which was crashworthiness, the types of information included summaries of crash simulation scenarios, physical tests, it might include a summary of child passenger safety information. If your system is going to be intended to carry passengers under the age of 12 you might offer information about the protection and testing, discussions for non-traditional seating configurations if that's appropriate for your system. There also might be summaries of how the vehicle considers crash forces from other vehicles or infrastructure. That is just a few of the things that we listed. That is by no means a checklist. That template does not provide a checklist for saying we've done this, this, and this, we're good to go. That is not an exclusive list either. Those are just examples of the type of information that an entity might
consider including in their VSSA.

So we are not expecting this to be an exhaustive recount of every action an entity has taken to address any particular safety element. It is envisioned to contain concise information on how you utilized the guidance and how you utilized your best practices within your entity or your company or industry best practices for that applicable safety element.

The manner by which an entity discloses that information remains flexible as well. The one example that we have in public now is WAYMO’s. We see that their choice was to put that on their website, their company website. That was their choice. There may be other options appropriate for other entities. And the user perspective that we are hoping to hear today from folks in the audience is going to be a big factor in making the determination on what is appropriate for each entity.

So at today's meeting we want to hear your perspectives on the template, approaches and considerations for improvement to that. We don't
currently have a general repository for VSSAs and we're interested to hear your input on that and if that is even necessary.

So with representatives from across the board with our stakeholders here today each of them is looking at the VSSA from a different angle and we are looking forward to hearing from each of those perspectives.

I do want to make sure everyone is aware that with the federal notice that came out for today's meeting there is an open comment period, it is a 60-day comment period. That closes on December 18. If you are interested in the Docket Number the Docket Number is NHTSA-2017-0086, again NHTSA-2017-0086. You are welcome to offer public comments in that manner as well.

So I'm happy with the turn out today. And based on this turn out, based on the fact that we already have information out in the public realm I think we understand and we all see the importance of this information getting out to the public.

And so we see the desire of the entities to
publish quality information that is beneficial and consumable and we see the desire of the users to find information that they can learn from and is successful to them.

So I want to thank you in advance for a positive and productive conversation today. And with that I'm going to go ahead and wrap up and we'll start with a couple of comments.

Steve, I'm going to ask Steve Gehring to come up to the table first.

MR. GEHRING: So Debbie would you like me to sit here.

MS. SWEET: Yes, please, Steve.

MR. BEUSE: It's very intimidating.

MR. GEHRING: It is.

MR. BEUSE: And probably for the folks on the phone, probably good, as Debbie said use the mic and have at it.

MR. GEHRING: Okay. Great. Well good morning. My name is Steve Gehring, Vice President of Vehicle Safety and Connected Automation at the Association of Global Automakers, a trade association
representing the U.S. operation of international motor
vehicle manufacturers, original equipment suppliers,
and technology providers. Our members are making
significant investments and progress in the research
and development of automated vehicles. And we
appreciate the opportunity to provide comments on the
updated federal AV guidance.

In my remarks today I will provide some
initial perspectives on the vision for safety 2.0 as
well as some general suggestions for building upon the
guidance moving forward.

It is well recognized that AV systems across
all levels of automation will provide significant
opportunities for improving safety, efficiency and
mobility. With the increase in highway fatalities it
is important now more than ever that the policy
environment continues to support the safe testing and
deployment of innovative technology. To that end we
support NHTSA's strong statements on the appropriate
role of state and federal government with regard to the
development of automated vehicle policy.

Consumer trust and confidence are critical to
the adoption of new technology. And we are encouraged
that the administration has embraced the safety, an
assurance process that provides the necessary
flexibility to develop, test and deploy highly
automated vehicle systems.

With research and data needed to understand
how best to regulate the performance of AV systems we
believe the federal guidance supported by NHTSA's
existing authority strikes the right balance for
promoting safety and innovation.

At the same time the process also provides an
opportunity for manufacturers and other entities to
demonstrate transparency to the public on how they are
addressing priority safety elements identified within
the guidance. Specific to each of the guidance areas
we appreciate that the agency has sought to provide
additional clarification to help address ambiguities
within the original federal policy. We also agree with
the agency's decision that while issues such as ethics,
data sharing and privacy are important areas to
consider as vehicles become more connected and
automated these items do not necessarily apply directly
within the context of a safety self-assessment but should be discussed through broader stakeholder engagement separately from the guidance.

Our members agree that the voluntary safety self-assessment process will help support innovation and encourage open communication with the public. However, we also recognize there are questions regarding specific types of information that should be included as part of such an assessment whether it be for testing or deployment. While providing a template may be useful for some companies in helping determine the level of information to provide the guidance should continue to encourage freedom for manufacturers to disclose relevant information in a format that works best for them. This is an emerging area as you well know and how manufacturers or other entities may communicate relevant safety information to the public is likely to evolve as we gather more experience and a greater understanding of consumer expectations.

In any case NHTSA should maintain that any supporting templates are consistent with the guidance and make clear that the agency is not dictating a
specific format or style for how information is
presented to the public. Related to this we appreciate
the guidance underscoring the importance of identifying
the appropriate level of detail and transparency that
can be provided without compromising confidential
business information.

However, recognizing that the agency may at
some point in the future request additional information
related to a VSSA or automated vehicle design it is
critical that NHTSA insure proprietary data is
protected given the significant investment in new
technology and the competitive nature of the industry.

As we continue to develop our written comments
on the guidance we would like to provide the following
initial recommendations for the agency to consider
moving forward. Recognizing the voluntary nature of
the safety self-assessment we believe there is some
public benefit for the agency to develop and maintain a
website that provides links for consumers and other
policymakers to access the VSSAs publicly disclosed by
manufacturers. To compliment the model state policy
NHTSA should consider organizing a public workshop or
series of workshops like we are having today to convene
a national discussion on the key policy issues
affecting states. This would not only better align the
respective role of state and federal government but
would also provide a forum to insure a more uniform
national approach to AV policy.

While the guidance provides helpful
recommendations for manufacturers to consider in the
development there are still a number of regulatory
barriers that need to be addressed for both the testing
and deployment of automated vehicles. It is critical
that NHTSA continue aggressively research how best to
modernize existing regulations to support deployment of
these lifesaving technologies in the short term.

Finally, we believe it would also be helpful
for the agency to consider the development of a
research priority plan and share with the public to
help better understand how we can avoid duplication and
collectively work together to the shared goal of
increased safety and mobility.

In conclusion we believe that it is important
that we have the right process in place to assure both
the agency and the public that automakers are designing
their systems with safety first in mind. I would like
to just reiterate that we believe the agency has made a
number of significant improvements to the federal
guidance.

We appreciate the opportunity to provide
remarks here today. And we look forward to continued
engagement with both NHTSA and other stakeholders to
insure the policy framework continues to support the
testing and deployment of automated vehicles.

Thank you.

MR. BEUSE: Thank you, Mr. Gehring.

Couple of follow up questions. Number one,
have the companies within Global discussed sort of the
challenge of translating very technical information
into a format that is digestible let's say to consumers
while not making it sound like a marketing piece.

MR. GEHRING: We are in the process of
discussing that and will have more information in our
comments. But that will be something we are focusing
on and will focus on.

MR. BEUSE: Great. And then in reference to
your comment about the either a central repository or
links on a website, is the preliminary discussion
around how would NHTSA know that those were there, the
companies would have to tell us or what is the thinking
behind how that would work?

MR. GEHRING: We think the agency does a very
good job in canvassing what's going on out in the field
and we would also expect that manufacturers and
suppliers and those that are deploying AV systems would
be in communication with the agency as well. I believe
the guidance seeks to develop a collaborative and open
up lines of communication with those and the AV space.
So we think continuing to communicate with the industry
will help that communication. So we would expect that
various companies will be reaching out to NHTSA for
discussions. And we would expect NHTSA would continue
to reach out to entities within the industry to
continue to understand what's being deployed.

MR. BEUSE: Great. Any questions?

MS. SWEET: No questions.

MR. BEUSE: I've got one more. I think one of
the early iteration of comments from the one last
September there was a lot of comments from companies about iterative versions, you know, might need to make changes to this and update the self-assessment. Is that something also that companies within Global are discussing is the idea that there would be just one self-assessment that would just maybe bits and pieces would be updated over time or that there be kind of multiple entries for any one company or any one system or it is still being discussed?

MR. GEHRING: It is still being discussed. But I would say the more flexible that the guidance can remain in providing information I think it will open up areas for everyone to consider as far as what information is useful for the public, for public disclosure and what helps inform various policy makers. So I think the agency has developed a flexible process here and I would suggest that that continue and will also integrate that into our comments as well.

MR. BEUSE: Okay. Great.

MS. SWEET: I do actually have one question. Steve, you mentioned that the template is helpful for some entities that may want to look for some guidance
in the VSSA but that you still want the freedom. On the other hand you mentioned that it is unclear what types of information that should go into the self-assessment. So does the template assist in understanding what types of information go in even if that's not necessarily the format or design of choice for an entity. Is that beneficial to understand the types of information that might go in?

MR. GEHRING: Yes, I would say that a template can be useful particularly for new entrants that are coming in and deploying automated vehicle systems. But I think as was said earlier I don't think it should be viewed as necessarily a checklist since this is something that is looking to be publicly disclosed I think it is a good list for folks to consider but I wouldn't limit oneself to that and really encourage manufacturers to open up this dialogue and not limit themselves by a list or view the list as something that is being strictly required because I think that the intention here is to get the dialogue going and publicly disclose information.

MR. BEUSE: Yeah. I mean certainly we can
clear it right now. You know I think the whole point of that template and the information that is in there, as bulleted in there as Debbie mentioned is really not meant to be a checklist. And she mentioned that in her remarks. So anybody confused about that in cyber and in the room that is not what the purpose of that is. It really was a guide based on comments that we received and also our own research and talking to our engineers about well, if you were going to write something like that this is probably what people should consider. And so thank you for raising that and allow this opportunity to clear that up.

MR. GEHRING: And I believe your opening comments made that clear as well. So thank you.

MR. BEUSE: You're welcome. Thank you.

MS. SWEET: Thanks, Steve.

All right. If Ian Grossman can come to the table, I'll go ahead and set the computer up.

MR. BEUSE: Good morning.

MR. GROSSMAN: Good morning. How are you?

MR BEUSE: Good, how are you?

MR. GROSSMAN: I'm all right.
MS. SWEET: If you just want to give me a nod when you want to advance a slide.

MR. GROSSMAN: Sure. Good morning. Ian Grossman with the American Association of Motor Vehicle Administrators. By way of quick background AAMVA is the organization that represents all the motor vehicle agencies and law enforcement agencies throughout the U.S. and Canada. In plain speak we represent the DMVs and the state police, and state police specifically on their duties as relates to on the road highway enforcement throughout North America.

Our members are very excited as is everyone in this room about the promise of automated vehicles and the safety promise that it holds for highway safety. States are excited to be partners in this conversation. As we know many of the DMVs are being turned to for promulgating regulations and handling that public oversight of public protection. And that's why this partnership with state government and the private sector, of course, federal government is so important. The states take individually are the laboratories for innovation and we want to support an atmosphere, an
environment that allows for that innovation to flourish. At the same time keeping for first and foremost are our mission to protect our citizens both as relates to highway safety matters as well as in many cases more traditional consumer protections that need to be put in place.

And so it is within that context, in that partnership and balancing innovation and safety that our comments today around the voluntary self-assessment is based.

So what I'll cover is some thoughts on the access to self-assessments, how states imagine they'll make the best use of the self-assessment and some additional information that would be of use to our jurisdictions.

So first on access, perhaps a theme that we'll start to hear throughout the day today is this idea of single source that an entity has published a safety assessment. We would encourage that there be a one-stop shopping clearinghouse of these safety assessments so that if a manufacturer chooses to voluntary do them they could be filed in a single place. This is really
important for state policy makers and state regulators
to have that place where they can go to to know what
has been filed and then have those links to the actual
documents.

An enhancement on that would be the ability to
notify when something has been added to that
clearinghouse or it has been updated so that there are
these push notifications so that states can know
someone has filed a voluntary self-assessment, let me
go and read what they have put out there.

The use by jurisdictions I think most of the
bullets here are pretty consistent with how most
anybody would use the assessment to know what might be
wanting to be tested in their state vis a vis focus on
safety. The safety and the risk that the manufacturer
is putting in place, consumer education training,
compliance with laws and the last piece I think is a
little bit different than perhaps the traditional set
of how folks are going to use the assessment. We also
want to know what law enforcement and first responders
may need to know when interacting with these vehicles
at roadside if indeed there is unfortunately an
incident or an event that occurs when that first
responder is on scene or law enforcement has to
communicate with the vehicle how might they be trained
and they be aware on how to do that.

So this I think is also another piece that has
already been talked about early on. The idea that it
is not just a checklist and that we are really looking
for some in depth information in these areas. I
appreciate that in your comments that clearly the
intent was providing that in depth information. I
think perhaps what we are hearing this morning is that
maybe that could use some additional guidance and
clarity so that those that are completing the self-
assessment really understand the depth of information
that everyone is looking for. That is something that
would be very helpful to the states.

We would like to see that information being
specific to vehicle model as opposed to only an entity
that is doing a disclosure. That if an entity is
manufacturing more than one model with the features
that require self-assessment that the disclosures
either within one disclosure be specific to models or
separate disclosures. We don't necessarily have a
strong feeling on that method but that we at least
identify and acknowledge that multiple models may be
needed to be recognized differently.

And any summary of those test results. This
is the information that when states are determining
their role in regulation or writing rules it really
falls in the category of the more information they know
the more educated they are the better partner they can
be. And so we just want to continue to encourage that
type of content.

Number of vehicles being tested and the number
of vehicles being produced. Again this goes to scope
and scale whereas state is going to interact with an
entity one way if they want to test three models on
their roads versus if they're rolling out 300 on their
roads. So really understanding the scale and scope of
that is helpful for jurisdictions.

The training materials as I mentioned early on
both as relates to first responders and law enforcement
and to the general public. Appreciate your question
earlier about translating that technical language is
something that is really helpful to consumers. State regulators very much need that same type of translation. So we would encourage that.

And updates on the assessment. We think that is important. When an assessment becomes outdated, if the software or hardware upgrades are being made, if updates are being sent through an online system to the software on the road we believe that those types of junctions, that should trigger an update to that self-assessment.

And of course a list of the states on which the entity is testing or is considering testing and contact information. And I recognize and am sensitive to the fact that in a very public disclosure entities may not want to provide direct contact information. I will say that some states have struggled to find the right contact at different entities and if there is a way that some part of the self-assessment can create that bridge for states to build that direct relationship we would find that helpful.

So to continue this partnership we AAMVA and its members really want to encourage all entities
playing this space to provide and update the self-assessment. We recognize and appreciate that the NHTSA guidance creates it as voluntary mechanism, so anything we can do to encourage those entities to take advantage of that voluntary opportunity to file that disclosure we would very much be happy to support.

We also in your opening remarks, Debbie, you mentioned how it applies to all different classes of vehicles. We would like to see some guidance and clarification as it relates to after-market products that may be sold after market to add on automated features to a vehicle. And we would further say that we think that a self-assessment or a different template version of the self-assessment would be helpful in those after-market products that would then apply to those vehicles.

And of course continuing conversations like we are having today and that we are having next month on the docket as a whole. AAMVA has been a partner with NHTSA early on in this conversation. It has been an incredibly valuable and successful partnership and we are looking to continuing that as we go forward.
And we really appreciate being here today and providing the perspective of the public sector particularly state governments that are really on the front lines of regulating this innovation and protecting their citizens and providing that environment for innovation that hopefully will be a huge safety gain and drive down those fatality numbers that we all ultimately want to see as a common goal.

That's it.

MS. SWEET: Thank you, Ian.

MR. BEUSE: Thank you, Mr. Grossman. I actually just have maybe two minor comments. And I appreciate your TTD (ph) button, very important. So you mentioned the notification, push notifications and you mentioned somehow that there be like a central repository. So what that triggered in my mind is I know that my own instruction, we are not talking about the other section today, but in that section there was a recommendation about sort of states -- at the kind of state level versus the local jurisdiction level helping out with registration. And so my question back to you on that is is it conceivable that states would have
sort of a single entity or a single person or is it just sort of like people would somehow have to register themselves to get these push notifications?

MR. GROSSMAN: I think at the most basic level somebody from the state would register to receive those notification. There may be some states where multiple individuals are working on that and so they would need to register. And really it is about being able to be notified that something new has been added to that public clearinghouse.

MR. BEUSE: Yeah.

MR. GROSSMAN: It could be something that is of value even beyond state personnel, folks that want to be able to track this and see what's occurring to be notified.

MR. BEUSE: Right.

MR. GROSSMAN: We don't have any strong feelings about where this should be housed or who it should be hosted by. We just would like to see it centralized as one stop shopping.

MR. BEUSE: Right. Okay. So I mean it's what we're talking about. The other thing I think that
comes up in your comments and you were pretty clear on
it is the struggle between providing concise summary
information that is not overly technical that provides
useful information about how a company is addressing
safety. In the discussions that you folks have had is
there a distinction between what would be provided
let's say to the general public versus something that
would be useful for let's say a state legislature or an
AAMVA jurisdiction?

MR. GROSSMAN: I think there is a level of
technical specificity that might be of use to say the
DMVs --

MR. BEUSE: Yeah.

MR. GROSSMAN: -- that are really diving deep
in this that may not be as accessible or applicable to
either the public or a state legislator. However, I
wouldn't -- I would suggest that it is so new that the
more we can make all that information available to
everyone I would hesitate to separate it too finely.
However, I would reinforce that there will be a need
and desire for state DMV officials to want to dive
deeper than maybe the average consumer that is looking
at the product or the state legislator that is trying to be educated.

MR. BEUSE: Right. Right.

MR. GROSSMAN: Does that --

MR. BEUSE: Absolutely. Absolutely.

MS. SWEET: Similar comments actually with a single location with push notification would require some kind of registration and --

MR. GROSSMAN: Yes.

MS. SWEET: -- and is that public. Is that something that you would envision everyone in the public having access to these kind of push notifications or if is it not necessary are there two different venues one to get push notifications and others where maybe the public just goes to learn about it and doesn't necessarily require that kind of registration. Is there a difference?

MR. GROSSMAN: I think if they're -- sure.

Ultimately no. I think if the nature of the voluntary self-assessment is to be a public disclosure for anyone who wants to be able to access that I would see no harm in allowing any individual to register to receive a
notification that that information has been loaded or updated.

MS. SWEET: In your comments you mentioned having contact information for entities.

MR. GROSSMAN: Uh-huh.

MS. SWEET: Is having that as part of the public website would open up entities to risking getting a lot of information -- a lot of calls.

MR. GROSSMAN: Right.

MS. SWEET: So is that something that is in your mind more state specific?

MR. GROSSMAN: Yes. And as I mentioned I am not sure how -- I don't have today a solution on how to do it. I just know that the self-assessment process may provide a platform where we could bridge that gap. And if indeed we're creating a clearinghouse of this information, perhaps there is an opportunity to dive deeper, figure out how to do that. But I would agree. I would not anticipate that entities would have to put up that individuals name and contact information for anyone to access.

MR. BEUSE: I have one follow up question if I
can. And granted it has only been out there for a little bit of a month but when you think about kind of how companies and entities will be interacting with kind of AAMVA, DMV at the state level this constant theme of having awareness of what's going on in the jurisdiction or what's going on in that local community kind of comes up time and time again and so the question I have for you is, and you may not have an answer and that is okay, if somebody is developing let's say a system, let's call it the driving system, the ADS and that is the same no matter what vehicle they put it on, do you see a clever way to sort of be able to meet the need of knowing what is deployed in their jurisdiction without sort of predetermining or them foreshadowing that they might be deploying in other part of the country that they haven't announced yet, let's say. So in other words they might start in one place and that system is going to be nearly identical to one deployed somewhere else but they are not ready to disclose that. How do you wrestle with that with the need for wanting to know a specific make and model or specific vehicles?
MR. GROSSMAN: Well, I think in that instance I mean that is where the update to the self-assessment can be a solution. So if at one point you're putting out that model in only State A, you're putting out that self-assessment that identifies that. And then when you are ready to expand it you will be able to go back in and update that assessment to say technology is the same, we are expanding the footprint of where it is going to be.

MR. BEUSE: Okay. Great. Thank you.

MS. SWEET: I do actually have one more question. There is a lot of responsibility I think expected of NHTSA to inform the public and states about information in any kind of self-assessment that we might get. It is foreseeable that if a state is requesting or looking to get or to permit an entity that that jurisdiction wants a self-assessment tape with the document or information provided to them; is there an avenue for states to provide NHTSA with that information if they were to find out about it before a federal notification; does that make sense?

MR. GROSSMAN: I think I followed what you were
saying. I think the answer is the good news is that
informally the states have a very strong and positive
relationship with NHTSA where I believe that
information is flowing regularly. To set up a formal
relationship with that I think that is where the
centralized clearinghouse could come to effect because
I would be pressed to imagine a situation where an
entity would send an assessment only to that one
individual state without actually also filing it in
that central location if that central location is
available.

MS. SWEET: Just -- I think a lot of us think
about these entities as large corporations and
companies and we have to take into consideration the
smaller guys, the start-ups, the garage folks
developing systems.

MR. GROSSMAN: Absolutely.

MS. SWEET: And maybe they don't know about
responsibilities that would lie with the federal
government and might just show it to a state.

MR. GROSSMAN: In that case I think it would
be a simple business step for a state to say have you
also uploaded this to blah, blah, blah where all the
self-assessments go to, you really need to do that.
And states would be happy to reinforce that with the
terminology that they're working with.

MR. BEUSE: And thinking through kind of a
follow up to that question and my question before
because you mentioned updates and then kind of this
exchange going on. So I think year two down the road,
year three, the same question I kind of alluded to with
Mr. Gehring what's been the preliminary conversations
within the AAMVA community about sort of updating of
self-assessments? Is the idea that we would have kind
of the one that was published or made available
whatever December 2017 and that same one keeps getting
updated and there is a whole kind of track of that or
is the idea that no, you just really only care about
most current one and that is what's available, so
multiple documents or one single document? What's the
--

MR. GROSSMAN: That's a great question. I
haven't heard a specific conversation about that. I
think the most current information, of course, is
important but I think having a historical record as we know once -- just because there's a new update to the vehicle or the system doesn't preclude that previous vehicle system for still being on the roadway.

MR. BEUSE: Right.

MR. GROSSMAN: So I think it has to not supersede it. It needs to somehow be connected to the original self-assessment. Whether or not the template itself allows for that continuation or it's additional filings, I think that's a level of detail that I think could be helpful. We don't have a strong viewpoint on that.

MR. BEUSE: Okay. Great.

MR. GROSSMAN: I would though say as I think through your question not losing that history and having that either in an archive or somehow connected through a hyperlink to the updated version is going to be a valuable piece because all of those previous iterations will still be out there on the road somewhere.

MR. BEUSE: Great. Great. Thank you very much. Appreciate it.
MR. GROSSMAN: My pleasure. Thanks for having us.

MS. SWEET: All right. The next Brian Daugherty. It looks totally different on the screen.

MR. DAUGHERTY: All right. Thanks, Debbie.

MS. SWEET: You're welcome.

MR. DAUGHERTY: Good morning. My name is Brian Daugherty. And I'm the Chief Technology Officer with the Motor Equipment Manufacturers Association, also known as MEMA.

On behalf of the members of MEMA we'd like to thank NHTSA, Secretary Chao, and Acting Administrator King for the opportunity to speak today as well as both of you.

So MEMA, the Motor and Equipment Manufacturers Association represents almost 1,000 manufacturers of original and after-market components and systems for both passenger and commercial vehicles. MEMA has four divisions which you see up here. OESA the Original Equipment Suppliers Association covering light vehicle suppliers. HDMA the Heavy-Duty Manufacturers Association representing commercial and off-highway
vehicle suppliers. AASA the Automotive After-market Suppliers Association. And MERA the Motor and Equipment Remanufacturers Association. So our four divisions give us a unique understanding of the innovation and technology development that is going on across the transportation industry.

So the motor vehicle suppliers are the nation's largest direct employers of manufacturing jobs employing over 87,000 workers in all 50 states and contributing nearly $435,000,000 in terms of U.S. GDP.

Our members support a cleaner safer world and are committed to developing a broad array of technologies and manufacturing a wide range of products, components and systems that make vehicles safer and more efficient. Suppliers are on the forefront in the development of automated driving systems as well as a whole host of other advanced safety technologies that are intended to improve mobility and make it safer for drivers, passengers, pedestrians, cyclists and other road users. Suppliers provide the technologies and components that make up more than 77% of the value of a new vehicle.
Automated driving systems have their foundation in critical building block technologies like advanced driver assistance systems, commonly known as ADAS, advanced vehicle architectures and also vehicle to vehicle communications, also known as V2V.

To get there suppliers have significant ongoing investments in R&D and in validation testing both simulated and real world in order to bring these technologies safely to fruition and onto vehicles.

The bottom line is we believe the technologies our members are developing for their vehicle manufacturers customers will have a profound impact on avoiding or mitigating crashes thereby saving lives through reducing injuries. The development of automated driving technologies is evolutionary. The endeavor to tackle public policies while permitting rapid innovation is a balancing act and requires the collaboration and cooperation among all public and private stakeholders just like we are doing today.

We appreciate the opportunity to be here today to share some initial views on the voluntary safety self-assessments from the recently revised automated
driving system guidelines 2.0 version.

So MEMA supports an iterative transparent approach to provide entities with a flexible framework of voluntary guidance that applies to automated driving systems for passenger cars, light trucks, and commercial vehicles. A guidance approach in the context of a national framework with a clear role for the states sets pathways for all stakeholders to navigate the complexities of automated vehicle technologies and vehicle supply chains.

MEMA wants to ensure that these pathways avoid unintended impediments to product design, enhancements, and innovative advancements, innovative technologies each with a goal of saving lives.

MEMA appreciate key clarifications regarding voluntary safety assessments such as consolidating the elements down from 15 to 12 and then allowing flexibility on the information provided is helpful to entities like suppliers to tailor their assessments more appropriately to the testing and evaluation environment.

We believe the guidance approach is
appropriate for this policy and maintains NHTSA ability
to stay flexible regarding these quickly evolving
technologies. Most of our suppliers are testing their
systems in modified test vehicles which should be
treated differently from production vehicles.
Typically these vehicles are company owned, are
operated only by trained employees and are not intended
for production or sale to the public. Thus MEMA was
pleased that the agency recognizes that during the
testing phase some of the 12 elements are simply not
applicable and offers entities the opportunity to
include an acknowledgement stating that an element is
not applicable.

Also protecting companies' proprietary
hardware and software, intellectual property, and
confidential business information are extremely
important as previous speakers have said. There is
also a great deal of propriety intellectual property
invested in these systems. If the agency needs more
information from an entity then assurances should be
given that the confidential information will be
protected by going through normal confidential business
information protocols.

MEMA encourages NHTSA to consider hosting a central repository of entities safety assessments. This would help provide easy access for not only the agency but also for entities and members of the public and enhance transparency.

It is especially important that in the 2.0 guidelines NHTSA strongly encourages states not to codify the federal guidelines as a legal requirement for any phases of development, testing or deployment.

However, a key concern remains. Vehicle manufacturers are currently allowed to test and evaluate vehicles which do not comply with FMVSSs and are able to operate on public roadways. Suppliers currently do not have this codified. While there are efforts under way in Congress to fix this issue via legislation there are no guarantees that the bill will be finalized and passed. If this legislative solution is not solidified the current US DOT processes do not provide an adequate avenue for suppliers. Therefore MEMA urges the US DOT to address this matter and implement key processes such that suppliers can
effectively petition NHTSA for exemptions allowing testing on public roads.

On behalf of our members thank you for the opportunity to share our views today. We look forward to continuing our interaction with NHTSA regarding these guidelines and voluntary safety self-assessments.

Thank you.

MS. SWEET: Thank you Brian.

So this is going to sound kind of familiar but coming from your perspective especially with all the testing that your members conduct, updates are going to be something that are of interest and we've heard that before from folks that have come in, suppliers that have come in. So how do you foresee updates to a self-assessment given that they are done so frequently and do we need to keep track of them in this central repository from your unique perspective of frequent updates?

MR. DAUGHERTY: I think obviously some updates will be necessary. We're still discussing this with our members but I think depending on how general a section is that it may not require as much updating as
people think unless there's some significant changes in
how the vehicle is designed.

I agree with the previous comment that having
access to prior versions of the safety assessments is a
good idea especially if you can have the most current
ones kind of easily available and then an archive with
the older versions so people don't get confused on what
the latest and greatest versions are.

MS. SWEET: Okay. Is this central repository
public or something only accessible for certain
individuals or companies?

MR. DAUGHERTY: I think given that these are
public disclosures I think that having it available to
the public makes sense.

MS. SWEET: In the same format?

MR. DAUGHERTY: I think some of the
confidential information as was discussed in some of
your previous comments and by previous speakers it
would make sense to have some of the contact
information only available to entities that really need
to know that information.

MR. BEUSE: Mr. Daugherty I have a couple
maybe follow up questions. One is maybe to pick up on
the question that Mr. Grossman asked about after-market
equipment let's say. Do you think the discussion that
have happened thus far within the MEMA community that
there is not enough flexibility in this to allow this
to apply to after-market equipment or that there is
kind of a whole new process needed? And I believe what
Mr. Grossman -- I don't want to put words in his mouth
but I believe what he is specifically referencing is
sort of someone buying software and putting it on top
of the vehicle.

MR. DAUGHERTY: Right. No at least my initial
impression from the guidelines, the 2.0 guidelines you
can see that applying to the after-market as well. So
maybe there needs to be somewhat of a different version
but I think in general that makes sense. When you also
look at the commercial vehicle market you know a lot of
the systems really are almost after-market systems that
the OEs install on those heavy trucks per the fleets
specifications when they order a vehicle. So given
that I think that you'd have a very similar process.

MR. BEUSE: Right. And you referenced this
testing versus deployment versus for sale and I think you would agree with me that it has become somewhat complicated over the past 12 months.

MR. DAUGHERTY: Yes.

MR. BEUSE: But beyond that I think in looking at from a state perspective and using these voluntary self-assessments is that sort of becoming not a necessary distinction. I mean granted there is a distinction between two engineers in the car with the laptop and they are doing their thing but the moment you put a member of the public in there it just seems to be a different kettle of fish.

MR. DAUGHERTY: I agree with that division. I think as long as you have company employees testing company vehicles even on public roadways that is very different than actually having members of the public either in the car with those test engineers or on their own in a deployed vehicle.

MR. BEUSE: Right.

MR. DAUGHERTY: So I think that is distinction there.

MR. BEUSE: Okay. And maybe the last question
when you look at kind of the role of the suppliers

currently right now many suppliers have test vehicles

on the road and presumably that's what Debbie was

mentioning presumably those folks would have voluntary

self-assessment they'd make available and it might need

to be updated et cetera. But how does that change or

more for how you guys talking about it with respect to

kind of now once that is ready for let's say deployment

is that now a shift that someone else is responsible

for the self-assessment or you think the supplier

community would still be responsible? And the reason

why I ask is because this has come up in discussion at

the state level with the jurisdiction wanting to know

like who do they need to talk to if they need to talk

to anybody.

MR. DAUGHERTY: I think that is a very good

question. I guess I would say that you know a

supplier, especially larger tier one suppliers that are

doing testing on these types of vehicles all the time,

testing a vehicle that is kind of that testing element

we talked about. So there would obviously be the

voluntary safety self-assessment there. Once that
technology was headed for production I would assume
that would be through an OEM, that OEM then would work
with that supplier of the technology or maybe multiple
suppliers to integrate that into a new safety
assessment for that OEM -- from that OEM for that
deployment.

MR. BEUSE: Okay. Great. Thank you very
much.

MR. DAUGHERTY: Thank you.

MS. SWEET: Thank you, Brian.

Dan Smith, if you can come up next.

MR. SMITH: While you are getting ready,
Debbie I'll just say good morning and then good
morning. If I had understood this seating arrangement
I might have shined the backs of my shoes.

[LAUGHTER.]

MR. BEUSE: Always good for a joke from Mr.
Smith.

MR. SMITH: I'm Dan Smith. I'm the Senior
Regulatory Advisor at WAYMO. And I want to thank DOT
and NHTSA for holding this workshop and more important
for leading the way in expending interest in and
It is great to be here with so many people who whatever our perspectives welcome the huge safety benefits that self-driving vehicles will bring.

On October 12 WAYMO published the WAYMO safety report, called On the Road to Fully Self Driving which you can find at waymo.com/safetyreport, we thought it was a clever title. At any rate you will find it there.

This next slide shows the cover of the report on the left and parts of the table of contents on the right. Again anyone who is interested can find it at waymo.com/safetyreport.

Let me briefly explain what our report consists of and why we published it. Our report provides an overall framing of WAYMO's safety processes for our Level 4 technology which is being designed to operate without a human driver. The report addresses the 12 safety areas that NHTSA has recommended for inclusion in a voluntary safety self-assessment in its automated driving systems 2.0, A Vision for Safety.

Yes, we can move to the next slide please.
However, rather than simply list each of the 12 areas and address them separately we decided to address them within four broader categories which you can see up on the screen. Number one our systems safety program which we call safety by design. Number two how WAYMO's self-driving vehicles work. Number three testing and validation methods, insuring our vehicles are capable and safe. And number four interacting safely with the public. I am going to spend a minute on each of those to give you an idea what is covered within those area.

You can leave that one up there if you would please, thanks. First of all our systems safety program Safety by Design as its name implies it summarizes the safety processes we use to address behavioral functional operational crash and non-collision safety. We note in the report that we rely heavily of course on ISO 26262 and the Military Standard 882E which is kind of the grandparent of system safety and as well as our own experience in determining our safety processes that we use. And we in the report go into more detail in terms of hazard analysis and other techniques that we employ.
The second big subject area that we deal with is how our vehicles work which we thought would be of greatest interest to the public because there is so much mystery about how these vehicles actually work and you know everybody's works a little differently but basically they all derive their information from a suite of sensors. And so we describe our suite of sensors and how our software uses the sensor data to make driving decisions; how our vehicles stay within our operational design domain, our ODD; how are vehicles are built to always have the capability to transition to a safe stop if necessary; and how we address cyber security and data recording. All of those are covered in terms of how our vehicles work in a way that we hope is understandable to all readers.

If you could move to the next slide for a minute please and then move back. This one which may be illegible from further away that I'm sitting underscores our redundant safety systems in the vehicle. Redundancy is extremely important particularly at Level 4 and ours is a Level 4 system. So we wanted to explain to folks that in addition to
all of the work we do with regard to developing the
software, designing the software, the hardware that
goes with it to make up sub body system, we also build
in redundancies; we have backup, computing backup,
steering backup, braking and backup power and backup
collision avoidance systems. And so they're just
symbols that we are using for those.

If you could go actually backwards, Debbie,
just so we've got the heading up there. Thank you.

The third category in the report concerns our
testing and validation methods. And here we explain
how we used closed course testing at a facility in
Castle in California; computer simulation, billions of
miles of computer simulation each year; and on-road
testing to insure the safety of our hardware, software,
and of course the complete vehicle.

We explain in the report that we conduct
testing in literally thousands of different scenarios.
And we divide those scenarios as NHTSA does into two
broad categories: behavioral competencies for normal
driving. The report notes that our testing goes beyond
the 28 competencies that NHTSA has listed derived
partly at least from the PAC competencies. And we've
added some of our own based on our own experience for
instance adding school buses which might have been
implied in one of the NHTSA's competencies but clearly
is an important one for self-driving vehicles.

In the crash avoidance area the other major
area of our testing the report notes our use of NHTSA
crash causation research, the 37 pre-crash scenarios
from the 2007 NHTSA report which I am sure everyone
here has read in detail but it does lay out the basic
pre-crash scenarios which we used to develop and model
some of our crash avoidance testing. We've added to
that testing based on our own experience and other
sources including digging into the FARS, Fatality
Analysis Reporting System, of NHTSA to find other
scenarios that we wanted to test.

So all told, and all put together the testing
that we do in behavior competencies and crash
avoidance, the reliability tests we do, the software
tests from the beginning of the process to each version
of the software, all of that testing, we are doing
thousands of tests in different scenarios.
The fourth area of our report deals with what we call interacting safely with the public. And of course this is as important as any other area. Here we describe our user interfaces including our mobile app, our in-car displays and how passengers can speak with WAYMO's rider support team from inside and outside of vehicles. In addition to accessibility features in development and our practices for interaction with law enforcement and emergency responders. And I know that is of great interest to AAMVA and the other folks interested in dealing with the state and local officials. Our report has a fairly broad description on how we do it but if you read our report you'll see we've already begun trainings with state and local emergency responders which we find very useful and I hope they find very helpful. We think that ground level contact is most important for insuring that there is an understanding in terms of what a manufacturer is putting on the roads.

So we chose this organization with these four broad areas because we thought it would be helpful to address the safety assessment subjects within a broader
discussion of our overall safety approach, the way our
technology works and how we test and validate the
safety of our technology and how our vehicles interact
with the public. So we thought those broad categories
made it more understandable.

In providing our report to DOT and NHTSA we
explained where each of the 12 subjects is addressed
within that report's framework.

So that is the what. Now the question is why.

Why did we do the report? Why now? How did we decide
what to include?

The next slide please, actually two slides up.

There were go. Thank you.

In short, the time is right for us to explain
to NHTSA and the public the basic workings of our Level
4 self-driving system and the extensive steps we take
to design and build safety into our self-driving
technology from the ground up both before and after it
is integrated into a fully self-driving vehicle. We
are confident in the capability of our self-driving
technology and committed to its safety. We know that
sharing with the public the basis for our confidence
and the strength of our commitment is important to building public trust around the technology.

DOT and NHTSA also recognize the importance of educating the public on the basic of self-driving technology and the steps companies have taken to insure the safety of those systems. In fact, the public notice for this meeting articulated why an entity would want to issue such a report. The notice said that voluntary safety self-assessments are intended to communicate to the public and that the entity issuing the report is among other things considering the safety aspects of automotive driving systems and building public trust, acceptance and confidence through transparent testing and deployment of automated driving systems.

So we strove to strike a helpful balance between being too technical on one hand or too basic on the other. Reasonable minds can always differ in terms of how the balance is stuck in any of these things. We were trying to insure the report be approachable to those who are not steeped in the technical jargon of automated vehicles but also useful to a technical
audience.

We were able to highlight the important aspects of our technology and safety program without disclosing confidential business information and as NHTSA said in its notice to this meeting the report also allows companies an opportunity to showcase their approach to safety without needing to reveal proprietary intellectual property. We think it is important that NHTSA stated it that way, that the idea of these things is to showcase the approach to safety.

The report that we've done is quite clearly intended only to summarize our safety approach and to provide baseline information to a public that is still looking for basic information on how the cars work. This once again accords with NHTSA's notice for this meeting which recommends that a voluntary safety self-assessment contain concise summary information.

To further educate the public we've also embarked on a focused campaign to help the public better understand the technology which we call Let's Talk Self-driving which you can find at letstalkselfdriving.com, all one word. And we have
partners in that including some local groups and also National Safety Council being partners in this effort to increase public education for self-driving vehicles which I know is extremely important to Secretary Chao.

We don't contend that the report is the last word on the safety of our Level 4 system. We'll be continually improving the safety of that system through the processes outlined in the report insuring that we are ready for every new step along the way.

WAYMO safety culture insures that safety drives our self-driving program insuring that safety issues are always at the forefront.

One final point Acting Administrator King already pointed to the traffic statistics that NHTSA recently published for the world to see. The recent report from 2016 provides a clear warning about continuing down the road we're on as a society with regard to highway safety. 37,461 people died on the roadways, an increase of 5.6% from the previous year. And I'd like to let those numbers sink in for a minute because I know -- I don't know about you but sometimes when I hear these numbers, these large numbers they go
right by, the conversation continues. But that's an amazing toll, 37,000 people.

Self-driving vehicle including WAYMO's are designed not to make the kinds of errors that human drivers make such as driving drunk, drowsy, or distracted and that cause the vast majority of crashes.

The very real opportunity to vastly reduce this annual toll of deaths and injuries as well as the enormous economic costs that add in human toll provides all the incentive anyone needs to stay focused on the ultimate safety goal of self-driving technology.

Efforts by leaders in self-driving technology to make summaries of their safety approaches publicly accessible make it more likely that the public trust of the technology will grow and its benefits will be realized in lives saved and injuries prevented.

Thank you very much for your attention.

MR. BEUSE: Thank you, Mr. Smith.

MR. SMITH: Uh-huh.

MR. BEUSE: Maybe a couple of questions and some of which you addressed but I want to make special emphasis on is as somebody who has had a long career or
making technical information easy to understand and it is kind of striking that balance can you kind of walk us through again, just sort of at a high level some companies processes they consider a CBI and then so how do you take that and try to make sense of it without disclosing the CBI and make it useful.

MR. SMITH: Uh-huh. Well, we did the best we could in that regard. We obviously went through and made sure we weren't disclosing CBI and you need to do that. But we wanted to go right up to the point where we were explaining as much as we possibly could without you know tipping over into the point where we were disclosing something that is really commercial information or proprietary information. So I think what we did was essentially start with the story we wanted to tell, tell it, and then make sure we weren't breaching anything that's truly proprietary.

MR. BEUSE: Did any of the -- and you can say can't answer or whatever but did any of the testing that WAYMO's already been doing kind of help inform the format and the types of information. Was there like sort of a dry run of it to say you know what this is
the right level for kind of general public to
understand or it's just kind of what you guys came up
with without doing that?

MR. SMITH: Any pre-testing of --

MR. BEUSE: Yeah.

MR. SMITH: -- our approach?

MR. BEUSE: Uh-huh. Or the types of
information regarding --

MR. SMITH: No I mean we've got a very great
communications staff and they I think tend to be very
well attuned to what might actually be understandable
to folks who are highly intelligent but not well versed
in this particularly wonky area. So it was their
influence that helped us try to find ways to explain
things. You can see that in the format it is sort of
like okay rather than several pages of dry -- of black
and white text which is probably what I would have
produced, they'll have insets and boxes and so forth
that explain particularly important areas in ways that
are discrete and bite size chunks of information.
Sorry. I think all our credit goes to our
communications staff for understanding how to do that.
MR. BEUSE: Great. Kind of along that same theme what are your initial thoughts about the idea of this template of an element that was sort of put out there. Do you think it's useful? Was it useful? Was it not necessary? What are your initial thoughts on that?

MR. SMITH: Well, oddly enough the template came out the day we issued our report.

MR. BEUSE: It did. There was a version in the PR packet.

MR. SMITH: So we weren’t able to make great use of it, that and the fact that it concerned a hypothetical vehicle with two doors and four passengers and had been subject to intentions and so forth, so in other words I think it was helpful to know that the agency was giving suggested areas as you said earlier today for things that might be addressed rather than trying to proscribe any rigid kind of format.

MR. BEUSE: Right. One of the things you heard Mr. Grossman talk about this idea of having kind specific make/model information and kind of linking that to a safety report. If you kind of think through
that for a moment is that a particular challenge or do
you see it just as simply as he said it is just an
update to a safety report as maybe more vehicles are
added or more states are added or how that would
actually work.

MR. SMITH: Well, I'd like to talk to my
colleagues back in WAYMO in terms of how that might
actually unfold without delving into it now. But for
right now it is simple for us. We've got one platform.

MR. BEUSE: Right.

MR. SMITH: And one automated driving system.

So it is just not all that complicated right now. In
the future it may become a different sort of
arrangement where different manufacturers have
different things going on all over the place and people
need to understand what those different things are.

MR. BEUSE: Yeah. I think we'd look forward
to your comments on that kind of at the comment period
about is there an issue there or not and what are some
ideas maybe to address that. Again kind of all in with
the mindset of trying to make it useful to both the
states who want to see this information but also
protecting CBI and all the like.

    MR. SMITH: Uh-huh.

    MR. BEUSE: Maybe my last question and Debbie might have some as well so this idea of a central repository or a linking system has come up a couple of different times today. How does WAYMO view that or what are your views on sort of the need to kind of have all these things be once stop shopping or is there a better way to do it?

    MR. SMITH: Again I think AAMVA had some very good comments in terms of what it sees as the needs of the state and so forth and then there is the public at large and research institutions and so forth who also would want to know about these things. I think it is just up to NHTSA to figure out what might make the most sense, what your role is, whether it is a central repository point system or what have you. I will say for the moment it is pretty simple.

    MR. BEUSE: Yeah.

    MR. SMITH: Go to waymo.com/safetyreport, that's where you will find the current stock in safety reports.
MR. BEUSE: Right.

MR. SMITH: But as they get to be more numerous that will be challenging.

MR. BEUSE: Yes, and I know you have some experience with sort of when you create these systems sometime and you don't think down the road a bit sometimes you put things in place and you realize I really wish we would have built it a little bit differently. And I think that is what we're trying to think about is we are in year -- no even year month one essentially, we have one which is great and I'm sure we will get others but then as this thing expands does it end up becoming just something that's just not workable because we didn't ask the right questions about all these different issues. That's sort of why we are asking to make sure we are keeping an open mind about the various possibilities for what this would look like to indeed address a one stop shopping but not make it seem like we're sort of holding all of these and somehow some in our possession that aren't -- I mean you wouldn't believe the number of questions we received over the past couple of months about did NHTSA
get one as if we got a bunch and had kept them private or something.

MR. SMITH: Well, you folks know what pressures you've got to deal with but I think that the whole point of the guidance was to be transparent and publicly educational and so forth and where there is a will there's a way. I'm sure I'll hear from other good folks later in the day who will have ideas in terms of how that might get done.

MR. BEUSE: Yeah. Great.

MS. SWEET: So in reading the report --

MR. SMITH: Uh-huh.

MS. SWEET: -- and you stated earlier you didn't call out specifically the safety elements, the 12 safety elements such that maybe a state looking to use it to understand before they were to allow testing or anything they're kind of -- the comments are embedded within without specific callout. How does a user, a state that is looking to expect this safety report as their assurance that you guys have taken all these safety elements into consideration where is their checklist to know these are the safety elements in the
voluntary guidance and WAYMO has specifically gone through it? I know we saw the letter that preceded the document but to be honest I didn't see if that was an appendix to your safety report. But I am just curious how a user matches the items in safety or in the voluntary guidance to your safety report?

MR. SMITH: Right. And as you said we did submit a letter to the Secretary and to Acting Administrator King which did layout, in fact, I missed my last slide there. My last slide would help us. The point is that the 12 areas are dealt with in a way that we have described for the Secretary. We thought the Secretary would be more interested and NHTSA than necessarily anybody else in the general public in terms of ticking off those 12 areas. We'd be glad to explain to anybody where they are. But some of them are fairly I think pretty obvious, the system safety plan is a whole chapter in object event, detection response. We've got the entire sensor suite described; we got the whole section on such things as minimal risk condition and so forth. So I think -- yeah, it might require someone to look around a little bit if they are
actually interested in ticking off those 12 or we could help them with that. But as I explained our purpose was to try to find a really helpful approachable way to get into it without just having a list of 12.

MS. SWEET: As I did go to the WAYMO website to find it. It is how does someone that doesn't know about the waymo.com/safetyreport know that down at the bottom of the page that safety report is what I'm actually looking for to find that type of information?

MR. SMITH: So you mean if someone is interested in the general subject and doesn't know that we have done the safety report how would they know where to look?

MS. SWEET: Uh-huh.

MR. SMITH: Well, let me turn that back at -- that kind of goes back to some degree to the question about whether or not there is a repository. But you raise a good question and I will take that to our comm's folks. In other words they do a great job on that website.

MS. SWEET: No, I --

MR. SMITH: I think if -- it should leap out
at you but maybe there is a better way to make it leap
out.

MS. SWEET: And one last question. Your
discussion in the report is thorough and it goes
through history, it talks about your system as it
stands. So you may not know this but what would an
update look like to that report? Would it be an
addendum? Would be a wholesale new report?

MR. SMITH: We haven't taken that up. I'll
have to talk to my colleagues about that. We -- we're
glad we've got report number one published. And we
just haven't really thought that through. We haven't
thought that through.

MR. BEUSE: Thank you, Mr. Smith.

MR. SMITH: Thank you very much for your
attention.

MR. BEUSE: Yes, thank you.

MS. SWEET: And our next speaker Anne Marie
Lewis. And I'm going to take the screen down.

MS. LEWIS: Good morning. I'm Anne Marie
Lewis, the Director of Safety and Technology Policy at
the Auto Alliance. And on behalf of Alliance members
we thank Secretary Chao and NHTSA for their thoughtful leadership and the opportunity to participate in this public meeting today and discuss the voluntary safety self-assessment.

The action that the DOT and NHTSA's taken with the updated guidance will help to proactively reduce barriers for technologies that can have profound societal benefits. AVs and related technologies have the potential to significantly improve overall safety on our nation's roadways. The fatality numbers that we were just discussing for 2016 underscore what is at stake as we witness another year over year increase in roadway fatalities.

Given that over 90% of crashes are related to human error the crash avoidance technologies of AVs offer great promise to reduce these crashes. The enhanced mobility aspect of AVs are also laudable from a societal, economic and environmental perspective. AVs will offer more personal freedom and greater self-sufficiency for the elderly and people with disabilities as well as other segments of the population without access today. They will also help
reduce congestion getting us from point A to point B faster and with greater energy efficiency.

The future isn't something we should be afraid of or try to slow down. Rather it is something we should embrace and smiling accelerate. That is the path that we believe the administration has wisely chosen with the update to the AV guidance and the revamped voluntary safety self-assessment.

Alliance members appreciate that the VSSA is a voluntary publication process. This update provides transparency to the public of the critical safety elements while affording flexibility for each auto maker or AVs supplier to customize their assessment and publish it in the form that best fits their needs.

Additionally the AVS guidance recognizes that not all of the safety elements in the VSSA will be applicable to test vehicles. This is important and we appreciate this recognition and would like to reemphasize that providing a VSSA for each variant of an AV test vehicle would quickly become unwieldy. Not only do some of the safety areas clearly not apply for automated test vehicles such as consumer education and
training but providing an update for each modification to the vehicle technology would significantly delay the engineering process. We ask that NHTSA to keep this in mind going forward.

In the template provided for crashworthiness there are a few items that could be considered confidential business information. This includes summary of crash simulation scenarios, component testing, and physical tests. We believe these examples should be afforded confidential business treatment if the submitter properly requests it. And on behalf of our members Alliance would appreciate clarification from the agency to this effect.

Additionally with respect to the crashworthiness template our understanding that manufacturers should provide information that demonstrates that the highly automated vehicle being deployed provide an equivalent level of safety overall as compared to conventional vehicles. This approach is consistent with the expanded exemption process in the House and Senate AV bills that are moving through the legislative process.
Related to this point Alliance members appreciate the point that Secretary Chao emphasized in the AVS guidance regarding the enforcement authority of NHTSA to identify defects and issue recalls. This process is the same for AVs as it is for conventional vehicles. And the guidance also reiterates NHTSA's role in establishing FMVSS and enforcement compliance.

In closing Alliance is pleased to be working with NHTSA on updating many of the FMVSS for conventional vehicles for AVs. This is an important step to reduce barriers and we look forward to providing input on this process.

And overall today we'd like to take the opportunity to thank the DOT and NHTSA for their leadership on this issue. The next generation of policy is a powerful and effective step towards providing a safer, cleaner and more accessible mobility for all Americans. Alliance looks forward to submitting more detailed comments as part of the formal docket and I appreciate the opportunity to be part of today's public session.

Thank you.
MS. SWEET: For the issue of CBI in the template that was provided do you foresee being able to address that kind of information in generalized statements and then if necessary maybe linking or stating that you or an entity has submitted CBI as well if there is further information that is perhaps associated with it or is that just something that you don't foresee even going near in the first place?

MS. LEWIS: I think for those specific items I mentioned this would be something more case by case with the OEM.

MS. SWEET: Okay.

MS. LEWIS: So I'm not -- answer today but we can have follow up conversations on that.

MS. SWEET: Okay. I think you know at one point we had envisioned if something did come across as CBI that there would be an opportunity for the self-assessment to state something in a general manner and if an entity felt the need to submit CBI they could do so and maybe include that so that was an option to cover, to be able to cover the general idea and disclose the information that had been discussed. But
also provide or keep the confidential information

confidential and know that it is available if

necessary.

MS. LEWIS: Right. I mean I guess in the

comments, if a manufacturer wanted to submit additional

information about its CBI to NHTSA then we just wanted
to ensure that it would be treated appropriately.

MS. SWEET: Of course. Of course.

Nat?

MR. BEUSE: Yes, I guess on maybe kind of
closing in on that point. And granted it has only been
a month and I know you said you were going to provide
more detailed comments later but have the initial
discussion sort of yielded that template is even
necessary or not helpful or what?

MS. LEWIS: I think the template was helpful.

In our previous comments we had suggested that this
would be helpful. And we do find it helpful.

MR. BEUSE: Okay.

MS. LEWIS: And we appreciate the comments
made today on a checklist and it could be added to but
I think it give us a sense of what you have in mind and
the process is a flexible one.

MR. BEUSE: Yeah, I mean that is one of the
great things about being open and collaborative and
having a dialogue about this is to clarify all of these
things pretty simply. So yeah, I mean I think the
intent is not to get CBI actually at all. I mean the
agency has other tools it can use if it needs to get
that information versus having companies imply in some
self-assessment that there is CBI available if you want
it. I think that is not the intent.

MS. LEWIS: Okay.

MR. BEUSE: Maybe and again with the
recognition that it has only been out there a month and
as Mr. Smith pointed out the template itself the better
part of a week. Can you talk a little bit about what
the conversations have been about translating kind of
very technical information into something that is
useful for the public? I mean some of the companies
did submit templates with their comments last time
around. And I wondered has the conversation matured a
little bit if there is any insight you can give us
about that? The whole goal being is there something
more we could do to sort of help that along? That is why we are asking these questions. It is not so much to just ask questions. It is really to figure out is there a role for the agency much like we did the generic template is there another role we can play with sort of saying if you are struggling with this sort of how much information, here's some pointers.

MS. LEWIS: Yeah, I guess so far I haven't heard any major questions. I think like I said each manufacturer will address the VSSA a little differently.

MR. BEUSE: Right.

MS. LEWIS: So I think we can continue the dialogue on it but I don't really have any areas that we need further clarification on today.

MR. BEUSE: Okay.

MS. LEWIS: Still digesting.

MR. BEUSE: Yes, of course. So switching now to the public disclosure piece and there's already been a couple of ideas floated around are there any preliminary ideas that you can share with us about central repository, not central repository, linking,
not linking, maybe a big docket, maybe not. What have
been some of the thoughts around this sort of public
disclosure piece?

MS. LEWIS: Yeah. So we've just started
having a conversation on this. So unfortunately it has
not gone very far. It would be great to follow up
maybe next week on this particular topic.

MR. BEUSE: Sure. Or the 6th that's fine.

MS. LEWIS: Yeah. I think that if a
manufacturer is putting a VSSA out in the public it
makes sense that they would notify NHTSA.

MR. BEUSE: Right.

MS. LEWIS: But exactly a recommendation about
how a one stop shop happens, I'll have to --

MR. BEUSE: Or maybe one of the concerns about
that if there was some task to have to tell the agency
every time and put it in somewhere.

MS. LEWIS: Yeah, I mean one thing we had
noted in our previous comments is the process for --
well the current process addresses some of our previous
concerns with having to -- there being ambiguity and
when you need to have a new version come out.
MR. BEUSE:  Exactly.

MS. LEWIS:  And especially on the technology is changing so quickly.  So yeah, for any concerns on that to follow up.

MR. BEUSE:  Okay.

MS. SWEET:  Question about the disclosure as well.  I think we've seen from WAYMO the type of company, it is a little bit different as far as public interaction.  In the information that they are providing given their vehicles are out there, they are public knowledge, they are being tested and people are well aware, some of the things that the OEMs are they are testing, they're deploying may mean different numbers but the websites that maybe an OEM has contains very different information I think.  And I'm curious whether or not that's a VSSA about testing or deployment is something that an OEM might consider appropriate or not appropriate, how they feel about that type of material in a very public facing website that's made to sell product as opposed to inform, they are looking to sell a product and so I am just curious how that discussion goes about it being something on
their website?

MS. LEWIS: I think consumer education and awareness is really important for all of our members and so each one may do it a little differently but I would say it might be a great option for them as well. I wouldn't rule that out as an option.

MS. SWEET: Okay.

MR. BEUSE: You mean the association's website?

MS. LEWIS: Well, either the association's website or a member's website.

MR. BEUSE: Okay.

MS. SWEET: I'm good.

MR. BEUSE: All right.

MS. SWEET: That is all we have for this morning. So I think we are a little bit early, we are about 20 minutes early on lunch which might help to get everybody back in the building. So we will go ahead and conclude for this morning.

Again if you are going to travel outside the building we ask that you keep your badges and give a little time in case you have to come back through the
security.

If you have questions about where you might want to go just pop up here, I'll give you a couple of recommendations if you don't know where you are going.

And we'll come back here. And then we'll come back here and start up at 1:00 so if everybody can be back in the room a few minutes before 1:00 to make sure that we are ready to start.

We are going to do open mikes this afternoon.

A couple of you had registered to speak for some time this afternoon. And then we'll open it up to those individual that maybe haven't registered but feel that given the information they've heard this morning they want to make a few statements.

And I'm going to as the folks in the room go we will for the folks on the phone, we will be calling back in. So I'm going to get off the line for the folks on the phone. We'll call back in about quarter to one and sign back in.

For folks on the web there is a second link for this afternoon for those folks who need to sign in on the web. And if anybody needs that information to
send out to folks that they know, come and see me and
I'll take care of that and get you guys the website to
send back out.

So again thank you very much for everyone's
participation this morning. It was really informative
and helpful and we look forward to the afternoon.
We'll see you back here at 1:00.

(WHEREUPON, a lunch recess was taken.)

MS. SWEET: ... started though. We have a
couple of folks that have asked to speak. I am going
to call them up first as a priority. And then if I
call your name to come up and speak and come to the
table the mike should be on. I can double check it.
Provide your remarks and then we may have some
questions for you.

After everyone has spoken that registered with
us ahead of time we will open the mike up for anybody
else that wants to make any remarks.

So with that we will start with Henry Jasny.
Would you like to come forward please? Thank you.

MR. JASNY: Thank you. I am Henry Jasny with
Advocates for Highway and Auto Safety. And Advocates
has long advanced technology to support and improve safety. But as a great American once said "Trust but verify."

Voluntary guidelines that can be ignored by the industry are inadequate to insure American families are not put at unreasonable risk during the testing and deployment of the promised vehicle technology. The optional safety self-assessment proposed by NHTSA in its latest AV policy illustrates the shortcomings of voluntary guidelines. No matter how comprehensive the structure of the safety self-assessment may be manufacturers can simply choose not to publish one or to provide superficial or incomplete information.

Advocates is pleased that WAYMO has released the first safety self-assessment to the public that could be helpful to consumers. While we don't want to pick on WAYMO; WAYMO is the only data point we have to examine.

There are two major problems with the document that WAYMO has submitted or issued. First it is used as an opportunity to craft a slick marketing brochure for technology and the company's product. And second
the submission does not provide sufficient detail and technical information to allow the public to know the safety performance of their system.

We need WAYMO (way more) information.

[LAUGHTER.]

MR. JASNY: Just yesterday my computer crashed but I walked away unscathed. AVs are computers on wheels. So the industry and the agency bear a heavy burden to insure crash safety in the brave new world of driverless cars. The safety self-assessment must provide the public with an honest assessment of the technology limitations as well as the capabilities.

Certainly in the near future not all cars including AVs will be able to avoid crashes, not all AVs will operate as designed, and the public and policymakers must be given an accurate picture of what lies ahead.

Advocates does not believe that manufacturers should use the safety self-assessment as a sales tool. For example WAYMO touts the fact that it has conducted more than 3.5 million miles of on-road driving experience. Testimony before Congress on this very
issue pointed out that New York City taxi cabs accumulate approximately 4 million vehicle miles of travel each day. Also the motor vehicle fatality rate is measured by 100,000,000 vehicle miles traveled. So 3.5 million miles is a comparatively low level of VMP exposure. While Advocates understands that accruing on-road VMP takes time the 3.5 million miles statistic trumpeted by WAYMO should not be presented to the public as an unqualified and rigorous mark of distinction of the technology.

WAYMO's submission also touts the fact that current motor vehicle crashes often involve human error as a factor. But the company fails to mention that 100% of computer programming errors involve human error as a factor. While we are endeavoring to improve safety we must never forget that we are replacing human driver error with human programming errors. Mistakes that could have widespread unintended consequences.

We know from defects and recalls that both people and complex systems are prone to errors and mistakes. That is why Advocates prefers a phase-in approach to AV deployment to insure public safety.
The safety assessment should provide enough information to consumers, researchers and the agency to properly evaluate the current state and development of the technology. For example the WAYMO document provides more specific information on behavioral competencies and test scenarios, more than what is provided in many other subject areas of the document. However even that level of detail still falls short of providing enough information for researchers or the public to understand how the systems will perform in these scenarios and what would constitute a deviation from expected performance.

The WAYMO self-certification addressed many of the recommended subject areas if not all of them proposed by NHTSA but in very general manner. In some cases critical details were lacking and in the end the public is still left with no assurance of safety. For example while WAYMO provided a fairly clear explanation of the SAE level of their proposed systems when it came to the cyber security the discussion was vague and it talked about the approach that builds upon best practices and includes aspects of some industry
standards. Instead Advocates recommends that companies identify the specific standards that they have used and which they believe all the industry should be held to. I do point out that WAYMO did refer to ISO 26262 and we compliment them for that.

WAYMO also provides detailed numbers on current crash statistics, societal costs and mobility and quality of life impact but provides no specific context for the results of their 3.5 million miles of testing in terms of crash rate or fatality rate particularly in comparison to human driver performance.

Furthermore WAYMO did not quantify the results of their work which WAYMO states was able to comprehensively analyze and evaluate the safety of self-driving system prior to operating their vehicles on public roads. If the analysis was so complete why are there no quantified results presented. The public still has no assurance that WAYMO or any other company will meet any specific level of performance to insure the protection of road users.

Finally beyond the information in the safety self-assessment the agency must require explanatory
information for each specific autonomous vehicle
driving system to be provided at point of sale.

Essential information should be on the label and on the
vehicle in clear, concise and uniform explanations and
instructions must be provided at the dealership and on
the manufacturers website as well as included in the
vehicle owner's manual.

In the end the voluntary safety assessments
may amount to little more than marketing materials
dressed up as consumer information. Any consumer
information is helpful to some but probably not to all
consumers and certainly not to others who are
interested in doing research on comparative safety.

Advocates supports the need for consumer
information but the type and quality of that
information must be objective, specific and uniform to
ensure that the public is able to evaluate the
technology and even compare the technology between
companies. However promotional materials and consumer
information are no substitute for regulations to insure
public safety.

Thank you.
MR. BEUSE: Thank you Mr. Jasny. Maybe a couple of questions regarding the generic template.

MR. JASNY: Sure.

MR. BEUSE: So you mentioned the use of standards as one way to -- that a company could put information out about how it is addressing the safety elements. As you know in some of those 12 areas there are no existing industry standards.

MR. JASNY: Right.

MR. BEUSE: What are your thoughts on how that could be achieved otherwise or is there a way to achieve it otherwise?

MR. JASNY: Well, I suspect there is a way to achieve it otherwise. I am not an engineer but I know that the companies can package and produce information about what their testing was, how they conducted it without giving away any CBI, any confidential business information, because nobody wants that. But they can package the engineering information in a way that consumers, not just consumers that are not familiar with the issue but consumers who want to take a deeper dive just like the NCAP test results are given in stars
as well as the raw data is available to consumers.

Consumers learn in different and have the ability to understand at different levels. TRB the report on this years ago shopping for safety. Some consumers just want you to tell them this works or this is the high-quality level or whatever that is. Other consumers would be happy with the WAYMO product except they may feel it is too long because it does explain what they are doing and has a lot of catch phrases and terms of art. But there are other consumers and researchers who want to know much more about the specifics. And we think that a lot of the specifics can be divulged without divulging CBI. I'm sure that the same people that have engineered this great technology that their communications people can figure out a way to impart that information to consumers who want that information, want more detail without giving away confidential business information. For example WAYMO gives a list of the different behavioral types of things that they looked at but they didn't explain what each one was or how they dealt with it or what the results were.
And the other thing is that the Acting Administrator mentioned transparency. Transparency is not only transparency about what is working and what's successful. It is about what the challenges are, what hasn't worked out especially if your ODD doesn't allow you to operate in all circumstances and all conditions. You really have to talk about why that is. But we give credit to WAYMO for talking about the redundancy that they have in their vehicles and talking about the sensor PRAs that they have.

MR. BEUSE: Great. I don't remember if you touched on it but one of the topics that came up this morning is the issue of where to house these things or how would people find them. Do you have any preliminary thoughts on that whole issue?

MR. JASNY: Well, we're generally agnostic about that except that NHTSA is the place that most Americans turn to for information about vehicle safety. And so just like safercar.gov has a portal to manufacturers websites, that might be one way of organizing the information with a drop-down menu of all the vehicle manufacturers or all the AV manufacturers
and the consumer could click on which one they wanted
to find out about.

MS. SWEET: You mentioned three words objective
specific and uniform with respect to the contents of
the self-assessment. Does that mean you are in favor
of a very specific set format with specific content,
checklist type things? Or are you more interested in
seeing the flexibility that manufacturers entities have
now?

MR. JASNY: Well, in the context of the safety
voluntary self-assessments we don't want a checklist.
But the template that you are talking about does have
value in terms of letting a consumer who is not that
knowledgeable compare apples to apples. To be able to
look at one section of one companies' brochure and be
able to compare it to the same section of another
companies' brochure, that's very helpful. But the real
touchstone is what is the quality of the information
that is being imparted and whether there is any
quantified information that's provided.

MS. SWEET: Thank you.

MR. BEUSE: Going back to the central
repository or not central, whatever we're calling it,
do you have any preliminary thoughts about what was
raised this morning about is it better to have just the
most current version of someone's voluntary self-
assessment or is there a need to kind of go back, and
kind of imagine three, four, five years from now and
assuming there's 40 or so entities that are submitting
all these and multiple different versions. Do you have
any preliminary thoughts on that whole thing?

MR. JASNY: Sure. You are asking the wrong
person because I still have the comments I filed in
1990 to the agency in paper form in my files. So I
believe in archiving this. It should -- since it is
electronic it could be there very readily just like I
want to look up a bank statement of mine from five
years ago, it is there on the web. All that
information whether it’s a new one or just a revised
one probably you should revise it every time there is a
change but only come out with a new one when there is a
major substantive change. If WAYMO went to L-3
vehicles they should probably come out with a new one.

MR. BEUSE: Uh-huh.
MR. JASNY: But short of that probably revise it. And I'm not big within the electronic age with this thing of annual updates. If they are changing something, if they are making something significant --

MR. BEUSE: Right.

MR. JASNY: -- the public should know about they could do that on the fly --

MR. BEUSE: Right.

MR. JASNY: -- in real time.

MR. BEUSE: Great. Thank you, Mr. Jasny.

MS. SWEET: Thank you.

MR. JASNY: Thanks.

MS. SWEET: Can we have David Friedman come take a seat.

MR. FRIEDMAN: Dan's not messing with my chair.

Hello.

MS. SWEET: Hello.

MR. FRIEDMAN: So I'm David Friedman. I'm the Director of Cars and Products Policy and Analysis at Consumers Union, a Division of Consumer Reports.

There are a few points I'd like to make and
then also happy to address any questions.

First off thank you to NHTSA and the Department for hosting this event. I think it is really important to have public dialogues on these issues. We'll certainly be filing comments to the docket.

But I think we are literally talking about the future of automation, the future of mobility in this country and having transparent clear dialogue and transparent clear processes is going to be critical to insure the safety and security of Americans for decades to come.

We've heard the number before but it bears repeating over and over and over again that 37,461 lives were lost in 2016 alone and that that is the second year in a row of increases in fatalities. Part of what that shows is that cars still aren't safe enough. Part of what it also shows is that more needs to be done to address the issue of driver error.

I think everyone realizes that vehicle automation has amazing potential to be a part of that. The hope is ultimately it will solve driver error
though as was previously noted it won't solve human error. As long as there are humans there will be human error and so that is something that obviously the enforcement side and more have to be able to deal with.

One of the most important things as we think about what auto makers are doing and what NHTSA is doing in this space is that not only must safety be their top priority but automakers have to show not just tell us that that is their top priority. And part of what that comes down to is sharing more data. And in general being more transparent overall.

The one thing that shouldn't happen is that folks misread the current consumer mistrust in the technology. Multiple surveys have shown that trust levels are in the teens or low 20s. But no one should misread that as an indication of need for a broader PR campaign. That's I think misunderstanding part of why consumers have this lack of trust.

The airline industry experiences this every single day and has had a transformation in safety because of it. Because the airline industry is dealing with a situation where consumers have no control over
the operation of their vehicle. And because of that
the standards for safety go through the roof. It is
not enough to just simply be as safe as a vehicle on
the road today, with 37,461 fatalities each year
clearly maintaining that level should not be the goal
of anyone in the industry or in the agencies.

The goal has to be dramatically increasing
safety with the understanding that consumers get that.
Consumers get that if they are no longer going to be
controlling the vehicle their expectation for safety is
not going to be a 10% improvement, a 20% improvement or
even a 50% improvement. It is going to come close to
expecting no deaths. And that is why a PR approach is
not the right way to do it.

The right way to do it is to ensure that
consumers, organizations like mine and the agency has
the data to understand how safe these vehicles are and
how automakers are insuring that they are safe. And
obviously the key to that is transparency.

Transparency ultimately equals trust.

And I would say as part of this process and
this is really speaking directly to the car companies
involved and other suppliers transparency builds trust
and you shouldn't be afraid of being transparent if
you're doing things well. And you should understand
that if you aren't being transparent people are going
to make assumptions. And those are not irrational
assumptions. Those are assumptions based one even
recent history, whether it is the GM ignition switch or
Takata Airbag or other problems or people's perceptions
around aircraft safety, people are not going to start
off by trusting. They are not going to start off by
assuming that what you are telling them is true. They
are going to want you to prove it and they are going to
look to organizations like Consumer Reports and others
to help validate that those claims are true.

And if you don't give us enough data we're not
going to be able to do that and we are going to be in a
position to make assumptions as well.

Part of this is the issue of competition and I
understand the importance of competition and that
companies are jockeying for who can be in the lead on
this because there is a lot of money to be made. But
that competitive push should not overwhelm transparency
and the need for cooperation. That will come back to
bite you in the end. Maybe not in one year, maybe not
in two years but it will happen because something will
go wrong. And the last thing we need is for this
technology to be slowed down because some bad actor
makes a mistake and it turns the public even further
against this critical technology.

I would also say that companies should not
limit themselves in their submission to what NHTSA lays
out in the guidance given this need, given the consumer
need for more information. Yes, the guidance and the
information in it is voluntary for NHTSA but it is not
voluntary for building consumer trust. And that is why
I would say automaker should go beyond what is even in
there and include issues like data sharing, privacy,
ethics, registration and other issues that folks maybe
feel were too preliminary for NHTSA to include but
again those issues are not too preliminary for
consumers to understand what's happening.

I would also strongly argue that companies
doing Level 2 automation should also voluntarily submit
all applicable information if for no other reason than
the evidence is showing that consumers are using Level 2 vehicles as Level 3 vehicles. Yes, you can argue that that is not how they were designed and it is "the consumer's fault" but that is the very definition of foreseeable misuse. There is a lot more education and information needed there.

I would also say automakers should share summary performance data with the public and share the details with the states and with NHTSA on crash rates overall, crashes avoided and much more, areas that if the data library is built up people can understand how fast the progress is moving, how safe the different products are which can be critical information for consumers when they go in to buy a vehicle.

I would also argue in terms of a federal repository I think that would be critical. There needs to be one place where this information is available. The VIN lookup tool is a great example of that, asking consumers to track down on automaker websites including sometimes in very fine print where the recall information is, it is just not a realistic expectation. NHTSA is the leader in this space and I think can and
should host this kind of information. I would even add
like we do at Consumer Reports when there is a vehicle
with Level 2 autonomy and we're rating the vehicle we
put a flag on that to let consumers know that this is a
unique vehicle. It has these autonomous features. And
over time we want to make sure to build in links to
that so the consumers can find out more.

I would very much argue the same for NHTSA
safety rating system. It should be clear which
vehicles take some or all control from the driver so
that when they are looking up that safety information
and told there are safety ratings for automation there
at least needs to be transparency for consumers. And
again NHTSA is in a critical place to provide that.

I would also say that, I'm not going to get
into the format of things. I do think there are some
benefits to trying to stick with a template and making
sure you answer each of the 12 items. But I go back to
the fact that details are more important. And maybe you
need different tiers of information. Maybe there is a
general public version and an appendix or something
else that has more details. And if there is CBI
involved make sure NHTSA gets that when you submit it
to NHTSA mark out the CBI yourself, don't waste NHTSA's
staffs time having to mark out your CBI. But share
that information with NHTSA so that they can analyze
things and share aggregated versions of that
information with the public to build that trust.

Last two issues. One is I think these safety
assessments should absolutely be updated regularly. In
a world today where the features on consumer's car can
literally change overnight it is critical that the
public has information. Honestly you shouldn't wait to
update a safety assessment. You should be posting this
on your web. You should be insuring that your consumers
get live information and updates with enough details so
they can truly understand as has happened for example
with one company where they've turned AEB on and off.
Well even in a Level 3 vehicle because there is the
potential for humans to take over if they change the
ODD or change other features of how it works that must
be transparently communicated to the consumer right
away when it happens, but it should also very soon
after be updated in these public submissions.
Last but not least and I know this is not at all the subject of this panel but I think about the future of automation and how similar of a world we are moving in to hopefully to airlines. I'd also remark that FAA had roughly a 16:1 budget ratio to NHTSA and I think that highlights if we are going to move into this world how critical it is going to be for everyone in the room and everyone listening to support insuring that NHTSA has additional resources to insure the safety of these vehicles going forward.

Thank you.

MS. SWEET: Thank you.

MR. BEUSE: Thank you Mr. Friedman for your thoughtful comments. Couple of quick questions maybe. And you touched on this a little bit but given your role at Consumer Union and Consumer Reports how feasible is it do you think that we could develop or if it is even necessary some sort of criteria about this tricky line between too little like Mr. Jasny suggested kind of looking like marketing and too much just sort of not being helpful. There are some pointers there you think?
MR. FRIEDMAN: Well, I do think that's where as you indicated at least hinting at that with the concept of maybe there is an appendix or maybe there are multiple versions of the submissions. I think it is great to educate the public on what you are doing and the features; that is critical. But you can't overwhelm the general public with data. That won't ultimately serve them. But you do need to have, whether it is an appendix or a separate submission or two depending on you know CBI involvement or not, there needs to be and maybe this is where templates would be even more helpful. Maybe you don't need a template for the more public higher-level stuff but for the information that researchers and states and NHTSA needs I would strongly encourage folks to work together to develop a template on what kind of data, what kind of information would be critical and maybe work out ahead of time with the industry what of that is likely to be CBI and how to handle that carefully. But again I'd go back to what I said before don't let -- transparency is your friend and if you are afraid to share the data with NHTSA then there is reason for us to worry.
MR. BEUSE: Thank you for that. Maybe a second question. You also touched on this but I think I have to ask it maybe in a different way, so you talked a lot in your remarks about consumers and the need to access this information and so did Mr. Jasny. So we have the first one, there was a press release with it. There was a lot of kind of fanfare about it. I imagine that is not going to be the case at some point, I assume it is going to become more routine.

MR. FRIEDMAN: Uh-huh.

MR. BEUSE: What's your thought on when it reaches that stage, what do we do with it; right? Is it some other role for somebody else to play? I mean is there going to need to kind of -- safety self-assessment and does that really solve anything? What's the balance you were trying to do. One is how consumer understands that folks are thinking about safety and on concrete area not just accumulating knowledge but actually in really concrete areas and that there is a place for them to find that. But you know you balance that with sort of email blasts every time somebody changes one. I'm not sure how to strike that balance.
MR. FRIEDMAN: Right. I would say a couple of things. Respectfully I would discourage the department from using the submission of these as an opportunity to highlight any particular company especially without a clear bar as to what is a good and not a good submission. I think that veers on endorsement and I think there is a challenge and should be avoided.

I think that each company can have their PR strategy and that's thoroughly appropriate. I think that if you have an online repository and you have an education tool that make sure that the consumers are aware that that is available. I think that is a more appropriate way as they come in. And again I go back to including it on safercar.gov with the vehicle safety ratings and certainly organizations like ours, Consumer Reports, when these things come out we will probably do some assessments of them and of the vehicles, certainly we'll assess them, that's what we do. So we will certainly try to call attention to these issues. But I think in this case NHTSA and DOT's role is more to have a repository that consumers can access in the same way they access critical safety information today. But
maybe there is a role also for updating states or
researchers on a monthly or quarterly basis; here's the
latest information we've got so that they can be ready,
willing and able to be involved as well. But I don't
think a massive public blast is what's needed.

MR. BEUSE: Okay. Great. Debbie?

MS. SWEET: In thinking about like your idea
of like a tiered submission or assessment whatever it
becomes do you run the risk then of overburdening an
entity to the point that what has become a voluntary
publication has now become too burdensome that they are
not going to publicize it anymore?

MR. FRIEDMAN: I mean that gets to the whole
nature of this being voluntary which is I think as Nat
said at the beginning not the goal of this
conversation. But --

MR. BEUSE: Feel free to say it.

MR. FRIEDMAN: You know me, I will. But I
think that on the one hand that is one of the
challenges here; right, is that this is voluntary and
that allows bad actors to just skip out of it. That is
in part the role for organizations like mine to put
pressure on companies like that to follow through. I go back to two things that I said before. One is that if you are doing your job you have nothing to hide and this isn't a burden. In fact, this is critical to the success of this technology because if you are not transparent and mistakes pile up you are going to turn the public even more against this technology. And you are going to be effectively responsible for not deploying technologies that can save a lot of people's lives. So you've got to be transparent. So there may be companies who respond with the burden argument. Transparency should never be considered a burden argument. And if a company is arguing it is a burden, again I'd go back to question their thought processes or motivations behind that because this is technology that is going to ideally transform this country and the world in terms of safety and mobility. We've got to get it right the first time.

MS. SWEET: I'm done.

MR. BEUSE: That's it for me. Mr. Friedman thank you.

MS. SWEET: Von Lindsey please.
MR. LINDSEY: All right. Thank you for this opportunity. I'm Von Lindsey with Lindsey Research. We've been a resource for industry and government for over 20 years. We love NHTSA data. And we love to see where this is all going. It is pretty exciting.

As far as the voluntary self-assessment and the data recording portion it is interesting that Mr. Friedman mentioned bad actors. I'm fairly certain that NHTSA has the authority to use special crash investigations to go out when there is a fatal accident and gather data. And so it may be helpful to request or provide for particularly new entrants some of the data fields that are included in that kind of an investigation. Not that they would put that in their assessment but they would be aware and maybe create a program to make sure that their data is available. I mean what's amazing is when you think about Part 563 the black box or EDR and you think about these vehicles that are coming out now, the data, the cameras, the sensor, it is just tremendous what they could provide. And so that is something that even down to the nomenclature and taxonomy of how those fields are
1. determined is critical. I know NHTSA is working with
2. SAE to kind of get that established. But that's a
3. great starting point. So that is one area.
4. The second, both these guys stole my thunder,
5. because I love the VIN, I love the VIN look up, I love
6. safercar.gov. I'm going to take a quick survey here.
7. Who's used safercar.gov here?
8. That's beautiful, isn't it.
9. [LAUGHTER.]
10. MR. LINDSEY: You can take a VIN and look in
11. there and find out if you have an open recall. Now who
12. does that? Consumers who care. Right. NHTSA provides
13. the data and if you are smart enough to go and check
14. and you can find out if there is an open recall. So
15. these ideas that I think are fantastic of the
16. repository or an area where people can go look up about
17. different AVs and systems, fantastic. And you can
18. either provide a link to the manufacturer's website and
19. put the pressure on them to keep that up to date or you
20. can request it on an annual basis.
21. The other thing when you think about it these
22. cars are so advanced now that hopefully manufacturers
will provide in-car update information. And if I was a manufacturer, I might get in trouble for this, but I don't care, I would say put some mandatory training in your HMI when there is an update. That is another thing to consider so that when you are talking about consumer education, oh, I just got an update on my fancy new Level 3, thank you, but how does it work. And if there is an in-car tutorial, that is a good possibility.

The other thing that in the long-term view I really do love the vehicle identification number, 17 digits tells you what type of vehicle it is, year, model, everything. You could add to that under the power train section for manufacturers is this an AV. And for tracking that down the road that would be very helpful particularly for researchers when you are looking at FARS data or other data to see how well some of these systems are working you need to know which vehicles have those systems in place. So that may require some regulatory action.

But anyway those are some of my thoughts.

These kind of meetings are fantastic because you get
interchange and so thank you for hosting it and I had
some other stuff but I might save it for November 6.
So thank you very much.

MR. BEUSE: Thank you, Mr. Lindsey.

MS. SWEET: So just in thinking about just
what you said and related to the VIN being able to
associate the AV with the VIN does create some problems
and run the risk of potentially putting out bad
information if there is a crash that is associated with
automated technology that perhaps wasn't used or
associated with the crash itself. So relating it to a
VIN does create some problems in that respect.

MR. LINDSEY: Explain that to me again. If the
VIN says this has the technology and there is a crash
and it didn't actually have the technology?

MS. SWEET: It didn't -- no it wasn't active,
it wasn't turned on.

MR. LINDSEY: It wasn't engaged. Yeah and you
are going to run into that with after-market as well,
that is a nightmare scenario so I don't know --

MS. SWEET: It does create a little bit of
difficulty because of the public perception. We don't
want attribute crashes or incidents to technology that didn't -- wasn't at fault in a crash. So associating it with Av is challenging.

MR. LINDSEY: Yeah, that is a good challenge and I think this later today is talking about challenges so maybe there are smarter people here that might have a suggestion for that. And there was a great article in Automotive News a couple days ago about transparency and when there are these crashes that the manufacturers -- it needs to be determined fairly quickly was it the AV system or was it another driver and let the public know that. And then NHTSA does have that ability to go in and really find out. But that kind of transparency hopefully helps build public trust.

I mean the numbers that are being thrown out, 37,000 fatalities and if you have a fatality which will happen with these new systems, it just needs to be out in the public and figure out -- and there are learning possibilities there.

MR. BEUSE: Thank you Mr. Lindsey. So a couple of questions for you. So you mentioned the -- I
guess we'll call them the start-up companies or
something like that. Is what you are implying sort of
like having a template is helpful for those folks and
we should actually be thinking about more and different
types of information to provide to them as well?

MR. LINDSEY: Sure. I think so.

MR. BEUSE: I want to talk about this central
repository thing and just kind of pull that apart a
little bit because since you are -- I'm not sure if you
have a chair upstairs but you are pretty well known
around the building. So this idea of thinking kind of
three, four years down the road. I've mentioned this
before and asked other panelists the same question. So
imagine there are 40 companies now, 50, whatever, some
big number of companies. They might have multiple
systems. Some make all three, some make all four,
whatever. As a researcher who is using that
information how do you see that being most useful for
you in sort of these voluntary self-assessments?

MR. LINDSEY: That is a fascinating question
because if and we are talking somewhat hypothetical
here but let's say you are looking at a 2018 model with
a certain AV system; right. And then it is updated, it seems unlikely to me that that may not get updated as well through in-vehicle updates; right.

MR. BEUSE: Right.

MR. LINDSEY: So if it is updated it is maybe less important. But if that 2018 vehicle is based off of that self-assessment then yeah, you need to make that available. And that is where maybe tying a VIN back into it would be helpful so you know based on this 11 digit or 12 digit that this was a 2018 model vehicle with that system then that would match up to this self-assessment.

MR. BEUSE: Right.

MR. LINDSEY: So archiving it is critical for sure but it would be interesting to see how many models stay static instead of dynamic if you will.

MR. BEUSE: All right. I think that is all I had.

MR. LINDSEY: All right. Thank you for your time. Appreciate it.

MS. SWEET: David Kidd.

MR. KIDD: Shuffle his chair.
MR. BEUSE: Mr. Friedman is not paying attention.

MR. KIDD: Okay. So my name is David Kidd. I'm a Senior Research Scientist at the Insurance Institute for Highway Safety.

The Insurance Institute for Highway Safety commends NHTSA continued support of the deployment of automated driving systems. As the agency expressed in the revised guidance document automated driving is projected to eliminate nine out of every ten serious crashes that stem from human error or behavior. We need to seize this unprecedented opportunity to save tens of thousands of lives each year as we take prudent steps to maximize the full safety potential of automated driving technology.

In the short term the actual safety benefits likely will fall short of these expectations just as airbags have not prevented all crash deaths, electronic stability control has not prevented all loss for control crashes and automatic emergency braking systems have not prevented all front to rear crashes.

To understand how systems are working in the
real world it is imperative that NHTSA collect
information that it and other stakeholder and the
public can use to independently assess the safety
benefits of automated driving systems and to promote
those that are most effective for reducing crashes,
deaths and injuries.

The voluntary safety self-assessment provides
the agency and the public with information that could
be helpful for evaluating the safety of automated
driving system. But the usefulness depends on what
companies deploying the technology choose to submit.

We are pleased that WAYMO voluntarily
submitted its self-assessment to the Department of
Transportation and shared it with the public. In its
self-assessment WAYMO broadly described the hardware
and software that enables its automated driving system,
the vast quantity of simulated and on-road miles
traversed and the steps the company is taking to insure
safety. Although the document is a good general
introduction to self-driving technology and WAYMO's
approach in particular it offers no evidence that the
millions of miles of testing on public roads, billions
of miles of simulated driving and various safety assessments during the development and deployment of the automated driving system has yielded a system that is safe or safer than a human driver within its operational design domain.

The institute expects other companies will follow WAYMO's lead, submit safety self-assessments but like WAYMO we anticipate that these reports will advertise the safety of automated driving technology without presenting evidence to support the claim.

Based on the revised guidance document the Agency also has no specific plans for collecting information that could allow it to assess the real-world safety of automated driving systems, validate the claims made by companies deploying them, or reasonably judge whether exemptions from federal motor vehicle safety standards which is being contemplated in pending legislation are justified.

NHTSA must take the lead in collecting this information by creating and maintaining a public database of vehicles with automated driving technology also those that are exempt from federal motor vehicle
safety standards which is indexed and searchable by the vehicle identification number or VIN.

Each vehicle sold in the U.S. has a unique VIN as Von Lindsey was saying researchers we've long used VINs to evaluate the safety benefits of vehicle features when those VINs can be tied to crash and exposure data. The VIN standard requires certain information be encoded but excludes the presence of optional crash avoidance features and automation making evidence based evaluations of these type of features very difficult.

When evaluating effects of various driver assistance systems on police reported crashes and insurance claims IHS and our sister organization the Highway Loss Data Institute work with manufacturers who are willing to provide special samples of VINs of vehicles that were fit with technologies. The studies based on these data were the first ever to document the actual crash and injury preventing benefits of forward collision warning and automatic emergency braking. And it was actually crucial in negotiating the commitment by 20 automakers to make automatic emergency braking
standard feature by September 2022.

NHTSA has been unable to measure the real effect of these systems on its own because it lacks access to similar data. Likewise the agency will not be able to evaluate automated driving systems unless it begins collecting this type of information immediately.

Archival crash data will allow the real-world safety benefits of technologies to be measured but provide little or imprecise information about the contributing factors in the moments before the crash and in vehicle performance afterwards. For this reason objective information about the behavior of automated driving systems in crashes must be collected and it can be accomplished by using event data recorder, black boxes.

The institute has developed a list of data elements that we believe can be collected using an event data recorder and are sufficient for understanding the circumstances of a crash and the contribution of automated driving technology without compromising confidential business information. The information will help determine whether the human or
the vehicle was in control at the time of the crash as well as the actions that each entity took prior to the crash. Importantly law enforcement agencies and insurance companies need this type of information to assign liability and settle claims.

So in conclusion the potential safety benefits of automated driving technology are too profound to go unmeasured. Analyses comparing real world crash experience with and without automated driving systems and different implementations of the technology are fundamental to understanding the effects on safety. Knowing the presence or absence of these systems at the VIN level is a cornerstone for carrying out these type of evaluations.

Creating a public VIN index database listing vehicles equipped with automated driving systems and those exempt from safety standards as well as mandating event data recorders that would record automated driving system information are crucial for bolstering NHTSA and other stakeholder efforts to precisely measure the real world safety effects of automated driving systems, fostering public confidence in the
technology and directing the evolution of the
technology to swiftly realize the anticipated safety
benefits.

MR. BEUSE: Thank you, Mr. Kidd.

It is worth nothing I think as Mr. Lindsey did
but I don't know if everybody heard him, you know, we
are working with SAE already on the elements that would
potentially go into some sort of -- we will call it
something other than an event data recorder for these
more advanced systems. And so the elements that you
guys have thought about I think would be great to get
to that committee that's working on that. So either
see me afterwards and we'll share how to make that
happen.

Kind of related to that so we had this idea of
this generic element that we tried to do and we picked
sort of crashworthiness as an element to kind of do
that with because its particularly complicated. Do you
see then a need to do a sample for each one of those or
what is your thought about that? So we were trying to
do just for one element and say this is how you could
do it for others but maybe that is not sufficient.
MR. KIDD: I mean I misunderstand your question, are you talking about --

MR. BEUSE: Whether there is a need to do a template for each of the 12 elements --

MR. KIDD: Okay.

MR. BEUSE: -- in order to get at some of the issues you were talking about.

MR. KIDD: Sure. So with regards to self-assessment I mean one of the comments we made on the earlier guidance document was to be more specific about what types of information would be helpful for the agency and the public to have in order to understand whether or not a specific element was addressed appropriately and whether or not safety was insured. The template is helpful for at least guiding companies about the information that is of interest. However, I do think that is important to lay out kind of at least a minimum set of elements that need to be in there because those will be critical for at least the government or the general public consensus is that these are critical for understanding whether or not safety and due diligence have been done.
With that I also agree with previous comments that it is possible to provide aggregated safety information to justify claims rather than generic descriptions of how safety or process what's in place to address it.

MR. BEUSE: So along those lines being a consumer information organization yourselves do you think there's further information that could be provided or further guidance on how to walk this fine line between too much information that just becomes kind of unbearable I guess at some point versus something that looks more like companies are trying to showcase and sell technology.

MR. KIDD: Sure. I mean I think one of the important things is just having the information made available. And not just information, a very high level that is descriptive, information that can be used by organizations like IHS or Consumer Reports to package it in a way that's meaningful to consumers but also is meaningful in the sense that it is comparing different products or at least able to track how a product has evolved or how it compares to whatever standard of
safety that you need. And so that may not be something
that NHTSA needs to accomplish within the safety self-
assessment but by collecting that information and
making sure the information is good enough to support
such efforts and making it available especially in an
archival format I think would be sufficient to enable
other organizations to be able to take on that task and
provide consumers with what does this all mean.

MR. BEUSE: Uh-huh. So maybe tying a couple
of themes there I guess what I'm hearing and maybe you
can just second guess me if you think I'm not getting
this right. But it seems like what I'm hearing is
there's a need maybe for qualitative information but
also there seems to be this desire for quantitative
information. Is that what I'm hearing?

MR. KIDD: So qualitative information is
important to fully understand an automated driving
system, where it is actually supposed to operate, how
it functions and things like that. So if you have the
quantitative information so we'll just take for example
crash data. Say we have that public database of VIN so
we can tie the crash data and for us exposure data
insure as in insured vehicle years. We would want to
make sure that our analyses to be really -- there was
the concern brought up earlier about you get a general
idea about crash experience but you don't know if the
system is on or off. Well, one way to assist with that
or at least kind of weed out some of the noise is if we
know how an automated driving system operates and where
it is supposed to operate then we kind of exclude those
crashes where we know that that system was not
applicable. And so that helps, having that qualitative
information that we compare with the quantitative
information allows us to not only evaluate a system but
do it fairly.

MR. BEUSE: Okay. Great. Switching to the
public disclosure piece of this in making these
available what are your preliminary thoughts on sort of
repositories and companies' websites and things like
that?

MR. KIDD: I think having a central place
where all this is assessable is a good one. If you have
it spread out across a number of different sources then
people may not be able to compare on their own or may
miss some things. I think as when there is an update
to a document that that update should be front and
center but of course if people are curious about what
the previous versions or what the previous status were
that that needs to be available too. So whether that
is in an archive format on a separate page or if it is
linked -- actually underneath this top line, however is
best, most suitable. But it is something that I think
NHTSA should at least in the beginning collect that
information and start hosting that information whether
or not it stays there or they provide the backbone for
that for another entity however it unfolds.


MS. SWEET: So I kind of heard a couple of
things. Evidence based database or data centered
information and I pulled out that it sounds like you
want metrics for each of the safety elements. And is
that correct, is that something that you are looking
for, identifying and establishing metrics so that they
are comparable from assessment to assessment?

MR. KIDD: So in our view a voluntary self-
assessment in the way that it is framed out right now
and at least with the one example that we have is not
going to be sufficient for independent evaluation of
the safety of these technologies. I think it is
important but I am trying to better understand what a
technology is and how it could be used to guide
additional or future assessments. If a company wants
to make safety claims and that document is the only way
that they can justify that the safety claims are valid
then it is going to need quantitative information. The
actual metrics I think are at this point not clear.
But if you have simulated crashes or you have actual
crashes occurring on the road those are clear metrics
that are indicative of how safe it is especially when
you can compare it to the typical human experience.

MS. SWEET: And you would look for that
included in the self-assessment?

MR. KIDD: Correct. Yeah.

MS. SWEET: Okay. Is that going more towards
a researcher route though as opposed to increasing
public trust for the self-assessment to being we put it
out as this is a means for companies to increase public
trust and inform about the product and the safety and
after taking things inconsideration is it moving too
much into the research realm by including that data?

MR. KIDD: So it depends what you want from
the safety self-assessment. If you want it to be
something that is specifically for the public so they
can learn more about what products are out there and be
assured by companies and the government I guess by
approving or validating this is a case that they have
taken steps considering safety and all that then that
is the more generic description is kind of along those
lines. But if the safety self-assessment is really
intended to try and aggregate information from
companies in this space in a way to derive meaningful
conclusions about the relative safety of the technology
as compared to each other as well as to the human
driver then you are going to need some type of
quantitative information to justify those claims not
just qualitative information. So it really depends
upon on NHTSA envisions the safety self-assessment's
purpose is.

MR. BEUSE: Yeah. And I think that is a fair
point and I think I mentioned earlier today but this
bring it up again NHTSA has many other tools at its
disposal to get information, not just this. I think
we're trying to tease out sort of this how to rectify
what we would normally do anyway versus this kind of
particular tool and its usefulness for state level
folks and obviously the research community at large.
So thank you for clarifying that.

MS. SWEET: I'm good.

MR. BEUSE: Okay. Thank you.

MR. KIDD: Thanks.

MS. SWEET: Thank you.

Is Dave LeBlanc here?

MR. BEUSE: I do not see Mr. LeBlanc.

MS. SWEET: Amitai?

MR. BEUSE: I saw Amitai this morning but I
don't see him here now.

MS. SWEET: Okay. So those are the other
names. If I've missed anyone that registered to speak,
please raise your hand or stand up so that we can make
sure you get up.

MR. BEUSE: You win a prize if you do.

[LAUGHTER.]
MS. SWEET: So if anybody else would like to make remarks we have time to take that now.

MR. VINCENT: Can I say something?

MS. SWEET: Go ahead, Kevin Vincent.

MR. VINCENT: Hello. I'm Kevin Vincent with Faraday Future and I didn't prepare any remarks for this event but there has been some discussion of the utility of templates. And speaking on behalf of my company which is a new entrant into the auto manufacturing and into automated vehicles templates are very useful. It is very useful in educating the company about what it is we need to be doing in matching up to the rest of the industry to have a template. And you know those templates either get created from scratch based on trying to gather information and research into what other companies are doing or it is nice when it is ready-made. So I think it is great value for new entrants to have a template and frankly the more detail in that template that NHTSA is recommending the more value there is to new entrants. So that is the only comment I wanted to make but I did want to endorse the idea of the utility
templates.

MR. SWEET: Thank you.

MR. BEUSE: So if we can Mr. Vincent I guess as a new entrant, one discussion that comes up often, it has come up a little bit today but kind in vague circumstances is how do we make -- is there a way with this self-assessment a voluntary disclosure to make other new entrants aware of these sort of things?

MR. VINCENT: Yes, there is a way but I mean events like today, this workshop, and just more focus that is getting into the press and getting into the industry discussion that this is going on I think is the best way to do it.

MR. BEUSE: Okay.

MR. VINCENT: It is just very informal but the more buzz there is the more new entrants are going to have to realize they need to be matching up to what the rest of the industry is doing and not going off and doing something on their own.

MR. BEUSE: Yeah.

MR. VINCENT: And that is not to say things won't fall through the cracks but I think just having
some publicity around what you are doing here which is
I know now what you are trying to do is the way to go.

MR. BEUSE: Okay. Great. Thank you for that.

MR. VINCENT: okay.

MS. SWEET: Would anybody else like an
opportunity.

MR. BEUSE: Mr. Smith, would you like to go
again?

MR. SMITH: Can I talk about chairs?

Well, if not.

MR. BEUSE: Go ahead.

MS. SWEET: All right. So again we've said it
multiple times and I think this has been extremely
productive. And it has been really great to hear the
different perspectives throughout the day. We got more
information that I could have imagined. So thank you
all for coming. Thank you all for participating.

Just a reminder that we do have the open
docket. Again it is NHSTA-2017-0086. It is open until
December 18 if you so choose to use that as a means to
get comments, that docket is specifically for the
voluntary safety self-assessment.
We have other dockets open for the PRA and another docket open for the guidance document in general 2.0. So if you would like to make comments, please do. Again closes December 18.

We also want to put out there we mentioned before we are going to have another public meeting on November 6. It is going to be here, same room, 9:00 to 12:00 I think is the time that we have slotted. That is going to be on the 2.0 document in general.

Listening session, so if you have comments that you would like to offer to us at that point we welcome you to join us that day as well. That will be on the Federal Register pretty soon.

MR. BEUSE: Hopefully next week. And then I also wanted to point out that there's a box up here with some hard copy prints of the guidance if you would like to get one.

MS. SWEET: All right. That's all.

Thank you very much. Appreciate it.
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11/1/2017

DATE CHERYL LaSELLE