Page 1

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3   FEDERAL AUTOMATED VEHICLES POLICY

4   PUBLIC MEETING

5   Conducted by NHTSA

6   Monday, December 12, 2016

7   8:33 a.m.

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10   The U.S. Army Conference and Event Center

11   2425 Wilson Boulevard

12   Arlington, Virginia   22201

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1   A P P E A R A N C E S

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5   Paul Scullion   Norma Krayem

6   Leigh Merino   Steven Shladover

7   William Wallace   Steve Wood

8   Thomas Lehner   Christine Hines

9   Catherine Curtis   Adam Thierer

10   Joshua Fikentscher   Michael Clamann

11   David Strickland   Ryan Hagemann

12   Russ Martin   Cary Coglianese

13   Paul Hemmersbaugh   Ian Adams

14   Marc Scribner   Michelle Atwell

15   Reginald Govan   Yvonne Clarke

16   Peter Kurdock

17   Debbie Sweet

18   Timothy Mullens

19   Bryant Walker Smith

20   Kerry Kolodriej

21   Rodney Slater

22   Sean Kane

1   C O N T E N T S

2   PAGE

15

16

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1   P R O C E E D I N G S

2   MS. WILLIAMS: Okay. Well, good morning,

3   everyone. We're going to go ahead and get started. I

4   know some folks are probably still arriving given the

5   weather this morning. I did hear traffic was pretty

6   bad, but it would have been worse. We don't have

7   freezing rain so that's good.

8   So, again, good morning. I'm Dee Williams

9   and I'm currently serving as the team leader for the

10   Federal Automated Vehicles Policy Implementation Team.

11   Oh, sorry about that. I'm echoing a bit.

12   So I just wanted to thank everyone for

13   joining us this morning. This is the second in a

14   series of public meetings that we're holding since the

15   release of the U.S. Department of Transportation's

16   Federal Automated Vehicles Policy. And that was

17   released on September 20th of this year.

18   However, before we get started I'd like to

19   introduce Dr. Mark Rosekind, the 15th Administrator

20   for the National Highway Traffic Safety

21   Administration, to give some opening remarks.

22   DR. ROSEKIND: Good morning, everybody.

1   (Chorus of good morning.)

2   DR. ROSEKIND: Do it again, come on. Good

3   morning, everybody.

4   (Chorus of good morning.)

5   DR. ROSEKIND: Okay. It's like if we're

6   going to start that way. So thanks, everybody, for

7   being here today.

8   At NHTSA our mission is all about saving

9   lives on America's roadways. And for over 50 years

10 now we've carried out that mission by writing and

11 enforcing strong regulations to make vehicles safer.

12   Fighting against drunk driving, building a

13 national consensus on seat belt use, and so many other

14 efforts that have already saved hundreds of thousands

15 of American lives, but we have far more work to do.

16 And you know that those -- that work is being measured

17 by some very alarming numbers.

18   In 2015, we lost -- I should do this as a

19 test sometime. We lost -- give me the number.

20   DAVID: 36,000.

21   DR. ROSEKIND: 35,092. Thank you, David.

22   DAVID: You're welcome, Administrator.

1   DR. ROSEKIND: And we know that exact number

2   because every one of those was a father, a mother,

3   son, or daughter, a colleague, a friend and that's why

4   the folks at NHTSA know that number exactly.

5   And unfortunately that problem is getting

6   worse because, as you know, just recently we announced

7   that that number of fatalities is actually going up in

8   the first half of the year by 10.4 percent.

9   And so it's against this particular backdrop

10   that the Department of Transportation, under the

11   leadership of Secretary Foxx, has been working so hard

12   on our efforts to accelerate the safe deployment of

13   automated vehicle technologies.

14   Because while automated vehicles really

15   carry enormous potential to transform mobility,

16   reshape our transportation system, it really is their

17   awesome potential to revolutionize roadway safety that

18   has all of us at NHTSA so motivated.

19   And there's one more number that explains

20   why we are so focused on this area. That number is

21   94. That's percentage of crashes that can be tied

22   back to human choice or error. And that's the choice

1   to speed, drive drunk, send a text behind the wheel,

2   or misjudge the stopping distance.

3   That 94 percent represents the untold

4   potential of automated vehicle technologies. We

5   envision a future where advanced technologies not only

6   help reduce crashes, but a world with fully self-

7   driving cars that could hold the potential to

8   eliminate traffic fatalities altogether.

9   The Federal Automated Vehicles Policy which

10 the Department issued on September 20th is the world's

11 first comprehensive government action to guide the

12 safe and efficient development and deployment of these

13 technologies.

14   In our view this policy's the right tool at

15 the right time. It answers a call from industry,

16 state and local governments, safety and mobility

17 advocates, and many others to lay a clear path forward

18 for the safe deployment of automated vehicles and

19 technologies.

20   But this policy's not the final word. It is

21 designed to be nimble and flexible, to evolve over

22 time that allows us to stay at the leading edge. To

1   the end, the policy identifies 23 next steps that will

2   help guide the evolution of the policy.

3   The first of those next steps is why we're

4   here today. We've received comments on the entire

5   policy and we've committed to holding a series of

6   public workshops on the individual components of the

7   policy.

8   We held our first public workshop just last

9   month on policy overall and on the first section

10 specifically. And we heard from a wide ranging group.

11 That means we're getting feedback that's proven

12 helpful in guiding our next iteration of the policy.

13   Today we're here to discuss two critical

14 components of the policy. The first is the Model

15 State Policy. And for the last 50 years there has

16 been a fairly clear division of responsibility between

17 the federal government and the states for the

18 oversight and regulation of motor vehicles.

19   Generally speaking, it has been the federal

20 government's responsibility to regulate motor vehicles

21 and equipment safety while the states have regulated

22 drivers and traffic laws.

1   That division of responsibility may be much

2   less clear in a highly automated vehicle where

3   increasingly the vehicle's automated systems become

4   the driver. The Model State Policy delineates the

5   federal and state roles for the regulation of these

6   vehicles and it outlines the approach we recommend to

7   states as they consider the regulation of testing and

8   operation of automated vehicles on their public roads.

9   Our goal is to build a consistent national

10   framework for the development and deployment of

11   automated vehicles so that users can take their

12   vehicles across stateliness just as they can do today

13   and so that developers are building toward a single

14   set of standards rather than 50.

15   The Model State Policy confirms that states

16   retain their traditional responsibilities for vehicle

17   licensing and registration, traffic laws and

18   enforcement, and motor vehicle insurance and liability

19   regimes.

20   At the same time the policy reaffirms that

21   the federal government will continue to be responsible

22   for the oversight of vehicle safety and design

1 including automated features.

2   The policy was developed in close

3 coordination with the American Association of Motor

4 Vehicle Administrators or AAMVA, individual states,

5 and a range of other stakeholders.

6   It suggests recommend areas for states to

7 consider in the development of their own regulations

8 including testing regimes and registration. It also

9 identifies a number of areas that need to be further

10 discussed and developed including how law enforcement

11 will interact with highly automated vehicles and the

12 development of a consistent approach to insurance and

13 liability challenges.

14   The second section that we will discuss

15 today is the modern regulatory tools. This section

16 identifies 12 potential new tools, authorities, and

17 resources that could aid the safe deployment of new

18 lifesaving technologies and enable the agency to be

19 more nimble and flexible.

20   Today's governing statutes and regulations

21 were developed before highly automated vehicles were

22 even a remote notion. And for that reason current

 1   authorities and tools alone may not be sufficient to

 2   ensure that highly automated vehicles are introduced

 3   safely and to realize their full safety promise.

 4   This challenge requires NHTSA to examine

 5   whether the ways in which the agency has addressed

 6   safety for the last several decades should be expanded

 7   and supplemented.

 8   The new tools identified in this section

 9   include premarket approval, expanded exemption

10   authority, imminent hazard authority, new research and

11   hiring tools, and others that may better equip the

12   agency in the future as more technologies move from

13   the lab to the road.

14   And just to be clear, these tools are

15   offered for consideration by policymakers, industry,

16   advocates, and the public as we move forward.

17   The policy is already a product of

18   considerable public input and its evolution will be

19   based on the feedback we continue to receive. Your

20   participation today will help the department to

21   continue to improve this policy in a manner that

22   reflects the ideas and concerns that we hear from you.

1   We're in an important moment. We have an

2   industry that is rapidly innovating and we have a

3   government that is inspired about what this technology

4   means for the future of safety.

5   We view the best path forward as having the

6   entire community from industry to safety and mobility

7   advocates to the general public working together in a

8   committed way with safety at the top of the agenda.

9   Again, thank you for being here today.

10   We're looking forward to hearing from all of you and

11   what you have to say. Thanks.

12   MS. WILLIAMS: Thank you, Administrator

13   Rosekind. So, again, we want to thank Administrator

14   Rosekind for paying tribute to those lost from roadway

15   crashes by continuing to drill in the senseless

16   numbers of lives taken. Again, these are our family,

17   our friends, our coworkers, our neighbors, the list

18   goes on; however, also reminding all of us why it's a

19   truly exciting time to be part of roadway safety.

20   So now for some additional context for

21   today's event. As the agency has emphasized many

22   times since the release of the policy, it lays a

1   national framework for the safe testing and deployment

2   of new automotive technologies that have enormous

3   potential for improving safety and mobility for all

4   Americans.

5   For today's meeting during the morning

6   session, as Dr. Rosekind detailed, we're seeking

7   specific input on the Model State Policy. As we know,

8   states have already begun passing laws and developing

9   regulations surrounding highly automated vehicles.

10   A national dialog is necessary to gather

11   additional information on any potential challenges

12   foreseen, suggestions for clarification, and

13   recommended improvements to assist in avoiding a

14   patchwork of inconsistent laws and regulations.

15   This session is to achieve this objective

16   and will be an opening listening session style whereby

17   I will call out the names of the individuals who have

18   requested to provide oral technical comments in

19   advance, but will also provide an opportunity at the

20   end for open mic.

21   Our focus is on gathering feedback regarding

22   the states, manufacturers, and other entities and how

1   they have understood and interpreted the Model State

2   Policy. Then, also as Dr. Rosekind detailed, the

3   afternoon session of the meeting the agency will seek

4   specific input on the Modern Regulatory Tools section,

5   which is Section IV.

6   This session will focus on gathering

7   feedback on the new tools and authorities discussed in

8   that section as well as other ideas and suggestions to

9   assist in the safe deployment -- development, testing,

10 and deployment of highly automated vehicles.

11   It's going to consist of six moderated

12 sessions each lasting about 35 minutes. And you'll

13 get additional details from the moderators during the

14 afternoon session.

15   So, again, we are very grateful you've

16 chosen to be here with us today and for those that

17 joined us back on November 10th. And following the

18 new year do look out for those other opportunities for

19 the additional meetings and additional sessions for

20 input as we continue to implement the next steps that

21 are laid out in the back of the policy.

22   So that said, I just want to take a moment

1   to introduce the rest of my team -- Debbie Sweet, Josh

2   Fikentscher, and Michelle Atwell.

3   So for any of our guests if you have any

4   questions during the course of today, please see any

5   of them or any of the other NHTSA staff on hand and

6   they're more than willing to assist you.

7   And if there are media in the room, we do

8   have a table set up in the back so we do just ask that

9   you check in with Becca and register with her and

10   she'll make sure that you have everything you need.

11   Just a few other additional housekeeping

12   items. So at this time, if you haven't done so

13   already, I do ask you to silence any devices you have

14   with you.

15   In the unlikely event of an emergency, of

16   course, see the red exit signs. And your restrooms

17   they're going to be off this doorway to your left.

18   There's men's and women's right there.

19   We'll break by noon or sooner. It just

20   depends on the number or oral technical comments that

21   folks request to make. So when we do break there's

22   various businesses around the area that you can grab

1   lunch or even coffee or snacks.

2   This meeting is being live webcasted today

3   so we welcome those watching both virtually and, of

4   course, you all for joining us here in the room as we

5   continue to find ways to collaborate and work together

6   to implement this policy.

7   We're here to listen and we look forward to

8   continuing the discussion in the days to come. And

9   with that in mind I'm now going to begin calling the

10   names of those who indicated during registration that

11   they wanted to provide oral technical remarks this

12   morning.

13   So when I do so, I would ask you to come to

14   one of the microphones, speak your name and also the

15   agency or organization you're representing so that our

16   court reporter can definitely get that detail down.

17   So to get us started, I'd like to ask Mr.

18   Ryan Hageman to start our day. Is Ryan in the room?

19   And he may not be. I do know he's one of

20   our panelists for this afternoon, as well. He could

21   be stuck in traffic or otherwise so I will go onto the

22   next name.

1   Do we have Emily Frascaroli from the Ford

2   Motor Company?

3   Okay. And I will come back. I'll circle

4   back on some of these names. How about Thomas Karol

5   with Mutual Insurance Companies?

6   Great.

7   MR. KAROL: I guess -- I guess it is

8   important just to show up so. My name is Tom Karol.

9   I'm the general counsel federal with the National

10   Association of Mutual Insurance Companies.

11   We represent -- we represent over 1,400

12   insurance company members providing more than 170

13   million policyholders with 43 percent of the

14   automobile insurance policy market.

15   We applaud the NHTSA commitment and

16   coordination, stakeholder engagement, education and

17   pledge our support in developing this important

18   component.

19   The NHTSA policy proposes a Model State

20   Policy which confirms that states retain their

21   traditional responsibility for vehicle licensing and

22   registration, traffic laws enforcement, and motor

Page 18

1   vehicle insurance and liability regimes.

2   The NHTSA further reiterates that states are

3   responsible for determining liability rules for highly

4   automated vehicles. States should consider how to

5   allocate liability among highly automated vehicle

6   owners, operators, passengers, manufacturers, and

7   others when a crash occurs.

8   The NHTSA proposes that in the future the

9   states may identify additional liability issues and

10   seek to development consistent solutions. It may be

11   desirable to create a commission to study liability

12   and insurance issues and make recommendations to the

13   states.

14   With respect to insurance and liability,

15   NHTSA suggests convening a commission to study these

16   particular issues and make recommendations. In

17   recognition of the overall efforts of the NHTSA -- and

18   this suggestion, in particular, NAMIC today pledges

19   its support for further development and will

20   enthusiastically provide its expertise and experience

21   to any such group the NHTSA proposes. Thank you.

22   MS. WILLIAMS: Thank you. Paul Scullion,

1   Association of Global Automakers.

2   MR. SCULLION: Good morning. My name is

3   Paul Scullion, Safety Manager of the Association of

4   Global Automakers. We're a trade association

5   representing international motor vehicle manufacturers

6   and original equipment suppliers. Our OEM members

7   include Toyota, Honda, Nissan, Hyundai, Kia, and

8   Subaru.

9   We welcome the opportunity to provide

10   comment and the intent of these remarks is to

11   reinforce and supplement the detailed written comments

12   provided to NHTSA on November 22nd.

13   Given the significant benefits of

14   technology, it's important that we have the right

15   policy frameworks in place to foster innovation and

16   investment at both the state and federal level.

17   NHTSA has taken an important first step in

18   demonstrating leadership with release of its federal

19   policy by consistent national approach for this is

20   critically important as automated vehicles will

21   advance safety, mobility, and sustainability.

22   In our written comments we noted a number of

1   unclear and conflicting statement between the guidance

2   and model policy that are already creating significant

3   challenges and questions at the state level.

4   Although the agency has indicated its plans

5   to update the guidance in the future, we believe it's

6   critical some of these issues be address expeditiously

7   and the revision or correction to the policy should be

8   published in the near term to address any significant

9   issues or inconsistencies.

10   These clarifications should be provided as

11   NHTSAs -- as part of NHTSA's planned stakeholder

12   engagement and education on the policy also.

13   With regards to the specifics off the Model

14   Policy, we agree with NHTSA that the shared objective

15   is to ensure that the establishment of consistent

16   national framework rather than a patchwork of

17   incompatible laws and support many of the statements

18   and recommendations in the Model Policy.

19   We agree with the basic division of

20   responsibility between NHTSA and the states with NHTSA

21   being responsible for vehicle safety issues and states

22   responsible for driver licensing, registration,

1   traffic law enforcement, and insurance.

2   The division of this responsibility

3   maintains the ability of vehicle manufacturers to

4   produce a single fleet of products for the U.S.

5   market.

6   Allowing individual states to regulate the

7   design and performance of automated vehicles would

8   lead to a patchwork of different requirements and this

9   would require manufacturers to develop vehicles

10   meeting multiple design targets which would increase

11   costs and divide development resources.

12   The additional burden of having to meet

13   multiple design targets would also significantly

14   impair and delay efforts to test and deploy

15   technology.

16   We were encouraged the document included

17   strong statements that this guidance is not intended

18   for states to codify as legal requirements for the

19   development, design, manufacturing, and testing of

20   automated vehicles and that NHTSA strongly encourages

21   states to allow DOT alone to regulate the performance

22   of highly automated vehicle technologies and vehicles.

1   There are, however, a number of conflicting

2   statements between the operational guidance and the

3   Model Policy on this matter. Specially Section C2D

4   and C2H for the Model Policy includes suggestions that

5   as part of the application for testing states should

6   seek to require manufacturers include a safety and

7   compliance plan for testing vehicles which should

8   include a self-certification of the testing and

9   compliance to NHTSA's vehicle performance guidance.

10   States requiring compliance with the

11   guidance for testing or operation would create massive

12   regulatory uncertainty since determinations could be

13   inconsistent with the federal government.

14   We've already seen this being proposed at

15   the state level and I'm concerned this approach would

16   essentially create a two-step regulatory system.

17   Other issues of concern include Section 2D

18   which recommends that states require manufacturers and

19   other entities meet all applicable FMBSS for testing.

20   This conflicts with the intent of the Fact Act which

21   allows manufacturers to test vehicles that are not

22   FMBSS compliant under certain conditions.

1   Another troubling aspect of the policy is

2   that it includes language that could be read as

3   encouraging states to regulate highly automated

4   vehicle test programs including such measures as the

5   application process, issues -- issuance of permits,

6   and jurisdictional permission to test.

7   We do not see it being in the best interest

8   if agency, manufacturers, or the public for states or

9   localities to regulate or prohibit testing of vehicle

10   systems. This would create obstacles to the

11   deployment of such safety technologies.

12   The Model State Policy should be clarified

13   to explicitly state that the regulation of motor

14   vehicle testing is a federal responsibility.

15   Some additional comments related to the

16   Model Policy. On the issue of state laws, the vehicle

17   performance guidance discusses compliance with

18   federal, state, and local laws as the agency provides

19   an example of circumstances where human drivers have

20   the ability to temporarily violate certain motor

21   vehicle traffic laws such as the example where

22   crossing the double lines for a broken -- broken down

1   vehicle that might be in the path.

2   And this raises an important question. In

3   the ethical consideration section NHTSA states that

4   vehicles are expected to address potential conflicts

5   within the context of certain ethical objectives of

6   safety, mobility, and legality.

7   It could be suggested, however, that this

8   issue is not so much related to how the vehicles

9   resolves these conflicts, but rather the way in which

10   the traffic law is drafted.

11   In the example provided, it would be more

12   straightforward to ensure the traffic laws provide

13   necessary exceptions to address potential conflicts so

14   that rules could be more clearly followed to remove

15   legal uncertainty.

16   So, for example, in the double lines example

17   there may be an exception written in law where there

18   are circumstances where it's okay to pass.

19   While a number of states are focused on

20   developing regulations related to the testing or

21   operation of automated vehicles, we believe it'd be

22   appropriate for NHTSA to consider in future revisions

1   to the guidance a recommendation that states review

2   existing traffic laws to identify reasonable and

3   consistent commonsense exceptions where necessary to

4   reduce potential conflicts of safety mobility and

5   legality.

6   Global Automakers strongly recommends that

7   NHTSA work closely with government stakeholders and

8   representative organizations to consider the

9   development and maintenance of a database comprised of

10   all applicable laws that may be adhered to at the

11   federal, state, and local level across the United

12   States.

13   There's another issue related to the

14   definition of deployment. The guidance defines

15   deployment as the operation of a highly automated

16   vehicle by members of the public who are not employees

17   or agents of the designer, developer, or manufacturers

18   of the highly automated vehicle.

19   However, this definition may more accurately

20   describe operations, not deployment. We would note

21   that manufacturers do not deploy vehicles in the sense

22   that they, themselves, would not operate the vehicle.

1   If NHTSA is seeking to use the term

2   deployment, we believed it'd be more suitably defined

3   as something, for example, as making commercially

4   available to the public autonomous vehicle or

5   aftermarket autonomous technology.

6   One final point on the issue of the safety

7   assessment letter. Finally, we note the NHTSA has

8   ongoing efforts in the deployment of a safety

9   assessment letter template.

10   While we are generally supportive of the

11   concept, office safety assessment letter is a

12   mechanism for providing premarket assurance to

13   consumers and policymakers and other stakeholders.

14   We are concerned that states may seek to

15   mandate the submission of a safety assessment letter

16   as a prerequisite for testing or deployment. We think

17   this would be inconsistent with the model policy.

18   Additionally, we have significant concerns

19   with regards to the inclusion of potentially sensitive

20   and competitive information on the safety assessment

21   letter and how this information would be protected

22   isn't part of established process. If not addressed,

 1 it could have potential to set back the pace of

 2 innovation.

 3   It's important that we get this right and we

 4 reiterate that NHTSA should issue a draft of the

 5 safety assessment letter and underlying process prior

 6 to its finalization.

 7   Thank you for the opportunity to provide

 8 comments today.

 9   MS. WILLIAMS: Thank you. Eric Williams

10 with Tesla Motors.

11   Okay. How about Leigh Merino with MEMA?

12   MS. MERINO: Good morning. My name is Leigh

13 Merino and I serve as the senior director of

14 regulatory affairs for the Motor and Equipment

15 Manufacturer's Association or MEMA.

16   MEMA represents over 1,000 vehicle suppliers

17 that manufacture original equipment and aftermarket

18 components and systems for passenger and commercial

19 vehicles. Our members lead the way in developing and

20 deploying a wide range of advanced driver assistant

21 systems or ADAS, vehicle-to-vehicle technologies, and

22 other advanced vehicle safety innovations.

1   Suppliers are critical in the ongoing

2   development and implementation of those technologies

3   which are the building blocks necessary for highly

4   automated vehicles to reach their full potential.

5   MEMA supports the iterative process and

6   guidance approach of NHTSA's Federal Automated Vehicle

7   Policy, or I'll call FAVP herein, to create a national

8   framework recognizing that the federal and state

9   governments must work together to establish policies

10   that accelerate deployment of these technologies while

11   also balancing public safety and building trust.

12   Federal leadership working closely with the

13   states is essential to avoid a potential patchwork of

14   varying state laws and requirements. However, even

15   though voluntary, the federal guidelines essentially

16   become a defect- -- become defective requirements. As

17   such, the current FAVP may lead to various states

18   requiring NHTSA's voluntary guidance as a condition

19   for testing and deploying automated vehicle

20   technologies in their stated.

21   It's critically important to get the

22   foundational policy as clear as possible in these

1   early stages to prevent uncertainty among the

2   government and industry stakeholders because

3   misunderstandings may inadvertently delay technology

4   evaluation and development.

5   Consequently, MEMA urged NHTSA to clarify

6   key aspects of the policy in the immediate future. We

7   also ask NHTSA to treat systems in vehicles that are

8   being evaluated and tested differently from those that

9   are in production and deployed.

10   As it relates to the State Model Policy, in

11   the FAVP NHTSA proposes a framework of requirements

12   among which are the assertion that each test vehicle

13   follows the performance guidance set forth by NHTSA

14   and meets all applicable Federal Motor Vehicle Safety

15   Standards.

16   MEMA strongly believes that states should

17   not codify the NHTSA vehicle performance guidance by

18   way of its state laws, policies, and/or the

19   application requirements for automated vehicle

20   testing.

21   The challenge with FAVP recommendations to

22   the states is that often test vehicles are modified

1   from their original off-the-lot condition in order to

2   be evaluated and tested. Modifications could include

3   disabling certain features or adding instrumentation

4   to the vehicle.

5   This modifications process is a longstanding

6   common industry practice for test vehicles in

7   evaluation. The operators of these test vehicles are

8   highly trained driving professionals indoctrinated in

9   the test protocol and are informed and aware of the

10   modifications.

11   During a test evaluation of vehicles with

12   automated systems trained drivers are constantly

13   monitoring the driving environment and will take

14   control of the vehicle during critical situations.

15   Furthermore, the trained driver takes due care to

16   comply with all applicable traffic laws just as

17   currently required with drivers operating SAE level 0

18   to 1 vehicles.

19   Developers and testers must fully evaluate

20   the test vehicle under a variety of conditions in

21   order to fine tune and enhance the automated system

22   and ultimately prepare the system for production.

1   Real world exposure on public roads is a

2   critical stage in vehicle and vehicle equipment

3   development which is one of the key reasons MEMA's

4   comments emphasize the need for test vehicles and

5   production vehicles to be addressed differently in the

6   AV policy.

7   We would also like to point out that Section

8   24404 of the Fast Act of 2015 allows for vehicle

9   manufacturers to test and operate vehicles that do not

10 meet FMVSS provided they are not offered for sale.

11   This provision as currently worded only

12 applies to OEMs and does not include component

13 manufacturers. In a November 15th Congressional

14 hearing on self-driving vehicles, MEMA noted this

15 point and asked the members of Congress to clarify

16 this provision at their first opportunity.

17   Nevertheless, in the interim NHTSA must

18 explore how this matter can be addressed and clarified

19 in the context of the FAVP and its Model State Policy.

20 Doing so will avoid the impact of unintended

21 consequences that may hinder supplier development and

22 innovation of automated systems and prevent

1   opportunities for real world testing experiences in

2   various states.

3   Therefore, MEMA reinforces our plea to NHTSA

4   to recognize the differences between testing and

5   production vehicles and to amend the FAVPs Model State

6   Policy recommendations to allow for modified test

7   vehicles that are not fully compliant with FMVSS.

8   These and other clarifications to the FAVP

9   must be addressed by NHTSA at the earliest possible

10 time to avoid confusion for all entities and avert

11 potential delays of current or future test

12 evaluations.

13   Thank you for your consideration of MEMA's

14 comments.

15   MS. WILLIAMS: William Wallace, Consumer's

16 Union.

17   MR. WALLACE: Good morning. I'm William

18 Wallace with Consumer's Union. And Consumer's Union,

19 the policy and mobilization arm of Consumer Reports,

20 thanks you today for the opportunity to share oral

21 comments on the Model State Policy portion of the

22 Federal Automated Vehicles Policy. We appreciate the

 1   work done by NHTSA, AAMVA, and other stakeholders to

 2   complete this section of the policy.

 3   With technology rapidly advancing it's

 4   appropriate to clearly describe and delineate federal

 5   and state roles in regulating automated vehicles. In

 6   part, this exercise should be carried out to ensure

 7   that as long as a car is safe a motorist can do as

 8   NHTSA suggests and drive across stateliness without a

 9   worry more complicated than did the speed limit

10   change.

11   However, we warn against going too far in

12   the name of avoiding a patchwork. As the agency seeks

13   to achieve a reasonable degree of consistency among

14   state laws, NHTSA should not support any policy that

15   would unduly restrict the ability of states to protect

16   safety on public roads.

17   We would particularly oppose measures that

18   would preempt state authority without strong federal

19   safety standards being in place for automated

20   vehicles.

21   Like the rest of the AV policy, the Model

22   State Policy is, of course, voluntary guidance. So,

1   as Administrator Rosekind has said, what the states

2   actually implement is their call. Under current

3   policy this is appropriate.

4   With the absence at this time of enforceable

5   standards, citizens and their elected state

6   representatives should retain the right to take action

7   to keep their roads safe. On the details of the Model

8   State Policy, while the policy includes several areas

9   of useful guidance to the states, we are concerned

10   that it may understate the advisory role NHTSA can and

11   should play under this policy to ensure safety.

12   Under the framework established by the

13   policy states are effectively responsible for deciding

14   whether to grant permission for AVs to be tested,

15   operated, and used on public roads. They have the

16   final call.

17   We are very concerned that states often lack

18   the technical motor vehicle safety experience --

19   expertise necessary to make this determination and

20   that this framework will leaves states in an a tenable

21   position unless they extensively consult with a well-

22   informed better resource to NHTSA.

1   NHTSA seems to somewhat share this concern

2   about states' capabilities recognizing in the next

3   step section of the Model State Policy that states may

4   not have the resources to develop a deep understanding

5   of the technologies being deployed and suggesting that

6   the agency will, in conjunction with vehicle

7   manufacturers, explore a mechanism to help state

8   officials gain a better understanding.

9   While this education program could be useful

10   for informing states about technologies that are

11   already on the market, it is no substitute for

12   independent technical expertise.   Therefore, if the

13   current framework remains in place, as opposed to

14   having something closer to a premarket approval

15   process, we would strongly encourage NHTSA to take an

16   active role in assisting states with their approval

17   decisions.   Including by indicating whether the agency

18   has verified that a vehicle meets the most up-to-date

19   version of NHTSA's performance guidance.

20   We are also concerned that state governors,

21   motor vehicle administrators, or other executive

22   branch officials may grant permission for an automated

1   vehicle to be deployed on public roads without its

2   safety having been sufficiently ensured. We urge

3   NHTSA to establish a federal policy that discourages

4   states from making this mistake as it could profoundly

5   jeopardize consumer safety.

6   NHTSA should communicate clearly and

7   forcefully with a state governor if it believes safety

8   has not been sufficiently ensured for a vehicle that

9   the state intends to permit on its public roads.

10   The policy's model framework for states

11   include several areas in which it is appropriate and

12   beneficial to consumer safety for states to regulate

13   the testing, deployment, and operation of AVS.

14   This includes issues related to requirements

15   for drivers of deployed vehicles, titling of these

16   vehicles, law enforcement considerations, and

17   insurance. However, there are additional steps that

18   NHTSA should recommend the states take.

19   First, NHTSA should recommend that state

20   require dealers, rental companies and other retailers

21   to clearly communicate the limitations of automated

22   systems to consumers. We are very concerned that the

1 significant potential for driver confusion over AV

2 capabilities will lead to crashes particularly of cars

3 with the Level 2 and Level 3 systems whose

4 capabilities can most readily be overstated.

5   In making this recommendation, NHTSA should

6 urge states to set requirements that ensure retailers

7 work closely with manufacturers, NHTSA, and other

8 stakeholders to determine the appropriate information

9 to communicate to consumers and the most effective

10 method and timing of this communication.

11   Second, NHTSA should recommend that states

12 prohibit the operation of vehicles automated driving

13 systems if needed equipment has been significantly

14 damaged and not repaired.

15   We appreciate that the policy's safety

16 assessment already asks entities to prohibit vehicles

17 from operating in HAV mode if sensors or critical

18 safety control systems are damaged. Instead of being

19 voluntary, NHTSA should recommend that this

20 prohibition be a part of state laws nationwide.

21   Once again, thank you for your work on this

22 policy and for your consideration of our comments.

1   MS. WILLIAMS: Thomas Lehner from MEMA. Do

2 you also have additional remarks you would like to

3 make?

4   MR. LEHNER: Thank you. No. My colleague,

5 Leigh Merino, covered it. Thank you.

6   MS. WILLIAMS: Great. Peter Kurdock,

7 Advocates for Highway and Auto Safety.

8   Okay. Do we have Joan Claybrook, former

9 NHTSA Administrator? I haven't seen her yet this

10 morning. Okay.

11   Catherine Curtis with AAMVA.

12   MS. CURTIS: Good morning. I'm Cathy

13 Curtis, Director of Vehicle Programs at the American

14 Association of Motor Vehicle Administrators, also

15 known as AAMVA. I'm speaking today on behalf of AAMVA

16 and the AAMVA autonomous vehicle working group.

17   Automated vehicles represent one of the most

18 significant innovations impacting transportation

19 sector since the advent of the motor vehicle. This

20 technology has the potential for significantly

21 improving safety on our roadways and increasing the

22 mobility of society in general.

1   AAMVA applauds the federal government's work

2   to ensure these technologies continue to deliver as

3   consumer protections while at the same time

4   encouraging innovation.

5   We believe the Model State Policy provides

6   guidance that creates a framework for consistent

7   regulations across the states. We think this guidance

8   serves as a very good starting point and agree with

9   NHTSA that the guidance must be updated on an ongoing

10   basis.

11   We also believe that some areas can be

12   approved upon in the short term while other areas need

13   more discussion with government and industry

14   stakeholders.

15   AAMVA appreciates that NHTSA considered

16   AAMVA autonomous vehicle working group's input in

17   formulating the section of the policy as our members'

18   expertise is an essential resource for the development

19   of the comprehensive policy.

20   AAMVA involve -- AAMVA's involvement ensures

21   state interest and vehicle technology innovators work

22   in tandem to provide a level of consistency in AV

 1   testing and deployment across jurisdictional lines.

 2   AAMVA reiterates that their input towards

 3   this section was not just a single organizational

 4   consideration, but that multiple states with different

 5   interests collaborated on the recommendations made to

 6   NHTSA.

 7   Now for a few comments on the details of the

 8   Model State Policy. While we understand that there

 9   are benefits of grouping SAE Level 3, 4, and 5

10   vehicles together into a single highly automated

11   vehicle HAV designation, there still will be need --

12   will be a need for specific level classification to be

13   used by the states and NHTSA when appropriate.

14   AAMVA believes that this grouping of

15   distinct classifications into one term may cause some

16   confusion. We would also like to point out that

17   Section 1B provides information on the establishment

18   of jurisdictional automated vehicle technology

19   committees in states.

20   AAMVA members have expressed the committee

21   membership should also include legislative and

22   executive state government representatives as well as

 1 economic development advisers.

 2   Policy at the state level will be defined by

 3 state legislatures and lead executives making their

 4 integration into the decision making process

 5 essentially.

 6   Also AAMVA notes that the policy does not

 7 address the platooning of vehicles, including

 8 commercial vehicles. While AAMVA understands that

 9 platooned vehicles may be incorporated in aspects of

10 connected vehicle technology working in tandem with

11 autonomous vehicle functionality, AAMVA requests

12 clarification on whether NHTSA intends for this policy

13 to apply to connected vehicles.

14   Section 5B states that fully automated

15 vehicles are driven entirely by the vehicle, itself,

16 and require no human driver, SAE Levels 4 and 5, at

17 least in certain environments and under certain

18 conditions.

19   The footnote attached to the statement

20 provides a very important distinction by reference.

21 Some vehicle may be capable of being entirely driven

22 by the vehicle, itself, or by a human driver. For a

1 dual capable vehicle the states would have

2 jurisdiction to regulate and license the human driver.

3   AAMVA believes that this statement is

4 important to the discussion of HAVs and state

5 licensing jurisdictions. AAMVA recommends that NHTSA

6 consider incorporating this footnote directly into the

7 policy, itself, to ensure that there's no confusion

8 regarding the authority of the state to establish the

9 licensing laws associated with autonomous vehicle

10 regulation.

11   In the glossary, driver is defined as the

12 following: For the purpose of this policy, the human

13 operator of an HAV when not operating in a full

14 automated mode.

15   AAMVA requests clarification whether it's

16 NHTSA's intent that the person sitting in the driver

17 seat of a Level 3 or 4 vehicle would be responsible

18 for distracted driving or any other rules of the road

19 violations if the vehicle is operating in fully

20 automated mode.

21   Also operator is defined as an occupant of

22 an automated vehicle who is not responsible for the

 1 driving task, but is still responsible for certain

 2 aspects of the journey.

 3   AAMVA requests clarification on whether this

 4 definition is meant to cover those vehicles that may

 5 be remotely operated or tracked. If this is the

 6 intent, those terms may need to be incorporated into

 7 the definition.

 8   Section one of the full policy titled

 9 Vehicle Performance Guidance describes the types of

10 data that NHTSA will require to be documented and

11 recorded by manufacturers for retrieval by NHTSA.

12   While this information will be made

13 available to NHTSA, AAMVA suggests that the Model

14 State Policy also mention the availability of the data

15 to the states. Should this data be only made

16 available to NHTSA, the states may need to request the

17 same information be submitted to them and by any

18 entity conducting testing within that jurisdiction.

19   A single provision of this data to federal

20 and assess- -- to a federal and assessable source

21 would eliminate redundancies in data collection and

22 reporting between both federal and state

1   jurisdictions.

2   AAMVA supports a suggestion that a

3   commission that includes government and industry

4   stakeholders study liability insurance issues and make

5   recommendations to the states. And AAMVA offers their

6   expertise in this area.

7   In summary, it is the highest priority of

8   AAMVA to support our members' work to create a

9   consistent approach to ensuring vehicles are tested,

10   deployed, and operated safety -- safely. The Model

11   State Policy provides the framework for that approach.

12   AAMVA is energized by the activity in the

13   autonomous vehicle sector and emphasizes that it is

14   important that no single entity dictate the terms of a

15   safe testing and deployment of autonomous vehicle

16   technology.

17   We believe it'll take a coordinated effort

18   amongst government and industry stakeholders to get

19   this lifesaving technology into the nation's roadways

20   as safely and quickly as possible.

21   AAMVA thanks NHTSA for the opportunity to

22   comment on this important safety issue and for NHTSA's

 1   continued partnership and support as we work

 2   collaboratively on this potential lifesaving

 3   technology.

 4   MR. FIKENTSCHER: Thank you. I would just

 5   like to go on record with stating that these are

 6   voluntary guidelines. NHTSA is not requiring that any

 7   entity submit anything to us yet.

 8   MS. CURTIS: Thank you.

 9   MS. WILLIAMS: Okay. Do I have Sean Kane,

10   the Safety Institute representing Consumers for Auto

11   Reliability and Safety, also known as CARS?

12   MR. KANE: Hi, good morning. And I'm here

13   on behalf of CARS and also the Safety Institute.

14   We're 501(c)(3) non-profit organizations that address

15   issues around consumer safety and consumer product

16   safety.

17   So with respect to the Model Policy, you

18   know, our concerns really that they are not going to

19   preempt the current state requirements and the laws

20   that are in place for the states.

21   So one of the issues, you know, we've seen

22   is this idea that the preemption of some of the

1   regulations could come into play and create a

2   significant issue for folks. When you have a Model

3   State Policy overriding some of the concerns, for

4   example, the state laws around what constitutes a

5   safety-related problem, they are dealt with in the

6   state laws so those are real concerns for both of our

7   organizations.

8   You know, I was here to really talk about

9   the imminent hazard aspect of it and what those

10   restrictions are that would be addressed in the next

11   panel presumably.

12   But in terms of the other issues that we

13   want to make sure that are addressed, for example, the

14   -- we have reports from the California DMV, which, you

15   know, requires manufacturers to provide disengagement

16   information about what's happening in those vehicles

17   that are on the road that are having disengagements.

18   We feel that real-time data is a very

19   important aspect of all of these types of issues that

20   -- we've heard a lot about 94 percent of people are

21   the real problem creating errors, but we have real

22   scant data and that data's not real-time available.

1   Having available data and information from

2   all the stakeholders would play an important role in

3   understanding what policies are going to work and how

4   they're going to work going forward whether it's the

5   imminent hazard issues, whether it's the safety

6   problems, or whether we're going to end up having

7   regulations that would set the foundation for the

8   safety of these vehicles.

9   We have real concerns that the policy that

10   is out there is just that, it's a policy. And I think

11   we've seen over and over again that many of the crisis

12   that have been the underpinnings of the problems that

13   find their way into the enforcement side have their

14   underpinnings in a lack of a solid regulatory

15   framework by the agency.

16   So we would certainly encourage the agency

17   to look at codifying and having some baseline

18   regulations that ensure the safety of these vehicles

19   as we go forward.

20   I've heard from others here that, in fact,

21   the states aren't equipped to handle some of the

22   complexities of that and they would be looking to the

1   agency for that.

2   Some of those, you know, have talked about

3   the other models of certification through the FAA, for

4   example. And that may be one way to look at is as we

5   go forward because absent any of the structure or the

6   infrastructure for a regulatory environment we end up

7   with a situation where the agency doesn't have the

8   underpinning, the expertise and they're relying on

9   self-certification which can be a real problem in

10   terms of understanding the complexities as we go

11   forward.

12   So I think in short, you know, the big

13   concern is what happens absent a regulatory

14   environment. Understanding that everyone's looking

15   for move forward and move forward quickly and not

16   interrupt technology, but at the same time having

17   those protections in place and setting a minimum

18   baseline to ensure that the vehicles that are coming

19   onto the road have met a minimum baseline.

20   And that can be -- that should happen across

21   the United States. It shouldn't be in some type of

22   patchwork of a model or even some general policy

1   areas. And that could save, frankly, many of millions

2   if not billions of dollars in the long wrong.

3   It may take an additional effort, it may

4   slow some things down. But if we're going to go

5   forward here rather than putting the cart before the

6   horse setting a minimum baseline of safety standards

7   that we all can say, yes, we're on those pages as we

8   move forward so we don't end up with a patchwork as

9   well I think benefits everybody involved and it's all

10   stakeholders involved. Thank you.

11   MS. WILLIAMS: Thank you. May I have David

12   Strickland, our former NHTSA Administrator, who is now

13   with Venable on behalf of the Safe Driving Coalition.

14   MR. STRICKLAND: Thank you, Dee, and good

15   morning, everyone. On behalf of the Self-Driving

16   Coalition for Safer Streets I am happy to provide this

17   statement for the record in response to NHTSA's public

18   meeting on the Model State Policy section of the FAVP.

19   The coalition appreciates NHTSA's commitment

20   to obtaining feedback regarding all aspects of the

21   policy. Self-driving technology has a great potential

22   to enhance public safety and mobility especially for

1   the elderly and the disabled, reduce traffic

2   congestion, and improve environmental quality.

3   The Coalition's mission is to promote the

4   benefits of fully self-driving vehicles and support

5   the safe and rapid deployment of these innovative and

6   potentially lifesaving technologies.

7   We believe that it is the fully automated

8   levels, that is SAE Levels 4 and 5, where we see the

9   greatest opportunities for safety and mobility.

10   The discussion of the Model State Policy is

11   timely given the ongoing and expanded state activity

12   in the highly automated vehicle space. Since NHTSA's

13   deadline for comments on the policy, several states

14   have continued to push forward with HAV-related

15   agendas.

16   For example, just last week the Texas House

17   of Representatives Committee on Transportation held a

18   hearing on automated vehicles. And we suspect that

19   other states will likely explore this matter

20   throughout the 2017 legislative season.

21   The Coalition believes that it is crucial

22   for NHTSA to take a strong leadership position in

1   clearly defining the federal and state

2   responsibilities when it comes to HAVs. The federal

3   government's exclusive mandate to promulgate and

4   enforce the Federal Motor Vehicle Safety Standards has

5   been observed for decades and we do not believe that

6   HAVs present a reason to deviate from that well-

7   established precedent.

8   We commend the agency for encouraging states

9   for focus on their traditional areas of jurisdiction

10   such as licensing, traffic enforcement, and setting

11   insurance requirements; however, we are concerned that

12   the policy still provides leeway for states to fill in

13   gaps and build their own regulatory framework for HAVs

14   outside of their normal areas of jurisdictional

15   control.

16   We encourage NHTSA to signal to state and

17   local entities against rushing into legislating simply

18   because a subject matter is new and novel. The

19   Coalition also calls upon NHTSA to leverage its

20   existing authority and position as a federal vehicle

21   safety authority to safeguard against overlapping

22   regulation by state and local governments.

1   Inconsistency at the state and local levels

2   will harm innovation and slow the deployment of this

3   technology that has the potential to save thousands of

4   lives. Should state and local governments move to

5   enact disparate regulatory frameworks, it will reduce

6   NHTSA's ability to ensure that this country can move

7   forward on safety.

8   The success of automated technologies

9   depends on access to public roads. State

10   municipalities play a great role and we look forward

11   to working with them to achieve scalable solutions.

12   To the extent states wish to act in this

13   area, the Coalition strongly urges them to examine and

14   address existing laws and regulations that may serve

15   as an impediment to HAV testing and deployment rather

16   than implementing restrictive requirements that may,

17   in fact, lead to move barriers to HAV operations.

18   Thank you all so very much for you hard work

19   on this policy and to continued transparency in these

20   workshops. And we look forward to working with you in

21   the months and years going ahead. Thank you so much.

22   MS. WILLIAMS: Thank you. Russ Martin with

1   AAA.

2   MR. MARTIN: Hi, good morning. My name's

3   Russ Martin. I'm the manager of states relations for

4   AAA.

5   AAA is a not-for-profit member services

6   organization dedicated to advancing road safety.

7   We've advocated for safer roads and safer mobility for

8   over 100 years and we represent more than -- or

9   server, rather, more than 56 million members in the

10   United States and Canada.

11   AAA and the motoring public are intensely

12   interested in the possibility of autonomous vehicles

13   and AAA clubs across the states are already working

14   with policymakers on state laws and regulations across

15   a broad swath of mobility and safety issues.

16   AAA aims to ensure that AV policies designed

17   to safely maximize the benefits of technologies for

18   consumers. So as we turn to the federal level, thank

19   you so much for national leadership on this issue

20   embodied in the Federal Automated Vehicle Policy and

21   the opportunity to provide remarks today.

22   Today we're suggesting a short set of

1   improvements of the Model State Policy to promote a

2   more straightforward and consistent consumer

3   experience across the HAV space.

4   In its Model State Policy NHTSA recommends

5   that HAVs have the capability to make minor technical

6   violations of state laws in certain situations for

7   safety and expediency. And like some other

8   commentators, we urge NHTSA to recommend that states

9   explore whether and how to formalize this elasticity

10   of laws for HAVs or at least guidelines for how such

11   laws ought to be enforced.

12   We suggest a collaborative process between

13   states, HAV developers, and researchers to identify

14   common scenarios which may require exemptions to

15   existing state laws.

16   Once these scenarios are identified, new

17   state laws ought to be considered to provide the

18   appropriate exemptions. But states should only allow

19   HAVs to perform these maneuvers which violate the

20   usual decorum when it's safe to do so and would

21   require HAVs to yield to vehicles and other potential

22   hazards.

1   Second, NHTSA urges HAV developers to

2   consider ethical programming for HAVS; however, not

3   only can HAV developers anticipate ethical programs in

4   programming, but states can also take action to

5   mitigate these ethical crisis.

6   For example, states should consider laws to

7   prevent people from purposely disrupting HAV systems.

8   States could adopt a graduated system of laws

9   criminalizing the intentional disruption of HAV

10   operation.

11   This could range from misdemeanors to

12   felonies, index to potential and actual safety impact,

13   and exempts safely conducted white hat research.

14   States should also examine roadways for

15   design flaws that could lead to ethical conflicts.

16   When we think about the trolley car program they

17   suggest high speed, low visibility, pedestrian dense,

18   single-lane roads where these problems were most

19   likely to arise.

20   But states could find these locations and

21   deploy solutions to reduce the risk. They could lower

22   speeds, remove sensor obstructions, discourage

1   pedestrian roadway entrance. They could also ask or

2   require entities testing or deploying HAVs to help to

3   identify these instances before an actual ethical

4   dilemma plays out and risk to life and property.

5   And, finally, AAA agrees the federal

6   government is best suited to offer a national

7   framework on AV governance and oriented all the

8   stakeholders in this space in the same direction.

9   The Division of Regulatory Responsibilities

10   outlined in the policy makes sense, but we would offer

11   one clarification. It's not just the federal

12   government, but states and other entities that are

13   also -- that also share a lot of responsibility for

14   communicating with and educating the public about

15   motor vehicle safety issues.

16   So AAA urges NHTSA to consider the full

17   range of potential communications channels and

18   partners to distribute safe messages about vehicle

19   automation and safe mobility.

20   So thank you for the opportunity to provide

21   your comments today and we welcome the opportunity to

22   answer any questions. Thanks.

1   MS. WILLIAMS: Ben Husch with the National

2   Conference of State Legislatures. No.

3   Okay. So that's actually who we had -- who

4   signed up in advance. And I'm just going to run

5   through a couple of the names to see if anyone did

6   join us.

7   Is Ryan Hagemann here?

8   How about Emily Frascaroli from Ford?

9   Eric Williams, Tesla Motors?

10   MR. WILLIAMS: Yeah, pass.

11   MS. WILLIAMS: You're going -- okay. Peter

12   Kurdock. And I didn't see Joan.

13   Okay. Do we have anyone else who is here

14   this morning who would like to offer some oral

15   technical remarks on the Model State Policy portion of

16   this program?

17   Silence. Okay. Well, if I could have done

18   it differently, I probably would have flipped the

19   sessions to have the Modern Regulatory Tools in the

20   morning and then that way everyone could have been

21   going home early this afternoon, but that said we're

22   going to break at this time until after lunch.

1   Okay. Thank you.

2   (Off the record.)

3   MS. WILLIAMS: Okay. So we're just hitting

4   1 o'clock now so we're going to go ahead and get

5   started. So I just want to welcome or welcome back

6   those who weren't able to join us this morning.

7   Just a quick recap. So during the morning

8   session of today's meeting we covered the Model State

9   Policy portion of the Federal Automated Vehicles

10 Policy.

11   So during this session we're actually now

12 going to focus on Section IV of the Policy which is

13 called Modern Regulatory Tools. And if you weren't

14 here this morning, I'll just give also a little detail

15 as to how this session's going to work.

16   As you can tell, we're going to have very

17 structured panels, six of them to be exact. And we're

18 going to cover the potential authorities that may

19 foster the automated vehicle innovation including

20 safety assurance, premarket approval, imminent hazard,

21 expanded exemptions, and tools related to post sale

22 for the regulation of software updates along with a

 1   variety of others that were -- are proposed.

 2   So each panel, again, six in total, they're

 3   going to last approximately 35 minutes. And during

 4   the last five minutes of each we're going to ask the

 5   moderators to open up the panel to see if anyone in

 6   the audience has questions.

 7   So to facilitate this process and given the

 8   limited time for each panel, there are going to be

 9   index cards passed out and some pens. And if you want

10   to pose a question to a panelist, we just ask you to

11   write it down and there will be a couple volunteers

12   that are going to come through the aisles and collect

13   those cards.

14   So we're probably, then, going to pick one

15   or two and any of the other ones we'll try and cover

16   in a different forum or consider otherwise.

17   So before we get started, again, I would

18   just like to remind everyone if you do have a wireless

19   device, which I think we all do or maybe multiple, if

20   you could take the time and turn them off, silence

21   them, that would be great.

22   And let's go ahead and get started. Our

1   first panel this afternoon it's going to be on Safety

2   Assurance and it's going to be moderated by Mr. Paul

3   Hemmersbaugh. He's our chief counsel for NHTSA.

4   Paul?

5   MR. HEMMERSBAUGH: Thanks. Is this working?

6   MS. WILLIAMS: So --

7   MR. HEMEMRSBAUGH: You got to press the

8   button, though. Now it's working.

9   Welcome back. I hope we'll have a good

10   discussion to keep the onset of the early afternoon

11   naps away.

12   We're going to talk today on this panel

13   about premarket assurance and -- or premarket safety

14   assurance. And one of the things I was thinking is I

15   was hearing her ticking through the topics is that

16   these topics are not necessarily, you know, sort of

17   distinct and hermetically sealed from one another. So

18   you'll excuse us if some of us bleed over into

19   premarket approval on occasion.

20   The -- what we mean by premarket assurance,

21   premarket safety assurance is testing risk analysis,

22   gathering of data regarding vehicle or equipment that

 1   is conducted by the designer, developer, or

 2   manufacturer that's intended to demonstrate that the

 3   design and manufacturing process has incorporated

 4   standards, testing, and criteria that assure the safe

 5   operation of new motor vehicles -- and this is the key

 6   -- before they're deployed on public roads.

 7   So that's kind of the definition that we're

 8   using. We're -- it's the -- other definitions are

 9   certainly possible and -- but that's the one that I'd

10   like to use as our working definition.

11   And one more parenthetical about that. I

12   think that it's in our way of thinking under the

13   Federal Automated Vehicles Policy it's the intention

14   is to provide the government agency and consumers some

15   level of assurance that vehicle design and

16   manufacturing process have followed industry best

17   practices, the agency guidance, and other performance

18   criteria, again, before the vehicles or the equipment

19   is rolled out for public use, consumer use.

20   And I'd like to introduce the panel. First

21   we have on my right here Marc Scribner. Marc's a

22   research fellow at the Competitive Enterprise

1   Institute. He focuses on transportation, land use,

2   and urban growth policy issues.

3   Those issues include infrastructure

4   investment in operations, transportation safety and

5   security, risk and regulation, privatization of public

6   finance, urban redevelopment and property rights, and

7   emerging transportation technologies such as automated

8   road vehicles and UAS.

9   Our second panelist we're privileged to have

10   the chief counsel of the FAA, Reggie Govan. Reggie is

11   chief counsel for the FAA, as I said. The office of

12   chief counsel provides legal support and legal advice

13   in support of the FAA administrator and all agency

14   operations are headquarters, regions, and centers.

15   Reggie has a diverse legal practice

16   background as corporate counsel, litigator, and

17   legislative counsel. Prior to joining the FAA, he

18   served as managing associate general counsel of

19   Freddie Mac.

20   And finally we have Peter Kurdock. Peter's

21   the director of regulatory affairs for Advocates for

22   Highway and Auto Safety. Prior to joining the

1   Advocates in 2013, he served in the legislative

2   departments of several non-profit organizations. He

3   also served as a legislative aide to U.S. Senator

4   Frank Lautenberg and Congressman Bill Pascrell, both

5   of New Jersey. For them he handled transportation

6   issues.

7   So having introduced our panelists, my first

8   question is for each of them -- and I think we'll just

9   sort of go down the line and get your views.

10   As a general matter, does the safety

11   assurance approach offer significant safety benefits

12   over and above those provided by the current

13   manufacturer's self-certification to FMVSS compliance?

14   Again, this, I should say, doesn't -- as of

15   right now it doesn't provide anything. But does it

16   hold -- I think -- I think I -- well, just because it

17   doesn't exist for us.

18   But what I meant to say does it hold the

19   potential to provide additional benefits or different

20   benefits or different downsides from the current FMVSS

21   self-certification?

22   Marc?

 1   MR. SCRIBNER: Yeah. I think it would -- as

 2   a gen- -- whoop. As a general matter, I think it

 3   would depend how each tool would be -- would be

 4   conceived and implemented.

 5   And as a general matter, we have two sort of

 6   thoughts on this that I thought we could maybe tease

 7   out a little bit later. I think before beginning any

 8   serious discussions about premarket safety assurance

 9   tools, NHTSA would need to articular precisely why the

10   self-certification regime is inadequate.

11   You know, is the regulatory process too slow

12   making -- updating Federal Motor Vehicle Safety

13   Standards to reflect this new technology in the

14   context of traditional automotive -- or auto equipment

15   manufacturer self-certification?

16   Is that -- is that problematic? Does that

17   prevent us realizing some of these safety benefits as

18   early as we could?

19   If yes, I think NHTSA may wish to consider

20   appealing to Congress to fix the longstanding self-

21   certification regime rather than augmenting it with

22   these premarket safety assurance tools.

 1   But if NHTSA can articulate a basis for

 2   these premarket safety assurance tools to augment

 3   self-certification, we do believe that the agency

 4   needs to carefully weigh the additional potential

 5   benefits of a given tool against the potential delay

 6   cost and price rises that could result, you know, from

 7   these ultimately being deployed to consumers.

 8   And that's because, you know, these

 9   technologies hold great promise in offering massive

10   safety benefits to the future so we think that you

11   need to keep sort of an eye on this. The fact that,

12   you know, this technology as it's being developed and

13   as it's being deployed may offer some of the greatest

14   safety benefits that have -- you know, any technology

15   ever deployed. And that perhaps additional scrutiny

16   could -- could reduce the -- use realizing those

17   benefits as early as we could.

18   MR. HEMMERSBAUGH: Great. Thanks, Marc.

19   We'll turn to Reggie next. But, Reggie, I'd like you

20   to also comment on the FAA's experience with premarket

21   safety assurance and how you think it may or may not

22   be instructive as to the regulation of automated motor

1 vehicles and equipment.

2   MR. GOVAN: So the aviation framework is

3 fundamentally different than the framework that you're

4 used to and operate in. And just in a very broad

5 outline, the FAA -- the aviation regulatory framework

6 has been very proscriptive and the FAA essentially has

7 controlled all things from almost from the conception

8 in someone's brain like in the Matrix to the rolling

9 off of -- off an assembly line.

10   And the FAA certifies everything in between

11 -- the aircraft, the component parts, certify the

12 airman, the pilot who's going to be flying it, we

13 certify the mechanics and the maintenance operation,

14 everything is federalized soup to nuts.

15   And that has actually worked brilliantly.

16 The FAA's regulatory standards are the platinum

17 standard for safety regulation in aviation and have

18 largely been -- have influenced and been adopted

19 throughout the world.

20   The reality is that the standards that we've

21 relied upon have really come out of an assessment of

22 accidents. And accidents are far and few these days

1   and so the agency has been shifting to a very

2   different model. Not that the regulations are going

3   by the wayside, but we are really trying to do two or

4   three different things simultaneously.

5   One is to shift from very proscriptive

6   regulations to performance-based standards in which

7   the means of compliance would probably primarily be

8   based upon voluntary consensus standards in the

9   industry.

10   But that doesn't preclude the innovator or

11   the entrepreneur from coming in with their own means

12   of compliance and being able to satisfy whatever the

13   performance-based safety standard is. So, A, we're

14   really relaxing if you will the regulatory regime.

15   Secondly, we're relying upon a great deal of

16   voluntary information sharing in the industry. It

17   started off among the commercial air carriers through

18   a twice-a-year meeting where there's just an opening

19   up the books, if you will, on safety issues so that

20   the entire industry can know what each operators

21   experience is on a broad range of matters. And

22   together with the FAA the industry and the FAA can

1   develop responses.

2   Most of the issues that are discussed are

3   not about regulatory compliance. These are safety

4   issues that either don't violate regulations or that

5   there's some latent problems that only manifest

6   themselves in an accident.

7   If sort of all the holes in Swiss cheese in

8   10 to 12 different pieces would line up and there's a

9   very low probability that would ever happen and so

10   it's really an attempt to be proactive and

11   preventative and to go well beyond whatever the

12   regulatory compliance requirements are.

13   And, third, we rely upon a great deal of

14   voluntary reporting programs that industry has for

15   their employees to report to industry and to the FAA

16   collaboratively whatever problem or experience they

17   have. And often times these are, again, not

18   regulatory compliance issues, but they do help

19   identify latent safety issues.

20   The framework in which a lot of that is

21   happening is a requirement for both air carriers and

22   airports to adopt safety management systems which are

1   really the aviation equivalent of the financial

2   reporting and disclosure practices that publicly

3   listed companies have with respect to, you know, their

4   earnings and sales releases and all that.

5   My own view is that most of industry has

6   probably a more robust set of internal practices than

7   what the FAA would be requiring initially out of the

8   box by way of a regulation, but that's not true across

9   the board.

10   And so the safety management systems that

11 are being adopted now to meet the initial round of

12 regulatory requirements are setting a floor and

13 programs agency -- industry programs would be more

14 robust over time than what the regulations require.

15 But that's simply the aviation industry has always

16 taken its safety mandate very seriously and often

17 times goes well beyond whatever the federal regulatory

18 requirements are.

19   MR. HEMMERSBAUGH: Thanks, Reggie. Peter,

20 one of the things I'd be interested in your augmenting

21 whatever you were going to say about this is whether

22 you think -- and just for the audience information, a

1   pretty good example of what we mean by premarket

2   safety assurance are the -- the vehicle performance

3   guidance safety assessment letter. And so that's the

4   kind of thing we're talking about.

5   And what I'm interested in is we've made

6   that voluntary and we certainly have reasons that it's

7   voluntary. But what I'd be interested in, Peter, is

8   whether you think that this sort of premarket safety

9   assurance is necessarily workable only if it's

10   mandatory or if voluntary standards can work in

11   addition to whatever else you were going to say.

12   MR. KURDOCK: So, first, before I address

13   that question, Paul, thank you to NHTSA and to the

14   folks here for having us.

15   I think it's important, too, as a safety

16   organization -- and it's something that Marc touched

17   upon -- is we are very, very hopeful that autonomous

18   vehicles has the potential to save significant amount

19   of lives, prevent significant amount of crashes.

20   Sadly, the last couple years we've seen some

21   significant upticks in the lives lost on highways due

22   to crashes. So we are very, very optimistic that the

1   technology will save those lives.

2   Unfortunately, like the crash that happened

3   in Florida in May, gives us great pause as to what

4   manufacturers are already currently putting on the

5   road. So our public comments did address the fact

6   that the letter is voluntary.

7   We think it should be mandatory as well as

8   what strikes us quite interestingly about the letter

9   is if it's voluntary and the information that a

10   manufacturer chooses to provide is voluntary they

11   simply can provide whatever information they choose to

12   and the agency has no recourse to require them to

13   submit additional information that they may need.

14   Now, they may go back to the manufacturer

15   and politely ask them to provide the information they

16   would like and the manufacturer can simply say no

17   thank you and there's nothing that the agency can do

18   at that point and they've already wasted a significant

19   amount of resources. So that's a significant concern

20   for us.

21   Turning to really what our comments -- to

22   public comments to the docket which you can all see is

1   we talked a lot about reorganizing this policy around

2   functional safety, the functional safety requirements.

3   And functional safety really is the way we

4   define it in our public documents. It's always been

5   if the vehicle's not tested to one test, it's not

6   designed to a series of tests. It's really assured

7   that in any type of situation that the vehicle on a

8   public road is going to encounter they're able --

9   going to be -- handle that -- that situation safely.

10   And, frankly, from all we've learned from

11   the public disclosure of what happened back in May

12   with the crash. If that manufacturer engaged in a

13   robust and an appropriate functional safety process,

14   they would have caught that defect that occurred and

15   very likely could have prevented that crash that cost

16   that gentleman his life.

17   So that's really where we look at it, but

18   and a final thing I would put on for Advocate's, too,

19   is that we're very concerned about it seems to be the

20   stance of the agency that this is somehow -- that all

21   autonomous vehicles and automated vehicles are somehow

22   so different that the -- you know, the regime that's

 1 worked for the agency for 50 years and they talk

 2 about, you know, vehicles standards and technology

 3 have saved 600,000 lives -- more than 600,000 lives

 4 that somehow that doesn't apply here and we don't

 5 accept that.

 6   MR. HEMMERSBAUGH: Okay. I think what I'd

 7 -- we've got a common thread here in that there's some

 8 question about are voluntary -- why would you have

 9 voluntary standards and are they in any sense superior

10 to or do they offer advantages over the FMVSS, which

11 is slightly different from what we started with.

12   But, Marc, for example, I think you said

13 that one of the questions NHTSA should ask before

14 embarking on any sort of set of premarket assurance or

15 safety assurance is why are these -- or are these

16 measures necessary.

17   And one of the things I'd like to throw out

18 and have each of you address or talk about is in light

19 of the fact that very few of the Federal Motor Vehicle

20 Safety Standards cover automated vehicle functions and

21 in light of the fact that it has taken us in recent

22 years eight to ten years to issue a final rule FMVSS

1   standard, the last I think three of four took eight to

2   ten years, is there -- does that give you some feeling

3   or notion that it makes sense as these new

4   technologies are rapidly developing and coming online

5   whether we're making rules or not, does that strike

6   you as an appropriate or reasonable justification for

7   using premarket safety assurance tools as opposed to

8   rules?

9   MR. SCRIBNER: I think it could, but, as I

10   said earlier, I think that the question really comes

11   down to what specific benefits is the specific tool

12   going to provide over the -- over the existing Federal

13   Motor Vehicle Safety Standard and self-certification

14   regime.

15   I think there's a potential and there may be

16   a case in the future for mandating the safety

17   assessment letter as we said in our public comments,

18   but we also raised a number of concerns with the

19   current safety assessment letter or the elements

20   contained, the 15 point checklist.

21   And particularly on some of the data and

22   cybersecurity components there and privacy components

1 there which I think would need to be addressed before

2 moving forward. These are some of the issues that --

3   MR. HEMMERSBAUGH: Uh-huh.

4   MR. SCRIBNER: -- that I think NHTSA really

5 needs to grapple with before moving forward or really

6 even asking that question of whether or not this

7 should be mandated or not.

8   So I don't think we're at the stage at least

9 where we are with the safety assessment letter to even

10 really consider mandating it just because I think

11 there's much more work to do in this early voluntary

12 stage before we can move on.

13   MR. HEMMERSBAUGH: Are you concerned that

14 vehicles are going on the road without -- would

15 otherwise go on the road without standards at least

16 for an interim period?

17   MR. SCRIBNER: I'm less concerned. I mean, I

18 think the developer have all -- have all taken a

19 fairly cautious approach. Now, we can think of one

20 developer who may not have taken quite as cautious of

21 approach, but it's also important to keep in mind that

22 if we're talking about highly automated vehicles as

1 NHTSA defines them it's not at all clear that that

2 technology in question would be covered by the Level

3 3, Level 4, Level 5 SAE levels that cover highly

4 automated vehicles.

5   So and that's another thing worth

6 considering, as well. I know other commenters raised

7 that. Should NHTSA be looking more closely right now

8 at some of these lower levels of automation where

9 you're seeing some of the technology's actually being

10 deployed to consumers as opposed to focusing as much

11 on the highly automated vehicles.

12   MR. HEMMERSBAUGH: Okay. Thanks. I'm going

13 to jump over to Peter for a moment. Skip over Reggie

14 and we'll come back to Reggie.

15   Peter, similar question to you. Given that

16 rules, our standards, have taken eight to ten years in

17 recent years to promulgate and that there doesn't seem

18 to be -- there may be, but there doesn't seem to be a

19 prospect for reducing that time substantially.

20   And if you disagree with that you can say.

21 But, you know, it's not immediately apparent what

22 could make those -- these more -- if anything, more

 1   technical standards get faster.

 2   How does that affect your view of whether

 3   and to what extent NHTSA should use this premarket

 4   safety assurance tools and particularly voluntary

 5   tools?

 6   MR. KURDOCK: Yeah. So, first of all, you

 7   know, we -- definitely the agency should be using

 8   those premarket assurance tools. There's no doubt

 9   about that. We can debate all day here long and it's

10   a conversation for another day about the length it

11   takes the agency to issue regulations and there's no

12   need to go down that road now.

13   But one of -- I think one of the things I

14   want to point out, too -- and I agree with Marc

15   absolutely. He made an excellent point about how we

16   do think the agency should be focusing less on the

17   highly automated vehicles that necessarily may be

18   years, decades away depending on who you talk to and

19   the technology that's already in a lot of these cars.

20   But one of the things that we outlined in

21   the functional safety approach that we advocate for in

22   our public comments is that it gives the manufacturers

1   a great deal of leeway on what tests that they want to

2   put their technology to to prove to the agency that

3   the technology that they're putting into these cars

4   right now can perform safely in all types of different

5   situations.

6   Now we think the agency very well could at

7   some point in the near future require a certain set of

8   basics tests. But those beyond that the manufacturer

9   can perform whatever tests they want and bring those

10   to the agency and that data to the agency to prove to

11   them that the technology is safe and it gives the

12   manufacturers a great bit of leeway.

13   I know that's a surprise probably to hear

14   from a safety advocate, but I think that's one of the

15   great benefits of the functional safety analysis.

16   MR. HEMMERSBAUGH: Are you saying, though,

17   that those standards should or can supplant rule-made

18   standards or they just augment the --

19   MR. KURDOCK: I think they augment. I think

20   they aug- -- I mean, I think they're certainly -- you

21   can't just have the wild west and have every

22   manufacturing kind of playing by their own rule out

1   there and no standards whatsoever on what is safe and

2   what is not safe and everything's voluntary and the

3   market's just going to take care of itself because we

4   see where that is right now when we've already had

5   some instances that are of great concern to the safety

6   community.

7   MR. HEMMERSBAUGH: Right. I guess I would

8   challenge the notion that premarket assurance is no

9   standards whatsoever. I think they are industry

10   practices --

11   MR. KURDOCK: No. And I'm not saying that,

12   yeah.

13   MR. HEMMERSBAUGH: -- standard performance

14   criteria that are established by industry.

15   MR. KURDOCK: Right.

16   MR. HEMMERSBAUGH: So it may not be

17   established by a government agency but there are

18   certainly standards --

19   MR. KURDOCK: Yes.

20   MR. HEMMERSBAUGH: -- that they would comply

21   with.

22   MR. KURDOCK: Absolutely.

 1   MR. HEMMERSBAUGH: Reggie, recently I think

 2   maybe with UAS and some other regulations the FAA has

 3   been going a little bit more toward sort of a

 4   certification model.

 5   And I'm curious as to why that is and what

 6   advantages the agency sees in the certification model

 7   because it sort of seems like FAA is over here looking

 8   at it from a premarket assurance standpoint and

 9   they're looking over at sort of the other pool which

10   are self-certification.

11   We're both thinking about that the grass is

12   greener or something. And I'm just curious as to the

13   thought and rationale for that.

14   MR. GOVAN: I'm perfectly situated in

15   between Marc and Peter and that's pretty much where

16   the agency's moving actually is between the two of

17   you. It's fascinating to listen to it.

18   Aviation is such a different business and a

19   different community of businesses. There is simply no

20   discussion among the manufacturers, among the carriers

21   about one or another's safety system being to one

22   company or another's competitive advantage.

1   Sure. There's proprietary and intellectual

2   property, proprietary information and intellectual

3   property and the like, but at the end of the day the

4   books are open when it comes to anything having to do

5   with safety. And I suspect that's not the case among

6   the -- in the automobile industry.

7   The reality is that there are very serious

8   -- several things are motivating a shift. One is that

9   there is a reality here of new technology. And it's

10   the pace of the development of new technology, but

11   also the rapid commercialization of that technology.

12   Those two things combined simply, to put it

13   bluntly, means the agency has a hard time keeping up

14   with what's going on out there if we're going to rely

15   upon our traditional tools.

16   Secondly, I think the enlightened view is

17   that the old model of overly prescriptive where you

18   specify each and every thing is ultimately a little

19   anti -- maybe not anti-competitive, but anti-

20   innovation and it does affect the pace of innovation

21   and the commercialization of that innovative

22   technology.

1   But some forms of self-certification have

2   always been a part of FAA processes. The label we use

3   is different. They're called delegations. We have --

4   Boeing has some delegations from the FAA where there

5   are Boeing employees who act in the stead of the FAA

6   in ensuring compliance with various manufacturing

7   processes, design standards, and the like.

8   The general feeling is that those practices

9   don't go far enough and so there's a live debate in

10 Congress about whether Congress should direct us to do

11 more to rely on self-certification. But the reality

12 is as we shift from prescripted to performance-based

13 standards, and the means of compliance with those

14 standards will primarily be voluntary consensus

15 standards, there is an opportunity, as I said earlier,

16 for kind of a different approach and a new way of

17 thinking about how to comply separate from the

18 consensus.

19   So that's an area where we're loosening up,

20 but we're also actively considering proposals for some

21 forms of self-certification in some of the new rules

22 primarily around the use of drones. And that's simply

1 because drones are a fundamental shift in -- it's a

2 new entrant that requires a fundamental shift in how

3 we think about the regulation of a form of aviation

4 that doesn't have a person in the controls.

5   MR. HEMMERSBAUGH: Thanks. I would be

6 interested -- we had, as probably everybody knows, we

7 had a hearing like this regarding our safety

8 assessment letter. And then this morning, of course,

9 we had the Model State Policy and we had gathered

10 public views on that.

11   But I would be interested in if each of you

12 could give your thoughts -- to the extent you've taken

13 a look at the -- the safety assessment letter and the

14 criteria that we use there -- are those criteria

15 sufficient to provide the kind of safety assurance

16 that we need for the American public?

17   And if they are not, where do you think

18 there's room for development or improvement?

19   Marc?

20   MR. SCRIBNER: Yeah. As I said, before, you

21 know, I think there's -- I actually think the

22 categories of how -- that would show how NHTSA is

1   thinking about these issues are appropriate. I think

2   these are aspects and these reflect industry best

3   practices as they exist right now.

4   I think further refinement, however, is

5   needed in a number of these different categories.

6   And, like I said earlier, as we develop more in our

7   comment letter the data, the privacy, the

8   cybersecurity areas -- areas where NHTSA, frankly,

9   doesn't have a lot of experience and is currently in

10   this -- at the beginning of this learning process.

11   But fortunately I think as we recommend that

12   NHTSA should turn to other federal expert agencies,

13   namely the Federal Trade Commission, on how they deal

14   with -- how they deal with privacy.

15   You know, we have the Auto Ice (sic) Act set

16   up right now. Industry is thinking long and hard

17   about this. I mean, this is the beginning for many of

18   them, as well, particularly the OEMS rather than some

19   of the tech companies who've gotten involved.

20   Cybersecurity is going to be a growing

21   issue, privacy's going to be a growing issue, and data

22   ownership and management's going to be a growing

1   issue. But, like I said, I think one thing that

2   concerns us or would concern us about mandating the

3   safety assessment letter at this point -- whether at

4   the state level as we've unfortunately seen draft

5   rules from California that go in that direction or at

6   the federal level -- is that, particularly with

7   respect to data ownership, right now there's a lot of

8   concern at this early stage of the technology

9   development where do we drawn that line between what

10   is safety critical data that NHTSA could use versus

11   proprietary information that ought to be -- that ought

12   to be protected by that private developer.

13   And I think it's not at all clear where that

14   line is going to be drawn yet and I think that's an

15   important -- going forward, that's going to be an

16   incredibly important discussion that, you know,

17   industry is going to have and NHTSA's going to have.

18   MR. HEMMERSBAUGH: Lots of questions. We're

19   going -- speaking of questions, we're going to take

20   questions from the audience in just a moment. And I'm

21   going to skip over Reggie and give Peter a shot at

22   that question.

 1   MR. KURDOCK: This is like a lot of

 2   flyovers, right. That was a bad joke.

 3   So I think -- and our public comments

 4   reflect this, too -- is that we think that the agency

 5   is right in kind of the topics that they have

 6   identified in the letter, but they need -- we feel

 7   like they need to be more specific to make sure that

 8   they're actually getting kind of that subsetted data

 9   in each topic that allows them to get some real useful

10   information to see what's out there.

11   I think we're concerned -- I know especially

12   our engineer on staff is concerned that, you know, if

13   they remain so obtuse that there's just this huge

14   amount of information and it really isn't all that

15   useful why we certainly as a safety organization, you

16   know, are always in favor of, you know, complete and

17   honest disclosure.

18   We want to make sure that, you know, all the

19   information that the agency is getting -- you know, we

20   understand the agency's -- you know, the agency's

21   limitations. That they're going to be able to -- to

22   be able to analyze this information. It's the type of

1 information that they necessarily need to make -- make

2 those critical decisions.

3   So I think a little bit more detail on those

4 topics would be quite helpful.

5   MR. HEMMERSBAUGH: And I think we have

6 indicated both in our public statements and in the

7 guidance, itself, or the policy, itself, that we do

8 regard this as an iterative process.

9   That we're going to get more information and

10 that we're going to continue to collaborate with some

11 of the agencies that have a little more expertise in

12 cyber privacy and security and so forth.

13   Although we certainly did collaborate with

14 them in the first instance to develop this. And I

15 think part of what we're seeing here is that

16 cybersecurity and privacy controls and so forth are

17 very much of an emerging issue area and everybody's

18 learning as we go along.

19   I don't know if we have any questions, do

20 we?

21   MR. FIKENTSCHER: We have one question. Are

22 motorcycles included in NHTSA's pre-emergent safety

1   assurance program before HAVs are certified as safe?

2   MR. HEMMERSBAUGH: Are they included before

3   HAVs are certified as safe? I'm not entirely sure

4   what they mean by that question, but we intend to

5   include in the guidance all automated motor vehicles.

6   And so if the -- if the question is whether

7   there should be some time to certify all other kinds

8   of vehicles before motorcycles, I -- that's not the

9   intention.

10   We have a couple minutes in case if anybody

11   out in the audience has a question that they'd like to

12   offer.

13   MS. SWEET: Hang on a second, Paul, if I

14   can. So that question came from Rick. If you could

15   stand up and hop to a mic for a moment if you don't

16   mind.

17   Just to clarify, are you looking for whether

18   or not the motorcycle is included as one of the motor

19   vehicles to be -- to have a safety assessment letter

20   or are you looking for motorcycles to be included in

21   what is looked at by the -- by the automated vehicle

22   like as they can see and detect and everything like

1   that?

2   So I guess it's --

3   (Speaker off mic.)

4   MS. SWEET: Can you do a microphone just for

5   the web folks and the court reporter?

6   So I think that was one of the -- and since

7   it's also something that's come up in the comments I

8   just would like --

9   RICK: Yeah.

10   MS. SWEET: -- you to clarify that, as well,

11 just for the general public.

12   RICK: We just want to make sure that the

13 automobile manufacturers that design these systems

14 also include motorcycles in the algorithm and software

15 and hardware so that they can be recognized before

16 anything happens.

17   So that's what we want some assurances from

18 NHTSA and also the manufacturers. That's what we're

19 looking for.

20   MR. HEMMERSBAUGH: Okay. I obviously can't

21 provide any manufacturer assurance, but, I mean, I

22 think it is our intention to be inclusive and to take

1   the lessons learned with respect to automated

2   technologies and so forth and that they should be

3   equally applicable to motorcycles, as well, to the

4   extent they're -- it's a good fit.

5   RICK: All right. Thank you.

6   MR. HEMMERSBAUGH: Thank you.

7   MR. FIKENTSCHER: Re FAA airlines and

8   carriers enjoy liability protection in exchange for

9   opening their books on safety. Will NHTSA support the

10   same in regards to FAV manufacturers?

11   MR. HEMMERSBAUGH: One of the things our

12   administrator, Marc Rosekind, is fond of saying at

13   these things is don't make new policy. So I'm not

14   going to try to make any policy pronouncement on that

15   and I suspect Congress would have something to say

16   about that before we did that so.

17   MR. GOVEN: I do want to say it's not clear

18   to me that there's a limitation on liability at all.

19   I mean, the agency in exchange for voluntary

20   disclosure of a range of issues, not just safety

21   issues, has, in fact, not immunized the participants

22   in these programs.

1   The agency continues to be able to take

2   enforcement action against intentional and reckless

3   misconduct, against falsification, a whole range of

4   matters. But for your less serious matters we do say

5   that the disclosure would protect because our ultimate

6   goal is not a $25,000 civil penalty, it's to develop

7   the data and the information that then could be spread

8   throughout the industry so that we up everybody's

9   safety game.

10   And it's not clear to me that, you know,

11   trying to fine tune these proposals so that they meet

12   some eventuality yet to come is the right approach.

13   Let's get the conversation stated, let's get the

14   information in, let's figure out what we don't know

15   and then figure out what's the best response when we

16   find out what we don't know.

17   MR. KURDOCK: Hey, Reggie, I think it would

18   be helpful, especially for me, could you talk more

19   about when you say "less serious matters," what, you

20   know, an example of that would be?

21   MR. GOVAN: Well, it's the non-intentional,

22   the non-reckless matters that are honest mistakes

1   rather than falsifications. There's a continuum of

2   misconduct out there or a continuum of non-compliance.

3   And the intention misconduct is the worst form and

4   that is something that the agency will always take an

5   enforcement action.

6   And as you go down that list of severity

7   when something is truly an honest mistake and can be

8   remedied with other than a civil penalty action, the

9   agency's more than happy to do it.

10   Sometimes that's corrective action in terms

11   of a change of manufacturing process or in terms of

12   hiring a different quality of staff in a particular

13   department, hiring a different type of engineer. For

14   an airman it may be going back and getting a refresher

15   training just like they do when you get too many

16   tickets in your car for speeding. There's a whole

17   range of things. But there's -- immunity is not the

18   case.

19   MR. HEMMERSBAUGH: Thanks, Reggie. And

20   thanks to all of our panel members. And I think I'll

21   try to keep us close to on schedule for the first

22   panel. And, Tim, you've got a challenge to see if you

1   can get it done more quickly than I did.

2   Premarket Assurance next -- Approval next.

3   MS. WILLIAMS: So while we set up the second

4   panel I just want to introduce our moderator will be

5   Mr. Timothy Mullens. He's an attorney adviser to the

6   Office of the Secretary of Transportation.

7   And this will continue that discussion on

8   Premarket Approval so there will be a little bit of

9   overlap with this panel.

10   MR. FIKENTSCHER: Guys, I'd like to clarify

11   a little bit. This is an opportunity to ask questions

12   of the panel, not directly to NHTSA about things

13   inside of the policy. Thank you.

14   MR. MULLENS: Just let me know when we are

15   ready to start.

16   MS. WILLIAMS: Yeah. Go ahead and take it

17   away if you're ready.

18   MR. MULLENS: Okay. Great. So good

19   afternoon. I'm Tim Mullens with the Department's

20   Office of General Counsel. I'm here to discuss the

21   section and policy on Premarket Approval Systems for

22   automated vehicles.

1   As Paul had indicated, there are some

2   significant overlap obviously between premarket

3   assurance and premarket approval, but they are

4   fundamentally different in that premarket approval

5   goes a bit further and requires that the regulator

6   actually affirmatively approve a vehicle before it is

7   allowed for sale.

8   And we discussed that a fair amount in our

9   policy document primarily at a preliminary level and

10   sort of more and more for the floating the idea and

11   asking questions about how it could be designed for

12   automated vehicles.

13   And we requested comment and we received

14   quite a bit of comment on that. And so I'm hoping

15   this panel today will allow us to talk through some of

16   those issues and just sort of the concept, in general.

17   Before we begin, though, I'd like to

18   introduce our panelists. To my right is David

19   Strickland. David Strickland's currently a partner in

20   Venable's regulatory group where he focuses on

21   transportation policy, consumer protection, Internet

22   privacy, data security, and legislative and government

1   affairs.

2   Prior to joining Venable, Mr. Strickland

3   served as the administrator of NHTSA where he worked

4   on a number of issues, including the first statement

5   that the Department had issues on automated vehicles

6   back in 2013.

7   Prior to joining NHTSA, Mr. Strickland spent

8   eight years on the staff of the United States Senate

9   Committee on Commerce, Science, and Transportation as

10 Democratic Senior Counsel.

11   To David's right is Bryant Walker Smith.

12 Mr. Smith is an assistant professor in the school of

13 law and the school of engineering at the University of

14 South Carolina. He's also an affiliate scholar at the

15 Center for Internet and Society of Stanford Law School

16 and chair of the Emerging Technology Law Committee of

17 the Transportation Research Board of the National

18 Academy of -- International Academies.

19   Mr. Smith's research focused on risk,

20 particularly tort law and product liability in

21 technology, including automation and connectivity and

22 mobility including safety regulation.

1   He has the honor of teaching a first-ever

2   course on self-driving cars and is considered an

3   expert throughout government, industry, and media.

4   Our final panelist is Mr. Tom Karol. Mr.

5   Karol serves as general counsel in the federal -- for

6   -- in Federal, I think that's how you say it, in the

7   National Association of Mutual Insurance Companies or

8   NAMIC.

9   There Tom represents NAMIC in Washington on

10   issues impacting private property casualty insurance

11   companies and is primary management of NAMIC's

12   response to Dodd-Frank legislation and regulation.

13   He's also the leader of NAMIC's investment services

14   practice.

15   So it's in the policy and in -- obviously in

16   the response in the comments we've seen this has been

17   an issue of significant interest and it -- because it

18   raises quite a bit of number of issues.

19   And I think we want to start it off by

20   starting at the higher level and as the discussion

21   goes on, maybe working our way down. So just for our

22   panelists we can just go, I think, one at a time.

1   If you want to just quickly describe how you

2   think a premarket approval system could work for

3   automated vehicles. And to the extent you find it

4   useful comparing it to the existing systems for

5   vehicles including NHTSA's self-certification system

6   and type approval used by the European Union.

7   MR. STRICKLAND: We negotiating on the spot

8   here.

9   MR. SMITH: That's generous of you. Thank

10   you, David.

11   MR. STRICKLAND: Thank you, Professor.

12   MR. SMITH: So as you noted in your

13   introduction, there is not one definition of approval.

14   And, in fact, the range from assurance to approval

15   really is a spectrum.

16   Thanks -- thanks in large part to NHTSA's

17   leadership we now have one unified set of definitions

18   of levels of automation so in no way am I trying to

19   upset that, but I'll note that those levels came in

20   part from Tom Sheridan's earlier levels of automation.

21   And those levels are actually instructive when we

22   think about what approval might be.

1   So just replace computer with developer and

2   human operator with regulator in those definitions and

3   we have a sense of how a regulator might approach a

4   developer.

5   So you could have in the most extreme kind

6   of type approval where the developer needs to present

7   a specific product that the developer, then, approves

8   in that specific form as a one-time approval.

9   But you can move into much more flexible

10 regimes, including ones that start straddling with

11 assurance where, for example, the developer notifies

12 the regulator what it is doing or where the developer

13 notifies that regulator and the regulator has an

14 opportunity to veto that action rather than require

15 affirmative approval or where the developer presents

16 it and the regulator has the option to say yes or no,

17 but not the obligation and moving lower and lower to

18 the point that the greater control is exercised.

19   And that's useful in thinking about this

20 because we're encountering a regime where a lot of

21 things are going to be flux. What we mean by a car or

22 a product or a service is going to change. As over-

1   the-year updates effect more of the fleet, product

2   will not be static. It will be dynamic.

3   NHTSA, much like FAA, is seeing a world

4   where a relatively small number of developers could

5   rapidly expand into a much larger and more diverse

6   group of developers, manufacturers, and deployers and

7   that diversity will raise a lot of issues that may be

8   new or difficult for the agency.

9   Regulating a large automaker may be

10   fundamentally different than regulating a startup and

11   may require new tools.

12   It will also potentially require a

13   commitment to funding and staffing. And I want to put

14   that out there really not for the -- not for NHTSA or

15   the DOT's ears, but for -- but for Congress's ears

16   that if you ask more you do need to provide more.

17   And ideally you would see funding tagged to

18   the workload. Conversely you might even see the

19   specific regulatory tools that are used tagged to the

20   funding so that an agency with lots of resources could

21   do a detailed type of approval. An agency with very

22   few would have to rely necessarily and perhaps legally

1   on a different set of tools.

2   This is one of the reasons why I have

3   advocated for what I call the public safety case which

4   is returning back to the developer and saying tell us

5   what your safety philosophy is, tell us what safety

6   means to you, how you will define it, measure it,

7   monitor it over the lifetime of the system.

8   That's similar in some ways to the

9   functional safety that was introduced in the previous

10   session and could provide some of that flexibility

11   within the context of type approval without being such

12   an extreme form of that premarket approval.

13   MR. MULLENS: Great. So, David, would you

14   like to respond?

15   MR. STRICKLAND: I knew that Bryant would be

16   very open and thoughtful about the possibilities in

17   regimes of how you structure premarket approval so I

18   could be able to do this.

19   I don't think a premarket approval scheme

20   works at all on this context. See, I actually up here

21   giving good information. Good negotiation, right?

22   MR. SMITH: Nice run in, yeah.

1   MR. STRICKLAND: Yeah, exactly. This is

2   truly a notion of if it's not broken don't fix it. I

3   think ultimately when you're talking about finding a

4   way to leverage resources of an agency that needs, as

5   Bryant alluded to, to be able to grow its resources in

6   this particular regime to be able to put together

7   whatever notion of a premarket approval process may

8   be.

9   It will be limited in scope as to what it

10   promises the American public in terms of its safety

11   promise. Ultimately, as Professor Smith was talking

12   about, a more iterative regime which is captured by

13   self-certification where there is an exchange of

14   constant information as things develop and things are

15   in flux.

16   I think that premarket approval I think in

17   some instances in federal governments and other

18   agencies rings a bit hollow. We could talk about the

19   -- the premarket approval processes in the Federal

20   Drug Administration where, frankly, it is actually

21   used as actually a shield for, frankly, lowest common

22   denominator.

1   And I think that's probably a concern of

2   many is like how do you speak to a process that make a

3   promise to the American people which, frankly, will

4   never ultimately be fulfilled and the only thing it's

5   going to do is, frankly, slow technologies down that

6   can aim at -- specifically at 35,092 that died last

7   year.

8   So I think from a perspective of my

9   coalition members and many the continuation of the

10 self-certification regime, the liability

11 responsibilities that you have for issuing any new

12 technology into the marketplace that never goes away.

13 And having an iterative process with the agency

14 talking about how you sort of -- how -- what is your

15 long-term philosophy on how you sort of deal with

16 safety.

17   But, more specifically, as you develop new

18 technologies having that, frankly, open process which

19 we've all worked with for a very long time have proven

20 very successful. And I don't think there is a need to

21 go to a premarket approval process for additional

22 assurances.

1   MR. MULLEN: Thank you, David. Mr. Karol,

2   if you'd like to make your introductory remark.

3   MR. KAROL: I'm in the unique position of

4   following two brilliant people with different opinions

5   and trying to come up with something new to say so.

6   We have a unique position in that we are a

7   highly regulated industry. We report as much as

8   anybody does and we understand the burdens of

9   reporting and pre-reporting and continually reporting.

10   On the other side our business is basically

11 based on the continued analysis of the frequency and

12 severity of incidents based on historical trend so we

13 need that type of information.

14   So I think that we're -- overall our opinion

15 would be that preapproval could have certain benefits,

16 but the key is to focus on the right information.

17 I've been part of other tasks and other organizations

18 where they collect a basket of information that really

19 doesn't tie into safety necessarily.

20   And most of the safety information we have

21 is actually responsive, not predictive. It's not a --

22 we don't predict an accident based upon the

1   intelligence or the education of a person, but

2   basically get the historical data after it's happened.

3   So I think the preapproval -- I think the

4   collection of data and the review of data relevant to

5   actual incidents when something goes wrong that's the

6   really relevant information.

7   And the -- NHTSA has a number of abilities

8   to enhance advanced data recorders, require further

9   reporting after incidents happen, things like that.

10   One of the things that the FAA's doing with drones now

11   is after an event -- after an incident has happened

12   more reporting there.

13   We think that's the type of most valuable

14   information relevant to both safety and our business

15   and that's where we would come down.

16   MR. MULLENS: Great. Thank you. So I think

17   after everyone's made their initial statements maybe

18   it makes sense since Bryant had a positive -- more

19   positive take and David came down pretty quickly on

20   that so maybe we should have Bryant to kind of -- and

21   you were sort of in the middle, which was good.

22   MR. KAROL: Thank you.

1   MR. MULLENS: Focusing on the information

2   which I think is important. I think it goes to maybe

3   where I think people are closer on it. But maybe if

4   you wanted to say why you think maybe it would work or

5   maybe even how -- what David and also Tom described as

6   -- or David iterative process and Tom's focused on

7   information, maybe similar to where you're talking

8   about with your continuum of what approval means.

9   MR. SMITH: Sure. Sure. No, I'm happy to

10   be the strawman here. Because, to be clear, I'm not

11   advocating for an extreme form of prior approval so we

12   can talk about what the best approach would be or we

13   can talk about were NHTSA on its own or more likely

14   through Congressional direction to implement one of

15   these more extreme versions, what would be a good way

16   of going about it.

17   And I would maybe try to selfishly reconcile

18   what we've each said and say that there are a number

19   of tools that are currently or could be available to

20   NHTSA which can be deployed in a way that might mimic

21   premarket approval in some ways.

22   So the kinds of letters and inquires that

1 NHTSA is empowered to do and does do today is a way of

2 intervening even before a product might reach the

3 market, mandating particular information, and then

4 setting the agency up to intervene at the point that

5 it might see a problem.

6   Now, that's not the same as requiring every

7 developer to go before the agency and get specific

8 approval, but if implemented it may have the same

9 effect.

10   Likewise, the combination of the 15-point

11 safety assessment that we've seen along with state

12 authorities and NHTSA's other existing regulatory

13 authorities in some ways can function as this

14 premarket approval in a soft form.

15   So a state might require that a developer

16 file one of these letters as a condition of operating

17 on that state's road. And the policy is a bit of two

18 minds on this possibility depending on the section

19 that you read, but it seems like a possible approach

20 for a state to take.

21   At the point that such a letter is filed,

22 the NHTSA could, very consistent with existing law,

1 essentially look a little more favorably on the

2 companies that are complying than the ones that are

3 not in its investigations, in its follow up, in its

4 handling. Not favoritism, but simply recognizing the

5 information that's available and has been presented.

6   All of these are ways of providing that

7 shack of constructing some kind of gateway through

8 which developers might pass without setting up the

9 agency for a yes/no assessment on every single design

10 decision or every single product or product iteration

11 that comes out.

12   I share David's concern particularly with

13 respect to the FDA not only for the floor problem, but

14 also for the capacity problem. When we're talking

15 about real potential safety innovations we do not want

16 a regulatory system where approvals are measured in

17 years or decades rather than months. And unless you

18 fix the resource side that's the reality for these

19 technologies.

20   MR. STRICKLAND: Just to follow up on what

21 Bryant was saying. I think ultimately, you know, you

22 ask a question of what does premarket approval do what

 1 self -- self-certification does not.

 2   And the only answer I've been able to call

 3 up -- and I turn to my panels or others -- is

 4 basically if there is a need that there is some larger

 5 and more inherent risk created by the technology or to

 6 be able to calm the public about accepting the

 7 technology because there's some imprimatur being

 8 placed upon this technology by the federal government.

 9   And I, frankly, don't see there being a

10 need. Ultimately it's going to be about the

11 performance of the technology, frankly, in the

12 marketplace in a way that is self-assured.

13   If you think about other active safety

14 systems that are, frankly, in the status quo right now

15 which are the foundational steps to full self-driving,

16 you didn't need to sell the public on a premarket

17 notion. They basically -- you made basically

18 companies lean view, made the safety case, made the

19 business case and took on their own risk to do so.

20   And I think ultimately regardless of I think

21 what Bryant is talking about is probably, to be

22 perfectly blunt, is, frankly, a more robust

1 interaction on the self-certification process which I

2 think fits the regime properly. Some notion of

3 whatever checkmarks that need to be checks I don't

4 think will ever be complete enough. I think we'll

5 always -- you know, it will be an impediment and,

6 again, ultimately what is the question that we're

7 trying to answer with.

8   And I am always all ears, you know, if folks

9 decide to go in this direction in advocacy about we

10 need premarket approval because of X, but I remember

11 my time in meeting with my European counterparts when

12 I was serving with the agency.

13   Premarket approval was basically it was like

14 the David Strickland version of preparing for an exam

15 in college. You cram like hell for one car to get

16 through the premarket approval process in Europe and

17 then it gets left alone, which I think is horrible for

18 safety and I don't think it really does anything.

19   MR. SMITH: Yeah. But it worked well for

20 you.

21   MR. STRICKLAND: Well, you know, I just got

22 lucky. But I think that, you know, as Bryant said, I

1   mean, clearly we're going to have to have some new

2   thinking about the self-certification process and how

3   we evolve in thinking about a performance standard

4   versus maybe a process standard in thinking about

5   software, things of that nature, yes.

6   But I think that the regime works for this

7   as well as it does for anything we work in technology.

8   MR. KAROL: Well, one of the concerns that I

9   have predominantly is, it was touched on by David, is

10   just the pure complexity of this. You're going to

11   have a car or a vehicle built not by one entity, but

12   by probably literally hundreds of entities where these

13   -- this software and the technology has to integrate.

14   And to be able to be smarter than all of

15   those collectively and have a pre-review process that

16   really provides you some level of comfort is going to

17   require an enormous amount -- as Bryant said, an

18   enormous investment in terms of making the federal --

19   making NHTSA have the ability internally or externally

20   be smarter than the collective businesses out there

21   creating things every day.

22   So I'm worried that if you're creating too

1   high of a standard the public is going to start

2   assuming that that level is provided there without the

3   investment being made.

4   MR. MULLENS: So -- go ahead.

5   MR. KAROL: Oh, just to add two things to

6   this fascinating discussion. First, I would also be

7   concerned at any point that the agency reaches a

8   decision that could then be subject to subsequent

9   challenge by other parties. So that's another level

10   of delay which we might not consider as the regulatory

11   model, but as part of the broader judicial model.

12   The second is I think we're principally

13   looking at premarket approval as the approval, as the

14   stick, but there are ways that it could be designed as

15   a carrot. So you could have the existing regime

16   complete with existing FMVSS or existing regulatory

17   requirements that might conceivably be inconsistent

18   with some visions for automated driving.

19   And in alternative to meeting those or

20   another way of meeting those could be what is an

21   essentially a premarket approval process where a

22   developer goes and says, well, here is why our system

1   is reasonably safe and why we are able to achieve

2   reasonable safety notwithstanding these impediments in

3   the FMVSS.

4   This is consistent with the current limited

5   scale exemptions model and also very consistent with

6   the FAA's approach. And so there is -- it's another

7   way of conceiving this that might be less harsh and

8   burdensome while still providing that flexibility.

9   MR. MULLENS: So one question I had as you

10   guys have been talking about, you know, some struggles

11   with premarket approval or using kind of maybe a

12   beefed up self-certification or kind of more safety

13   assurance is to what extent do you think that the

14   regulatory regime is actually the driving issue and

15   rather following the technology challenges?

16   So what is sort of inherent in the

17   difficulty in regulating automated vehicles or other

18   sorts of advanced technology that premarket approval,

19   you know, says government says it can -- it's only

20   allowed if we say it's safe, but the other regimes

21   have a little bit more of a back and forth. But

22   they're still fundamentally answering the same

1   question of when is this vehicle safe.

2   MR. STICKLAND: I think ultimately the

3   difficulty is when you're actually have the machine as

4   an operator. And an operator has to basically absorb

5   the multi-variable notion of chaos and how to respond

6   to it.

7   And there's -- with the FMVSS and the

8   particular performance tests it is a -- wrote here's

9   how we expect this vehicle to perform. It has to

10   brake within a certain number of feet, has to be able

11   execute a J-turn and kick in the electronic stability

12   control to make sure we don't have -- all those things

13   are very much point blank questions about performance.

14   Where you now have a vehicle that ultimately

15   when it's going to be -- it reaches the higher levels

16   of automation it's going to have to manage the entire

17   driving task and all aspects of it.

18   And there's no way that you can actually put

19   together a test that, you know, that's going to say,

20   yes, this can handle all operations. Ultimately it's

21   going to have to be some notion of software process

22   and then it's going to be, you know, an attestation to

1   being able to perform safely on the roads.

2   And then ultimately it's going to turn into,

3   then, frankly, reviewing the performance of the fleet,

4   performance of a vehicle, and then if it isn't

5   performing as expected then you go through the defect

6   and recall process.

7   So I think that's the reason why how do you

8   set up a premarket approval process it's just it

9   impacts self-certification, as well, in terms of the

10   being an operator is not a performance test. It's

11   going to be a long-term observation and making sure

12   that, frankly, those that are put in that vehicle on

13   the road have taken the initial, you know, liability

14   analysis and making sure the vehicle performs as

15   expected.

16   It's a Sig Sigma way of handling the

17   particular operational domain and I think that's the

18   -- I think that's the reason why it's so difficult.

19   MR. SMITH: Yeah. Regulatoin should correct

20   market failures. And so we should ask in this case

21   whether there are or are likely to be specific market

22   failures that require reform of or replacement of the

1   existing regulatory system.

2   One potential market failure could be a lack

3   of legal clarity. But here I expect that there is

4   enough incentive within industry to analyze existing

5   law and to determine whether that law is sufficient

6   for the particular vision of automated driving. And

7   if it's not, to seek legal change consistent with that

8   vision.

9   So unless there are smaller companies or

10   disadvantaged concepts that are going to be ill served

11   by the existing economic verses that might not be

12   something that agencies have to worry all that much

13   about.

14   What are the market failures?   Well, one

15   might be safety. And we've spoken a lot about that.

16   And it's true that the diversification of the industry

17   could present new safety challenges and new failures

18   of the existing model. That's worth looking into.

19   And the third -- and David really alluded to

20   this -- was trust. Is it possible that the general

21   public will be unable to get the information they want

22   or need about these systems in order to determine the

1   relative safety or will be unable to understand or

2   process that information in a way that means they

3   trust too much or trust too little in these systems.

4   And that's where NHTSA can -- can convey the

5   trust of the federal government -- and I use that very

6   earnestly because I think that there is that trust --

7   onto new technologies that do have real lifesaving

8   potential.

9   MR. KAROL: I think the only thing I would

10 add to that is it will never be completely safe.

11 There will be an accident, there will be a series of

12 accidents. It's basically trying -- from our business

13 we're just calculating what's the likelihood, what's

14 the down side of that.

15   And I think the conveyance of that to the

16 general public would be also that -- a key part, too,

17 is that we're not going to round all the corners.

18 We're not going to make everything perfect. There's

19 going to be something that happens.

20   And no matter how much you disclose to them

21 nobody reads those little things you get for your

22 software updates, nobody reads any of the -- I would

1   have -- most people don't read their insurance

2   contract, most people don't read their --

3   MR. STRICKLAND: I love my insurance

4   contract, Tom.

5   MR. KAROL: Yeah. The night before you sign

6   it. But, you know, it's going to be the conveyance

7   of, hey, you know, we're doing the best we can. We're

8   reasonably there is all you can expect.

9   MR. MULLENS: All right. Thank you. It

10   seems like we've seen -- I've seen a number of index

11   cards coming their way so if you guys want to read

12   whatever one's you've selected.

13   MS. SWEET: Hang on one second. All right.

14   I apologize. Okay. Established safety commitment is

15   not driven by certification requirements whether a

16   self-certification or type approval rather driven by

17   reputation, liability, risk aversion, and ethics.

18   Concern seems to be more with startups. Why

19   not consider separate requirements for startups?

20   MR. SMITH: Volkswagen. No. So --

21   MR. STRICKLAND: Yeah. He went there.

22   MR. SMITH: It's true. There are a lot of

 1   forces that will act on established companies that

 2   will not act on startups and that's why I talk about

 3   market failures.

 4   There are financial considerations including

 5   liability considerations, reputational considerations

 6   that certainly effect financial considerations all of

 7   which are part of the regulatory picture when we ask

 8   whether the market is functioning to achieve goals or

 9   not. And in some cases it will and others it will

10   not.

11   We've seen states that are more comfortable

12   with this approach of asking who's acting rather than

13   what they're doing. Nevada establishing entry

14   barriers, Michigan in legislation that was signed just

15   last week likewise setting up sort of these special

16   categories of privileged actors.

17   And that makes more sense in some ways as we

18   shift from products to really actors and activities as

19   the locust of regulation.

20   MR. STRICKLAND: And ultimately especially

21   in the context of testing on public roads when you

22   think -- think the notion of having entry barriers to

 1   entry to make sure that you have companies that are --

 2   have a very healthy risk assessment regime are

 3   properly capitalized so that they have financial

 4   responsibility for any mistakes that may happen on the

 5   road that may lead to a crash.

 6   Those are all incredibly important. And

 7   ultimately it's what the agency does to this day which

 8   is there is a range of actors which the agency is very

 9   familiar with. Some of them are very large and very

10   sophisticated, some of them are very small and

11   occasionally obstreperous and occasionally violative

12   of, frankly, the FMVSS's policies laughing.

13   And they deal with that right now today.

14   And the last thing we want to ever do is to be -- be a

15   barrier that's too high so that innovators and

16   innovations that may not necessarily be at the largest

17   most sophisticated companies are there.

18   But we need to be able, as Bryant said, have

19   those assurances that we protect the entire ecosystem

20   from risks that may not be appropriately dealt with.

21   And so focusing just on startups and leaving everybody

22   else alone may not necessarily be the right

1   temperature of the oatmeal, but I think finding sort

2   of that place where, yes, you have particular levels

3   of barriers of entry to make sure that those players

4   are doing the right things in the place. And new

5   entrants having a pathway where there may have to be

6   more of an upfront, I guess, proof to the agency may

7   be a process. But I don't think there should ever be

8   a notion where the agency as a regulator should just

9   simply, you know, write off the largest most

10   sophisticated just because they are.

11   MR. FIKENSTSCHER: We have two more

12   questions. I'll give you the less difficult I think

13   of the two first.

14   This discussion is focused on who does the

15   certification, but what they are certifying is a more

16   important question to consider. Given that precisely

17   defined FMVSS's do not exist in the automation domain,

18   what should be certified?

19   MR. KAROL: As I said in the first, we think

20   that the post-incident date is the most relevant. We

21   think that, you know, finding out when something is

22   actually happened and doing the post-mortem, the

1   forensic of that, going back and finding what are the

2   common factors there.

3   It's not a -- we think that, you know,

4   whether the states, the federal does it or, frankly,

5   the insurance companies is a backstop that has not

6   been discussed because you can certified everything

7   you want. But if we find that the numbers are wrong

8   your insurance is going to be so high that you

9   probably can't have this thing.

10   So there's going to be a cooperative effort

11 between the entities there and they'll -- you know,

12 someone will look at, you know, whether the systems

13 work, someone will look at the range ability of the

14 material.

15   We're going to look at what's the likelihood

16 we're going to lose money.

17   MR. SMITH: Here I would shift from

18 performance standards in the specific way that the

19 FMVSS implements them to really process standards.

20 And -- and certify or ask whether the developer and

21 deployer has a reasonable approach to the activity,

22 whether that activity is testing onto deployment.

1   That is have they presented a plan that

2   shows that they understand the risks? That they have

3   broadly considered not just those risks in the design

4   of their system, but ultimately in the implementation

5   and ongoing monitoring and eventually termination of

6   that system, whether they have the competencies and

7   the care and the credibility to be worthy of trust.

8   This is -- this is very similar to

9   functional safety in many ways. And it's less about

10   are you checking boxes are you meeting specific

11   requirements and more about are you making a

12   reasonable good faith effort.

13   And that's how I would judge any application

14   or proposal or review depending on the regime and ask

15   not is it correct, not is it precisely mapped on a

16   specific requirements, but all things considered, is

17   it reasonable.

18   And previously at these I've talked about

19   ways that courts and agencies can ask this question

20   and really the case law that's developed to assist

21   them in answering that.

22   MR. STRICKLAND: I agree with Bryant. It's

1   going to be some type of a process system to evaluate

2   a self-driving system. I think the 15-point safety

3   assessment letter sort of talks about some of those

4   things like about, you know, identify your operational

5   design domain as an example.

6   Not necessarily this is what you need to do,

7   but explain to us your process of what you did.

8   Because this technology's going to be evolved in

9   multiplicitous different ways from every designer and

10   manufacturer.

11   And ultimately the goal is I think, as

12   Bryant said, making sure that, you know, the deployer

13   of the technology will stopple and took care of those

14   basic notions of functional safety I think it going to

15   -- ultimately where this is going to have to land for

16   the regulator to be able to have thoughtful and

17   efficient input in making sure that those reasonable

18   safety issues are taken care of.

19   MR. MULLENS: Okay. Do we have one more

20   question?

21   MR. FIKENTSCHER: We really don't have time

22   for the last question.

 1   MR. MULLENS: Oh, okay.

 2   MR. FIKENTSCHER: So I think we're going to

 3   call it as this.

 4   MR. MULLENS: Great. All right. Well,

 5   thank you all so much. It sounds like we hopefully

 6   had a good discussion on both premarket approval, but

 7   also just any sort of process that goes a little

 8   beyond the traditional self-certification process that

 9   gets a little more involved in the discussions and

10   processes that went into making the vehicle and the

11   software. Thank you.

12   MS. WILLIAMS: So big thanks again to our

13   first panels. And as we're setting up the third

14   panel, this panel's going to be on Imminent Hazard

15   Authority. And it's going to be moderated by Ms.

16   Kerry -- Kerry, can you pronounce your last name for

17   me?

18   MS. KOLODRIEG: Kolodrieg.

19   MS. WILLIAMS: Kolodrieg?

20   MS. KOLODRIEG: Kolodrieg.

21   MS. WILLIAMS: Apologize. I didn't want to

22   butcher it. And she serves as a trial attorney for

1   NHTSA.   So we're just going to get them set up.

2   And for the panelists when you are ready to

3   speak there is a little speaker button that you'll

4   have to hit that'll light up your microphone. Yep.

5   You got it.

6   So following this panel we will take a 15-

7   minute break. So, Kerry, when you're ready go ahead.

8   MS. KOLODRIEG: Thank you. My name is Kerry

9   Kolodrieg. I'm the acting assistant chief counsel for

10   litigation and enforcement. And we're here to talk

11   about the Imminent Hazard Authority proposal in the

12   policy.

13   I think most of my panelists are known to

14   the audience, but I'll take a brief minute here to

15   introduce them.

16   Next to me is the Honorable Rodney Slater.

17   He served as the 13th Secretary of Transportation from

18   1997 to 2001. Secretary Slater previously served as

19   administrator of the Federal Highway Administration

20   from 1993 to 1997.

21   Secretary Slater currently is a partner at

22   the law firm Squire, Patton, Boggs where his practice

1   focuses on, no surprise, transportation. He's one of

2   the firm's corporate compliance advice practice

3   leaders.

4   Specifically in the area of vehicle safety,

5   Secretary Slater has led Toyota's Safety Advisory

6   Panel and he currently serves as the independent

7   monitor of FCA.

8   Next we have Sean Kane who is a safety

9   researcher and advocate who founded and serves as the

10   president of Safety Research and Strategies. Mr. Kane

11   has a long history of working on vehicle safety issues

12   having begun work with the Center for Auto Safety in

13   1991.

14   He's worked on a wide range of vehicle

15   safety issues including Firestone tires, Toyota

16   unintended acceleration, heater core ruptures, engine

17   fires, failed electronics, and other tire issues.

18   He's testified before Congress in the

19   National Academy of Sciences and he regularly provides

20   comments, testimony, and data to both NHTSA and the

21   CPSC.

22   And then we have Erika Jones who is a

1   partner at the law firm Mayer Brown. Her practice

2   focusing on regulatory matters involving vehicle

3   safety and consumer product safety and related

4   litigation.

5   Before joining Mayer Brown, Ms. Jones served

6   in a variety of capacities in the federal government

7   including as NHTSA's chief counsel from 1985 to 1989

8   and as special counsel to the NHTSA administrator from

9   1981 to 1985.

10   So, as I mentioned, we're here to talk about

11   Imminent Hazard Authority. This authority would

12   enable NHTSA to require manufacturers to take

13   immediate action to mitigate safety risks that are so

14   serious and immediate as to be imminent hazards.

15   So the first question is really the

16   foundational one: Should NHTSA have this authority?

17   Is it necessary? Would it be useful?

18   Give it over first to Secretary Slater.

19   MR. SLATER: Thank you, Kerry, and thanks

20   for the opportunity to --

21   UNKNOWN SPEAKER: It's the third one in.

22   MR. SLATER: Right there? Very good. I

1   guess I should have started out by saying that I've

2   always wanted to come to a NHTSA comment hearing so

3   that I could learn about the specifics of making the

4   speakerphones work and that sort of thing.

5   But let me say at the outset that I really

6   want to commend NHTSA and the Department of

7   Transportation in playing a leadership role and

8   engaging the industry as we really try to get a grip

9   on this dynamic, frankly, transition and

10   transformation across the automotive industry.

11   And I think that NHTSA's done a great job

12   providing leadership with it's -- with its principles

13   and with this kind of hearing. And I'm just very

14   pleased to be a part of the effort.

15   First of all, the Grow America Act, as you

16   know, Kerry, actually had a provision that provided

17   for the Imminent Hazardous Authority -- Imminent

18   Hazard Authority.

19   You did not -- you mentioned it as a part of

20   the tool book -- tool package, but you didn't

21   necessarily take a position on it in the guidelines.

22   I think that it's actually something that NHTSA should

1   have this authority.

2   If you look across the Department of

3   Transportation, frankly, all of the other modes of

4   transportation have this kind of authority. And when

5   you look to the premiere role that NHTSA plays in the

6   safety of the movement of Americans and in the

7   leadership that it provides to its counterparts across

8   the globe, this is the kind of authority that it

9   should have and I think would use wisely.

10   I know that some of the comments that you've

11   received thus far by the OEMs have not been altogether

12   supportive of that. And the Auto Alliance has also

13   expressed itself on this point, as well.

14   But one or two of the OEMs, as I recall, did

15   respond positively but wanted some assurance that

16   NHTSA would not exercise, you know, the authority

17   responsibility without some checks and balances and I

18   think over the course of the discussion we can talk a

19   bit about that.

20   I would say that I think that NHTSA sought

21   to address that issue again in the Grow America Act by

22   saying that it would make this initial determination

1   and then the OEM would be afforded an opportunity to

2   respond before a final decision. So I think that

3   there was, at least in that effort, an attempt to try

4   to balance the considerations, but, frankly, there may

5   be other things that could be considered, as well.

6   And I'm sure, as I've said, that we'll talk a bit

7   about that over the course of this session.

8   MS. KOLODRIEG: Thank you. Sean, do you

9   have any thoughts?

10   MR. KANE: Sure. Thank you. And, you know,

11   I think right out of the box I'd say in having

12   imminent authority is another tool for the toolbox and

13   we're certainly in favor of that tool for the agency.

14   And I think that serves some purposes.

15   But also I'll be a bit provocative and say,

16   you know, it's really something that has to be

17   properly supported and I'd also say that it's far from

18   settled that the agency has the wherewithal right now

19   to do this kind of imminent authority.

20   What I think was alluded to by the Secretary

21   is there needs to be parameters. I mean, what we've

22   already seen is, you know, the -- we're missing some

1   of the things that need to happen before that. And

2   may -- I think there's the cart before the horse here.

3   Ultimately, if you're going to have these

4   Imminent Hazard Authority, what you should be looking

5   at first and foremost is preventive. What can be

6   preventatively?

7   And I think if we looked back at the crises

8   that have landed us in places like, you know, Takata

9   or even some of these other areas from, you know,

10   General Motors to Toyota going back to Firestone since

11   you mentioned it that many of these things are rooted,

12   in fact, in a lack of robust standards that have been

13   in place to begin with.

14   The lack of a robust standard, the lack of

15   an agency depth and understanding of the complexities

16   of the issues associated with those things, and their

17   inability to use the tools that are already in their

18   toolbox effectively.

19   And so, again, I'll be provocative and say

20   that I think a lot of those things need to happen in

21   this cart before the horse is the there, but the --

22   you know, there is certainly a place for this going

1   forward. And I think we're going to talk about that

2   next is like what are some of the parameters that we

3   could use it in.

4   But at the end of the day, you know,

5   preventing the imminent hazard is really, I think,

6   where we should be focusing first and foremost.

7   MS. KOLODRIEG: Thank you.

8   MS. JONES: I'm going to be a bit

9   provocative, too, and say I think you already have it.

10   You already have Imminent Hazard Authority. You have

11   the authority under Section 30118 to order a recall

12   after giving notice to the manufacturer and you have

13   authority under 30163 of the Safety Act to enjoin any

14   violation of that order.

15   And I don't know what more you get with

16   imminent hazard than you already have. It's a very

17   elegant tool. The Safety Act is -- has proven over

18   the years to empower the agency to compel recalls.

19   And the fact you haven't needed to use the judicial

20   side of your authority for many years at least against

21   a major manufacturer is a testament to the fact that

22   when there are imminent hazards they are generally

1   recognized.

2   I can't envision an imminent hazard that

3   wouldn't also be a safety-related defect. Well, to

4   Sean's point, perhaps ones that haven't happened yet.

5   But once they're in the market, once there is an

6   imminent hazard arising in a product the -- it's going

7   to overlap with the definition and the judicial

8   construction of safety-related defect.

9   And the agency has ample authority right now

10   without needing new legislation to order that recall

11   and a court to enjoin a violation of that order and to

12   compel the action by the manufacturer.

13   So I don't think you need new authority, but

14   I would urge you to take a look at the Consumer

15   Product Safety Act which is a sister agency to NHTSA

16   except that they don't regulate in the motor vehicle

17   space.

18   They've had Imminent Hazard Authority for

19   decades and they don't use it. They don't use it.

20   Even when they had exploding Samsung telephones, when

21   they had Bucky Balls that were adhering inside

22   people's intestine, they used the conventional process

1 of urging a voluntary recall which in those cases one

2 went to a recall and one did not, but that is the

3 process that they've chosen to use.

4   And the reasons may vary from chairman to

5 chairman, but it's -- they certainly have not invoked

6 that authority in at least 25 years and it's been on

7 their books.

8   So I think one has to ask why not and what

9 is it about the tools that you don't have that -- or

10 what is it about the tools you do have that is

11 inconsistent with getting a rapid recall when you need

12 one.

13   MS. KOLODRIEG: Thank you. Let's assume

14 that Congress does give us additional authority --

15 Imminent Hazard Authority, under what circumstances --

16 and I'll throw this to Sean first because you

17 mentioned parameters.

18   What are the parameters? When is there an

19 imminent hazard and the agency should take action?

20   MR. KANE: You know, that's a great

21 question. And I think that looking at it as a

22 baseline, you know, there has to be something

1   definable here. And I think this has been one of the

2   significant criticisms of the agency over the years is

3   that there really isn't a defined process particularly

4   in the enforcement side as to how things get handled.

5   And so the absence of a process that's

6   definable we've heard about this being art and science

7   and there's no definable way. We've seen criticisms

8   from these -- from the IG, we've seen criticism from

9   the GAO about this and it plays out in real time.

10   There isn't a process why which certain

11   things get addressed in the same way. And I think

12   I'll give it a real time example of let's take some of

13   the bridge technologies that have led us to the steps

14   that we've been watching that are moving us towards

15   autonomous where we have electronic stability control

16   systems, for example, which we think we can all agree

17   have been, you know, fabulously successful.

18   But at the same time absent a functional

19   standard in place, okay, what we're seeing is failures

20   within those systems that are taking the loss of

21   control and taking the control away from drivers in

22   the inconsistent application on the enforcement side.

 1   So one manufacturer does a recall to fix

 2   that, okay, another manufacturer doesn't. And at what

 3   point -- you know, where are these definitions coming

 4   into play?

 5   So, again, I think go back to the cart

 6   before the horse. If we're missing some of these core

 7   standards, then we can go back and history and look at

 8   each of these crisis which have really been rooted in

 9   the absence of underlying robust, modern standards in

10   which the agency is -- has a depth of understanding of

11   those standards we're going to continue down this

12   path.

13   So Imminent, you know, Hazard Authority I do

14   agree is another tool for the toolbox just like EWR

15   was a tool for the toolbox, but it's got to be

16   properly applied and the parameters and definitions

17   need to be put in place in a way that I think the

18   agency has been unwilling to do in the past and has

19   been criticized by many for not doing that.

20   MS. KOLODRIEG: Thank you. Erika, I'll toss

21   it to you next. You had mentioned CPSC has this

22   authority and doesn't use it. I'd ask you to think

 1 about the automated vehicle context specifically and

 2 if you think there's any differences here where it may

 3 need to be applied or not.

 4   MS. JONES: Certainly there are differences

 5 when you're dealing with emerging technologies that

 6 are not as well understood as conventional

 7 technologies and that you may need to use the tools

 8 you have and any new ones that Congress gives you to

 9 address things that haven't been addressed before. So

10 they don't necessarily have precedence or a set of

11 parameters because at some point you're dealing with

12 it for the first time so you have to make the rules as

13 you go.

14   But I would note that, as Secretary Slater

15 mentioned, many of the other -- perhaps all of the

16 other modes at DOT have Imminent Hazard Authority but

17 they are generally directed to an individual taking a

18 plane out of service, a truck out of service, a rail

19 car out of service and they have very rapid -- after

20 that occurs the manufacturer, the operators, the case

21 may be gets a very quick opportunity to get it back

22 into service. It's very laser like targeted to an

1   individual issue.

2   That doesn't fit your regulatory model. You

3   don't regulate the driver, you don't regulate the taxi

4   cab fleet, you don't regulate -- you regulate only one

5   leg of that stool and it's the manufacturer. And your

6   authority generally is not exercised in isolated

7   cases.

8   You look for a fleet wide problem or a

9   general problem in a number of vehicles where the

10   Imminent Hazard Authority of taking them out of

11   service, which would be the parallel model to the

12   other modes, doesn't really work.

13   Your tool is a recall if it is out of -- if

14   it's unsafe or in the case of something that hasn't

15   been built yet to regulate against it. And perhaps

16   what you need is more flexibility on that front to be

17   able to prevent something from coming to market which

18   wouldn't really fit imminent hazard, but it might be

19   some form of short-term temporary rule making that you

20   could -- you could pause button on some technology.

21   I think somebody mentioned to me that Comma

22   One might -- I think that's what it's called, Comma

1   One that it was a form of automated technology that

2   could be retrofitted into certain vehicles. And you

3   sent them a special order and they decided to pull out

4   of the market.

5   But perhaps if you'd had the ability to

6   block that from coming to market until it was better

7   understood and that would bleed back into last panel's

8   discussion of premarket approval.

9   But the Imminent Hazard Authority that other

10   modes have doesn't -- doesn't really fit. And I'm not

11   seeing where the recall side is lacking in power in

12   the Safety Act right now.

13   MS. KOLODRIEG: Secretary Slater, do you

14   have a reaction to that how NHTSA compares to other

15   modes and how their might be an imminent hazard for a

16   NHTSA situation?

17   MR. SLATER: Sure. Well, first of all, I

18   think Erika raises an interesting point in that the

19   law, frankly, could be read technically to assume that

20   NHTSA already has the authority.

21   A thought comes to mind when I think about

22   that Thoreau once said that it matters not so much

1   what you look at, but what you see. And so NHTSA has

2   an opportunity to look at its regulations in new ways

3   as it deals with new situations and I think that there

4   may be something to that.

5   I'd also like to maybe lift up here the

6   proactive safety principles. This initiative that

7   NHTSA's now engaged in where it's actually reaching

8   out to the industry to help it sort of see beyond the

9   gray and to bring greater clarity to, say, best

10 practices as it relates to recalls or best practices

11 as it relates to, quote, "the implementation of

12 autonomous vehicle technology".

13   I mean, all I'm saying is that you could

14 extend it to include some of those kinds of

15 considerations, as well, and especially as you think

16 about maybe looking at the current laws from a

17 different perspective and in a new light. So I think

18 that there is actually something to that.

19   I will say this, though. There's a

20 difference in clearly having the power and not using

21 it. But a lot of times having the power makes it

22 easier for you not to have to use it because those who

1 know you have the power recognize that.

2   MS. JONES: And I'd say the number of

3 recalls that occur each year without exercising the

4 current power is testament to that.

5   MR. SLATER: Yes. I agree with that.

6   MR. KANE: You know, and if I could add,

7 too, I think one of the underlying things that you got

8 to look at is real-time data. I think one of the

9 problems you're going to have with imminent authority,

10 especially with these emerging technologies, is how

11 fast and how real the data is.

12   I think we all know looking at EWR how

13 challenging that can be to really identify problems,

14 you know. And so what are we going to be doing to

15 like, you know, have some type of real type, real

16 time, short-fused type of EWR type of analysis?

17   I mean, we've studied the EWR data and find

18 that it's a great tool to help us identify where

19 recalls aren't working, okay. That's not really an

20 early warning as much as it is really going back in

21 time.

22   So, again, looking at what can be done

 1   preventively if we're going to look at imminent

 2   hazard, what does that mean?

 3   Well, imminent hazard isn't Takata.

 4   Imminent -- I mean, Takata's been going on for a

 5   decade, okay. That's not an imminent hazard. But

 6   we're dealing with modern technologies. These

 7   problems -- you know, and I think to your point is,

 8   you know, the agency does, in fact, have authority.

 9   But also to your point, Secretary, is that,

10   you know, this is another tool that can really help

11   the agency maybe move things along and, you know, give

12   them that additional piece. But certainly those

13   parameters and the data collection is going to be a

14   big piece of that.

15   MR. SLATER: Yeah. You know, I'd like to

16   follow up just a little bit on this point. I think

17   that with an agency like NHTSA with all of its

18   responsibility and with, frankly, the limited number

19   of people and sometimes resources that having that

20   stick is sometimes a good thing that allows you to

21   then use the carrot a lot more.

22   Now, having said that, again, I want to go

1   back to something that NHTSA's doing now that I just

2   think is quite significant and quite transformative.

3   And that is the engagement of the industry so that you

4   can be preventative in your approach to dealing with

5   some of these challenges.

6   There is a shared value and responsibility

7   to be enjoyed by NHTSA working closely with industry.

8   And I know that Bryant in his comments earlier used

9   the word "trust" probably six or seven times in his

10   comments.

11   That's really the glue that makes it

12   possible for a regulatory agency that everyone

13   recognizes has to have the stick to actually be in a

14   position working with an industry that is a lot more

15   proactive to really do its work more with the carrot

16   than with the stick.

17   MR. KANE: You know, and I would add to that

18   I think that, you know, what we're seeing, too, is

19   what you said is what you look at and how you deal

20   with that. And for the agency to be able to do its

21   job properly they also have to have the depth of

22   understanding and the institutional knowledge and

1   baseline to be able to deal with these kinds of

2   issues.

3   We can take Toyota's a very good example of

4   that where for many years we had assertions from

5   Toyota that certain things would not happen with its

6   diagnostic systems that, in fact, were readily

7   disproven.

8   The agency was unable to do the diagnostics

9   and understand what that really meant in context. So

10 we went up with problems that absolutely continue even

11 after recall scenarios that are occurring.

12   So, you know, my point of view is it goes

13 back to the idea that robust regulation and modern

14 regulations need to be in place first and foremost to

15 be able to get us to the point where we're going to be

16 eliminating crises or then when they get it the -- or

17 we're not going to just toss them over to the

18 enforcement side.

19   I think it's a poor use of resources to toss

20 these big crises problems into the enforcement side of

21 the business when, in fact, they can be dealt with on

22 the preventative side through good standard and good

1   rulemaking.

2   MS. JONES: An interesting side note to that

3   is that in the Consumer Product Safety Act Imminent

4   Hazard section if they do exercise that authority,

5   they're required to begin rulemaking to address the

6   underlying issue. And it's part of that same

7   provision. Maybe that's why they don't use it.

8   MR. SLATER: Yeah. That's a good point.

9   MS. KOLODRIEG: I think we're ready for

10   questions.

11   MS. SWEET: Actually, I have a question

12   personally.

13   So you guys have talked about the

14   preventative measures and having requirements and

15   regulations in place. CPCC has jurisdiction over

16   15,000 different types of products.

17   Voluntary standards or federal regulations

18   can't cover 15,000 different products so having that

19   as the first step can't always happen. So I guess

20   what is that CPSC has in their box of tools that NHTSA

21   doesn't to make it so that they can have Imminent

22   Hazard Authority that NHTSA doesn't?

 1   And I guess I'm looking at Sean on this one

 2   because he said it a couple times. So what does CPSC

 3   have in their box that we don't have at NHTSA that

 4   gives them an okay for Imminent Hazard Authority that

 5   NHTSA does not?

 6   MR. KANE: You know, I'm not sure that the

 7   Imminent Hazard Authority is really the key thing

 8   here. I think, you know, with CPSC, as you know, most

 9   of the products that fall under their jurisdiction are

10   unregulated products, right. And so they have a wider

11   array of hazards to assess that would I think make the

12   argument that they may need to have an Imminent Hazard

13   Authority justification even more so than the agency

14   here.

15   That said, you know, with NHTSA I think one

16   of the things that needs to happen is setting the

17   baseline for those regulations that have really lagged

18   where CPSC doesn't have the same level of regulatory

19   authority.

20   You know, they -- if they have the -- they

21   have to allow the industry to develop a voluntary

22   standard. If the voluntary standard proceeds and can

1 address problems then -- which can take a very long

2 time, then they don't have the ability to necessarily

3 go forward with the regulation.

4   I think in this case what we've been

5 watching is a very slow train. This idea of

6 autonomous vehicles and where we are in the complexity

7 of cars and why we're looking at, you know, imminent

8 hazard now really has its roots in the 1980s where,

9 you know, vehicles started to get more automated.

10   And what we saw a few years ago was the

11 agency look at a functional safety standard that

12 should have been published in 1989. And if we set

13 these baselines for what can we set it for baseline

14 for functional safety standards, then you start

15 looking at a process approach to ensuring that the

16 control systems that are in our vehicles are, in fact,

17 you know, meeting a baseline of safety.

18   Then if they're not then you can look at the

19 enforcement side of it easier and then you can also

20 have the underlying institutional knowledge that gets

21 you to the point where you can have imminent authority

22 if you have complex problems that aren't being

1   addressed properly.

2   So I don't know if I'm even answering your

3   question as well as I can, but I think there's some

4   real differences between the two agencies and how and

5   what they're having to do especially in context of

6   motor vehicle.

7   MS. JONES: I believe the reason the CPSA,

8   the Consumer Products Safety Act, has Imminent Hazard

9   Authority is because they can't go directly to court

10   to order a recall the way NHTSA can.

11   NHTSA can order the recall and take it right

12   into court. The CPSC has to go in front of an

13   administrative law judge. The last time they did that

14   to try to get a recall it took three and a half years.

15   And so the imminent hazard is to bypass the

16   ALJ authority but -- the ALJ process, but NHTSA

17   doesn't have to do that.

18   MS. KOLODRIEG: So, Erika, you just

19   mentioned the time it takes. And previously you'd

20   talked about the tools that NHTSA already has, the

21   current tool being the recall.

22   Are there any other elements -- say Congress

 1   did give us this authority and we found an imminent

 2   hazard.

 3   Are there any other elements that you think

 4   should or the agency should put into an order, an

 5   imminent hazard order, to really address something

 6   that truly is imminent in an emergency situation?

 7   MS. JONES: In the order or in the law? Are

 8   you asking what the statute should provide or what the

 9   agency should say?

10   MS. KOLODRIEG: I guess either one, yeah.

11   MS. JONES: Well, I think the law has to

12   provide for due process protection so that there is no

13   risk of abusing the authority. And that can come in a

14   number of flavors, but most common and the one that

15   you have already is that it would be heard by a

16   district court judge who would make the findings of

17   fact and take the evidence. It can all be done very

18   quickly, but it would not be a unilateral -- seeking

19   it would be unilateral, but it would be -- a judge

20   would make that decision.

21   As to what would be in the order I think

22   that's going to depend on what the problem is that

1   you're addressing. The most likely would be you would

2   want to stop sale and have a recall of a product

3   that's presenting an imminent hazard. You would want

4   it off the market and you would want it to be repaired

5   or remedied or repurchased.

6   And I don't think that you're contemplating

7   some sort of in-rem seizures. CPSC does have that in

8   their imminent hazard authority. They can seize

9   products that are violative.

10   I think the stopping sale is the functional

11   equivalent of that and that's most likely the

12   direction I would think you would go.

13   MS. KOLODRIEG: Secretary Slater, do you

14   have any thoughts on that what either a statute should

15   provide as far as what the review would be or what the

16   order actually would mandate the manufacturer to do or

17   not do?

18   MR. SLATER: Well, I was listening to Erika.

19   I think she covered it pretty well. I will admit I

20   was thinking about one other point that I wanted to

21   make if I may.

22   We've talked about the need for the trust

1 between the industry and the agency and we've also

2 talked about the toolbox and all of those things. And

3 the one thing that we've alluded to but that we really

4 haven't directly addressed is the whole issue of just

5 people and talent.

6   I made reference to sort of resources and,

7 you know, how NHTSA can -- has sometimes been,

8 frankly, starved for resources and the like. I think

9 that as we come to better appreciate what is happening

10 across this industry there is the opportunity to make

11 the case not only for improvements in policies and

12 procedures, but also the need for appropriate

13 investment in the work that the agency does.

14   I mean, we are the most mobile society in

15 the world. And while we have a great mix of

16 transportation, the automobile is still central to the

17 way we move as a society.

18   And we're talking about an industry that is

19 being revolutionized. We're talking about, you know,

20 we're honoring the life of Senator Glenn. When you

21 think about the power of the equipment, the force that

22 lifted him to the far reaches of space, you have that

1   kind of power in an automobile that we drive on a

2   daily basis.

3   And so much has changed that you can flip

4   the hood and you know hardly where anything is in this

5   moment. That's the reality of a new time in which we

6   live and we need talented people on both sides of that

7   equation to be involved in the process.

8   So I think that this is a great time, again,

9   for NHTSA to step forward and play this leadership

10   role that you're playing and dealing with this new

11   dynamic. But it's also an opportunity to make the

12   case that the agency really needs the resources that

13   are necessary to do the work that you're doing.

14   And here we're talking about probably the

15   most significant investment that we can make in the

16   improved safety of the system from an automobile

17   perspective.

18   And such a timely argument to be made when

19   we're seeing, you know, a slight increase in the

20   number of fatalities and injuries on our roadways on

21   an annual basis. But this can significantly address

22   that issue if we get it -- if we get it right.

1   And I think at the end of the way much more

2   important than maybe the policy will be an investment

3   in the people I think. And bringing great talent,

4   continuing to bring great talent into the agency, that

5   agency being able to sit across the table from some of

6   the most well-financed OEMs in the world and to, you

7   know, do the necessary back and forth to ensure that

8   there is a balance, an appropriate balance of carrot

9   and stick incentives when it comes to ensuring the

10   safety of the traveling public.

11   So this is a magical moment I think to make

12   that case as we're making the case about new powers

13   and, you know, new dynamics as it relates to the

14   relationship between the industry and the regulator.

15   MS. KOLODRIEG: I think I saw a question

16   come in from the audience.

17   MS. SWEET: Yes. We might only have time

18   for this one. Isn't a public announcement by the

19   Secretary of Transportation that NHTSA is

20   investigating a safety defect that presents an

21   imminent hazard all that is needed?

22   An example, didn't Secretary Hood do that --

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 1    Secretary LaHood do that in the Toyota investigation?

 2             MS. KOLODRIEG:  Sean, would you like to

 3    respond to that?

 4             MR. KANE:  Well, you know, and it takes more

 5    than that.  I mean, at the end of the day an imminent

 6    hazard announcement doesn't get us where we need to go

 7    if the problem isn't resolved.

 8             And, you know, I think the context of this,

 9    too, can create some tiered effect.  What happens if

10    we have an imminent hazard authority as applied to one

11    defect, does -- you know, are we going to have

12    representation that those defect issues that are being

13    investigated that are not considered imminent

14    authority are somehow not as important?

15             And what kind of tiered system do we set up?

16    We've already seen this shaking out.  And I think, you

17    know, this is shaking out in context of the issues

18    around recalls currently where we've seen some

19    representations by the National Automobile Dealers

20    Association that, in fact, 6 percent of the recalls

21    are hazardous.  And, you know, this is not something

22    we need to really be worrying about.
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1   Are we going to set up a tiered system of

2   which ones imminent, which ones are not? How is that

3   going to play its way through?

4   And I'm concerned about how that really

5   affects consumers' attitudes around recalls and what

6   that means. So going forward, you know, if there is

7   an imminent hazard authority which, again, we believe

8   there should be a tool that is available to the agency

9   making sure that the parameters are set, that there's

10   good data and collection, there's good parameters that

11   set -- and prescriptive measures that are clear, that

12   are definable, that are based in solid data and

13   science in terms of going forward.

14   But it also doesn't diminish those things

15   that may not rise to the level of imminent hazard, but

16   that are also safety problems. So, you know, these

17   things are, I think, are really complex issues that

18   have to be juggled within a mix.

19   And, you know, the idea that, you know, the

20   agency is going to need more resources I think is

21   absolutely the case. But in doing that, you know,

22   this may be the argument why the agency also should be

1 looking at, you know, something beyond self-

2 certification so that they are continuing to stay

3 right there at the forefront of the technology.

4   Absent that, you're basically two years out

5 of the industry and you're toast. You don't have that

6 information anymore it's such a rapidly moving

7 environment.

8   MS. JONES: I think Sean raises a really

9 good point about tiering of recalls. There's a lot of

10 research that shows that consumers who are not

11 responding to a recall notice have self-selected out

12 of thinking that it's important enough to participate.

13   And if we have a new and a super serious

14 category called imminent hazard, is that going to

15 adversely affect recall participation in non-imminent

16 hazard recalls. I think that's a very valid point.

17   MS. KOLODRIEG: I think we're out of time,

18 but I wanted to thank all the panelists. This was a

19 great discussion.

20   MS. WILLIAMS: So we are now at 2:46. We're

21 going to take a break until 3 p.m. and then start

22 promptly with our fourth session. Thank you.

1   (A brief recess was taken.)

2   MS. WILLIAMS: Okay. So the break went by

3   just as quick as these panels are. So we're going to

4   go ahead and get started since we have three more to

5   cover this afternoon.

6   So we've had lots of interesting discussion

7   and I know we're going to have the same for the last

8   three panels.

9   Our fourth panel is on Expanded Exemptions.

10   It's going to be moderated by our very own Rebecca

11   Yoon. She's an attorney adviser for NHTSA. And I'm

12   going to turn it over to her.

13   MS. YOON: Okay. Thanks, Dee. And I am

14   thrilled to see so many people still here. I would

15   have figured that exemptions might be a bit of a

16   sleeper compared to some of the other topics, but it

17   is really relevant to my personal interest because I

18   may be the attorney who has to respond to the

19   exemptions that come in. So I'm really looking

20   forward to hearing what folks have to say.

21   I'm going to start by introducing our

22   panelists and then give a brief overview of the topic

1   and then we'll head right into questions.

2   So we have Jackie Glassman who's a partner

3   at King and Spaulding. Jackie served as both chief

4   counsel and acting administrator of NHTSA spearheading

5   the reform of the corporate average fuel economy

6   program and overseeing scores of rulemaking and

7   enforcement actions.

8   She counsels clients on compliance,

9   government, relations, litigation strategy, and

10   building robust corporate safety programs. Welcome,

11   Jackie.

12   We have Dr. Steve Shladover who founded the

13   California Partners for Advanced Transportation

14   Technology or PATH program, an R&D program at UC

15   Berkeley, which has been a leader in intelligent

16   transportation systems since 1986.

17   His focus at PATH is on cooperative systems

18   and vehicle automation. Welcome, Steve.

19   And we have Norma Krayem who serves as a

20   senior policy adviser and co-chair of the

21   cybersecurity and privacy team at Holland and Knight.

22   Norma also served previously as deputy chief of staff

1   at USDOT as well as the acting deputy administrator of

2   the Federal Railroad Administration.

3   And she's been working on issues involving

4   connected and autonomous vehicles including V2V and

5   V2I issues for almost 20 years.

6   So thanks, everybody, for coming. Expanded

7   Exemption Authority in the context of HAVs was one of

8   the things that NHTSA wanted to look at as a potential

9   future tool.

10   Our current authority allows us to exempt

11   not more than 2,500 vehicles per year for a two-year

12   period on the basis of equivalent safety. And there's

13   a couple of things with our current authority that we

14   thought might be worth exploring.

15   One thing is that 2,500 vehicles a pop

16   doesn't give either manufacturers or the agency a lot

17   of data to think about how automation might need to be

18   regulated going forward.

19   And the other issue is the limited duration

20   of exemptions can require frequent and repeated

21   application renewals which creates uncertainty as to

22   the availability of the exemption over a longer period

 1   makes planning difficult for manufacturers who want to

 2   get these vehicles on the road.

 3   So I think the first question I have for our

 4   panelists is -- and this will go for everybody. I

 5   think we'll just go down the line -- is whether we

 6   think the question of whether to expand the exemption

 7   authority is actually ripe.

 8   So we're really interested in anything that

 9   can help us gather data on HAV performance, but if the

10   exemption authority were expanded tomorrow which

11   manufacturer's going to be trying to sell more than

12   2,500 HAVs that can't meet current standards and when.

13   Or on the other hand, could it be important

14   to expand the exemption authority sooner rather than

15   later to give manufacturers a clear path toward being

16   able to sell these vehicles even if they might not

17   have them on lots tomorrow.

18   I think, Jackie, let's start with you.

19   MS. GLASSMAN: Thank you, Rebecca. I am

20   thrilled to be part of this sleeper panel. I think

21   that exemption authority -- the exemption authority

22   that's currently in the statute, like most of the

 1   FMVSS structure, was written in a very different

 2   environment at a very different time. And it was

 3   written to allow for particular pieces of technology

 4   to be evaluated even if they don't meet specific

 5   aspects of the FMVSS as they were written. And this

 6   is a somewhat different idea.

 7   But looking at expanding the exemption

 8   authority or changing that authority is overripe.

 9   First, it's not clear that what we're going to see in

10   terms of deployment is automatic sales to the open

11   marketplace.

12   Especially when we're talking about highly

13   automated vehicles we may see more controlled fleets

14   being deployed probably in ride sharing programs where

15   they're not testing, they are deployed. That may

16   easily exceed the 2,500 limit. There's no reason to

17   limit it temporally to three years or two years or

18   five years total as is in the statute.

19   And the concept of saying, well, we're

20   exempting you from a particular provision of the FMVSS

21   might be reconsidered into thinking about we're

22   deeming you to comply with particular provisions.

 1   Because most of the time we're not looking

 2   at whether or not we're going to exempt the vehicles

 3   from the functional safety consideration of the FMVSS,

 4   but rather the means of testing that get us to saying

 5   that vehicle complies.

 6   And if we can find a way -- and David and

 7   Bryant talked about various ways, various elements

 8   that you might consider for either deployers or OEMs

 9   or suppliers to be able to maybe through a safety

10   assurance program or a very soft form or premarket

11   review rather than premarket approval -- to say we

12   have enough assurance that we're meeting the

13   functional mechanism, the functional requirements of

14   what the safety standards are there to ensure that

15   that should be our next form of exemption.

16   MS. YOON: You know what, Steve, I think I'm

17   going to skip you and go to Norma first and then let's

18   come back to you for the last one if that's okay.

19   Norma?

20   MS. KRAYEM: I would probably offer this. I

21   think the discussion might be slightly overripe, as

22   well. I do think that we need to be defining maybe

1   two major buckets.

2   The first is that the FMVSS has some basic

3   standards that live beyond and talk about the outcome

4   and the safety of the vehicle and that is still valid

5   today.

6   I think we need to be identifying -- and we

7   have and you've done a great job at this -- about the

8   aspects of the vehicle that go beyond what the current

9   regulations and law really talk about because we don't

10 have any data.

11   The other side of this is to take a look at

12 what is the timeline that we think that we're really

13 going to be getting into full adoption whether it's

14 from the OEMs or even from the traveling public.

15   If you need expanded exemption authority,

16 you have to go to Congress for that. And while they

17 certainly want to I think help advance the integration

18 of the technology, they're going to want to know what

19 problem you're trying to solve.

20   At the end of the day if we look at the

21 levels of autonomy, we may be starting in the 0 to 3

22 and then we may straight to 4 or 5. So I think we

1   need to look at a concurrent structure that says what

2   do we need to update in the FMVSS, what is it that we

3   need to understand, and I think then back our way into

4   whether or not you really need to expand the exemption

5   authority or the industry's going to go beyond where

6   you are much more quickly.

7   MS. YOON: Yeah. Steve?

8   DR. SHLADOVER: Yeah. I don't think the

9   question is so much about the expansion of the

10   exemption authority, but how can you apply the

11   exemption authority given that you need to show

12   comparable safety to what you have today.

13   And I've heard a lot of comments in the

14   court of the day in which people are implicitly

15   assuming the automated vehicles will improve safety

16   without questioning it. That's by no means proven for

17   the higher levels of automation.

18   And, indeed, there are some serious

19   technical problems about identifying what would you

20   need to do to be able to assure that in one of those

21   automated vehicles is no less safe than driving today.

22   The Rand Corporation published a really

1   interesting analysis of that earlier this year which

2   predicated the number of hours or number of miles of

3   driving you would need to do without crashes in order

4   to be able to show that you were at least as safe as

5   driving today.

6   And those are some very, very large numbers

7   that they quickly concluded it would be unaffordable

8   to do the testing that you would have to do in order

9   to be able to show that you had at least the same

10   safety as you had today.

11   MS. YOON: Yeah. I think I want to come

12   back to that point after awhile. But before we do

13   that I'd like to ask our law firm panelists how do you

14   think, if you think, the Fast Act Provision that

15   allows manufacturers who are already producing FMVSS

16   certified vehicles to test new vehicles and equipment

17   fairly freely would factor in the discussion of

18   expanded exemptions?

19   MS. GLASSMAN: Well, I think it factors in

20   in two ways. Number one, it goes to testing and not

21   necessarily deployment. So that's one aspect. And,

22   number two, is that the Fast Act Provision applies to

1 OEMs who have a history of complying with the safety

2 standards.

3   And we limit it in that way because there's

4 an assumption of the trust that we've been talking

5 about throughout the day that says if these companies

6 already comply with the safety standards and they are

7 regularly certifying vehicles in good faith as being

8 compliant with the standards, that we have a level of

9 trust that they're going to -- they are going to test

10 in a responsible way.

11   And testing on the public roads has been

12 with us since the inception of the Safety Act. If you

13 go back to the original legislative history of the

14 Safety Act, you will see considerable amount of

15 testimony from car companies saying, yes, we are -- we

16 do advance safety. We test on the public roads.

17 There's always been a controlled level of testing on

18 the public roads by responsible, known companies that

19 regularly interact with the agency.

20   There were a lot of comments to the docket

21 that suggested, well, maybe that's too limited. What

22 about the deployers? What about the suppliers? If

1   we're tier -- high tier suppliers should we also be

2   able to have that right or that ability to do that?

3   And there's something to be said for that.

4   The question is how do you define who should be able

5   to do that and who should not?

6   MS. YOON: Norma?

7   MS. KRAYEM: I would agree with that. I

8   also think that the intent of the Congress was to try

9   and find a way when they knew that they had a vehicle,

10   pun intended, to actually address some of these

11   issues.

12   They didn't have a lot of time to have an

13   in-depth debate about it when the bill at the end of

14   the day was done, but also knew that a fair amount of

15   time could pass before something came forward.

16   So, you know, I agree with Jackie's point.

17   I also think there's a difference in this industry

18   between the OEMs and people who have been doing this

19   for quite some time and the technology disrupters.

20   And we see that in a lot of other sectors.

21   And I think that the language, at least, in

22   the Fast Act was a way to try and narrow in on a

1   portion of the section that generally people have a

2   comfort level with.

3   MS. YOON: Yeah. That's a fair point.

4   Okay. So assuming that we are interested in expanding

5   the exemption authority, let's bring a couple of

6   questions together.

7   What kinds of terms and conditions of

8   exemptions do panelists think would best help the

9   agency manage safety risks and why?

10   And then also how should manufacturers go

11   about demonstrating equivalent safety to the agency

12   and why?

13   I think this goes to Steve's point a little

14   bit about the how many million miles do you need to

15   drive or is that even a good metric.

16   So, Steve, let's start with you for that one

17   and then we'll …

18   DR. SHLADOVER: Okay. I think this is

19   probably the central challenge in defining the

20   regulatory approach not just for exemption authority,

21   but more broadly.

22   What does it take to assure the safety of a

1   system that has to deal with this extremely

2   complicated environment and perform extremely

3   complicated functions?

4   What combination of on-road testing, test

5   track testing, functional safety analysis and

6   simulations could be put together to produce a package

7   that then says, yes, this particular vehicle design

8   will meet a comparable safety to what we have today?

9   As far as I know, nobody knows how to do

10   that at this point. And I'd flag that as one of the

11   highest priority actions.

12   The German government has recently initiated

13   a project to try to make some progress on that

14   bringing together the research institutions and the

15   automotive industry within Germany. They're spending

16   over 40 million euros over the next four years trying

17   to find an approach that they can follow to gain that

18   level of safety assurance.

19   I think this would be a good thing for the

20   U.S. to either follow or to join with the activity in

21   Germany so that we can develop some technical methods

22   that are actually valid.

1   MS. YOON: We would love 40 million euros

2   for sure. Norma, you want to take the next?

3   MS. KRAYEM: Just three quick points and

4   building on what Steven said. First, there is a

5   tremendous amount of work being done at the

6   international level and we do need to be cognizant

7   that whatever we do there is an international approach

8   to standardization or harmonization, whatever terms

9   makes us happy today. That's hugely important.

10   There is a discussion in the EU about a

11   little bit what we're talking about here today. I

12   think that's important.

13   The second big issue, again, is that

14   identification of what is it that is inherently

15   different about the use of fully autonomous vehicles.

16   We are potentially looking at not just the awareness

17   and the testing of the vehicle, itself, but the

18   interaction of the fully autonomous vehicle with the

19   human driver still in the other vehicle on the road.

20   Those are different things than just testing whether

21   or not the vehicle meets certain safety standards.

22   The third big issue I'll just mention is

1   cybersecurity issues. And, again, I think we've heard

2   it from every panel that this is a very different

3   scenario. And I think it's something that maybe DOT

4   and DHS people need to come together on and talk about

5   what that means because we don't have standards for

6   cybersecurity in other sectors.

7   We do use different terms about what

8   reliability means, but in very few instances are we

9   talking about the safety and the lives of the

10   traveling public. And, again, those are inherently

11   different than I think what we've done at DOT and

12   NHTSA in the past.

13   MS. YOON: Just to follow up on that. So

14   you would recommend that sort of some kind of cyber

15   requirement go along with terms and conditions for

16   exemption.

17   I mean, if you're thinking in the context of

18   equivalent safety, how would you compare a highly

19   automated vehicle and the cyber requirements you would

20   want to put on that to, say, I don't even know what

21   vehicle? It's the comparable vehicle that you will be

22   demonstrating equivalent safety against.

1   MS. KRAYEM: I think on the cyber side I'm

2   not necessarily articulat- -- or advocating specific

3   standards per se. We're still talking about safety

4   and securities and the outcome, which is something

5   that we're used to in the automotive industry.

6   You just have to identify where the -- which

7   aspects of the vehicle are vulnerable to outside

8   influence whether it's taking over the vehicle and

9   putting in place or understanding what safety

10   considerations the OEM has decided to offer to meet

11   those risks.

12   I think that's going to depend on each

13   vehicle. And we see that in other sectors.

14   DR. SHLADOVER: I think we need to keep in

15   mind that the cyber threats to the automated vehicles

16   are not fundamentally different from the cyber threats

17   to all of the vehicles that are out on the road right

18   now. So that's with us here and now with virtually

19   any modern vehicle. This is not really fundamentally

20   different.

21   But what is fundamentally different is that

22   we now have technology embedded in the vehicles that

1   is making really, really complicated decisions about

2   the driving environment. And when we think about the

3   standards that are currently in place, things like

4   FMVSS, they deal with very narrow aspects of vehicle

5   performance and things that can be tested objectively

6   in very carefully measured ways.

7   When we look at the behavior of a vehicle in

8   the full complexity of traffic it's virtually

9   impossible to construct a test scenario that will

10   represent the complexity of that environment in a way

11   analogous to what you would do for testing FMVSS

12   compliance.

13   MS. YOON: Jackie, what do you think about

14   terms and conditions of exemptions and equivalent

15   safety? What would you say?

16   MS. GLASSMAN: Well, I think what we're

17   hearing and listening to the conversation is the

18   question of whether we ought to be trying to look at

19   this as a comparative.

20   Do we pick a current vehicle and say we're

21   comparing the level of safety to a traditional vehicle

22   or do we try to undertake the question of how do we

1 define safety in this environment knowing that the

2 highly automated vehicles have to share the road with

3 traditional vehicles?

4   And should be -- and maybe that means we

5 move more towards a functional safety definition as

6 opposed to the very limited and narrow system

7 component approaches of the FMVSS.

8   And maybe then if we do move towards a

9 functional safety approach, how do we embed that into

10 a program where the government has some role in the

11 regulation?

12   But it takes us away from the strict and

13 narrow consideration of whether we're comparing this

14 to another -- the other thing I'll just say about the

15 statistics in my recent experience trying to prove out

16 a technology through the exemption process the

17 technology worked very well, but just due to the

18 statistics it was impossible to statistically prove

19 any difference or a value to technology using this.

20   So even the original requirements, the

21 original purpose of the exemption authority is almost

22 impossible to prove given the statistics today.

1   MS. YOON: So, okay. Let's go with that.

2   I'm hearing a couple people say statistics maybe don't

3   work for proving equivalent safety. And, Jackie, you

4   started in functional safety. Maybe that's how you

5   start to get at how safe is safe, right?

6   But given the agency's authority is

7   currently written, equivalent safety does seem to have

8   some quantitative element. How would we tie these

9   things together?

10   MS. GLASSMAN: Well, first we have to think

11   about how we want to tie them together so that when

12   that conversation takes place at Congress we have an

13   approach that might last not four or six months and

14   not be based only on the past, but can move us forward

15   for another 10 or 20 years as this new environment

16   develops.

17   Looking at what is equivalent safety you've

18   got to look at what is the purpose. You first look at

19   what is the purpose of each requirement. The purpose

20   is to stop, make sure the vehicle stops when

21   appropriate and an appropriate stopping distance.

22   It's to steer appropriately and not lose control of

1   the steering. It's to not -- it's to not turn over

2   under certain events.

3   If we can meet those kind of functional

4   requirements, those kind of functional purposes, the

5   methodology of how we test the vehicles to get to that

6   point may be less significant.

7   So if we can focus more on the function and

8   less on the testing methodology, it's not completely

9   consistent with the original concept of self-

10   certification but it's -- somehow we have to build off

11   of the self-certification system to allow this to take

12   place.

13   MS. YOON: Norma, you want to take that?

14   MS. KRAYEM: I just want to add one piece.

15   The current structure is that the vehicle must perform

16   to certain standards and then it's up to the human

17   driver to make decisions about how they operate the

18   vehicle safely.

19   And when we look at the different levels of

20   autonomous vehicles, we're talking about the scaling

21   where the vehicle, itself, it making almost 100 --

22   well, ultimately 100 percent of the decisions. And

1   within that it has to communicate in some way to the

2   human driver or give the human driver that ability to

3   take the control of the vehicle back over.

4   When you go to Level 5 and it's highly

5   autonomous, then -- and we're talking about on-demand

6   vehicles and other things -- we still have to look at

7   what that interaction is and even training, then, the

8   human driver who's no longer used to operating the

9   vehicle when they have to take back over, what they

10   have to do. And, again, that just means a different

11   level of outcome that the vehicle needs to meet.

12   Now, I'm not saying we have to decide all of

13   that today because I don't think that we can. But I

14   think as we talk about whether it's new regulatory

15   authorities for NHTSA, we're trying to come up with a

16   concurrent regulatory structure where we can move

17   innovation forward, manage safety issues, but still

18   allow the industry to bring innovation to us which is

19   hugely important.

20   MS. GLASSMAN: Yeah. And remember, too,

21   that the FMVSS apply at the point of sale. The point

22   of for sale. On road safety risks are still handled

 1 by the defects process.

 2   DR. SHLADOVER: One thing I also wanted to

 3 bring up that we've talked about interacting with

 4 other vehicles. Remember our vulnerable road users.

 5 These vehicles also need to interact with pedestrians

 6 and bicyclists, not just with the other vehicles on

 7 the road.

 8   And now we're dealing with another level of

 9 complexity in terms of how do they interact, how do

10 they communicate with each other in a way that's going

11 to ensure safety and proper coexistence on our limited

12 road infrastructure.

13   MS. YOON: So, Steve, that's a good point.

14 And I was thinking about what Jackie said about

15 instead of thinking about automated vehicles or highly

16 automated vehicles meeting the test that's in the

17 FMVSS, maybe we go back to the purpose behind the

18 test.

19   Why is the test there? Is the automated

20 vehicle meeting the purpose?

21   But that's for when you have tests. In some

22 of the cases interaction with vulnerable road users

1   and some of the stuff that Norma was talking about

2   it's not just -- it's not just how does the vehicle

3   perform in a limited context of what the FMVSS

4   currently cover, but how does the vehicle perform,

5   period, out there on the road making all the decisions

6   that the human driver potentially would be making.

7   So if you're going back to the purpose, how

8   do you define the purpose in sort of that outside the

9   FMVSS context?

10   And Steve's reaching for it.

11   DR. SHLADOVER: I think if we try going too

12   far in that direction we'll just run around in circles

13   and we won't -- we won't really get very far because

14   of the complexity of the problem.

15   I think it's going to be necessary to go

16   back to something that came up in some of the earlier

17   sessions which is about the functional safety process.

18   How do you make sure that the process that the system

19   developer followed has shown proper cognizance of the

20   threats that are going to be encountered and that

21   they've managed to deal with those threats?

22   You can't possibly go through all the

1   scenarios that'll be encountered with all the other

2   road users. You couldn't possibly incorporate them in

3   a test because the test would take forever to execute.

4   And crashes will always occur in the corner cases.

5   Those really rare cases that you probably didn't think

6   about when you designed the system or that you

7   couldn't fit into the test program.

8   So the notion that we can test our way to

9   proving safety I think is a fallacious one.

10   MS. GLASSMAN: It's interesting to see the

11   -- all three conversations morph together. The safety

12   assurances, the premarket approval or premarket

13   review, and the exemption or deemed to comply

14   conversations fundamentally are the same conversation

15   which is how do we define safety, how do we account

16   for it, and how do we if not measure it -- how do we

17   have a program that at least assures that everybody's

18   taking the same considerations into account,

19   developing them into the vehicles and putting on the

20   roads vehicles that the government can have some level

21   of objective oversight over?

22   DR. SHLADOVER: Government and consumers and

1   insurance industry and the political leadership all

2   levels that need to have a level of comfort that we're

3   actually not going to be degrading safety, but at

4   least hopefully improving it, but certainly not making

5   it any less than it is today.

6   MS. KRAYEM: The last piece I'll add is the

7   whole discussion about machine learning and artificial

8   intelligence is hugely important to the future of this

9   industry. It's not something that the normal consumer

10   understands. It's not something that every member of

11   Congress understands.

12   And while we're saying 94 percent of all

13   crashes in the United States are because of human

14   error, we have to think ahead to what that -- and you

15   mentioned this in your documents -- the ethical

16   consideration about machine learning and artificial

17   intelligence and the decisions that the vehicle will

18   make.

19   These are much harder things to deal with on

20   the right here and the now and how to test. But I do

21   think from a public acceptance standpoint that's

22   something I know that NHTSA's looking at trying to

1   manage and it's hugely important. Again, not

2   something we're going to fix today, but that's a

3   factor that's going to be challenging to test against

4   as we go forward.

5   MS. YOON: Absolutely. I think it's

6   interesting how far maybe the discussion has veered

7   from the original expanded exemption authority

8   question so I'm going to bring it back around at the

9   end, which is fine.

10   But this is -- no. This is better. But

11   given everything that we've discussed I asked at the

12   beginning do you think the expanded exemption

13   authority question is ripe.

14   It sounds like a lot of folks are leaning

15   more towards, sure, that's fine, but maybe we need

16   something like functional safety instead.

17   Do you view expanded exemption authority as

18   sort of a gap filler under we get to something else?

19   I mean, given, Norma, what you brought up in

20   the first place about Congress needs to provide us

21   with this authority anyway would this be the thing

22   that you would go for if you were in charge or would

1   you sort of -- you know, it's worth asking.

2   MS. KRAYEM: It's so much fun to be in

3   charge, but then you have to make a decision. You

4   know, before I would do that with the Congress I would

5   very clearly articulate which aspects of the problem I

6   was trying to solve with expanded exemption authority.

7   If it is intended to be a gap filler, well,

8   we identify all the issues that we've all talked about

9   and the other panels. If it's intended to work at

10   some point concurrently with updating the FMVSS, then

11   I think holistically that might make sense.

12   But to simply go to Congress right now and

13   say, well, you know, we need to give the sector a

14   little more room to wriggle so we figure out what's

15   what. You know, that probably won't get you so far,

16   but if you put it all together then I would make the

17   decision if it's worth going forward.

18   DR. SHLADOVER: I think the central question

19   is what process are you going to have to go through to

20   issue the exemption if you're going to issue the

21   exemption. Whether it's expanded or within the

22   existing exemption authority you still need to have a

 1   good process for saying this one deserves the

 2   exemption, this other one doesn't. Where do you draw

 3   the line in terms of what's acceptable or not based on

 4   safety?

 5   MS. GLASSMAN: And you're going to need

 6   that, as Steve says, regardless of what process you

 7   have. If you go to Congress you don't get to go to

 8   Congress all that often so you want to --

 9   MS. YOON: No kidding.

10   MS. GLASSMAN: -- you know, you want to ask

11   for what you really -- you really need. If you go to

12   Congress and say we want, you know, we want to

13   eliminate the temporal or expand the temporal

14   limitation, we want to eliminate or expand the volume

15   expectation, at some point you're going to move beyond

16   whatever the next level is.

17   If we still have this question if you leave

18   the substantive elements alone, what is an equivalent

19   level of safety? If you eliminate those temporal and

20   volume limitations, you modify or eliminate the

21   concept that you have to prove out an equivalent level

22   of safety and you say when appropriate NHTSA can

1   exempt, that would be okay. But it would overwhelm

2   the agency.

3   MS. YOON: And thank you for thinking of

4   that. We appreciate it. I didn't see, were there any

5   cards?

6   MS. SWEET: All right. We did not receive

7   any question cards. Does anyone in the audience have

8   a question for our panelists?

9   No. Okay. You guys covered it. Okay.

10   MS. YOON: It's done.

11   MS. SWEET: Okay. So let's go ahead and

12   then thank our fourth panel.

13   Okay. So as we set up for our fifth panel

14   this one will be on Post Sale Tools to Regulate

15   Software Updates. It's going to be moderated by Mr.

16   Steve Wood, our assistant chief counsel for NHTSA.

17   And just give us a minute or so here to set

18   up. I would remind folks if you do have a question,

19   there are index cards that can be handed out and some

20   pens. And just look for the NHTSA staff and then

21   they'll collect them from you.

22   We have one other panel after this.

1   (Brief pause). And I would just remind the

2   panelists that when you go to turn your microphone on

3   you're going to see a face with it looks like words

4   coming out. So you'll just tap that and that'll

5   activate your microphone.

6   (Brief pause). And, Steve, we're ready,

7   then, whenever you are.

8   MR. WOOD: Good afternoon. My name is Steve

9   Wood, Assistant Chief Counsel for Vehicle Rulemaking

10   and International Harmonization.

11   Our panel topic here is on the subject of

12   Post Sale Software Updates, one of the topics

13   discussed in the Federal Automated Vehicle Policy.

14   I think all of us have consumer products

15   that are getting updates -- your iPhones, your iPads,

16   or similar products offered by other manufacturers.

17   Sometimes the consequences of those changes are

18   sometimes the loss of data or maybe simply irritation

19   that previous types of functionality may have been

20   lost by an update or you simply don't understand the

21   new one.

22   In the case of motor vehicles, the

1   consequences may include those, but they may also be

2   much more significant, in fact, even affecting life

3   and -- life and limb.

4   I think if you look at the public comments

5   if you had a chance to do that on this issue there are

6   a number of different perceptions of the post-sale

7   dates and even, indeed, just the basic issue of

8   software.

9   Some see a history of, say, 25 years of the

10   agency's issuing standards mandating installation of a

11   variety of safety systems whose performance is

12   dependent equally upon their software and hardware

13   components.

14   Some of the better examples -- some of the

15   better known examples of these are -- were actually

16   mandated by Congress so the advanced air bag, the

17   electronic stability control systems, the recent rule

18   on alert sound for hybrid and electric vehicles.

19   And although these standards were drafted in

20   terms of how the hardware is to perform, if you think

21   about it in how these systems work, these standards

22   were as much drafted to regulate the software of these

1   systems as the hardware.

2   The only way in which manufacturers can

3   comply, indeed, is by writing the software to command

4   that the hardware perfor- -- command that the hardware

5   perform in the desired ways.

6   And without the software to interpret the

7   data, to identify risk to make decisions and to direct

8   the hardware components when and how to perform these

9   systems couldn't function.

10   Indeed without the software you wouldn't

11   have systems. You'd have an assemblage of non-

12   functional hardware. But there is another point of

13   view that hard -- that software being intangible is

14   actually not even subject to regulation under the

15   Vehicle Safety Act which as part of the original

16   vehicle and I think they even more strongly believe

17   not part of -- not regulatable as a separate item.

18   But before we start asking questions, let's

19   introduce the panel. Let me start with Christine.

20   Christine -- and unfortunately I have a very short

21   biography. Actually I only have a single sentence so

22   if you could fill in so we know more about you, that

 1   would be helpful.

 2   You're a legislative director, as I

 3   understand, at the National Association of Consumer

 4   Advocates. And in that capacity or part of that or

 5   what would you like to fill in?

 6   MS. HINES: I'm legislative director of the

 7   National Association of Consumer Advocates where I

 8   advocate on behalf of consumers for strong consumer

 9   rights and consumer protections.

10   Before I was at NACA I was at -- spent seven

11   years a public citizen where I did pretty much the

12   same thing, but advocated before the Consumer Product

13   Safety Commission and before Congress.

14   MR. WOOD: And next to Christine is Michael,

15   Michael Clamann, senior research scientist at the

16   Humans and Autonomy Lab at Duke University.

17   Among his research interests include human

18   automation interaction and haptic control. And can

19   you offer a few additional words?

20   MR. CLAMANN: So, excuse me, thank you. In

21   addition to my duties within the Humans and Autonomy

22   Lab where I teach coursework in human factors and the

1   effects of humans working with advanced automated

2   systems, I'm also the lead robotics editor for the

3   Science Policy Tracking website at Duke University

4   called SciPol.

5   I'm also a contract human factors engineer.

6   I've done work with the FAA, with the FRA, and with

7   the military on issues related to humans and system

8   operations.

9   MR. WOOD: And finally, Adam. Adam Thierer,

10   senior research fellow with the Technology Policy

11   Program and Mercatus Center at George Mason.

12   Specializes in technology, media, Internet, free

13   speech policies, particular focus on online safety and

14   digital privacy.

15   You've also written on permissions lists

16   innovation which is appropriate for this topic --

17   general topic. Can you supplement that?

18   MR. THIERER: Well, I generally write about

19   and think about the public policy implications of a

20   wide variety of emerging technologies including

21   autonomous systems and driverless cars, but also

22   robotics, AI, sharing economy, bit coin, advanced

1 medical device technology, and so on and so forth and

2 attempt to tease out the privacy, safety, and security

3 implications of all these emergency technologies as

4 the old and new worlds collide.

5   MR. WOOD: I wonder if, Michael, we might

6 start first before jumping into policy questions and

7 sort of why should we care about post sale updates?

8 What opportunities and challenges do they pose or

9 create for safety in cybersecurity or other

10 considerations?

11   MR. CLAMANN: Sure. Glad to. So this is an

12 interesting time of the day to be talking about this

13 because I think a lot of the issues that we've talked

14 about in some of the earlier sessions having to do

15 with the preapproval process also relate to the update

16 issue.

17   So where essentially in the advanced

18 automated systems where the AI -- where the automation

19 becomes the driver you are -- you run the potential

20 risk or opportunity to actually be replacing the

21 driver with your automation after the sale.

22   So in that sense, you know, any of the thing

1   -- you can pretty much change any of the oper- -- any

2   of the operations as long as it doesn't have to do

3   specifically with the hardware.

4   So when we talk about things like how the

5   cars going to behave in certain accident conditions or

6   how it's going to treat pedestrians and so on any of

7   those things can be effected after the fact. So it

8   comes to a question of whether or not those things

9   should be modified, you know, after the car is sold.

10   So basically I've looked at some of the

11   comments and one of the things that you see if there

12   is a range, there's a continuum of the types of

13   updates that occur.

14   It could be something very simple. On the

15   one hand of being, you know, maybe a branding update

16   or maybe information being pushed to the owner of the

17   vehicle about when their next, you know -- when their

18   maintenance is going to be coming up due, could be

19   just simple color or font change to their display, or

20   it go much farther to the point where you actually are

21   changing some of the fundamental aspects of the

22   control of the vehicle.

1   And when we start talking about some of the

2   futuristic ideas of, you know, ethics and the driver,

3   some of these choices that the operator -- the owner

4   might have made at the time of the sale, they might

5   actually change in the post-sale about how the

6   vehicle, for example, is going to behave in an

7   accident.

8   Another issue on the flip -- so those -- and

9   those issues I think the communication to the owner

10   becomes a really big issue. I mean, I think this came

11   up in one of the earlier sessions.

12   I mean, we don't all read our privacy

13   policies. We don't read those recall notices. And so

14   when you're moving, when you're pushing forth an

15   update that has to do with the control of the vehicle

16   how then -- it's a huge challenge how you keep the

17   driver informed of what the new behavior of the

18   vehicle is. And if that involves some new training,

19   how, then, do you train the driver to deal with this

20   update.

21   On the flip side you have the issue of

22   cybersecurity which has also come up. Now, this one,

1 you know, with the design of autonomous vehicles you

2 -- you know, the more updates you get the better and

3 better -- the better the driving becomes.

4   And with cybersecurity the longer these

5 vehicles on the road -- are on the road, the better

6 the hackers are going to be. And so with

7 cybersecurity it becomes essential at that point in

8 order to keep up with some of these issues and some of

9 the problems that may come up due to, you know, these

10 vehicles behind hacked you want to be right on top of

11 it. Like if a hack comes in you want to get an update

12 out as soon as possible to be able to deal with those

13 issues.

14   The last thing that I want to mention on

15 this one is with pedestrians. I'm glad -- this came

16 up in the last panel discussion. That in addition to

17 the driver or the owner of the vehicle being affected

18 by these updates, the pedestrians are going to be

19 affected by these updates, as well.

20   You know, where we have road signs that we

21 look at now that there's a lot of consistency in the

22 way pedestrian traffic rules work. If individual

1   vehicles, then, become determined pedestrian safety,

2   how, then, do the pedestrians behave when these

3   updates occur especially when we have different

4   manufacturers who may be having different displays

5   across their vehicles.

6   We have several manufacturers right now that

7   are proposing different vehicle to pedestrian displays

8   and there's not -- I haven't seen any consistency

9   among those. If those, then, change with these over-

10   the-air updates, it makes it even more complicated for

11   the pedestrians to be able to handle these changes.

12   MR. WOOD: Can I -- Christine, from a

13   consumer standpoint why should they be concerned and

14   what rights of theirs might be potentially affected

15   such as right to be warned, right of privacy, right or

16   need to be educated about, as Michael was saying, the

17   practical effects of a sudden perhaps overnight change

18   in the software of your vehicle so that it does not

19   perform the same way on today as it did yesterday?

20   MS. HINES: So -- sorry. So there are a lot

21   of consumer rights at stake with the technology. But

22   I think, you know, the first -- the first concern with

 1   automated vehicles is to have proper standards before

 2   -- before they enter the market so that, you know,

 3   we're not risking lives for the sake of pushing out

 4   really exciting technology, but technology without

 5   having the appropriate safety information. So I think

 6   that's the first. The first consumer right is a right

 7   to safety.

 8   And so as far as that goes, you know, the

 9   policy has -- has recommended a guidance which may be

10   insufficient for consumers and consumer protection and

11   safety. We think that there should be proper notice

12   and rulemaking for these standards.

13   It is a complicated technology and I respect

14   that. I'm not here as an expert of the science behind

15   the automated vehicles not by any means, but as

16   someone who has paid attention to standards for

17   consumers in other sectors they're really only

18   effective if they are mandatory.

19   Voluntary standards means that, well,

20   they're voluntary and people -- and whatever the

21   motivations of manufacturers are to push the exciting

22   technology out there, but they can pick and choose

1   what they comply with and what they don't comply with

2   I think.

3   I think this -- there's so much unknown with

4   this -- with this technology that we need to just

5   before -- I think Sean Kane said something about the

6   cart before the horse or something like that and I

7   completely agree with that in that there should be

8   sufficient -- we're talking about the post, but the

9   pre is what we're really concerned about. And to have

10   enough information beforehand before we rush into

11   things.

12   And then as far post there is the issue of,

13   you know, privacy and cybersecurity are very important

14   issues. And, again, we need standards for those, too.

15   And somebody mentioned in the previous panel about DHS

16   and that is -- seems worthwhile because they have a

17   lot of knowledge in cybersecurity.

18   So but all of that needs to be -- we need

19   more information and detail and transparency about

20   those issues before we just kind of rush -- you know,

21   rush everything out there. That's it.

22   MR. WOOD: Thank you, Christine. Adam, do

1   you want to jump in at this point?

2   MR. THIERER: Sure. I'd be happy to. And I

3   should have said earlier, thank you, Steve, and thank

4   you to NHTSA for inviting me here today. I've already

5   learned a lot. This is a really interesting workshop.

6   And I think what we're seeing in our

7   conversations today and definitely we see in the topic

8   of this panel is a struggle with what I alluded to a

9   moment ago about worlds colliding, about old sectors

10   being revolutionized by new technologies.

11   The Silicon Valley venture capitalist Marc

12   Andresssen has this famous phrase that "software is

13   eating the world" and that we're seeing the sort of

14   softwarization (sic), if you will, of everything.

15   And clearly that's been the case in recent

16   years for a whole host of various consumer devices

17   starting with our phones, right, but most obviously

18   now our cars which is about as important of a consumer

19   device as you can get in your life. And it's being

20   completely digitized to the point where it's becoming

21   a rolling computer.

22   As that happens there's going to be a

1   significant challenge to traditional policies and

2   frameworks that we put in place for these things we

3   call cars traditionally as they evolve into rolling

4   code and rolling computers.

5   And it's particularly a challenge when it

6   comes to the question of what constitutes adequate

7   safety and security. It is something we struggle with

8   mightily in every single other sector that's being

9   disintermediate or disrupted by technology in some

10   way, shape, or form.

11   I spent a lot of time on medical device

12   issues like this and other things and it's a challenge

13   for every single agency. I've been in many workshops

14   like this, same exact discussion playing out.

15   I was in an FDA workshop where someone

16   literally held up a phone, "This is a smartphone or is

17   this a medical device?"

18   And it was a sort of metaphysical discussion

19   that followed about what is this thing and the reality

20   is it's both. And it creates enormous challenges for

21   policies that were established at an age when you

22   could have very clear sort of top down directives that

 1   said, well, you can do this, but thou shall not do

 2   that.

 3   And now we live in a very different world.

 4   It's a world that's going to be one where we need to

 5   be a lot more nimble and flexible and roll with the

 6   changes because they're happening faster than ever.

 7   We've heard it alluded to multiple times

 8   here this morning the so-calling pacing problem, as

 9   philosophers of technology call it. A pacing problem

10   refers to the fact that policy evolves sort of

11   incrementally but technology evolves exponentially.

12   And that problem's growing every day.

13   And so what this means for NHTSA is that

14   we're going to have to come up with a playbook

15   including for post-sale modifications. It's a lot

16   different than the old sort of thou shall not playbook

17   and one that probably has sort of best practices or

18   some guidance but understands that there is no such

19   thing as perfectly safe or secure code. That it's an

20   ongoing process. There's no end point or perfect

21   security and that we'll have to devise fixes in real

22   time to account for this.

1   This is exactly what innovators are doing

2   with real time OTA update, over-the-air updates.

3   Every automotive company and everybody out there is

4   going to be used to the idea that just as you're

5   getting constant updates on your phone you're going to

6   get constant updates on your car -- updates in your

7   car.

8   That's a good thing, but it creates a

9   fundamental insecurity I think among all of us --

10   consumers, the public, and regulators -- about, well,

11   how do we know what's happening at all times?

12   And the answer is we don't. We have to sort

13   of take a leap into the great unknown in saying a lot

14   of this is literally going to be learning by doing,

15   making it up as we're going along. Finding these

16   problems and experimenting through trial and error.

17   I totally recognize the discomfort that

18   creates for agencies and industry that value

19   certainty. And yet certainty in the form of sort of

20   thou shall not directives or preemptive, prescriptive

21   types of traditional reviews of post-sale

22   modifications I just don't think they're going to work

1   in this new world.

2   MR. WOOD: So you mentioned FDA. I mean,

3   you must be familiar, then, with other agencies such

4   as the Federal Railroad Administration dealing with

5   positive train control, FAA dealing with commercial

6   aircraft, FDA for the medical devices. All of them

7   have guidance on validation of software for new

8   vehicles, forgetting about the updates presumably.

9   And I think the policy we issued addresses

10   this. There's some need to validate the software for

11   vehicles as originally manufactured and then

12   presumably the same concerns, then, applied to the

13   updates.

14   As you mentioned, they have corrective

15   value, they are introducing new capabilities, in the

16   case as in Tesla it changed the amount of importance

17   given to different types of sensor data.

18   But how would you balance providing a degree

19   of -- and this is a question for all of you. How

20   would you balance getting the updates in there which

21   is partly experimentation, there is improvement, but

22   it may introduce new problems.

 1   How do you provide a measure of assurance to

 2   the public without interfering overly with the whole

 3   process of correction and refinement?

 4   MR. THIERER: Well, the common framework

 5   across all these agencies and technology topics you've

 6   just discussed comes back to a word you used which is

 7   guidance. And I think we're seeing the emergence of

 8   what some political scientists call sort of soft law

 9   for a lot of these emerging technologies as opposed to

10   traditional sort of hard or fixed law.

11   Soft law being more flexible, dynamic, sort

12   of a little bit of make it up as you go along. And a

13   lot of its agencies being nimble and responding to

14   concerns as they develop in the form of guidance.

15   Sometimes it's called best practices. We've

16   seen a lot of these sorts of things come out of the

17   Federal Trade Commission lately for various

18   technologies -- NTIA, FDA, FAA.

19   I had to develop an entire spreadsheet of

20   just all the multi-stakeholder soft law processes that

21   are going on for emerging technologies today to keep

22   track of them all.

1   And what they share in common is sort of

2   these best practices being hammered out as we go along

3   with a little bit of post market -- well, not a little

4   bit, a lot of post market sort of rigorous

5   surveillance of what's happened by the agencies.

6   And then a determination of do we need to

7   take action. What NHTSA would do, of course, would be

8   recall action. Other agencies have different powers

9   as we heard earlier today.

10   And then we've forgotten about a big part of

11   what the agencies can do in terms of public education

12   and educating not just industry, but consumers,

13   themselves, about a lot of these changes or potential

14   dangers.

15   The FDA's doing a lot more on risk education

16   now in the context of mobile medical devices on your

17   smartphone. And they've basically given up on a whole

18   class of emerging technologies like mobile medical

19   dictionaries they're uploaded every day and updated

20   and FDA just says, okay. We just can't keep up with

21   that.

22   But if you want to stick like a hypodermic

1   needle like on the end of your phone and put it in

2   your arm, you better go through the FDA and get

3   approval. So they have got a spectrum of how to deal

4   with those technologies.

5   And then one final thing I'll mention beyond

6   those other tools that we haven't discussed here today

7   is the role of torts, product liability, and product

8   defects law. There's a whole nother way of regulating

9   technology that exists beyond the confines of this

10   beltway.

11   And that's a very, very important thing in

12   many other sectors, but we haven't thought about it as

13   much in this one I guess which is kind of strange

14   because carmakers are being sued -- you know, they get

15   sued quite a bit.

16   But driverless carmakers and the makers of

17   the code that powers them in the future people will be

18   litigating these things, too, when cases and

19   controversies develop.

20   MR. WOOD: Michael?

21   MR. CLAMANN: I think one thing that's very

22   important to remember when we look across these

1   different agencies, when we look at the FDA, the FRA,

2   and the FAA, with all of those systems we're dealing

3   with highly trained operators. Ones that seek out

4   updates on a very regular basis.

5   So when you're looking at pilots, when

6   you're looking at engineers, when you're looking at

7   doctors and nurses these are people who on a daily

8   basis are going to find out, okay, what new

9   regulations do I have to deal with that have just come

10   out.

11   With drivers we're dealing with a very

12   different audience. You're dealing with the general

13   public. You know, we go in, we've got our drivers

14   licenses, you know, when we're 16 or 17 and then we go

15   in for a periodic eye test.

16   And there are -- it remains a challenge for

17   a number of organizations to try to reach out to these

18   people to try to say these are some of the safety

19   issues. And we see these campaigns all the time and

20   they vary in their effectiveness.

21   So one of the things that is definitely

22   going to be an issue here is, you know, we can look to

1 these other agencies to see, okay, how do they send

2 out these update, how do they communicate these

3 updates. We should look to those, as well, to see,

4 okay, what do we need to put in place for drivers to

5 make sure that these same types of updates are being

6 communicated to them, as well.

7   MR. WOOD: Christine, do you --

8   MS. HINES: So I just wanted to start with

9 one statement. And just the rise of technology is

10 inevitable, but don't risk lives to go from unknown to

11 the known.

12   And I think, you know, this is particularly

13 important here. You know, it's different from the

14 iPhones which I think iPhone apps still there's a risk

15 of cybersecurity issues and privacy issues. But when

16 we're talking about software updates on -- in cars

17 that could lead to serious harm it's a little

18 different.

19   Just in regards to some of the other, you

20 know, tort laws were mentioned and product liability.

21 And that's really interesting as far as post sale is

22 concerned. Which brings up the broad -- broad

1   preemption statement that was in the policy. I wasn't

2   thinking about it in terms of tort law necessarily,

3   but I think that there are state consumer protection

4   laws that -- and NHTSA has a very broad preemption

5   statement in the policy which was very concerning.

6   And, you know, we -- the states -- the

7   National Conference of State Legislatures they have a

8   list of the -- of I think 15 or 16 states that have

9   some sort of legislation on the self-driving cars.

10   And they want to be careful. I mean, these

11   states are concerned about their residents and their

12   residents' safety and their own standards, as well.

13   And it's fair that NHTSA should have -- certainly have

14   minimum standards of what -- of what performance is

15   and what safety is.

16   But we should be concerned about consumer

17   protection rights under their own state's laws.

18   MR. WOOD: Thank you. Michael, both you and

19   Adam mentioned the industry differences. You were

20   talking about the professional user in products

21   regulated by some other agencies and, Michael, you

22   were talking about the range of significance in some

1   of the updates or types of software involved whether

2   it's your medical encyclopedia or the needle assembly

3   fixed to or connected to the -- your iPhone.

4   So in the case of the automotive industry

5   compared to the other industries you can think of like

6   the train industry with positive train control and the

7   medical device, et cetera, how is the automotive

8   industry and its products different if they are and

9   what implications do those have on how we monitor post

10   sale updates and provide guidance?

11   How should that guidance differ? And what

12   -- what are the automotive analogs to the types of

13   examples you gave about encyclopedia versus the

14   hypodermic needle?

15   MR. THIERER: Well, that's a good question,

16   Steve. And I think one thing that I've seen not just

17   from the FDA, but these other agencies that I monitor

18   is that they've learned that they have to pick their

19   battles. They have to figure out maybe like here's

20   the threat scenario for this particular technology or

21   its software updates or whatever else that would be

22   most risky and here are the ones that we can live

1   with.

2   So that FDA example is, you know, a pretty

3   stark one of just a dictionary saying please don't lie

4   about things and if you do it's fraudulent behavior,

5   but then there's the more serious invasive types of

6   technologies that cause serious potential harm to life

7   and limb.

8   And so, you know, that's the FDA and its

9   officials making a choice about where to draw some

10   lines understanding that we live in a world of limited

11   resources including regulatory resources.

12   For a car that's a little bit more

13   complicated because, you know, how do you unbundle the

14   code part versus the mechanical part and there's that

15   relationship between them in order to make the machine

16   work.

17   And it seems like NHTSA's really struggling

18   with this in the comments and a lot of people that

19   commented to the agency talked about this. You know,

20   can you make that broad line distinction? It's going

21   to be hard.

22   But I do think there's no doubt that the

1   soft -- the pace of innovation at the code level is

2   going to be happening at a much, much faster clip than

3   at the mechanical -- the physical one. And, you know,

4   with NHTSA's recall authority you have the ability to

5   address both ex-post.

6   The question is can you do it preemptively?

7   And what I'm suggesting is on the software side of

8   things that's going to be extraordinarily difficult.

9   That it's better to rigorously monitor the market

10 performance of the vehicle as a whole and figure out

11 what went wrong afterwards and determine if that could

12 be corrected, if it needs a recall, or something else

13 or if there's some other remedy.

14   But that real world experimentation is going

15 to be happening at a faster clip I think whether we

16 like it or not. I've written about that in other

17 contexts about how we're not doing this in the vacuum

18 of just the United States of America.

19   This is happening internationally and we

20 live in a world now characterized by global innovation

21 arbitrage where innovators are saying, well, we're not

22 getting the flexibility to do it here, we're going to

1   go somewhere else and do it. And so that's another

2   uncomfortable reality we have to live with here.

3   MR. WOOD: Michael?

4   MR. CLAMANN: No. I agree that the rapid

5   evolution of software is going to make this a huge

6   challenge just to be able to keep up with the changes

7   that are going to be happening.

8   I think as we look across agencies we're

9   seeing that these advances in technology are affecting

10   all of them and everybody's kind of looking back to

11   see, you know, what changes they have to be making.

12   So you have the FAA, which is dealing with

13   their own guidelines at this point for the -- for

14   effecting drones. So while right now you're allowed

15   to go out and buy one of these things and use it for

16   business purposes, they're still limited to line of

17   sight. So this aspect of autonomy is still being kept

18   out of drone use for the time being.

19   You've got -- within the rail industry

20   you've got positive train control which offers a lot

21   of things. For example, you know, right now actually

22   this is true with pilots and with engineers that you

1   need two people in the cockpit after a certain number

2   of hours of use. And positive train control may help

3   the single operator to be able to deal with some

4   emergencies that he or she may not have been able to

5   deal with before.

6   But, you know, with the rail industry

7   they've been trying to implement positive train

8   control for a number of years. And I think recently,

9   you know, they kicked it out to 2021 at this point

10   moving it another three years before it can actually

11   be implemented due to some of the issues that they're

12   dealing with between industry and the regulatory

13   environment.

14   And then, again, we have with computer

15   assisted surgery in the medical domain. You've had

16   the so-call robotic surgery devices which have been

17   around for 17 years at this point, but none of these

18   have any kind of automation behind them.

19   And I've talked to a bunch of surgeons who

20   are very interested in what's going on in autonomous

21   vehicles saying we have cars now that can park

22   themselves. You know, why can't I have robotic

1   surgery device that can tie off a surgery -- tie off a

2   suture or close a wound?

3   And so I think all of these agencies need to

4   talk to each other to find out what is everyone doing

5   to be able to, you know, find out what the best --

6   what the best course of action is.

7   MS. HINES: Just one quick comment. So in

8   regards to, say, FAA and the CPSC, the policy has, you

9   know, refers to, you know, new regulatory tools and

10 refers to certification.

11   And both the FAA and the CPSC have third

12 party or not self-certification. And that could be

13 something or that's something we recommend that the

14 agency think about in this case, again, for the post

15 regulatory tools, for the software updates.

16   If there are -- if there is a third-party

17 standard for complying with -- for compliance to get

18 software updates out, that might be, again, something

19 that would protect consumers.

20   MR. THIERER: Again, just make a brief

21 comment on this because I think NHTSA alluded to this

22 question of like is there another model that we can

1   think about.

2   And when talking about the FAA model, NHTSA

3   says, and I quote, "The duration of the FAA

4   certification process varies. Typically, however,

5   they last three to five years. And that the most

6   recent one for the Boeing Dreamliner lasted

7   considerably longer, an estimated 200,000 hours of FAA

8   staff time, and lasted eight years."

9   I would hope if nothing else today we can

10   agree that's not a particularly good model for

11   driverless car technology. We need things to move a

12   little bit faster than even the average three to five

13   years.

14   And I think NHTSA identifies that problem

15   nicely and says we need to be aware of these

16   tradeoffs. So, yes, we should make safety the

17   paramount value, but we're also not having this debate

18   happen in a vacuum. As the Administrator started off

19   by talking about this morning, we live in an era when

20   35,000 people are losing their lives every year on the

21   road.

22   And, you know, we're not starting this

1   debate about driverless cars from the fresh point. We

2   have a starting point of a lot of deaths already due

3   to human error.

4   I have to believe the baseline could be

5   improved by embracing this technology.

6   MR. CLAMANN: I'm just going to make comment

7   related to the FAA again is that there was also, you

8   know, the issue with the FAA as they kind of switched

9   their -- some of their focus in the early 90s they

10   were referred to as a tombstone agency because a lot

11   of the policies that they enforced at that point had

12   to do with recovering from fatalities.

13   So, for example, you know, when we have a

14   flight that crashed in the Everglades due to a fire

15   that happened in the cargo hold it took awhile before

16   they were able to install smoke detectors and fire

17   alarms within the cargo holds.

18   So it also does help to look at some of

19   these issues in advance. Look at some of the

20   guidelines that are already in place in some of the

21   other agencies to do the hazard, do the risk analysis

22   in advance to see -- try to predict what problems may

1   come up so we're not having to chase afterward with

2   other -- other methods to be able to stop fatalities

3   after they've already occurred.

4   MS. WILLIAMS: Okay. We have a couple

5   questions.

6   MR. FIKENTSCHER: So the first question:

7   Some of this panel's discussion has operated under the

8   assumption that the status quo is reckless -- is

9   riskless. Sorry. Riskless. That makes more sense.

10   Which we know it's not, i.e., rising fatalities.

11   How risky would a post market software

12   update have to be to justify delay?

13   MR. THIERER: Well, I just alluded to this

14   and, you know, this is what economists call the

15   opportunity costs of regulation. That we live in a

16   world of tradeoffs.

17   So perfect safety, if that's our goal, and

18   we try to institute it by policy is actually going to

19   lead to less safety. Because if you spend all your

20   time obsessing about hypothetical worst-case scenarios

21   and base a public policy upon it, then ultimately many

22   best-case scenarios will never come about.

1   That it's only through ongoing trial and

2   error experimentation that we get greater prosperity

3   and wisdom and learning. And we learn from our

4   failures and we also get innovation through that trial

5   and error iterative process.

6   So a lot of the great success stories of not

7   just automotive engineering, but all forms of

8   engineering have come about through trial and error

9   experimentation. A lot of it being done in the real

10   world.

11   In my filing to NHTSA we actually took an

12   effort to try to put some math to this and quantify

13   this and talked about that using the baseline that

14   others have come up with in terms of the potential

15   delay. We could be talking about just a 10 percent

16   slowdown you're looking at somewhere in the order of

17   over 10,000 -- or, I'm sorry, over 30,000 lives

18   potentially over a 30-year year period being foregone

19   we could have saved assuming that driverless car

20   technology could save a certain percentage of lives.

21   And we used industry standards that were used in other

22   reports.

1   I know these things are debatable in terms

2   of exact numbers. We went through the exercise to

3   exemplify these tradeoffs. And as the questions are

4   asked, you know, we don't live in a riskless world

5   right now. We live in a world where human error leads

6   to around 94, 95 people losing their lives every

7   single day and 6,500 people being injured because of

8   that human error.

9   MR. CLAMANN: There's a precedent within

10   safety engineering for compar- -- for looking at risk

11   and determining if there needs to be an intervention.

12   Essentially it's a formula that looks at the

13   probability of a risk occurring and the severity of

14   the risk occurring.

15   So when we look at the types of updates that

16   are going to come through, if it's something that, you

17   know, isn't going to come up very often and has to do

18   with a simple cosmetic change, it's probably not

19   something that you need to intervene with. It's

20   probably something we go through.

21   But if you look at the opposite extreme --

22   something that is extremely likely to happen or

1   something that happens frequently and something that's

2   going to lead to some kind of a catastrophic multi-car

3   accident, then, yes, you probably do want to step in

4   and intervene in advance of this being released over

5   the air.

6   But then it depends on where across that

7   continuum do you -- do you want to stop. And so it

8   would be up to, you know, someone with a different pay

9   grade than me try to look across that continuum in

10   figuring out what is the point where we have to stop.

11   But that point would exist, it just has to be decided

12   on within that continuum.

13   MS. HINES: Okay. So just really quickly.

14   I mean, I don't have a number for you, but, I mean, I

15   could say that, you know, just looking at, you know --

16   just looking at the news and the air bags and the --

17   all the various safety issues that have killed

18   hundreds or thousands of consumers not because of

19   their human error, but because of manufacturer --

20   manufacturer error and which have -- which could have

21   been prevented.

22   And even where there have been recalls and

1 they identified the wrong fix for it and still had to

2 make additional recalls because the -- because they

3 didn't identify what the real problem was.

4   So we've -- so we've seen this. And so I

5 think, you know, there is -- that's out there and that

6 could have been prevented. And that, you know, let's

7 not make human lives part of your beta testing trial

8 and error situation. These are people.

9   There are people who are going to be on the

10 road who are driving cars on their own and then you

11 have automated vehicles also on the road. So you're

12 risking their lives, as well, then -- you know, then

13 you're going to have vehicles that are kind of

14 automated, but not really. And so you're going to

15 have all of these three things on the road at the same

16 time.

17   And so what we're saying here is, you know,

18 we don't -- you know, we don't have a number for you,

19 but a lot more could be done. We see what's happening

20 now with people's lives being risked because of, you

21 know, defects in cars which could have been prevented.

22   So, you know, there is a lot of work to be

 1   done. And what we're saying is if there are, you

 2   know, proper standards, proper standards, you know, it

 3   is complicated and I understand that. But there can

 4   be proper standards with testing, proper standards for

 5   post-sale, proper standards, you know, throughout the

 6   process and we need those to be enforceable.

 7   MR. WOOD: Let me just add something there.

 8   There's another aspect of what Christine's raising and

 9   that is -- and it's a source of a different kind of

10   delay.

11   In addition to the human carnage, the

12   agency, over its history, has experienced problems

13   with different types of performance. Air bags in the

14   mid/late 90s in low-speed crashes there were some

15   drivers and young children being killed by air bags.

16   And I think one of the -- I think both the

17   manufacturer as well as the regulators recognize that

18   a concern is trying to maintain consumer confidence.

19   And so trying to strike the right balance between

20   preintroduction or premaking of the software updates

21   as well as the post-market surveillance.

22   That you need to try to maintain -- manage

1   risk in a way in which keeps that flow of technology

2   moving forward and having the permission within

3   society and within government for that process to

4   continue to occur.

5   MS. WILLLIAMS: Okay. With that we're going

6   to conclude that panel since we have one last panel to

7   get through this afternoon. So can you thank our

8   panelists?

9   So and our sixth and final panel is on other

10   potential tools. This will, again, be moderated by

11   Mr. Paul Hemmersbaugh, chief counsel for NHTSA. He

12   started us out this morning -- or this afternoon and

13   he's going to finish us out, as well.

14   And I do just want to make one point. We

15   did reach out to FDA and also CPSC. They

16   unfortunately couldn't be with us today. They had

17   other commitments. But these are dialogs that we

18   definitely will be having with them since they are

19   very relevant to this discussion.

20   (Brief pause). I guess I should follow that

21   (sic) own advice. For the panelists when you want to

22   turn on your microphone, again, if you look down it's

1   the button with the face, okay.

2   MR. HEMMERSBAUGH: So I noticed that our MC

3   said we had one more panel to get through. I wish you

4   all --

5   MS. WILIAMS: I apologize.

6   MR. HEMMERSBAUGH: -- courage and

7   perseverance --

8   MS. WILLIAMS: I did not mean it that way.

9   MR. HEMMERSBAUGH: -- in that task. I got

10 through all the panels today and I had a couple

11 observations that I thought would be useful or at

12 least of some value in summing up.

13   I think one of the things is that these are

14 some hard problems. And, you know, as Casey Stengel

15 was reputed to have said, you know, "it's really hard

16 to forecast especially about the future."

17   And the things that it seems like a lot of

18 the panelists have said are that it's really important

19 to get this regulatory approach right so you done

20 stymie innovation and you don't short change safety

21 and so forth. So it's really important to get it

22 right, but how to get it right people don't seem to

1   have a lot of ideas.

2   And similarly, I think, although we're

3   talking about tools -- regulatory tools, it seemed

4   also that people were saying, you know, the substance

5   of how you do this -- what is the content of these

6   tools and against what standards do you apply these

7   tools and so forth. That the substance of that is

8   really important and it's really important to get that

9   right.

10   And then something that seems to me a little

11   bit intentional with that people say but you need to

12   do it really quickly. And you need to keep pace with

13   this technology that is difficult to understand and

14   difficult to predict, but let's do it quickly.

15   And so I'm sort of adding all those things

16   up. I guess my thought was that the agency needs to

17   be more perfect about these things. And so we'll try.

18   But I think it's really, you know, joking

19   aside, it has illustrated that these are some tough

20   problems and that they're not necessarily susceptible

21   of easy solutions or perhaps of solutions that we've

22   used well in other context.

1   And one of the things I'd like to encourage

2   the three panelists here to talk about is if they have

3   ideas about tools -- so this is kind of a cleanup

4   obviously. And we're talking about -- here about

5   other regulatory tools that the agency might use.

6   And if you folks have ideas about things

7   that were not included in the policy, I'd be very

8   interested in hearing about them, we all would. But I

9   think that this illustrates to me more than anything

10   that the importance of this kind of dialog, but also

11   that it's ongoing.

12   And it's one of the reasons we made this

13   policy -- we're having these fora and hearings and

14   also that we made this policy to be renewed and

15   refreshed with some frequency is a little bit of a

16   degree of humility about what we know about all this

17   and what we can know and how the process needs to be

18   the product of our learning as we go forward.

19   Before I go any further, let me introduce

20   the panel members. We have directly on my immediate

21   right Ryan Hagemann, Hagemann. Ryan is the techno- --

22   technology and civil liberties policy analyst at the

1   Niskanen Center. His research specialties include

2   privacy and surveillance, robotics and automation,

3   decentralized networks, Internet policy, and issues at

4   the intersection of sociology, economics, and

5   technology. So he's the one who's going to give us

6   the solutions.

7   His previously authored works on the

8   Economic and Social Ramifications of Autonomous

9   Vehicles with the Mercatus Center.

10   To his right and in the middle is Ian Adams.

11   He's a senior fellow with the R Street Institute and R

12   Street's former western region director. He is also

13   an insurance and public policy associate with the firm

14   Orrick, Herrington, and Sutcliffe in Sacramento,

15   California, where he advises clients on matters at the

16   intersection of law, business, and public policy.

17   His research and writing has focused on

18   state-based property and casualty insurance

19   regulation.

20   And finally we have with us on the far right

21   -- well, I guess we'll find that out, but to my right,

22   Cary Coglianese, the Edward Shils Professor of Law and

1   Political Science at the University of Pennsylvania

2   where he currently serves as the director of the Penn

3   program on regulation and has served as the law

4   school's deputy dean for academic affairs.

5   He specializes in the study of regulation

6   and regulatory process with an emphasis on the puracol

7   evaluation of alternative regulatory strategies and

8   the role of public participation, negotiation, and

9   business government relations in policymaking.

10   Thanks to the panel for coming today and

11 thanks for persevering through the rest of the panels.

12   The first tool that we -- that I'd like to

13 discuss and have each of you sort of give your take on

14 is the notion of having a variable testing procedure

15 for testing automated vehicles and their competence

16 and their -- or their behavioral competence.

17   And the notion here I think is that in a

18 very complex environment -- in fact, I think Mr.

19 Shladover mentioned this -- that in such a complex

20 environment it's tough to have a single objective test

21 that can take into account all the variability that

22 especially higher level automated vehicles will

1   encounter.

2   And at the same time if you had such a test

3   that had all these things sort of preprogrammed or

4   preset in advance, it might be susceptible to the

5   gaming of the test.

6   And so our Vehicle Safety Act, our

7   authority, has been interpreted to require us to have

8   a -- essentially a static test. So there might be

9   some need for either new legislation or potentially a

10   different interpretation of our testing authority.

11   But, first, does it make sense for us to

12   have a variable test that is not applied in precisely

13   the same way to each and every vehicle?

14   Ryan?

15   MR. HAGEMANN: Right. There we go. Well,

16   first off, thank you, Paul. Thank you to NHTSA for

17   having me here.

18   So I'll answer that question very briefly,

19   but then I'm going to blow it up and broaden my

20   response a little bit to discuss the toolkit, in

21   general, that we're talking about here.

22   So, in short, attempting to impose some sort

1   of whether it's static or variable testing scheme here

2   dynamic or otherwise to these types of vehicles and

3   this type of underlying technology I think runs the

4   risk of running into a lot of problems. And a lot of

5   problems that aren't going to be easily communicated

6   to the regulators.

7   There is this notion in artificial

8   intelligence research called algorithmic pareidolia.

9   Pareidolia is a psychological condition where one

10 looks at a pattern or an object and sees something

11 that is not actually there. So they interpret, for

12 example, a -- if any of you have ever seen the movie

13 Mallrats, the fellow who's looking at the magic eye

14 and he's trying to see the boat, the schooner as the

15 child tells him, that's sort of what we deal with in

16 AI research when we're talking about algorithmic

17 pareidolia.

18   The difficulty is if you get the algorithm

19 coming back to telling you, you know, you feed it the

20 image of a cat but it comes back and it feeds you, you

21 know, an answer that says, well, it's a jumble of

22 nothing or alternatively you get a jumble of nothing

1   that's fed to it and it comes back and it says, well,

2   it's a cat. There's no real way for the algorithm to

3   actually explain to you why it is it made that

4   decision.

5   So I think a lot of the trouble you're going

6   to run to -- into with that first tool is at this

7   point there's no real objective measurement tool we

8   can use to assess why it is an autonomous vehicle

9   maybe made a particular decision that it made.

10   But to broaden this a little bit more, my

11   comments don't actually focus on the tools here at the

12   end of the Federal Automated Vehicles Policy

13   Guidelines at all because I saw the tools as a means

14   to support a number of the newly proposed authorities

15   in the guidance document almost some of which I

16   objected to on a number of different grounds. And

17   we've already covered those in all of the other

18   panels.

19   But just to put that into perspective for

20   you, the reason I didn't focus so much on these tools

21   in particular was because of -- because the way I saw

22   them was a means to support those ends.

 1   Something that I think we need to think

 2   about moving forward here when we start to discuss not

 3   just these tools, but what our next steps are is

 4   something that my friends over at the Mercatus Center

 5   I thought did a fabulously excellent job on with these

 6   comments which is cost benefit analysis.

 7   We aren't -- we just don't have enough cost

 8   benefit analysis that have been done or that maybe are

 9   on the horizon to be done to assess what kind of an

10   impact some of the proposed new authorities are going

11   to have and there's a lot still to be done there.

12   So I think next steps for us is not only

13   embarking on that path, but also addressing what I

14   look at as the underlying question with all of this

15   which is what exactly is it we're trying to regulate

16   here?

17   We're not actually talking about -- and I've

18   heard the phrases functional safety processes, system

19   safety processes. I mean, are these checklists for

20   software engineers? Is this what we're talking about?

21   I mean, what we're actually talking about I

22   see maybe this as the subtext throughout some of the

1   automated vehicle guidelines policies. But what I'm

2   worried about and why I objected to some of these

3   newly proposed authorities is I see this as perhaps --

4   I don't want to call it a stalking horse -- but a

5   situation which we start regulating the underlying

6   algorithms at play here. The underlying artificial

7   intelligence and we essentially turn NHTSA into the

8   Federal Code Commission as some have proposed.

9   That worries me partly because, as I've

10   already explained, part of the reason tool number one

11   maybe isn't that valuable for us right now in terms of

12   assessing appropriate objective standards of

13   regulations for these vehicles is we don't actually

14   know how AI works in all situations.

15   So to give you just a very broad

16   understanding of AI, here's basically how AI works.

17   This is basically underpants gnomes logic for you.

18   Step one, inputs; step two; step three, outputs. And

19   then there's an infructuous feedback loop where the

20   outputs are fed back into the -- it's complicated, but

21   basically algorithms -- artificial intelligence in

22   general is still kind of sort of a black box for all

1   of us.

2   And so when we're actually talking about

3   autonomous vehicles I think we need to start

4   separating the actual physical car from what we're

5   actually talking about with automated vehicles which

6   is the artificial intelligence that feeds into the

7   software algorithms that actually make the automation

8   possible.

9   How you regulate -- how you regulate that I

10   don't have a good answer to that. And anyone who says

11   they do is probably fibbing a little bit.

12   So I just wanted to sort of attack this from

13   a high level starting point to begin with because, you

14   know, I think the toolkit is, you know, if we can make

15   this work, great. But I don't think it is a workable

16   solution to what right now seems like a problem that

17   ultimately needs to be solved by industry-like

18   consensus based standards and best practices in

19   partnership with NHTSA and other federal regulators.

20   MR. HEMMERSBAUGH: Ian?

21   MR. ADAMS: Yes. And I also am pleased to

22   be here, Paul. Thank you.

1   So I suppose I'll jump right in. I don't

2   know that deviating from objective testing procedures

3   is the way to move because simply if I'm going to take

4   a test and I am in an industry with other folks, I'd

5   very much like the other participants in the industry

6   to be taking the same test.

7   At least with my clients in the insurance

8   industry if we were held to different regulatory

9   standards, that would be -- that would be a real

10 problem for me.

11   And then the second element of that is that

12 I don't know how profound the problem with gaming is

13 going to be in the event that during these tests,

14 right, manufacturers play to the test and then in the

15 real world these vehicles are unable to function as

16 we'd hope, right.

17   So you've got real world constraints in the

18 terms of recall, lawsuits, and as we've talked about

19 at great length today, customer trust which is going

20 to be a large component of this new technology's

21 adoption moving forward.

22   So and finally I think that this is

1   something where in -- once these vehicles are deployed

2   if there is some sort of a failing that was not

3   detected in an objective test, it's going to become

4   apparent rather quickly in the way that these vehicles

5   operate.

6   So I do have some reservations about

7   variable test procedures and I think I'd probably

8   stick to a more objective approach.

9   MR. HAMMERSBAUGH: Cary, do you have

10   thoughts?

11   MR. COGLIANESE: I think the concern about

12   gaming is something that exists with any kind of test

13   whether it's objective or variable I think really.

14   It's something that could always be there.

15   I guess the variable test would perhaps make

16   it harder to gain and that's for sure. But I think

17   there's actually two other reasons to think about

18   variable testing here that's not stated in the

19   guidelines, but I think probably are even more

20   important than gaming.

21   One is just that the testing should relate

22   to one's objective. And the objective here is that a

1   vehicle perform in a highly varied environment. And

2   so if the test is going to meet the objective, it's

3   got to be something that mirrors that varied

4   environment. So that would seem to me to be the first

5   and foremost reason to think about a varied test here

6   and not gaming.

7   But a second reason to think about this is

8   that tests in the regulatory context have historically

9   tended to have a narrow set of goals or even maybe

10   just one goal in mind. And, yet, in practice we often

11   demand of technologies and systems the meeting of more

12   than one goal. And variable testing might actually

13   help flush out how -- how vehicles will perform with

14   respect to multiple goals.

15   What I mean by that let me just give you two

16   examples. One was already mentioned before about that

17   NHTSA has had experience with in the air bag context

18   which the performance test initially was to, you know,

19   meet a set of pressures and so forth on crash test

20   dummies that were sized to the average adult male.

21   And obviously that -- those systems were

22   built and performed to meet that test well, but didn't

1   perform as well for people who were smaller than the

2   average adult male. And then with time we've

3   developed more sophisticated tests and now have a

4   range of things that we're looking for.

5   But I think that was an example of where you

6   can get with a single test -- a single objective test

7   to sort of a set of blinders -- regulator can get a

8   certain set of blinders. And I think that's important

9   to try to avoid here.

10   Here's another example from outside of

11   NHTSA's context and it has to do with something we're

12   probably all very familiar with. The child resistant

13   packaging on pharmaceutical products.

14   Lots of kids were dying because they were

15   able to get access to medications and so forth so the

16   federal government put in place standards that

17   products containing medicines and other harmful

18   substances had to have child-resistant packaging.

19   And what the standard called for was a test

20   that said give this product -- this package to kids,

21   show them how to open it, and then close it up and see

22   how many of them can open it. And as long as no more

1   than 15 percent of the kids could open it, it met the

2   test.   It was great.   And, again, products met that

3   single-objective test.

4   But it also turned out to be the case that

5   those products that met that test were hard for adults

6   to open.   And so what ended up happening is that

7   adults would open the packages and leave them open

8   because it was so hard to open.

9   And we went from a situation where there

10 actually were -- was an increase in certain kinds of

11 childhood poisoning from products being left open.   So

12 what it -- it took about 15 years and the federal

13 government then created a multi-factor test that said,

14 oh, these product packages have to be hard for kids to

15 open, but they also have to be easy for adults to

16 open.

17   So I think those are the sorts of factors

18 that I would be thinking about even more than gaming.

19 I think gaming's always a worry one has to think about

20 ways of monitoring, verifying.   Not just trusting, but

21 verifying in any kind of testing situation.

22   But you also need I think and particularly

1   in this context to pay attention to the highly

2   variable conditions under which vehicles are being

3   used in which in this context the autonomous systems

4   are designed to perform and also to the fact that

5   there's multiple objectives.

6   And with that in mind, by the way, I would

7   say that there are likely to be tradeoffs among the

8   various goals and objectives that have been tossed

9   about here today. You know, up until this point in

10   time NHTSA's primary objective I think with respect to

11   automobile design has been safety, but I'm hearing,

12   and rightly so, concerns about things like privacy and

13   cybersecurity which introduce completely new

14   objectives and which may introduce tradeoffs in how

15   these systems perform. And one needs to be mindful of

16   the multiple objectives that in practice we're

17   demanding of these new vehicles.

18   MR. HEMMERSBAUGH: Thank you. I think that,

19   again, this sort of illustrates, I mean, we've got

20   responses ranging from testing is maybe futile to

21   beware unintended consequences.

22   What perhaps both of those suggest is that

1   we're not likely to get it exactly right in the first

2   try. And one response to that sort of uncertainty is

3   to have sunsets in regulations.

4   And so, you know, you issue a regulation and

5   then you say in five years it shall cease to apply.

6   And I think the idea of that is to require agencies to

7   go back and revisit what their regulatory analyses and

8   conclusions were.

9   And in a lot of ways that seems to make

10 sense to me and I'm going to ask you what you folks

11 think about it. But the one thing I would also ask

12 you to take into account is the length of time it

13 takes to promulgate these regulations in the first

14 place, including cost benefit analysis.

15   And the -- we can't assume unlimited agency

16 resources. And, in fact, the agency resources are

17 quite limited. And so in the context of limited

18 agency resources, long lead times to promulgate

19 regulations, but aware of the cautions that each of

20 you has sounded, what do you think about sunset

21 provisions in regulations and should it be almost a

22 standard practice or used sparingly or used

1   frequently?

2   Ryan?

3   MR. HAGEMANN: I'm a huge fan of sunset

4   provisions. I say include the sunsets all over the

5   place. Especially, though, with emerging technologies

6   because this is an area where, you know, as Adam

7   already pointed out, the technology is just

8   developing, the innovation is occurring at such a fast

9   pace that organizations like NHTSA, the FDA, FAA, all

10   of these federal bureaucracies that were constructed

11   during a time when we didn't experience the type of

12   rapid progress that we've been experiencing now simply

13   can't keep pace.

14   And that -- this is sort of a broader issue

15   with -- you know, it's not just NHTSA. It's everyone

16   in the federal government, you know. The real

17   question right now of our time I think as it relates

18   to emerging technology regulations is how can

19   regulatory agencies more appropriately tailor their

20   rules to address this current policy dilemma?

21   And, you know, part of that answer is, well,

22   there's not really a good answer. But maybe the best

1   answer we have available to us is to simply, you know,

2   promulgate those rules we think will do the most good

3   in a very narrow sense, you know. I mean, pick --

4   pick your primary goal, as Cary was pointing out, you

5   know, and let's just install a, you know, one to two-

6   year sunset. I'm in favor.

7   MR. ADAMS: So, Paul, I'm also comfortable

8   with regulatory sunsets. That's just because I

9   primarily do most of my work in an industry that is

10   really very old when it comes to -- when it comes to

11   the regulatory environment and the insurance industry

12   and we're consistently running into regulations that

13   are different across the states because insurance is

14   regulated at the state level and have been on the

15   books in some cases for decades and decades and no

16   longer bear any resemblance to the sort of ongoing

17   business that is -- that is going on within the

18   industry.

19   And that's a real problem when it comes to

20   the new and exciting products that we'd like to see

21   developed and that we'd like to see consumers get

22   their hands on and it's also leading to -- I know

1   you've heard this recently -- a patchwork -- a

2   patchwork across the states of products available to

3   people which has turned into a real loss for

4   consumers.

5   But at the same time I'm mindful of the fact

6   that it's very expenses and very time consuming to go

7   back and to reassess these things particularly in the

8   event that the sunset applies to a provision that

9   ultimately will not be changed in a meaningful way.

10   And so we don't want to be wasting resources either.

11   So while drop dead sunsets do certainly

12   have, you know, an appeal to them, I think that

13   ongoing dialog, that an iterative approach as NHTSA

14   calls it, an informal approach that has constant

15   contact between the industry and the regulator is

16   likely the best way to inform when the implementation

17   of a sunset may be necessary.

18   So maybe not right out of the gate, but as

19   you begin to see issues on the horizon potentially

20   introduce one.

21   MR. COGLIANESE: I think the question is how

22   do we create an optimally flexible or an optimally

1   rigid regulatory system in the face of innovation.

2   And when one looks at it in terms of the optimality

3   and the degree of -- and rigidity is sort of a

4   negative term, but it has a negative connotation to

5   it, but I think there's actually positive

6   connotations, as well. Predictability comes with that

7   rigidity. I think a system -- an economy doesn't

8   thrive if we have too much unpredictability in our

9   legal system.

10   But when one looks at it, then, and from the

11 standpoint of optimality I think sunset provisions,

12 which may have their place in certain context, are in

13 many contexts a really blunt instrument.

14   There are other ways of creating the

15 smoothing and adaptability to a regulatory system

16 without creating hard sunsets. I mean, one thing,

17 Paul, you noted that the -- I think these were you

18 words -- wanted to require agencies to go back and

19 revisit.

20   Well, you can do that without a sunset.

21 Just require agencies every X period of time go back

22 and review and make a finding about whether it needs

1   to be changed. This is how the EPA is told under the

2   Clean Air Act to go back and revisit air quality

3   standards, for example. So it can be done even

4   without a sunset.

5   But there's also other vehicles. We had a

6   session here on exemptions. So to the extent that

7   there needs to be some flexibility adaptation the use

8   of exemptions maybe not under the current limitations

9   of a small number of vehicles, but there could be --

10   that could be a way.

11   Petitions, as well, are -- you know, if

12   there's something that's so outmoded like we're all

13   here today discussing whether the current regime is

14   outmoded, there will be avenues for people to petition

15   and try to seek to convince the agency to change. So

16   I think that there are those other avenues.

17   The real question in my mind is whether at

18   the end of the day thinking about the automation of

19   driving is -- and that's it's really the automation of

20   driving much more than the automation of vehicles that

21   we're here talking about.

22   Whether the automation of driving is

1   conducive to traditional regulation in the sense that

2   we have conceived of it over the years. We started

3   historically in this country with a legal system that

4   was based upon a common law method which was built

5   upon case after case after case and maybe principles

6   emerged from the accretion of individual contextual

7   decisions.

8   And then we moved into a world of regulation

9   which is sort of top down a set of general rules that

10   then apply to individual circumstances. And I think

11   what's really interesting and challenging about

12   artificial intelligence machine learning technologies

13   is that, first of all, those technologies, themselves,

14   are really, really, really good at contextualizing, at

15   making individualized forecasts.

16   This is -- and this is the beauty of it and

17   why it holds the promise of automating driving. And

18   the question is whether a legal system that is highly

19   general is capable of actually adequately addressing

20   the very real risks associated with the implementation

21   of a contextualizing technology.

22   And I know in one of the earlier panels the

1   question of ex-post liability came up. And I think

2   that's something that's really critical and to be

3   thinking about what's the interface between what the

4   federal government does and what liability which

5   exists at the state level principally will also -- how

6   all that will play out.

7   But I do think -- I do think the sunset

8   provisions are solutions that are put forth to a real

9   problem, but probably too blunt of a solution.

10   MR. HEMMERSBAUGH: So I'll toss it back to

11   you, Cary. If automated driving or automated motoring

12   is not conducive to traditional regulation, what's the

13   answer?

14   How do we ensure safety, ensure motor

15   vehicle safety of American consumers?

16   MR. COGLIANESE: Well, one thing that is in

17   the section right after ours about resources, networks

18   of experts, special hiring. I will say that this is

19   -- this is absolutely fundamentally crucial if we're

20   going to set sensible policy with respect to highly

21   complex technologies.

22   And there's no question that, I mean,

1 automobiles even with human drivers in them are very

2 complex systems. But to do this well we need to make

3 sure that we have government officials who have the

4 capacity to analyze the data.

5   So all the tools -- the subsequent tools

6 that maybe you still want to get to about data

7 collection and recordkeeping and reporting, all of

8 those I think are important.

9   The general strategy here is I think to

10 think about this as a strategy of regulating by

11 learning. And that -- that's why, you know,

12 certainly, as I say, the sunset provision is trying to

13 get at the right kind of problem of forcing an agency

14 to periodically learn and assess. That's important.

15   I'm just not sure that, quite frankly, that

16 there's a given time period. We could say let's all

17 agree on this panel here that sunset provisions every

18 five years are the right amount, but I don't know if

19 five. Maybe five months we'll get there.

20   But we -- you know, I think we need a system

21 that's learning and adaptable. So putting something

22 out like NHTSA has done as a guidance gives you that

1   flexibility, it puts it out there. And a lot of

2   things in this guidance are calling for additional

3   data and analysis and processing.

4   And we just need to make sure, to come back

5   to my first point here, was that, you know, the

6   government continues to have the human resources and

7   capacity to solve this. These are not going to be

8   just technical problems, but ones that require good

9   experts within government.

10   MR. HEMMERSBAUGH: Thanks. We're getting

11   toward the end here. Ian, I wanted to give you a

12   chance to in the last -- both of you a chance to

13   mention if you -- if you're interested any of the

14   tools that we may have listed in the policy, the other

15   tools, or other ideas you may have as to good -- good

16   safety facilitating devices that the agency might

17   consider.

18   MR. ADAMS: So I'm always confronted with

19   the issue of when something has presented a risk or

20   something has gone wrong what is the appropriate point

21   at which to report that to the regulator.

22   And so a regulator that is willing to build

1   a relationship with me and exercise a fair amount of

2   discretion in understanding the nature of the issue

3   that I have been confronted with that regulator is

4   going to be more likely to have me report the issue

5   earlier on.

6   And ultimately I think that's what's better

7   for consumers the earlier we can get this in the

8   process. And so if there were to be a tool that I

9   would point out, I would say, the FAA gentleman

10   mentioned it a little earlier, that when it is a

11   mistake and it is not intentional and there is a

12   meaningful remediation measure that is underway to

13   have the flexibility to not move forward to fine or in

14   some way publicly -- because that can be just as big

15   of a problem, publicly shame the group involved.

16   I would encourage NHTSA to if it doesn't

17   have that authority already to certainly make great

18   use of it because, as I think we've heard in the other

19   panels, given just how difficult the testing will be

20   it's going to be very important that we analyze what

21   happens once these vehicles are deployed.

22   And so we're going to see some of these

1   mistakes made out on the road in the environment with

2   the public and that's going to be the context in which

3   knowing when to forgive and build together the

4   knowledge associated with that process when it's going

5   to be even more important.

6   MR. HEMMERSBAUGH: So prudent to exercise

7   jud- -- or judicial -- prosecutorial discretion?

8   MR. ADAMS: Oh, geez. Oh, geez.

9   MR. HEMMERSBAUGH: Enforcement discretion?

10   MR. ADAMS: Yes. Yes. I feel like I just

11   failed the professor's test.

12   MR. COGLIANCESE: I'm all in favor of

13   prudence.

14   MR. ADAMS: Okay.

15   MR. HEMMERSBAUGH: Ryan?

16   MR. HAGEMANN: Yeah. No. Plus one to

17   everything that Ian and Cary just said honestly. I

18   think you kind of hit the head of the -- you hit the

19   head of the nail with your policy toolkit hammer at

20   the beginning, Paul, when you talked about this need

21   for humility.

22   You know, regulatory forbearance can

1   sometimes be a very powerful signaling mechanism I

2   think. Adam talked previously about, you know, the

3   use of soft law to start regulating a lot of these

4   emerging technologies.

5   The multi-stakeholder process, ongoing

6   dialogs between industry regulators and other

7   stakeholders in the community. I think having those

8   dialogs and keeping them going is important as a means

9   of signaling to the American people that these

10   vehicles aren't just being shoved out there, but we

11   are thinking about it.

12   But there's a lot of, as we've learned

13   through the last five panels this afternoon, there's a

14   lot of issues at play here. So I think continuing to

15   exercise regulatory humility is an important -- is an

16   important quality that folks over at NHTSA are

17   exercising very well and should keep doing.

18   MR. HEMMERSBAUGH: Thank you. I don't know

19   if we have questions or …?

20   MS. WILLIAMS: I will leave that to your

21   discretion. We do have one question, but we are also

22   at time.

1   MR. HEMMERSBAUGH: I will -- we'll take the

2   question --

3   MS. WILLIAMS: You'll take the question.

4   MR. HEMMERSBAUGH: -- so nobody can say that

5   we didn't entertain all questions.

6   MS. WILLIAMS: Okay.

7   MR. FIKENTSCHER: Okay. Here we go. In the

8   absence of a reliable objective test, would an

9   alternative strategy be to treat AVs less like an

10   inanimate object and more like a new human driver?

11   You might measure safety via a lifecycle

12   error rate, an enforced performance via relatively

13   strict liability for AV developers for safety critical

14   failures.

15   The idea is to create a string of incentives

16   to arrive at a high level behavioral pattern rather

17   than regulate the minutia of software.

18   MR. HEMMERSBAUGH: Who would like to start?

19   MR. COGLIANESE: I was going to say, yeah.

20   Rather than regulate the minutia of software I think

21   that makes sense. I don't -- I think the performances

22   of the software and the systems is what really

1 matters.

2   And taking that -- the kind of approach

3 thinking about this as automated driving calls to mind

4 how do we regulate driving. We have people who just

5 go down and they take a test and actually sometimes

6 they can take one test for the rest of their life.

7 That's the only time they're ever tested.

8   And those tests, by the way, to go back to

9 the variable they are highly varied, right. It

10 depends on what truck is coming down the street at any

11 given moment.

12   So I think thinking about this as how can we

13 have a testing or regulatory regime that gets us

14 closer to what we have right now which is -- seems,

15 you know, I guess less than fully rigorous in many

16 states would definitely be an advance.

17   MR. HEMMERSBAUGH: Ian, do you have

18 thoughts?

19   MR. ADAMS: Well, I forget the exact

20 language of the question, but it sounded -- I don't

21 know why we would need to make the liability system

22 any more stringent than it is. And that would be a

1   state-by-state project.

2   So I would be reluctant to move that

3   direction, but certainly sounds like an interesting

4   way of doing it given that it assumes that an

5   objective test is unable to accomplish the goals that

6   we would like to see accomplished.

7   MR. HEMMERSBAUGH: Thanks. Ryan?

8   MR. HAGEMANN: Yeah, briefly. I mean, it

9   sounds like an interesting idea. As with anything,

10   the devil is in the detail. So when we are talking

11   about putting this artificial intelligence, this

12   automated machine through this test what does that

13   actually mean?

14   Does it mean downloading the code onto a

15   central server at, you know, DMV and then they, you

16   know, run it in an AI-like simulation?

17   I mean, what does it actually look like?

18   Are we just running the code, are we installing it

19   into a particular vehicle? Many vehicles are

20   different. So, you know, there's a lot of questions

21   with something like that.

22   I generally am in favor of any sort of

1   approach that takes us away from any, you know,

2   stalking horse potential for regulating the underlying

3   code of, you know, the automaton or the artificial

4   intelligence unit, if you will.

5   So it's an interesting idea. I'd be

6   interesting in exploring it more, but I'm not going to

7   say definitely yes or definitely no right off the bat.

8   MR. HEMMERSBAUGH: Thanks very much to the

9   panel and thanks to all of you for persevering. And a

10   little bit more seriously, we really had some good and

11   thoughtful input I think today and given everybody

12   some things to think about and certainly the agency.

13   And on behalf of the agency, thanks to

14   everybody for participating and coming and listening

15   to this important topic. Thanks to the panel.

16   MS. WILLIAMS: So I'll just close us out.

17   Of course, as Paul just said, that concludes our

18   meeting for today.

19   However, if you do have any further feedback

20   that you would like to provide us either on the

21   morning session which was on the Model State Policy,

22   this afternoon's session, modern regulatory tools or

1   otherwise, you can still do so at the official docket.

2   So it's NHTSA-2016-0090. We'll still

3   consider that since, you know, as we committed as an

4   agency we'll be updating that document. So that

5   docket will be reviewed on a constant basis.

6   On behalf of Administrator Rosekind, I just

7   want to, again, say thank you. And we really did

8   enjoy the enriched conversation. And I meant that

9   very much so with our last panel. I know we stayed a

10 little longer today than we normally do for these

11 public sessions so I appreciate it.

12   You can also reach out to any member of the

13 team. Again, Dee Williams, I serve as the team leader

14 for the FAV policy, Josh Fikentscher, Debbie Sweet had

15 to leave us this afternoon but she was sitting in this

16 seat earlier, and, of course, Michelle Atwell.

17   So thank you and please look for

18 opportunities after the New Year.

19   (Whereupon, at 4:54 p.m., the meeting

20   concluded.)

21

22

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18

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20

21

22

0	2001 125:18	5	101:6 108:2,6

0

0 30:17 163:21

1

1 30:18 58:4
1,000 27:16
1,400 17:11
10 68:8 175:15
   218:15
10,000 218:17
10.4 6:8
100 53:8 176:21
   176:22
10th 14:17
12 1:6 3:6 10:16
   68:8
125 3:9
13th 125:17
15 74:20 106:10
   123:2 125:6 208:8
   239:1,12
15,000 145:16,18
157 3:10
15th 4:19 31:13
16 206:14 208:8
17 206:14 213:17
170 17:12
186 3:12
1980s 147:8
1981 127:9
1985 127:7,9
1986 158:16
1989 127:7 147:12
1991 126:13
1993 125:20
1997 125:18,20
1b 40:17

2

2 37:3
2,500 159:11,15
   160:12 161:16
20 159:5 175:15
200,000 215:7

2001 125:18
2013 63:1 95:6
2015 5:18 31:8
2016 1:6
2016-0090 258:2
2017 50:20
202 1:13
2021 213:9
20th 4:17 7:10
22201 1:12
224 3:13
22nd 19:12
23 8:1
2425 1:11
24404 31:8
25 134:6 187:9
25,000 91:6
257 3:14
2:46 156:20
2d 22:17

3

3 37:3 40:9 42:17
   45:14 76:3 156:21
   163:21
30 218:18
30,000 218:17
30118 132:11
30163 132:13
35 14:12 59:3
35,000 215:20
35,092 5:21 102:6
36,000 5:20
366-0846 1:13

4

4 3:3,4 40:9 41:16
   42:17 50:8 76:3
   163:22
40 169:16 170:1
43 17:13
4:54 258:19

5

5 40:9 41:16 50:8
   76:3 163:22 177:4
50 5:9 8:15 9:14
   73:1
501 45:14
56 53:9
5b 41:14

6

6 154:20
6,500 219:7
60 3:7
600,000 73:3,3

8

8:33 1:7

9

90s 216:9 222:14
93 3:8
94 6:21 7:3 46:20
   181:12 219:6
95 219:6

a

a.m. 1:7
aaa 53:1,4,5,11,13
   53:16 56:5,16
aamva 10:4 33:1
   38:11,15,15,16
   39:1,15,16,20
   40:2,14,20 41:6,8
   41:11 42:3,5,15
   43:3,13 44:2,5,8
   44:12,21
aamva's 39:20
abilities 104:7
ability 21:3 23:20
   33:15 52:6 110:19
   121:13 139:5
   147:2 167:2 177:2
   211:4 259:7 260:5
able 58:6 67:12
   72:8 86:21,22
   91:1 100:18 101:5

101:6 108:2,6
110:14 112:1
113:10 114:1
119:18 123:16
138:17 143:20
144:1,15 153:5
160:16 162:9
164:20 165:4,9
167:2,4 194:12
195:11 212:6
213:3,4 214:5
216:16 217:2
238:15
absence 34:4
   135:5 136:9 254:8
absent 48:5,13
   135:18 156:4
absolutely 77:15
   79:22 144:10
   155:21 182:5
   248:19
absorb 113:4
abusing 149:13
academic 228:4
academies 95:18
academy 95:18
   126:19
accelerate 6:12
   28:10
acceleration
   126:16
accept 73:5
acceptable 184:3
acceptance 181:21
accepting 108:6
access 52:9 238:15
accident 68:6
   103:22 116:11
   192:5 193:7 220:3
accidents 66:22,22
   116:12
accomplish 256:5
accomplished
   256:6

account 180:15,18
200:22 228:21
241:12
accretion 247:6
accurate 259:6
accurately 25:19
achieve 13:15
33:13 52:11 112:1
118:8
act 22:20 31:8
52:12 82:5 84:15
118:1,2 128:15
129:21 132:13,17
133:15 139:12
145:3 148:8
165:14,22 166:12
166:14 167:22
188:15 229:6
246:2
acting 118:12
125:9 158:4 159:1
action 7:11 34:6
55:4 91:2 92:5,8
92:10 98:14
127:13 133:12
134:19 204:7,8
214:6 259:9,13
260:8,10
actions 158:7
169:11
activate 186:5
active 35:16
108:13
actively 82:20
activities 118:18
activity 44:12
50:11 121:21,22
169:20
actors 118:16,18
119:8
actual 55:12 56:3
104:5 234:4
adam 2:9 190:9,9
197:22 208:19

242:6 253:2
adams 2:13
227:10 234:21
243:7 250:18
252:8,10,14
255:19
adaptability
245:15
adaptable 249:21
adaptation 246:7
adas 27:21
add 111:5 116:10
141:6 143:17
176:14 181:6
222:7
adding 30:3
225:15
addition 70:11
189:21 194:16
222:11
additional 12:20
13:11 14:13,19,19
15:11 18:9 21:12
23:15 36:17 38:2
49:3 63:19 65:4
65:15 71:13
102:21 134:14
142:12 189:19
221:2 250:2
additionally 26:18
address 20:6,8
24:4,13 41:7
45:14 52:14 70:12
71:5 73:18 129:21
137:9 145:5 147:1
149:5 152:21
167:10 211:5
242:20
addressed 11:5
26:22 31:5,18
32:9 46:10,13
75:1 135:11 137:9
148:1 151:4

addresses 202:9
addressing 150:1
232:13 247:19
adequate 199:6
adequately 247:19
adhered 25:10
adhering 133:21
administration
4:21 101:20
125:19 159:2
202:4
administrative
148:13
administrator
4:19 5:22 12:12
12:13 34:1 38:9
49:12 62:13 90:12
95:3 125:19 127:8
158:4 159:1
215:18 258:6
administrators
10:4 35:21 38:14
admit 150:19
adopt 55:8 68:22
adopted 66:18
69:11
adoption 163:13
235:21
adult 237:20
238:2
adults 239:5,7,15
advance 13:19
19:21 57:4 163:17
166:16 216:19,22
220:4 229:4
255:16
advanced 7:5
27:20,22 104:8
112:18 158:13
187:16 190:1,22
191:17
advances 212:9
advancing 33:3
53:6

advantage 80:22
advantages 73:10
80:6
advent 38:19
adversely 156:15
advice 62:12
126:2 223:21
adviser 93:5
157:11 158:20
advisers 41:1
advises 227:15
advisory 34:10
126:5
advocacy 109:9
advocate 77:21
78:14 126:9 189:8
advocated 53:7
100:3 189:12
advocates 7:17
11:16 12:7 38:7
62:21 63:1 189:4
189:7
advocate's 72:18
advocating 105:11
172:2
affairs 27:14
62:21 95:1 228:4
affect 77:2 81:20
156:15
affiliate 95:14
affirmative 98:15
affirmatively 94:6
afforded 130:1
aftermarket 26:5
27:17
afternoon 14:3,14
16:20 57:21 60:1
60:10 93:19 157:5
186:8 223:7,12
253:13 258:15
afternoon's
257:22
afterward 217:1

age 199:21
agencies 84:12
87:11 101:18
115:12 122:19
148:4 201:18
202:3 203:5,13
204:5,8,11 206:1
207:1 208:21
209:17 212:8
214:3 216:21
241:6 242:19
245:18,21
agency 10:18 11:5
11:12 12:21 14:3
16:15 20:4 23:8
23:18 33:12 35:6
35:17 47:15,16
48:1,7 51:8 61:14
61:17 62:13 65:3
67:1 69:13 71:12
71:17 72:20 73:1
77:7,11,16 78:2,6
78:10,10 79:17
80:6 81:13 86:4
86:19 90:19 91:1
92:4 99:8,20,21
101:4 102:13
106:4,7 107:9
109:12 111:7
119:7,8 120:6,8
130:13,18 131:15
132:18 133:9,15
134:19 135:2
136:10,18 142:8
142:11,17 143:12
143:20 144:8
146:13 147:11
149:4,9 151:1,13
152:12 153:4,5
155:8,20,22
159:16 166:19
168:9,11 185:2
199:13 210:19
214:14 216:10

222:12 225:16
226:5 241:15,16
241:18 246:15
249:13 250:16
257:12,13 258:4
agency's 80:16
86:20,20 92:9
175:6 187:10
agenda 12:8
agendas 50:15
agents 25:17
ago 147:10 198:9
agree 20:14,19
39:8 77:14 122:22
135:16 136:14
141:5 167:7,16
197:7 212:4
215:10 249:17
agrees 56:5
ahead 4:3 52:21
58:4 59:22 93:16
111:4 125:7 157:4
181:14 185:11
ai 190:22 191:18
230:16 233:14,16
233:16 256:16
aid 10:17
aide 63:3
aim 102:6
aims 53:16
air 67:17 68:21
187:16 195:10
201:2 220:5,16
222:13,15 237:17
246:2,2
aircraft 66:11
202:6
airlines 90:7
airman 66:12
92:14
airports 68:22
aisles 59:12
alarming 5:17

alarms 216:17
alert 187:18
algorithm 89:14
230:18 231:2
algorithmic 230:8
230:16
algorithms 233:6
233:21 234:7
alj 148:16,16
alliance 129:12
allocate 18:5
allow 21:21 32:6
54:18 94:15
146:21 161:3
176:11 177:18
allowed 94:7
112:20 212:14
allowing 21:6
allows 7:22 22:21
31:8 86:9 142:20
159:10 165:15
alluded 101:5
115:19 130:20
151:3 198:8 200:7
214:21 217:13
alternative 111:19
228:7 254:9
alternatively
230:22
altogether 7:8
129:11
amend 32:5
america 128:15
129:21 211:18
american 5:15
10:3 38:13 83:16
101:10 102:3
248:15 253:9
americans 13:4
129:6
america's 5:9
amount 70:18,19
71:19 86:14 94:8
110:17 166:14

167:14 170:5
202:16 249:18
251:1
ample 133:9
analogous 173:11
analogs 209:12
analyses 241:7
analysis 60:21
78:15 103:11
114:14 141:16
165:1 169:5
216:21 232:6,8
241:14 250:3
analyst 226:22
analyze 86:22
115:4 249:4
251:20
andresssen 198:12
announced 6:6
announcement
153:18 154:6
annual 152:21
another's 80:21
80:22
answer 56:22
108:2 109:7
201:12 229:18
230:21 234:10
242:21,22 243:1
248:13
answering 112:22
122:21 148:2
answers 7:15
anti 81:19,19,19
anticipate 55:3
anybody 88:10
103:8
anymore 156:6
anyway 182:21
apologize 117:14
124:21 224:5
apparent 76:21
236:4

appeal 244:12
appealing 64:20
applaud 17:15
applauds 39:1
applicable 22:19
  25:10 29:14 30:16
  90:3
application 22:5
  23:5 29:19 122:13
  135:22 159:21
applied 136:16
  137:3 154:10
  202:12 229:12
applies 31:12
  165:22 244:8
apply 41:13 73:4
  164:10 177:21
  225:6 241:5
  247:10
appreciate 32:22
  37:15 151:9 185:4
  258:11
appreciates 39:15
  49:19
approach 9:6
  10:12 19:19 22:15
  28:6 44:9,11
  63:11 75:19,21
  77:21 82:16 91:12
  98:3 105:12
  106:19 112:6
  118:12 121:21
  143:4 147:15
  168:20 169:17
  170:7 174:9
  175:13 224:19
  236:8 244:13,14
  255:2 257:1
approaches 174:7
appropriate 24:22
  33:4 34:3 36:11
  37:8 40:13 54:18
  72:13 74:6 84:1
  151:12 153:8

175:21,21 184:22
190:16 196:5
233:12 250:20
appropriately
  119:20 175:22
  242:19
approval 3:8 11:9
  35:14,16 58:20
  60:19 93:2,8,21
  94:3,4 97:2,6,13
  97:14,22 98:6,8
  98:15 99:21
  100:11,12,17,19
  101:7,16,19
  102:21 105:8,11
  105:21 106:8,14
  107:22 109:10,13
  109:16 111:13,13
  111:21 112:11,18
  114:8 117:16
  124:6 139:8
  162:11 180:12
  205:3
approvals 107:16
approve 94:6
approved 39:12
approves 98:7
approximately
  59:3
apps 207:14
arbitrage 211:21
area 6:20 15:22
  44:6 52:13 82:19
  87:17 126:4 242:6
areas 10:6,9 34:8
  36:11 39:11,12
  49:1 51:9,14 84:8
  84:8 131:9
aren't 47:21
  141:19 147:22
  230:5 232:7
  253:10
argument 146:12
  152:18 155:22

arising 133:6
arlington 1:12
arm 32:19 205:2
army 1:10
array 146:11
arrive 254:16
arriving 4:4
art 135:6
articular 64:9
articulat 172:2
articulate 65:1
  183:5
artificial 181:7,16
  230:7 233:6,21
  234:6 247:12
  256:11 257:3
aside 225:19
asked 31:15
  182:11 219:4
asking 75:6 94:11
  118:12 149:8
  183:1 188:18
asks 37:16
aspect 23:1 46:9
  46:19 165:21
  212:17 222:8
aspects 29:6 41:9
  43:2 49:20 84:2
  113:17 161:5
  163:8 172:7 173:4
  183:5 192:21
assemblage
  188:11
assembly 66:9
  209:2
assertion 29:12
assertions 144:4
assess 43:20
  146:11 231:8
  232:9 249:14
assessable 43:20
assessing 233:12
assessment 26:7,9
  26:11,15,20 27:5

37:16 66:21 70:3
74:17,19 75:9
83:8,13 85:3
88:19 106:11
107:9 119:2 123:3
assist 13:13 14:9
  15:6 122:20
assistant 27:20
  95:12 125:9
  185:16 186:9
assisted 213:15
assisting 35:16
associate 62:18
  227:13
associated 42:9
  131:16 247:20
  252:4
association 10:3
  17:10 19:1,3,4
  27:15 38:14 96:7
  154:20 189:3,7
assume 134:13
  139:19 241:15
assumes 256:4
assuming 111:2
  164:15 168:4
  218:19
assumption 166:4
  217:8
assurance 3:7
  26:12 58:20 60:2
  60:13,14,20,21
  61:15 63:11 64:8
  64:22 65:2,21
  70:2,9 73:14,15
  74:7 77:4,8 79:8
  80:8 83:15 88:1
  89:21 93:2 94:3
  97:14 98:11
  112:13 129:15
  162:10,12 169:18
  203:1
assurances 89:17
  102:22 119:19

180:12
assure 61:4
  164:20 168:22
assured 72:6
  108:12
assures 180:17
attached 41:19
attack 234:12
attempt 68:10
  130:3 191:2
attempting 229:22
attention 196:16
  240:1
attestation 113:22
attitudes 155:5
attorney 93:5
  124:22 157:11,18
  259:11
atwell 2:14 15:2
  258:16
audience 59:6
  69:22 85:20 88:11
  125:14 153:16
  185:7 206:12
audio 260:4
aug 78:20
augment 65:2
  78:18,19
augmenting 64:21
  69:20
authored 227:7
authorities 10:16
  11:1 14:7 58:18
  106:12,13 177:15
  231:14 232:10
  233:3
authority 3:9,10
  11:10,10 33:18
  42:8 51:20,21
  124:15 125:11
  127:11,11,16
  128:17,18 129:1,4
  129:8,16 130:12
  130:19 131:4

132:10,11,13,20
133:9,13,18 134:6
134:14,15 136:13
136:22 137:16
138:6,10 139:9,20
141:9 142:8 145:4
145:22 146:4,7,13
146:19 147:21
148:9,16 149:1,13
150:8 154:10,14
155:7 159:7,10,13
160:7,10,14,21,21
161:8,8 163:15
164:5,10,11 168:5
168:20 174:21
175:6 182:7,13,17
182:21 183:6,22
211:4 229:7,10
251:17
auto 38:7 45:10
  62:22 64:14 84:15
  126:12 129:12
automaker 99:9
automakers 19:1
  19:4 25:6
automated 1:3
  4:10,16 6:13,14
  7:4,9,18 9:2,3,8
  9:11 10:1,11,21
  11:2 13:9 14:10
  18:4,5 19:20 21:7
  21:20,22 23:3
  24:21 25:15,18
  28:4,6,19 29:19
  30:12,21 31:22
  32:22 33:5,19
  35:22 36:21 37:12
  38:17 40:10,18
  41:14 42:14,20,22
  50:7,12,18 52:8
  53:20 58:9,19
  61:13 62:7 65:22
  72:21 73:20 75:22
  76:4,11 77:17

88:5,21 90:1
93:22 94:12 95:5
97:3 111:18
112:17 115:6
137:1 139:1 147:9
161:13 164:15,21
171:19 172:15
174:2 178:15,16
178:19 186:13
190:1 191:18
196:1,15 221:11
221:14 228:15,22
231:12 233:1
234:5 248:11,11
255:3 256:12
automatic 161:10
automating
  247:17
automation 56:19
  76:8 95:21 97:18
  97:20 113:16
  120:17 158:18
  159:17 164:17
  189:18 191:18,21
  213:18 227:2
  234:7 246:18,19
  246:20,22
automaton 257:3
automobile 17:14
  81:6 89:13 151:16
  152:1,16 154:19
  240:11
automobiles 249:1
automotive 13:2
  64:14 128:10
  169:15 172:5
  201:3 209:4,7,12
  218:7
autonomous 26:4
  26:5 38:16 39:16
  41:11 42:9 44:13
  44:15 53:12 70:17
  72:21 135:15
  140:12 147:6

159:4 170:15,18
176:20 177:5
190:21 194:1
213:20 227:8
231:8 234:3 240:3
autonomy 163:21
  189:16,21 212:17
av 31:6 33:21 37:1
  39:22 53:16 56:7
  254:13
availability 43:14
  159:22
available 26:4
  43:13,16 46:22
  47:1 105:19 107:5
  155:8 243:1 244:2
avenues 246:14,16
average 158:5
  215:12 237:20
  238:2
aversion 117:17
avert 32:10
aviation 66:2,5,17
  69:1,15 80:18
  83:3
avoid 28:13 31:20
  32:10 238:9
avoiding 13:13
  33:12
avs 34:14 36:13
  254:9
aware 30:9 215:15
  241:19
awareness 170:16
awesome 6:17
awhile 165:12
  216:15

---

b

back 6:22 14:17
  14:21 15:8 17:3,4
  27:1 58:5 60:9
  71:14 72:11 76:14
  92:14 95:6 100:4
  112:21 121:1

156:21 157:2
bridge 135:13
brief 125:14 157:1
157:22 186:1,6
214:20 223:20
briefly 229:18
256:8
brilliant 103:4
brilliantly 66:15
bring 78:9 140:9
153:4 168:5
177:18 178:3
182:8
bringing 153:3
169:14
brings 207:22
broad 53:15 66:4
67:21 207:22,22
208:4 210:20
233:15
broaden 229:19
231:10
broader 111:11
242:14
broadly 122:3
168:21
broken 23:22,22
101:2
brought 182:19
brown 127:1,5
bryant 2:19 95:11
100:15 101:5
104:18,20 107:21
108:21 109:22
110:17 119:18
122:22 123:12
143:8 162:7
buckets 163:1
bucky 133:21
build 9:9 51:13
176:10 250:22
252:3
building 5:12 9:13
28:3,11 158:10

170:4
built 110:11
138:15 237:22
247:4
bunch 213:19
burden 21:12
burdens 103:8
burdensome
112:8
bureaucracies
242:10
business 80:18
103:10 104:14
108:19 116:12
144:21 212:16
227:16 228:9
243:17
businesses 15:22
80:19 110:20
butcher 124:22
button 60:8 125:3
138:20 224:1
buy 212:15
bypass 148:15

c

c 2:1 3:1 4:1 45:14
c2d 22:3
c2h 22:4
cab 138:4
calculating 116:13
california 46:14
85:5 158:13
227:15
call 7:15 13:17
28:7 34:2,16
100:3 108:2 124:3
199:3 200:9 203:8
213:16 217:14
233:4
called 58:13 82:3
138:22 156:14
190:4 203:15
230:8 238:19

calling 16:9 200:8
250:2
calls 51:19 244:14
255:3
calm 108:6
campaigns 206:19
canada 53:10
can't 78:21 89:20
121:9 133:2
145:18,19 148:9
160:12 179:22
204:20 213:22
241:15 242:13
capabilities 35:2
37:2,4 202:15
capability 54:5
capable 41:21
42:1 247:19
capacities 127:6
capacity 107:14
189:4 249:4 250:7
capital 1:19
capitalist 198:11
capitalized 119:3
captured 101:12
car 33:7 55:16
92:16 98:21
109:15 110:11
137:19 166:15
192:9 201:6,7
210:12 215:11
218:19 220:2
234:4
cards 59:9,13
117:11 185:5,7,19
care 30:15 79:3
122:7 123:13,18
191:7
careful 208:10
carefully 65:4
173:6
cargo 216:15,17
carmakers 205:14
205:16

carnage 222:11
carolina 95:14
carried 5:10 33:6
carriers 67:17
68:21 80:20 90:8
carrot 111:15
142:21 143:15
153:8
carry 6:15
cars 7:7 37:2
45:11,13 77:19
78:3 96:2 147:7
190:21 192:5
198:18 199:3
207:16 208:9
213:21 216:1
221:10,21
cart 49:5 131:2,21
136:5 197:6
cary 2:12 227:22
236:9 243:4
248:11 252:17
case 74:16 81:5
88:10 92:18 100:3
108:18,19 114:20
122:20 137:20
138:14 147:4
151:11 152:12
153:12,12 155:21
186:22 198:15
202:16 209:4
214:14 217:20,22
239:4 247:5,5,5
cases 118:9 134:1
138:7 178:22
180:4,5 205:18
243:15
casey 224:14
casualty 96:10
227:18
cat 230:20 231:2
catastrophic
220:2

categories 83:22 84:5 118:16
category 156:14
catherine 2:9 38:11
cathy 38:12
caught 72:14
cause 40:15 210:6
cautions 241:19
cautious 75:19,20
cease 241:5
center 1:10 95:15 126:12 190:11 227:1,9 232:4
centers 62:14
central 151:16 168:19 183:18 256:15
certain 22:22 23:20 24:5 30:3 41:17,17 43:1 54:6 78:7 103:15 113:10 135:10 139:2 144:5 170:21 176:2,16 192:5 213:1 218:20 238:8 239:10 245:12
certainly 47:16 61:9 70:6 78:20 79:18 86:15 87:13 118:6 130:13 131:22 134:5 137:4 142:12 163:17 181:4 208:13 244:11 249:12 251:17 256:3 257:12
certainty 201:19 201:19
certificate 259:1 260:1
certification 22:8 48:3,9 63:13,21

64:10,15,21 65:3 74:13 80:4,6,10 82:1,11,21 97:5 101:13 102:10 108:1 109:1 110:2 112:12 114:9 117:15,16 120:15 124:8 156:2 176:10,11 214:10 214:12 215:4
certified 88:1,3 120:18 121:6 165:16
certifies 66:10
certify 66:11,13 88:7 121:20 259:3 260:3
certifying 120:15 166:7
cetera 209:7
chair 95:16 158:20
chairman 134:4,5
challenge 11:4 29:21 79:8 92:22 111:9 168:19 193:16 199:1,5,12 206:16 212:6
challenges 10:13 13:11 20:3 112:15 115:17 143:5 191:8 199:20
challenging 141:13 182:3 247:11
chance 187:5 250:12,12
change 33:10 92:11 98:22 115:7 192:1,19 193:5 195:9,17 219:18 224:20 246:15
changed 152:3 202:16 244:9

246:1
changes 3:12 186:17 195:11 200:6 204:13 212:6,11
changing 161:8 192:21
channels 56:17
chaos 113:5
characterized 211:20
charge 182:22 183:3
chase 217:1
check 15:9
checking 122:10
checklist 74:20
checklists 232:19
checkmarks 109:3
checks 109:3 129:17
cheese 68:7
chief 60:3 62:10 62:11,12 125:9 127:7 158:3,22 185:16 186:9 223:11
child 230:15 238:12,18
childhood 239:11
children 222:15
choice 6:22,22 210:9
choices 193:3
choose 71:11 196:22
chooses 71:10
chorus 5:1,4
chosen 14:16 134:3
christine 2:8 188:19,20 189:14 195:12 197:22 207:7

christine's 222:8
circle 17:3
circles 179:12
circumstances 23:19 24:18 134:15 247:10
citizen 189:11
citizens 34:5
civil 91:6 92:8 226:22
clamann 2:10 189:15,20 191:11 205:21 212:4 216:6 219:9
clarification 13:12 41:12 42:15 43:3 56:11
clarifications 20:10 32:8
clarified 23:12 31:18
clarify 29:5 31:15 88:17 89:10 93:10
clarity 115:3 140:9
clarke 2:15
class 204:18
classification 40:12
classifications 40:15
claybrook 38:8
clean 246:2
cleanup 226:3
clear 7:17 8:16 9:2 11:14 28:22 76:1 85:13 90:17 91:10 105:10 155:11 160:15 161:9 199:22
clearly 24:14 33:4 36:6,21 51:1 110:1 140:20 183:5 198:15

clients 158:8
  227:15 235:7
clip 211:2,15
close 10:2 92:21
  214:2 238:21
  257:16
closely 25:7 28:12
  37:7 76:7 143:7
closer 35:14 105:3
  255:14
closing 3:14
clubs 53:13
coalition 49:13,16
  49:19 50:21 51:19
  52:13 102:9
coalition's 50:3
cockpit 213:1
code 199:4 200:19
  205:17 210:14
  211:1 233:8
  256:14,18 257:3
codify 21:18 29:17
codifying 47:17
coexistence
  178:11
coffee 16:1
cogliancese
  252:12
coglianese 2:12
  227:22 236:11
  244:21 248:16
  254:19
cognizance 179:19
cognizant 170:6
coin 190:22
collaborate 16:5
  87:10,13
collaborated 40:5
collaborative
  54:12
collaboratively
  45:2 68:16
colleague 6:3 38:4

collect 59:12
  103:18 185:21
collection 43:21
  104:4 142:13
  155:10 249:7
collective 110:20
collectively
  110:15
college 109:15
collide 191:4
colliding 198:9
color 192:19
combination
  106:10 169:4
combined 81:12
come 5:2 16:8,13
  17:3 46:1 59:12
  66:21 76:14 89:7
  91:12 103:5
  104:15 128:2
  149:13 151:9
  153:16 157:19
  162:18 165:11
  171:4 177:15
  193:22 194:9
  200:14 203:16
  206:9 217:1,22
  218:8,14 219:16
  219:17 250:4
comes 51:2 74:10
  81:4 107:11
  139:21 153:9
  192:8 194:11
  199:6 203:6
  230:20 231:1
  243:10,10,19
  245:6
comfort 110:16
  168:2 181:2
comfortable
  118:11 243:7
coming 48:18
  67:11 74:4 117:11
  136:3 138:17

139:6 159:6 186:4
  192:18 228:10
  230:19 255:10
  257:14
comma 138:21,22
command 188:3,4
commend 51:8
  128:6
comment 19:10
  44:22 65:20 84:7
  94:13,14 128:2
  214:7,21 216:6
commentators
  54:8
commented
  210:19
commenters 76:6
comments 8:4
  13:18 15:20 19:11
  19:22 23:15 27:8
  31:4 32:14,21
  37:22 40:7 50:13
  56:21 71:5,21,22
  74:17 77:22 86:3
  89:7 96:16 126:20
  129:10 143:8,10
  164:13 166:20
  187:4 192:11
  210:18 231:11
  232:6
commerce 95:9
commercial 27:18
  41:8 67:17 202:5
commercializati...
  81:11,21
commercially
  26:3
commission 18:11
  18:15 44:3 84:13
  189:13 203:17
  233:8
commitment
  17:15 49:19 99:13
  117:14

commitments
  223:17
committed 8:5
  12:8 258:3
committee 40:20
  50:17 95:9,16
committees 40:19
common 30:6
  54:14 73:7 101:21
  121:2 149:14
  203:4 204:1 247:4
commonsense
  25:3
commonwealth
  259:18
communicate 36:6
  36:21 37:9 177:1
  178:10 207:2
communicated
  207:6 230:5
communicating
  56:14
communication
  37:10 193:9
communications
  56:17
community 12:6
  79:6 80:19 253:7
companies 17:5
  17:10 36:20 69:3
  84:19 96:7,11
  107:2 108:18
  115:9 118:1 119:1
  119:17 121:5
  166:5,15,18
company 1:19
  17:2,12 80:22
  201:3
compar 219:10
comparable
  164:12 169:8
  171:21
comparative
  173:19

compare 171:18
compared 157:16
  209:5
compares 139:14
comparing 97:4
  173:21 174:13
compel 132:18
  133:12
competence
  228:15,16
competencies
  122:6
competitive 26:20
  61:22 80:22 81:19
complete 33:2
  86:16 109:4
  111:16
completely 116:10
  176:8 197:7
  198:20 240:13
complex 147:22
  155:17 228:18,19
  248:21 249:2
complexities
  47:22 48:10
  131:15
complexity 110:10
  147:6 173:8,10
  178:9 179:14
compliance 22:7,9
  22:10 23:17 63:13
  67:7,12 68:3,12
  68:18 82:6,13
  92:2 126:2 158:8
  173:12 214:17
compliant 22:22
  32:7 166:8
complicated 33:9
  169:2,3 173:1
  195:10 196:13
  210:13 222:3
  233:20
complies 162:5

comply 30:16
  79:20 82:17
  161:22 166:6
  180:13 188:3
  197:1,1
complying 107:2
  166:1 214:17
component 17:18
  31:12 66:11 174:7
  235:20
components 8:6
  8:14 27:18 74:22
  74:22 187:13
  188:8
comprehensive
  7:11 39:19
comprised 25:9
computer 98:1
  198:21 213:14
computers 199:4
conceivably
  111:17
conceived 64:4
  247:2
conceiving 112:7
concept 26:11
  94:16 161:19
  176:9 184:21
conception 66:7
concepts 115:10
concern 22:17
  35:1 48:13 71:19
  79:5 85:2,8 102:1
  107:12 117:18
  195:22 222:18
  236:11
concerned 22:15
  26:14 34:9,17
  35:20 36:22 51:11
  72:19 75:13,17
  86:11,12 111:7
  155:4 195:13
  197:9 207:22
  208:11,16

concerning 208:5
concerns 11:22
  26:18 45:18 46:3
  46:6 47:9 74:18
  85:2 110:8 202:12
  203:14 240:12
conclude 223:6
concluded 165:7
  258:20
concludes 257:17
conclusions 241:8
concurrent 164:1
  177:16
concurrently
  183:10
condition 28:18
  30:1 106:16 230:9
conditions 22:22
  30:20 41:18 168:7
  171:15 173:14
  192:5 240:2
conducive 247:1
  248:12
conducted 1:5
  55:13 61:1
conducting 43:18
conference 1:10
  57:2 208:7
confidence 222:18
confines 205:9
confirms 9:15
  17:20
conflicting 20:1
  22:1
conflicts 22:20
  24:4,9,13 25:4
  55:15
confronted 250:18
  251:3
confusion 32:10
  37:1 40:16 42:7
congestion 50:2
congress 31:15
  64:20 82:10,10

90:15 126:18
  134:14 137:8
  148:22 163:16
  167:8 175:12
  181:11 182:20
  183:4,12 184:7,8
  184:12 187:16
  189:13
congressional
  31:13 105:14
congressman 63:4
congress's 99:15
conjunction 35:6
connected 41:10
  41:13 159:4 209:3
connectivity 95:21
connotation 245:4
connotations
  245:6
consensus 5:13
  67:8 82:14,18
  234:18
consequences
  31:21 186:17
  187:1 240:21
consequently 29:5
consider 9:7 10:7
  18:4 24:22 25:8
  42:6 55:2,6 56:16
  59:16 64:19 75:10
  111:10 117:19
  120:16 162:8
  250:17 258:3
considerable
  11:18 166:14
considerably
  215:7
consideration
  11:15 24:3 32:13
  37:22 40:4 162:3
  174:13 181:16
considerations
  36:16 118:4,5,5,6
  130:4 140:15

172:10 180:18
191:10
considered 39:15
54:17 96:2 122:3
122:16 130:5
154:13
considering 76:6
82:20
consist 14:11
consistency 33:13
39:22 194:21
195:8
consistent 9:9
10:12 18:10 19:19
20:15 25:3 39:6
44:9 54:2 106:22
112:4,5 115:7
176:9
consistently
243:12
constant 101:14
201:5,6 244:14
258:5
constantly 30:12
constitutes 46:4
199:6
constraints
235:17
construct 173:9
constructed
242:10
constructing
107:7
construction
133:8
consult 34:21
consumer 32:19
36:5,12 39:3
45:15,15 54:2
61:19 94:21 127:3
133:14 145:3
148:8 181:9
186:14 189:3,7,8
189:9,12 195:13

195:21 196:6,10
198:16,18 208:3
208:16 222:18
consumers 26:13
36:22 37:9 45:10
53:18 61:14 65:7
76:10 156:10
180:22 189:8
196:10,17 201:10
204:12 214:19
220:18 243:21
244:4 248:15
251:7
consumers' 155:5
consumer's 32:15
32:18,18
consuming 244:6
contact 244:15
contained 74:20
containing 238:17
contemplating
150:6
content 225:5
context 12:20 24:5
31:19 64:14
100:11,20 118:21
137:1 144:9 148:5
154:8,17 159:7
171:17 179:3,9
204:16 225:22
237:8,17 238:11
240:1,3 241:17
245:12 252:2
contexts 211:17
245:13
contextual 247:6
contextualizing
247:14,21
continually 103:9
continuation
102:9
continue 9:21
11:19,21 14:20
16:5 39:2 87:10

93:7 136:11
144:10 223:4
continued 45:1
50:14 52:19
103:11
continues 91:1
250:6
continuing 12:15
16:8 153:4 156:2
253:14
continuum 92:1,2
105:8 192:12
220:7,9,12
contract 117:2,4
190:5
control 30:14
37:18 51:15 98:18
113:12 135:15,21
135:21 147:16
175:22 177:3
187:17 189:18
192:22 193:15
202:5 209:6
212:20 213:2,8
controlled 66:7
161:13 166:17
controls 83:4
87:16
controversies
205:19
convening 18:15
conventional
133:22 137:6
conversation
77:10 91:13
173:17 175:12
180:14 258:8
conversations
180:11,14 198:7
conversely 99:18
convey 116:4
conveyance
116:15 117:6

convince 246:15
cooperative
121:10 158:17
coordinated 44:17
coordination 10:3
17:16
core 126:16 136:6
corner 180:4
corners 116:17
corporate 62:16
126:2 158:5,10
corporation
164:22
correct 114:19
122:15
corrected 211:12
correction 20:7
203:3
corrective 92:10
202:14
cosmetic 219:18
cost 65:6 72:15
232:6,7 241:14
costs 21:11 217:15
couldn't 180:2,7
188:9 223:16
counsel 17:9 60:3
62:10,11,12,16,17
62:18 93:20 95:10
96:5 125:9 127:7
127:8 158:4
185:16 186:9
223:11 259:8,11
260:7
counsels 158:8
counterparts
109:11 129:7
country 52:6
247:3
couple 57:5 59:11
70:20 88:10 146:2
159:13 168:5
175:2 217:4
224:10

courage 224:6
course 15:4,16
  16:4 33:22 83:8
  96:2 129:18 130:7
  204:7 214:6
  257:17 258:16
coursework
  189:22
court 16:16 89:5
  133:11 148:9,12
  149:16 164:14
courts 122:19
cover 43:4 58:18
  59:15 73:20 76:3
  145:18 157:5
  179:4
covered 38:5 58:8
  76:2 150:19 185:9
  231:17
coworkers 12:17
cpcc 145:15
cpsa 148:7
cpsc 126:21
  136:21 145:20
  146:2,8,18 148:12
  150:7 214:8,11
  223:15
cram 109:15
crash 18:7 71:2
  72:12,15 119:5
  237:19
crashed 216:14
crashes 6:21 7:6
  12:15 37:2 70:19
  70:22 165:3 180:4
  181:13 222:14
create 18:11 22:11
  22:16 23:10 28:7
  44:8 46:1 154:9
  191:9 244:22
  254:15
created 108:5
  239:13

creates 39:6
  159:21 199:20
  201:8,18
creating 20:2
  46:21 110:21,22
  245:14,16
credibility 122:7
criminalizing 55:9
crises 131:7
  144:16,20
crisis 47:11 55:5
  136:8
criteria 61:4,18
  79:14 83:14,14
critical 8:13 20:6
  28:1 30:14 31:2
  37:17 85:10 87:2
  248:2 254:13
critically 19:20
  28:21
criticism 135:8
criticisms 135:2,7
criticized 136:19
crossing 23:22
crucial 50:21
  248:19
curious 80:5,12
current 10:22
  28:17 32:11 34:2
  35:13 45:19 63:12
  63:20 74:19 112:4
  140:16 141:4
  148:21 159:10,13
  160:12 163:8
  173:20 176:15
  242:20 246:8,13
currently 4:9
  30:17 31:11 71:4
  84:9 94:19 105:19
  125:21 126:6
  154:18 160:22
  173:3 175:7 179:4
  228:2

curtis 2:9 38:11
  38:12,13 45:8
customer 235:19
cyber 87:12
  171:14,19 172:1
  172:15,16
cybersecurity
  74:22 84:8,20
  87:16 158:21
  171:1,6 191:9
  193:22 194:4,7
  197:13,17 207:15
  240:13

d

d 4:1
daily 152:2 206:7
damaged 37:14,18
dangers 204:14
data 43:10,14,15
  43:19,21 46:18,22
  47:1 60:22 74:21
  78:10 84:7,21
  85:7,10 86:8 91:7
  94:22 104:2,4,4,8
  126:20 141:8,11
  141:17 142:13
  155:10,12 159:17
  160:9 163:10
  186:18 188:7
  202:17 249:4,6
  250:3
database 25:9
data's 46:22
date 35:18 120:20
  260:14
dates 187:7
daughter 6:3
david 2:11 5:20,21
  5:22 49:11 94:18
  94:19 97:10
  100:13 103:1
  104:19 105:5,6
  109:14 110:9
  115:19 162:6

david's 95:11
  107:12
day 16:18 77:9,10
  81:3 110:21 119:7
  132:4 154:5
  163:20 164:14
  166:5 167:14
  191:12 200:12
  204:19 219:7
  246:18
days 16:8 66:22
dead 244:11
deadline 50:13
deal 67:15 68:13
  78:1 84:13,14
  102:15 119:13
  143:19 144:1
  169:1 173:4
  179:21 181:19
  193:19 194:12
  205:3 206:9 213:3
  213:5 230:15
dealers 36:20
  154:19
dealing 137:5,11
  142:6 143:4
  152:10 178:8
  202:4,5 206:2,11
  206:12 212:12
  213:12
deals 140:3
dealt 46:5 119:20
  144:21
dean 228:4
deaths 216:2
debatable 219:1
debate 77:9 82:9
  167:13 215:17
  216:1
debbie 2:17 15:1
  258:14
decade 142:5
decades 11:6 51:5
  77:18 107:17

133:19 243:15,15
december 1:6
decentralized
  227:3
decide 109:9
  177:12
decided 139:3
  172:10 220:11
deciding 34:13
decision 41:4
  107:10 111:8
  130:2 149:20
  183:3,17 231:4,9
decisions 35:17
  87:2 173:1 176:17
  176:22 179:5
  181:17 188:7
  247:7
decorum 54:20
dedicated 53:6
dee 2:2 4:8 49:14
  157:13 258:13
deemed 180:13
deeming 161:22
deep 35:4
defect 28:16 72:14
  114:5 133:3,8
  153:20 154:11,12
defective 28:16
defects 178:1
  205:8 221:21
definable 135:1,6
  135:7 155:12
define 72:4 100:6
  167:4 174:1 179:8
  180:15
defined 26:2 41:2
  42:11,21 120:17
  135:3
defines 25:14 76:1
defining 51:1
  162:22 168:19
definitely 16:16
  77:7 198:7 206:21

223:18 255:16
  257:7,7
definition 25:14
  25:19 43:4,7 61:7
  61:10 97:13 133:7
  174:5
definitions 61:8
  97:17 98:2 136:3
  136:16
degrading 181:3
degree 33:13
  202:18 226:16
  245:3
delay 21:14 29:3
  65:5 111:10
  217:12 218:15
  222:10
delays 32:11
delegations 82:3,4
delineate 33:4
delineates 9:4
deliver 39:2
demand 177:5
  237:11
demanding
  240:17
democratic 95:10
demonstrate 61:2
demonstrating
  19:18 168:11
  171:22
denominator
  101:22
dense 55:17
department 4:15
  6:10 7:10 11:20
  92:13 95:5 128:6
  129:2
departments 63:2
department's
  93:19
depend 64:3
  149:22 172:12

dependent 187:12
depending 77:18
  106:18 122:14
depends 15:20
  52:9 220:6 255:10
deploy 21:14
  25:21 55:21
deployed 29:9
  35:5 36:1,15
  44:10 61:6 65:7
  65:13,15 76:10
  105:20 161:14,15
  236:1 251:21
deployer 121:21
  123:12
deployers 99:6
  162:8 166:22
deploying 27:20
  28:19 56:2
deployment 6:12
  7:12,18 9:10
  10:17 13:1 14:9
  14:10 23:11 25:14
  25:15,20 26:2,8
  26:16 28:10 36:13
  40:1 44:15 50:5
  52:2,15 121:22
  161:10 165:21
depth 131:15
  136:10 143:21
  167:13
deputy 158:22
  159:1 228:4
describe 25:20
  33:4 97:1
described 105:5
describes 43:9
deserves 184:1
design 9:22 21:7
  21:10,13,19 55:15
  61:3,15 82:7
  89:13 107:9 122:3
  123:5 169:7 194:1
  240:11

designation 40:11
designed 7:21
  53:16 72:6 94:11
  111:14 180:6
  240:4
designer 25:17
  61:1 123:9
desirable 18:11
desired 188:5
detail 16:16 58:14
  87:3 197:19
  256:10
detailed 13:6 14:2
  19:11 99:21
details 14:13 34:7
  40:7
detect 88:22
detected 236:3
detectors 216:16
determination
  34:19 129:22
  204:6
determinations
  22:12
determine 37:8
  115:5,22 211:11
determined 195:1
determining 18:3
  219:11
develop 21:9 35:4
  68:1 84:6 87:14
  91:6 101:14
  102:17 146:21
  169:21 203:14,19
  205:19
developed 10:2,10
  10:21 65:12
  122:20 238:3
  243:21
developer 25:17
  61:1 75:18,20
  85:12 98:1,4,6,7
  98:11,12,15 100:4
  106:7,15 111:22

121:20 179:19
developers 9:13
30:19 54:13 55:1
55:3 99:4,6 107:8
254:13
developing 13:8
17:17 24:20 27:19
74:4 180:19 242:8
development 7:12
9:10 10:7,12 14:9
18:10,19 21:11,19
25:9 28:2 29:4
31:3,21 39:18
41:1 81:10 83:18
85:9
develops 175:16
deviate 51:6
deviating 235:2
device 59:19 191:1
198:19 199:11,17
209:7 214:1
devices 15:13
198:16 202:6
204:16 213:16
250:16
devil 256:10
devise 200:21
dhs 171:4 197:15
diagnostic 144:6
diagnostics 144:8
dialog 13:10
226:10 244:13
dialogs 223:17
253:6,8
dictate 44:14
dictionaries
204:19
dictionary 210:3
didn't 57:12
108:16 124:21
128:20 153:22
167:12 180:5
185:4 221:3
231:20 237:22

242:11 254:5
died 102:6
differ 209:11
difference 140:20
167:17 174:19
differences 32:4
137:2,4 148:4
208:19
different 21:8
40:4 59:16 63:19
63:20 66:3 67:2,4
68:8 72:22 73:11
78:4 80:18,19
82:3,16 84:5
92:12,13 94:4
99:10 100:1 103:4
123:9 140:17
145:16,18 161:1,2
161:6 170:15,20
171:2,7,11 172:16
172:20,21 176:19
177:10 187:6
195:3,4,7 200:3
200:16 202:17
204:8 206:1,12
207:13,18 209:8
220:8 222:9,13
229:10 231:16
235:8 243:13
256:20
differently 29:8
31:5 57:18
difficult 99:8
114:18 120:12
160:1 211:8
225:13,14 251:19
difficulty 112:17
113:3 230:18
digital 190:14
digitized 198:20
dilemma 56:4
242:20
diminish 155:14

direct 82:10 188:7
directed 137:17
direction 56:8
85:5 105:14 109:9
150:12 179:12
256:3 259:5
directives 199:22
201:20
directly 42:6
93:12 148:9 151:4
226:20
director 27:13
38:13 62:21 189:2
189:6 227:12
228:2
disabled 50:1
disabling 30:3
disadvantaged
115:10
disagree 76:20
disclose 116:20
disclosure 69:2
72:11 86:17 90:20
91:5
discomfort 201:17
discourage 55:22
discourages 36:3
discretion 251:2
252:7,9 253:21
discuss 8:13 10:14
93:20 228:13
229:20 232:2
discussed 10:10
14:7 68:2 94:8
121:6 182:11
186:13 203:6
205:6
discusses 23:17
discussing 246:13
discussion 16:8
39:13 42:4 50:10
60:10 80:20 85:16
93:7 96:20 111:6
120:14 124:6

129:18 139:8
156:19 157:6
162:21 165:17
170:10 181:7
182:6 194:16
199:14,18 217:7
223:19
discussions 64:8
124:9
disengagement
46:15
disengagements
46:17
disintermediate
199:9
disparate 52:5
display 192:19
displays 195:4,7
disproven 144:7
disrupted 199:9
disrupters 167:19
disrupting 55:7
disruption 55:9
distance 7:2
175:21
distinct 40:15
60:17
distinction 41:20
210:20
distracted 42:18
distribute 56:18
district 149:16
diverse 62:15 99:5
diversification
115:16
diversity 99:7
divide 21:11
division 8:16 9:1
20:19 21:2 56:9
dmv 46:14 256:15
docket 71:22
166:20 258:1,5
doctors 206:7

document 21:16 94:9 231:15 258:4
documented 43:10
documents 72:4 181:15
dodd 96:12
doesn't 48:7 63:14 63:15,17 67:10 73:4 76:17,18 83:4 84:9 103:19 136:2,22 138:2,12 139:10,10 145:21 145:22 146:18 148:17 154:6 155:14 159:16 184:2 192:2 245:7 251:16
doing 31:20 98:12 104:10 117:7 118:13 120:4,22 136:19 141:14 143:1 152:13 155:21 167:18 201:1,14 204:15 211:17 214:4 253:17 256:4
dollars 49:2
domain 114:17 120:17 123:5 213:15
don't 4:6 49:8 68:4 73:4 75:8 82:9 87:19 88:15 90:13 91:14,16 100:19 101:2 102:20 103:22 108:9 109:3,18 113:12 117:1,2 120:7 123:21 132:15 133:13,16 133:19,19 134:9 137:10 138:3,3,4 145:7 146:3 147:2 148:2 150:6 156:5

161:4 163:9 164:8 171:5,20 175:2 177:13 184:7 186:20 193:12,13 197:1 201:12,22 207:10 210:3 219:4 220:14 221:18,18 224:20 224:22 231:11 232:7 233:4,13 234:10,15 235:1 235:12 244:10 249:18 253:18 254:21 255:20
doorway 15:17
dot 21:21 137:16 171:3,11
dot's 99:15
double 23:22 24:16
doubt 77:8 210:22
downloading 256:14
downsides 63:20
dr 4:19,22 5:2,5 5:21 6:1 13:6 14:2 158:12 164:8 168:18 172:14 178:2 179:11 180:22 183:18
draft 27:4 85:4
drafted 24:10 187:19,22
draw 184:2 210:9
drawn 85:9,14
dreamliner 215:6
drill 12:15
drive 7:1 33:8 152:1 168:15
driven 41:15,21 117:15,16
driver 9:4 20:22 27:20 30:15 37:1 41:16,22 42:2,11

42:16 138:3 170:19 176:17 177:2,2,8 179:6 191:19,21 193:2 193:17,19 194:17 254:10
driverless 190:21 205:16 215:11 216:1 218:19
drivers 8:22 23:19 30:12,17 36:15 135:21 206:11,13 207:4 222:15 249:1
driving 5:12 7:7 30:8,13 31:14 37:12 42:18 43:1 49:13,15,21 50:4 96:2 108:15 111:18 112:14 113:17 115:6 123:2 164:21 165:3,5 173:2 194:3 208:9 221:10 246:19,20 246:22 247:17 248:11 255:3,4
drone 212:18
drones 82:22 83:1 104:10 212:14
drop 244:11
drug 101:20
drunk 5:12 7:1
dual 42:1
due 30:15 70:21 149:12 174:17 192:18 194:9 213:11 216:2,14
duke 189:16 190:3
dummies 237:20
duration 159:19 215:3
duties 189:21

dying 238:14
dylan 1:18 259:2 259:16
dynamic 99:2 128:9 152:11 203:11 230:2
dynamics 153:13

e

e 2:1,1 3:1 4:1,1
earlier 74:10 82:15 84:6 97:20 143:8 165:1 179:16 191:14 193:11 198:3 204:9 247:22 251:5,7,10 258:16
earliest 32:9
early 29:1 57:21 60:10 64:18 65:17 75:11 85:8 141:20 216:9
earnestly 116:6
earnings 69:4
ears 99:15,15 109:8
easier 140:22 147:19
easily 161:16 230:5
easy 225:21 239:15
eating 198:13
echoing 4:11
economic 41:1 115:11 227:8
economics 227:4
economists 217:14
economy 158:5 190:22 245:7
ecosystem 119:19
edge 7:22
editor 190:2
educated 195:16

educating 56:14
204:12
education 17:16
20:12 35:9 104:1
204:11,15
edward 227:22
effect 99:1 106:9
118:6 154:9
effected 192:7
effecting 212:14
effective 37:9
196:18
effectively 34:13
131:18
effectiveness
206:20
effects 190:1
195:17
efficient 7:12
123:17
effort 44:17 49:3
121:10 122:12
128:14 130:3
218:12
efforts 5:14 6:12
18:17 21:14 26:8
eight 73:22 74:1
76:16 95:8 215:8
either 68:4 149:10
150:14 159:16
162:8 169:20
229:9 244:10
257:20
elasticity 54:9
elderly 50:1
elected 34:5
electric 187:18
electronic 113:11
135:15 187:17
electronics 126:17
elegant 132:17
element 175:8
235:11

elements 74:19
148:22 149:3
162:7 184:18
eliminate 7:8
43:21 184:13,14
184:19,20
eliminating
144:16
embarking 73:14
232:13
embed 174:9
embedded 172:22
embodied 53:20
embracing 216:5
emerged 247:6
emergence 203:7
emergencies 213:4
emergency 15:15
149:6 191:3
emergent 87:22
emerging 62:7
87:17 95:16 137:5
141:10 190:20
203:9,21 204:18
242:5,18 253:4
emily 17:1 57:8
emphasis 228:6
emphasize 31:4
emphasized 12:21
emphasizes 44:13
employed 259:8
259:11 260:8
employee 259:10
employees 25:16
68:15 82:5
empower 132:18
empowered 106:1
enable 10:18
127:12
enact 52:5
encounter 72:8
229:1
encountered
179:20 180:1

encountering
98:20
encourage 35:15
47:16 51:16 226:1
251:16
encouraged 21:16
encourages 21:20
encouraging 23:3
39:4 51:8
encyclopedia
209:2,13
ended 239:6
ends 231:22
energized 44:12
enforce 51:4
enforceable 34:4
222:6
enforced 54:11
216:11 254:12
enforcement 9:18
10:10 17:22 21:1
36:16 47:13 51:10
91:2 92:5 125:10
135:4,22 144:18
144:20 147:19
158:7 252:9
enforcing 5:11
engaged 72:12
140:7
engagement 17:16
20:12 143:3
engaging 128:8
engine 126:16
engineer 86:12
92:13 190:5
engineering 95:13
218:7,8 219:10
engineers 206:6
212:22 232:20
enhance 30:21
49:22 104:8
enjoin 132:13
133:11

enjoy 90:8 258:8
enjoyed 143:7
enlightened 81:16
enormous 6:15
13:2 110:17,18
199:20
enriched 258:8
ensure 11:2 20:15
24:12 33:6 34:11
37:6 39:2 42:7
47:18 48:18 52:6
53:16 153:7
162:14 178:11
248:14,14
ensured 36:2,8
ensures 39:20
ensuring 44:9
82:6 147:15 153:9
enter 196:2
enterprise 61:22
entertain 254:5
enthusiastically
18:20
entire 8:4 12:6
67:20 113:16
119:19 203:19
entirely 41:15,21
88:3
entities 13:22
22:19 32:10 37:16
51:17 56:2,12
110:12 121:11
entity 43:18 44:14
45:7 110:11
entrance 56:1
entrant 83:2
entrants 120:5
entrepreneur
67:11
entry 118:13,22
119:1 120:3
environment
30:13 48:6,14
156:7 161:2 169:2

173:2,10 174:1
175:15 213:13
228:18,20 237:1,4
243:11 252:1
environmental
50:2
environments
41:17
envision 7:5 133:2
epa 246:1
equally 90:3
187:12
equation 152:7
equip 11:11
equipment 8:21
19:6 27:14,17
31:2 37:13 60:22
61:18 64:14 66:1
151:21 165:16
equipped 47:21
equivalent 69:1
150:11 159:12
168:11 171:18,22
173:14 175:3,7,17
184:18,21
era 215:19
eric 27:9 57:9
erika 2:2 126:22
136:20 139:18
148:18 150:18
error 6:22 181:14
201:16 216:3
218:2,5,8 219:5,8
220:19,20 221:8
254:12
errors 46:21
especially 49:22
86:11 91:18
118:20 140:15
141:10 148:5
161:12 195:3
224:16 228:22
242:5

essential 28:13
39:18 194:7
essentially 22:16
28:15 41:5 66:6
107:1 111:21
191:17 219:12
229:8 233:7
establish 28:9
36:3 42:8
established 26:22
34:12 51:7 79:14
79:17 117:14
118:1 199:21
establishing
118:13
establishment
20:15 40:17
estimated 215:7
et 209:7
ethical 24:3,5 55:2
55:3,5,15 56:3
181:15
ethics 117:17
193:2
eu 170:10
europe 109:16
european 97:6
109:11
euros 169:16
170:1
evaluate 30:19
123:1
evaluated 29:8
30:2 161:4
evaluation 29:4
30:7,11 228:7
evaluations 32:12
event 1:10 12:21
15:15 104:11
235:13 244:8
events 176:2
eventuality 91:12
eventually 122:5

everglades 216:14
everybody 4:22
5:3,6 49:9 83:6
119:21 159:6
160:4 201:3
257:11,14
everybody's 87:17
91:8 180:17
212:10
everyone's 48:14
104:17
everything's 79:2
evidence 149:17
evolution 8:2
11:18 212:5
evolve 7:21 110:3
199:3
evolved 123:8
evolves 200:10,11
ewr 136:14 141:12
141:16,17
ex 211:5 248:1
exact 6:1 58:17
199:14 219:2
255:19
exactly 6:4 101:1
201:1 232:15
241:1
exam 109:14
examine 11:4
52:13 55:14
example 23:19,21
24:11,16,16 26:3
46:4,13 48:4
50:16 55:6 70:1
73:12 91:20 98:11
123:5 135:12,16
144:3 153:22
193:6 210:2
212:21 216:13
230:12 238:5,10
246:3
examples 187:14
187:15 209:13

237:16
exceed 161:16
excellent 77:15
232:5
exception 24:17
exceptions 24:13
25:3
exchange 90:8,19
101:13
exciting 12:19
196:4,21 243:20
exclusive 51:3
excuse 60:18
189:20
execute 113:11
180:3
executive 35:21
40:22
executives 41:3
exemplify 219:3
exempt 159:10
162:2 185:1
exempting 161:20
exemption 3:10
11:9 159:7,22
160:6,10,14,21,21
161:7 162:15
163:15 164:4,10
164:11 168:5,20
171:16 174:16,21
180:13 182:7,12
182:17 183:6,20
183:21,22 184:2
exemptions 54:14
54:18 58:21 112:5
157:9,15,19
159:20 165:18
168:8 173:14
246:6,8
exempts 55:13
exercise 33:6
129:16 145:4
219:2 251:1 252:6
253:15

exercised 98:18 138:6	**experiences** 32:1	**eye** 65:11 206:15 230:13	254:14
exercising 141:3 253:17	**experiencing** 242:12	**f**	**fair** 94:8 167:14 168:3 208:13 251:1
exist 63:17 84:3 120:17 220:11	**experimentation** 202:21 211:14 218:2,9	**faa** 48:3 62:10,11 62:13,17 66:5,6 66:10 67:22,22	**fairly** 8:16 75:19 165:17
existing 25:2 51:20 52:14 54:15 74:12 97:4 106:12 106:22 111:15,16 111:16 115:1,4,11 115:18 183:22	**experimenting** 201:16	68:15 69:7 80:2,7 82:2,4,5 90:7 99:3 190:6 202:5 203:18 206:2 212:12 214:8,11 215:2,3,7 216:7,8 242:9 251:9	**faith** 122:12 166:7
	expert 84:12 96:3 196:14		**fall** 146:9
	expertise 18:20 34:19 35:12 39:18 44:6 48:8 87:11		**fallacious** 180:9
			falsification 91:3
			falsifications 92:1
exists 205:9 236:12 248:5	**experts** 248:18 250:9	**faa's** 65:20 66:16 104:10 112:6	**familiar** 119:9 202:3 238:12
exit 15:16	**explain** 123:7 231:3	**fabulously** 135:17 232:5	**family** 12:16
expand 99:5 160:6 160:14 164:4 184:13,14			**famous** 198:12
	explained 233:10	**face** 186:3 224:1 245:1	**fan** 242:3
	explains 6:19		**far** 5:15 33:11 66:22 82:9 129:11 130:17 150:15 151:22 169:9 179:12,13 182:6 183:15 196:8 197:12 207:21 227:20
expanded 3:10 11:6,9 50:11 58:21 157:9 159:6 160:10 163:15 165:18 182:7,12 182:17 183:6,21	**explicitly** 23:13	**facilitate** 59:7	
	exploding 133:20	**facilitating** 250:16	
	explore 31:18 35:7 50:19 54:9	**fact** 22:20 47:20 52:17 65:11 71:5 73:19,21 90:21 97:14 131:12 132:19,21 142:8 144:6,21 147:16 149:17 154:20 187:2 192:7 200:10 228:18 240:4 241:16 244:5	
	exploring 159:14 257:6		**farther** 192:20
expanding 161:7 168:4	**exponentially** 200:11		**fascinating** 80:17 111:6
expansion 164:9	**exposure** 31:1		**fast** 31:8 141:11 165:14,22 167:22 242:8
expect 113:9 115:3 117:8	**expressed** 40:20 129:13		
expectation 184:15	**extend** 140:14	**factor** 165:17 182:3 239:13	**faster** 77:1 200:6 211:2,15 215:12
expected 24:4 114:5,15	**extensively** 34:21	**factors** 121:2 165:19 189:22 190:5 239:17	**fatalities** 6:7 7:8 152:20 216:12 217:2,10
	extent 52:12 77:3 83:12 90:4 97:3 112:13 246:6		
expediency 54:7		**failed** 126:17 252:11	**father** 6:2
expeditiously 20:6	**externally** 110:19		**fav** 90:10 258:14
expenses 244:6	**extraordinarily** 211:8	**failing** 236:2	**favor** 86:16 130:13 243:6 252:12 256:22
experience 18:20 34:18 54:3 65:20 67:21 68:16 84:9 174:15 237:17 242:11		**failure** 115:2	
	extreme 98:5 100:12 105:11,15 219:21	**failures** 114:20,22 115:14,17 118:3 135:19 218:4	**favorably** 107:1
			favoritism 107:4
experienced 222:12	**extremely** 169:1,2 219:22		**favp** 28:7,17 29:11 29:21 31:19 32:8

49:18

favps 32:5

fca 126:7

fda 107:13 199:15
202:2,6 203:18
204:20 205:2
206:1 209:17
210:2,8 223:15
242:9

fda's 204:15

features 10:1 30:3

fed 231:1 233:20

federal 1:3 4:10
4:16 7:9 8:17,19
9:5,21 17:9 19:16
19:18 22:13 23:14
23:18 25:11 28:6
28:8,12,15 29:14
32:22 33:4,18
36:3 39:1 43:19
43:20,22 51:1,2,4
51:20 53:18,20
56:5,11 58:9
61:13 64:12 69:17
73:19 74:12 84:12
84:13 85:6 96:5,6
101:17,19 108:8
110:18 116:5
121:4 125:19
127:6 145:17
159:2 186:13
202:4 203:17
231:12 233:8
234:19 238:16
239:12 242:10,16
248:4

federalized 66:14

feed 230:19

feedback 8:11
11:19 13:21 14:7
49:20 233:19
257:19

feeds 230:20 234:6

feel 46:18 86:6
252:10

feeling 74:2 82:8

feet 113:10

fellow 61:22
190:10 227:11
230:13

felonies 55:12

fibbing 234:11

fifth 185:13

fighting 5:12

figure 91:14,15
183:14 209:19
211:10

figured 157:15

figuring 220:10

fikenstscher
120:11

fikentscher 2:10
15:2 45:4 87:21
90:7 93:10 123:21
124:2 217:6 254:7
258:14

file 106:16

filed 106:21

filing 218:11

fill 51:12 188:22
189:5

filler 182:18 183:7

final 7:20 26:6
34:16 72:18 73:22
96:4 130:2 205:5
223:9

finalization 27:6

finally 26:7 56:5
62:20 190:9
227:20 235:22

finance 62:6

financed 153:6

financial 69:1
118:4,6 119:3

financially 259:12
260:9

find 16:5 47:13
55:20 91:16 97:3
121:7 141:17
162:6 167:9
169:17 206:8
214:4,5 227:21

finding 101:3
120:1,21 121:1
201:15 245:22

findings 149:16

fine 30:21 91:11
182:9,15 251:13

finish 223:13

fire 216:14,16

fires 126:17

firestone 126:15
131:10

firm 125:22 127:1
165:13 227:13

firm's 126:2

first 6:8 7:11 8:3,8
8:9,14 19:17
31:16 36:19 60:1
61:20 63:7 70:12
77:6 87:14 92:21
95:4 96:1 111:6
120:13,19 124:13
127:15,18 128:15
131:5 132:6
134:16 137:12
139:17 144:14
145:19 160:3
161:9 162:17
163:2 170:4
175:10,18 182:20
191:6 195:22,22
196:6,6 217:6
228:12 229:11,16
231:6 237:4 241:1
241:13 247:13
250:5

fit 90:4 138:2,18
139:10 180:7

fits 109:2

five 59:4 161:18
215:5,12 241:5
249:18,19,19
253:13

fix 64:20 101:2
107:18 136:1
182:2 221:1

fixed 203:10 209:3

fixes 200:21

flag 169:10

flavors 149:14

flaws 55:15

fleet 21:4 99:1
114:3 138:4,8

fleets 161:13

flexibility 100:10
112:8 138:16
211:22 246:7
250:1 251:13

flexible 7:21 10:19
98:9 200:5 203:11
244:22

flight 216:14

flip 152:3 193:8
193:21

flipped 57:18

floating 94:10

floor 69:12 107:13

florida 71:3

flow 223:1

flush 237:13

flux 98:21 101:15

flying 66:12

flyovers 86:2

fmbss 22:19,22

fmvss 31:10 32:7
63:13,20 73:10,22
111:16 112:3
113:7 121:19
161:1,5,20 162:3
163:2 164:2
165:15 173:4,11
174:7 177:21

178:17 179:3,9
183:10
fmvss's 119:12
120:17
focus 13:21 14:6
51:9 58:12 103:16
158:17 176:7
190:13 216:9
231:11,20
focused 6:20
24:19 95:19 105:6
120:14 227:17
focuses 62:1 94:20
126:1
focusing 76:10
77:16 105:1
119:21 127:2
132:6
folks 4:4 6:4 15:21
46:2 70:14 89:5
109:8 157:20
182:14 185:18
226:6 235:4
241:10 253:16
follow 107:3,20
142:16 169:17,20
171:13 223:20
followed 24:14
61:16 179:19
199:19
following 14:17
42:12 103:4
112:15 125:6
follows 29:13
fond 90:12
font 192:19
footnote 41:19
42:6
fora 226:13
forbearance
252:22
force 151:21
forcefully 36:7

forces 118:1
forcing 249:13
ford 17:1 57:8
forecast 224:16
forecasts 247:15
forefront 156:3
foregoing 259:3
foregone 218:18
foremost 131:5
132:6 144:14
237:5
forensic 121:1
foreseen 13:12
forever 180:3
forget 255:19
forgetting 202:8
forgive 252:3
forgotten 204:10
form 83:3 92:3
98:8 100:12
105:11 106:14
138:19 139:1
162:10,15 199:10
201:19 203:14
formalize 54:9
former 38:8 49:12
227:12
forms 82:1,21
218:7
formula 219:12
formulating 39:17
forth 29:13 87:12
87:16 90:2 112:21
153:7 191:1
193:14 224:21
225:7 237:19
238:15 248:8
fortunately 84:11
forum 59:16
forward 7:17
11:16 12:5,10
16:7 47:4,19 48:5
48:11,15,15 49:5
49:8 50:14 52:7

52:10,20 75:2,5
85:15 132:1 147:3
152:9 155:6,13
157:20 159:18
167:15 175:14
177:17 182:4
183:17 223:2
226:18 232:2
235:21 251:13
foster 19:15 58:19
found 149:1
foundation 47:7
foundational
28:22 108:15
127:16
founded 126:9
158:12
four 74:1 169:16
175:13
fourth 156:22
157:9 185:12
foxx 6:11
fra 190:6 206:1
framework 9:10
13:1 20:16 28:8
29:11 34:12,20
35:13 36:10 39:6
44:11 47:15 51:13
56:7 66:2,3,5
68:20 203:4
frameworks 19:15
52:5 199:2
frank 63:4 96:12
frankly 49:1 72:10
84:8 101:20,21
102:3,5,18 108:9
108:11,14,22
114:3,12 119:12
121:4 128:9 129:3
130:4 139:19
142:18 151:8
249:15
frascaroli 17:1
57:8

fraudulent 210:4
freddie 62:19
free 190:12
freely 165:17
freezing 4:7
frequency 103:11
226:15
frequent 159:20
frequently 220:1
242:1
fresh 216:1
friend 6:3
friends 12:17
232:4
front 138:16
148:12
fuel 158:5
fulfilled 102:4
full 11:3 28:4
42:13 43:8 56:16
108:15 163:13
173:8
fully 7:6 30:19
32:7 41:14 42:19
50:4,7 170:15,18
255:15
fun 183:2
function 106:13
176:7 188:9
235:15
functional 72:2,2
72:3,13 77:21
78:15 100:9 122:9
123:14 135:18
147:11,14 150:10
162:3,13,13 169:5
174:5,9 175:4
176:3,4 179:17
182:16 188:12
232:18
functionality
41:11 186:19
functioning 118:8

functions 73:20 169:3	**gathering** 13:21 14:6 60:22	**given** 4:4 19:13 50:11 59:7 65:5	168:10 171:15 175:1 177:4
fundamental 83:1 83:2 192:21 201:9	**geez** 252:8,8	76:15 120:16 164:11 174:22	178:17 179:15,22 182:4,22 183:12
fundamentally 66:3 94:4 99:10	**gen** 64:2	175:6 182:11,19	183:19 184:7,7,11
	general 12:7 17:9	202:17 204:17	185:11 186:2
112:22 172:16,19	38:22 48:22 62:18	249:16 251:19	192:20 203:12
172:21 180:14	63:10 64:2,5 82:8	255:11 256:4	204:2 205:2
248:19	89:11 93:20 94:16	257:11	206:13,14 207:10
funding 99:13,17	96:5 115:20	**gives** 71:3 77:22	212:1,15 219:20
99:20	116:16 131:10	78:11 137:8 146:4	226:18,19 229:15
further 10:9 18:2	138:9 190:17	249:22	241:7 244:6
18:19 84:4 94:5	206:12 229:21	**giving** 100:21	245:18,21 246:2
104:8 226:19	233:22 247:9,19	132:12	254:7 255:5,8
257:19 259:10	249:9	**glad** 191:11	**goal** 9:9 91:6
furthermore	**generally** 8:19	194:15	123:11 217:17
30:15	26:10 132:22	**glassman** 2:4	237:10,12 243:4
fused 141:16	137:17 138:6	158:2 160:19	**goals** 118:8 237:9
futile 240:20	168:1 190:18	165:19 173:16	237:14 240:8
future 7:5 11:12	256:22	175:10 177:20	256:5
12:4 18:8 20:5	**generous** 97:9	180:10 184:5,10	**goes** 12:18 69:17
24:22 29:6 32:11	**gentleman** 72:16	**glenn** 151:20	94:5 96:21 102:12
65:10 74:16 78:7	251:9	**global** 19:1,4 25:6	104:5 105:2
159:9 181:8	**george** 190:11	211:20	111:22 124:7
205:17 224:16	**german** 169:12	**globe** 129:8	144:12 165:20
futuristic 193:2	**germany** 169:15	**glossary** 42:11	168:13 196:8
	169:21	**glue** 143:11	**going** 4:3 5:6 6:7
g	**getting** 6:5 8:11	**gnomes** 233:17	14:11 15:17 16:9
g 4:1	86:8,19 92:14	**go** 4:3 16:21 45:5	33:11 45:18 47:3
gain 35:8 169:17	134:11 163:13	47:19 48:5,10	47:4,4,6 49:4
236:16	186:15 201:5	49:4 58:4 59:22	52:21 57:4,11,21
game 91:9	202:20 211:22	63:9 68:11 71:14	57:22 58:4,12,15
gaming 229:5	250:10	75:15 77:12 82:9	58:16,18 59:3,4,8
235:12 236:12,20	**give** 4:21 5:19	85:5 87:18 92:6	59:12,14 60:1,2
237:6 239:18	58:14 74:2 83:12	93:16 96:22	60:12 66:12 67:2
gaming's 239:19	85:21 120:12	102:21 106:7	69:21 70:11 72:8
gao 135:9	127:18 134:14	109:9 111:4 114:5	72:9 74:12 75:14
gap 182:18 183:7	135:12 142:11	125:7 136:5,7	76:12 79:3 80:3
gaps 51:13	149:1 157:22	137:13 142:22	81:14,14 84:20,21
gate 244:18	159:16 160:15	147:3 148:9,12	84:22 85:14,15,15
gateway 107:7	177:2 183:13	150:12 154:6	85:17,17,19,19,21
gather 13:10	185:17 227:5	157:4 160:4,5	86:21 87:9,10
160:9	228:13 233:15	162:17 163:8,16	90:14 92:14 98:21
gathered 83:9	237:15 238:20	164:5 166:13	98:22 102:5
	250:11		

105:16 108:10
110:1,10,16 111:1
113:15,16,19,21
113:22 114:2,11
115:10 116:17,18
116:19 117:6
121:1,8,10,15,16
123:1,8,14,15
124:2,14,15 125:1
131:3,10,22 132:1
132:8 133:6
136:11 141:9,14
141:20 142:1,4,13
144:15,17 149:22
154:11 155:1,3,6
155:13,20 156:14
156:21 157:3,7,10
157:12,21 159:18
160:11 161:9
162:2,17 163:13
163:18 164:5
166:9,9 172:12
178:10 179:7,11
179:15,20 181:3
182:2,3,8 183:17
183:19,20 184:5
184:15 185:15
186:3 192:5,6,18
193:6 194:6,18
198:22 200:4,14
201:4,5,14,15,22
203:21 206:8,22
210:20 211:2,8,14
211:22 212:5,7
213:20 216:6
217:18 219:16,17
220:2 221:9,13,14
223:5,13 227:5
229:19 230:5
231:5 232:10
235:3,13,19 236:3
237:2 241:10
243:17 248:20
250:7 251:4,20,22

252:2,4 253:8
254:19 257:6
good 4:2,7,8,22
5:1,2,4 19:2 27:12
32:17 38:12 39:8
45:12 49:14 53:2
60:9 70:1 90:4
93:18 100:21,21
104:21 105:15
122:12 124:6
127:22 142:20
144:3,22,22 145:8
155:10,10 156:9
166:7 168:15
169:19 178:13
184:1 186:8 201:8
209:15 215:10
234:10 242:22
243:2 247:14
250:8,15,15
257:10
gotten 84:19
govan 2:15 62:10
66:2 80:14 91:21
goven 90:17
governance 56:7
governing 10:20
government 7:11
8:17 9:21 12:3
22:13 25:7 29:2
39:13 40:22 44:3
44:18 56:6,12
61:14 79:17 94:22
96:3 108:8 112:19
116:5 127:6 158:9
169:12 174:10
180:20,22 223:3
228:9 238:16
239:13 242:16
248:4 249:3 250:6
250:9
governments 7:16
28:9 51:22 52:4
101:17

government's
8:20 39:1 51:3
governor 36:7
governors 35:20
grab 15:22
grade 220:9
graduated 55:8
grant 34:14 35:22
grapple 75:5
grass 80:11
grateful 14:15
gray 140:9
great 17:6 38:6
49:21 52:10 59:21
65:9,18 67:15
68:13 71:3 78:1
78:12,15 79:5
93:18 100:13
104:16 124:4
128:11 134:20
141:18 151:15
152:8 153:3,4
156:19 163:7
201:13 218:6
234:15 235:19
239:2 251:17
greater 98:18
140:9 218:2
greatest 50:9
65:13
greener 80:12
grip 128:8
grounds 231:16
group 8:10 18:21
38:16 94:20 99:6
251:15
grouping 40:9,14
group's 39:16
grow 101:5 128:15
129:21
growing 84:20,21
84:22 200:12
growth 62:2

guess 17:7,7 79:7
89:2 120:6 128:1
145:19 146:1
149:10 205:13
223:20 225:16
227:21 236:15
255:15
guests 15:3
guidance 20:1,5
21:17 22:2,9,11
23:17 25:1,14
28:6,18 29:13,17
33:22 34:9 35:19
39:6,7,9 43:9
61:17 70:3 87:7
88:5 196:9 200:18
202:7 203:7,14
209:10,11 231:15
249:22 250:2
guide 7:11 8:2
guidelines 28:15
45:6 54:10 128:21
212:13 216:20
231:13 233:1
236:19
guiding 8:12
guys 93:10 112:10
117:11 145:13
185:9

h

hack 194:11
hacked 194:10
hackers 194:6
hageman 16:18
hagemann 2:11
57:7 226:21,21
229:15 242:3
252:16 256:8
half 6:8 148:14
hammer 252:19
hammered 204:2
hammersbaugh
236:9

hand 15:5 160:13
    192:15
handed 185:19
handle 47:21 72:9
    113:20 195:11
handled 63:5
    135:4 177:22
handling 107:4
    114:16
hands 243:22
hang 88:13 117:13
happen 48:20 68:9
    104:9 119:4 131:1
    131:20 144:5
    145:19 146:16
    215:18 219:22
happened 71:2
    72:11 104:2,11
    120:22 133:4
    204:5 216:15
happening 46:16
    68:21 151:9 200:6
    201:11 211:2,15
    211:19 212:7
    221:19 239:6
happens 48:13
    89:16 116:19
    154:9 198:22
    220:1 251:21
happy 49:16 92:9
    105:9 170:9 198:2
haptic 189:18
hard 6:11 52:18
    81:13 84:16
    188:13 203:10
    210:21 224:14,15
    239:5,8,14 245:16
harder 181:19
    236:16
hardware 89:15
    187:12,20 188:1,4
    188:4,8,12 192:3
harm 52:2 207:17
    210:6

harmful 238:17
harmonization
    170:8 186:10
harsh 112:7
hasn't 138:14
hat 55:13
hav 37:17 40:11
    42:13 50:14 52:15
    52:17 54:3,13
    55:1,3,7,9 160:9
haven't 15:12
    38:9 132:19 133:4
    137:9 151:4 195:8
    205:6,12
havs 42:4 51:2,6
    51:13 54:5,10,19
    54:21 55:2 56:2
    88:1,3 159:7
    160:12
hazard 3:9 11:10
    46:9 47:5 58:20
    124:14 125:11
    127:11 128:18
    131:4 132:5,10,16
    133:2,6,18 134:15
    134:19 136:13
    137:16 138:10,18
    139:9,15 142:2,3
    142:5 145:4,22
    146:4,7,12 147:8
    148:8,15 149:2,5
    150:3,8 153:21
    154:6,10 155:7,15
    156:14,16 216:21
hazardous 128:17
    154:21
hazards 54:22
    127:14 132:22
    146:11
head 158:1 252:18
    252:19
headquarters
    62:14

healthy 119:2
hear 4:5 11:22
    78:13
heard 8:10 46:20
    47:20 135:6
    149:15 164:13
    171:1 200:7 204:9
    232:18 244:1
    251:18
hearing 12:10
    31:14 50:18 60:15
    83:7 128:2,13
    157:20 173:17
    175:2 226:8
    240:11
hearings 226:13
heater 126:16
held 8:8 50:17
    199:16 235:8
hell 109:15
help 7:6 8:2 11:20
    35:7 56:2 68:18
    140:8 141:18
    142:10 160:9
    163:17 168:8
    213:2 216:18
    237:13
helpful 8:12 87:4
    91:18 189:1
hememrsbaugh
    60:7
hemmersbaugh
    2:13 60:3,5 65:18
    69:19 73:6 75:3
    75:13 76:12 78:16
    79:7,13,16,20
    80:1 83:5 85:18
    87:5 88:2 89:20
    90:6,11 92:19
    223:11 224:2,6,9
    234:20 240:18
    248:10 250:10
    252:6,9,15 253:18
    254:1,4,18 255:17

    256:7 257:8
hereto 259:12
here's 113:8
    209:19 233:16
    238:10
hermetically
    60:17
herrington 227:14
hey 91:17 117:7
he's 16:19 60:3
    93:5 95:14 96:13
    126:1,14,18
    223:13 227:5,11
    230:14
hi 45:12 53:2
high 55:17 111:1
    119:15 121:8
    167:1 234:13
    254:16
higher 96:20
    113:15 164:17
    228:22
highest 44:7
    169:11
highly 9:2 10:11
    10:21 11:2 13:9
    14:10 18:3,5
    21:22 23:3 25:15
    25:18 28:3 30:8
    40:10 50:12 75:22
    76:3,11 77:17
    103:7 161:12
    171:18 174:2
    177:4 178:15
    206:3 237:1 240:1
    247:18 248:20
    255:9
highway 4:20 38:7
    62:22 125:19
highways 70:21
hinder 31:21
hinds 1:18 259:2
    259:16

hines 2:8 189:6 195:20 207:8 214:7 220:13
hiring 11:11 92:12 92:13 248:18
historical 103:12 104:2
historically 237:8 247:3
history 126:11 136:7 166:1,13 187:9 222:12
hit 125:4 252:18 252:18
hitting 58:3
hold 7:7 63:16,18 65:9 216:15
holding 4:14 8:5
holds 216:17 247:17
holes 68:7
holistically 183:11
holland 158:21
hollow 101:18
home 57:21
honda 19:7
honest 86:17 91:22 92:7
honestly 252:17
honor 96:1
honorable 125:16
honoring 151:20
hood 152:4 153:22
hop 88:15
hope 60:9 215:9 235:16
hopeful 70:17
hopefully 124:5 181:4
hoping 94:14
horizon 232:9 244:19
horrible 109:17

horse 49:6 131:2 131:21 136:6 197:6 233:4 257:2
host 198:16
hours 165:2 213:2 215:7
house 50:16
housekeeping 15:11
huge 86:13 193:16 212:5 242:3
hugely 170:9 177:19 181:8 182:1
huh 75:3
human 6:22 23:19 41:16,22 42:2,12 98:2 170:19 176:16 177:2,2,8 179:6 181:13 189:17,22 190:5 216:3 219:5,8 220:19 221:7 222:11 249:1 250:6 254:10
humans 189:16,21 190:1,7
humility 226:16 252:21 253:15
hundreds 5:14 110:12 220:18
husch 57:1
hybrid 187:18
hypodermic 204:22 209:14
hypothetical 217:20
hyundai 19:7

i

i.e. 217:10
ian 2:13 227:10 234:20 250:11 252:17 255:17

ice 84:15
idea 45:22 94:10 144:13 147:5 155:19 161:6 201:4 241:6 254:15 256:9 257:5
ideally 99:17
ideas 11:22 14:8 193:2 225:1 226:3 226:6 250:15
identification 170:14
identified 11:8 54:16 86:6 221:1
identifies 8:1 10:9 10:16 215:14
identify 18:9 25:2 54:13 56:3 68:19 123:4 141:13,18 172:6 183:8 188:7 221:3
identifying 163:6 164:19
ig 135:8
ii 3:5,8
iii 3:9
illustrated 225:19
illustrates 226:9 240:19
image 230:20
immediate 29:6 127:13,14 226:20
immediately 76:21
imminent 3:9 11:10 46:9 47:5 58:20 124:14 125:11 127:11,14 128:17,17 130:12 130:19 131:4 132:5,10,16,22 133:2,6,18 134:15 134:19 136:13

137:16 138:10,18 139:9,15 141:9 142:1,3,4,5 145:3 145:21 146:4,7,12 147:7,21 148:8,15 149:1,5,6 150:3,8 153:21 154:5,10 154:13 155:2,7,15 156:14,15
immunity 92:17
immunized 90:21
impact 31:20 55:12 232:10
impacting 38:18 96:10
impacts 114:9
impair 21:14
impediment 52:15 109:5
impediments 112:2
implement 14:20 16:6 34:2 105:14 213:7
implementation 4:10 28:2 122:4 140:11 244:16 247:20
implemented 64:4 106:8 213:11
implementing 52:16
implements 121:19
implications 190:19 191:3 209:9
implicitly 164:14
importance 202:16 226:10
important 12:1 17:8,17 19:14,17 19:20 24:2 27:3 28:21 41:20 42:4

44:14,22 46:19
47:2 70:15 75:21
85:15,16 105:2
119:6 120:16
153:2 154:14
156:12 160:13
170:9,12 177:19
181:8 182:1
197:13 198:18
205:11,22 207:13
224:18,21 225:8,8
236:20 238:8
249:8,14 251:20
252:5 253:8,15,16
257:15
impose 229:22
impossible 173:9
174:18,22
imprimatur 108:7
improve 11:21
50:2 164:15
improved 152:16
216:5
improvement
83:18 202:21
improvements
13:13 54:1 151:11
improving 13:3
38:21 181:4
inability 131:17
inadequate 64:10
inadvertently
29:3
inanimate 254:10
incentive 115:4
incentives 153:9
254:15
inception 166:12
incident 104:11
120:20
incidents 103:12
104:5,9
include 11:9 19:7
22:6,8,17 30:2

31:12 36:11 40:21
62:3 88:5 89:14
140:14 187:1
189:17 227:1
242:4
included 21:16
87:22 88:2,18,20
226:7
includes 22:4 23:2
34:8 36:14 44:3
including 10:1,8
10:10 23:4 35:17
41:7 58:19 95:4
95:21,22 97:5
98:10 118:4
126:15 127:7
159:4 190:20
200:15 210:11
241:14
inclusion 26:19
inclusive 89:22
incompatible
20:17
inconsistencies
20:9
inconsistency 52:1
inconsistent 13:14
22:13 26:17
111:17 134:11
135:22
incorporate 180:2
incorporated 41:9
43:6 61:3
incorporating
42:6
increase 21:10
152:19 239:10
increasing 38:21
increasingly 9:3
incredibly 85:16
119:6
incrementally
200:11

independent
35:12 126:6
index 55:12 59:9
117:10 185:19
indicated 16:10
20:4 87:6 94:1
indicating 35:17
individual 8:6
10:4 21:6 137:17
138:1 194:22
247:6,10
individualized
247:15
individuals 13:17
indoctrinated
30:8
industries 209:5
industry 7:15
11:15 12:2,6 29:2
30:6 39:13 44:3
44:18 61:16 67:9
67:16,20,22 68:14
68:15 69:5,13,15
79:9,14 81:6 84:2
84:16 85:17 91:8
96:3 103:7 115:4
115:16 128:8,10
140:8 143:3,7,14
146:21 151:1,10
151:18 153:14
156:5 167:17
169:15 172:5
177:18 181:1,9
201:18 204:12
208:19 209:4,6,8
212:19 213:6,12
218:21 234:17
235:4,5,8 243:9
243:11,18 244:15
253:6
industry's 164:5
inevitable 207:10
influence 172:8

influenced 66:18
inform 244:16
informal 244:14
information 13:11
26:20,21 37:8
40:17 43:12,17
46:16 47:1 67:16
69:22 71:9,11,13
71:15 81:2 85:11
86:10,14,19,22
87:1,9 91:7,14
100:21 101:14
103:13,16,18,20
104:6,14 105:1,7
106:3 107:5
115:21 116:2
156:6 192:16
196:5 197:10,19
informed 30:9
34:22 193:17
informing 35:10
infrastructure
48:6 62:3 178:12
infructuous
233:19
inherent 108:5
112:16
inherently 170:14
171:10
initial 69:11
104:17 114:13
129:22
initially 69:7
237:18
initiated 169:12
initiative 140:6
injured 219:7
injuries 152:20
innovating 12:2
innovation 19:15
27:2 31:22 39:4
52:2 58:19 81:20
81:20 177:17,18
190:16 211:1,20

218:4 224:20
242:8 245:1
innovations 27:22
38:18 107:15
119:16
innovative 50:5
81:21
innovator 67:10
innovators 39:21
119:15 201:1
211:21
input 11:18 13:7
14:4,20 39:16
40:2 123:17
257:11
inputs 233:18
inquires 105:22
insecurity 201:9
inside 93:13
133:21
inspired 12:3
install 216:16
243:5
installation
187:10
installing 256:18
instance 87:14
instances 56:3
79:5 101:17 171:8
institute 45:10,13
62:1 217:18
227:11
institutional
143:22 147:20
institutions
169:14
instructive 65:22
97:21
instrument 245:13
instrumentation
30:3
insufficient
196:10

insurance 9:18
10:12 17:5,10,12
17:14 18:1,12,14
21:1 36:17 44:4
51:11 96:7,10
117:1,3 121:5,8
181:1 227:13,18
235:7 243:11,13
intangible 188:13
integrate 110:13
integration 41:4
163:17
intellectual 81:1,2
intelligence 104:1
181:8,17 230:8
233:7,21 234:6
247:12 256:11
257:4
intelligent 158:15
intend 88:4
intended 21:17
61:2 167:10 183:7
183:9
intends 36:9 41:12
intensely 53:11
intent 19:10 22:20
42:16 43:6 167:8
intention 61:13
88:9 89:22 92:3
intentional 55:9
91:2,21 225:11
251:11
interact 10:11
166:19 178:5,9
interacting 178:3
interaction 109:1
170:18 177:7
178:22 189:18
interest 23:7
39:21 96:17
157:17
interested 53:12
69:20 70:5,7 83:6
83:11 160:8 168:4

213:20 226:8
250:13 259:12
260:9
interesting 139:18
145:2 157:6 165:1
180:10 182:6
191:12 198:5
207:21 247:11
256:3,9 257:5,6
interestingly 71:8
interests 40:5
189:17
interface 248:3
interfering 203:2
interim 31:17
75:16
internal 69:6
internally 110:19
international 19:5
95:18 170:6,7
186:10
internationally
211:19
internet 94:21
95:15 190:12
227:3
interpret 188:6
230:11
interpretation
229:10
interpreted 14:1
229:7
interrupt 48:16
intersection 227:4
227:16
intervene 106:4
219:19 220:4
intervening 106:2
intervention
219:11
intestine 133:22
introduce 4:19
15:1 61:20 93:4
94:18 125:15

188:19 202:22
226:19 240:13,14
244:20
introduced 11:2
63:7 100:9
introducing
157:21 202:15
introduction
97:13
introductory
103:2
invasive 210:5
investigated
154:13
investigating
153:20
investigation
154:1
investigations
107:3
investment 19:16
62:4 96:13 110:18
111:3 151:13
152:15 153:2
inviting 198:4
invoked 134:5
involve 39:20
involved 49:9,10
84:19 124:9 152:7
209:1 251:15
involvement 39:20
involves 193:18
involving 127:2
159:3
ipads 186:15
iphone 207:14
209:3
iphones 186:15
207:14
irritation 186:18
isn't 26:22 86:14
114:4 135:3,10
142:3 153:18
154:7 219:17

233:11
isolated   138:6
issuance   23:5
issue   23:16 24:8
   25:13 26:6 27:4
   44:22 46:2 53:19
   73:22 77:11 84:21
   84:21 85:1 87:17
   96:17 112:14
   129:21 138:1
   145:6 151:4
   152:22 159:19
   170:13,22 183:20
   183:20 187:5,7
   191:16 193:8,10
   193:21 197:12
   206:22 216:8
   241:4 242:14
   250:19 251:2,4
issued   7:10 202:9
issues   18:9,12,16
   20:6,9,21 22:17
   23:5 36:14 44:4
   45:15,21 46:12,19
   47:5 53:15 56:15
   62:2,3 63:6 67:19
   68:2,4,18,19 75:2
   84:1 90:20,21
   94:16 95:4,5
   96:10,18 99:7
   123:18 126:11,15
   126:17 131:16
   144:2 154:12,17
   155:17 159:3,5
   167:11 171:1
   177:17 183:8
   190:7 191:13
   193:9 194:8,13
   197:14,20 199:12
   206:19 207:15,15
   213:11 216:19
   220:17 227:3
   244:19 253:14

issuing   102:11
   187:10
item   188:17
items   15:12
iteration   8:12
   107:10
iterative   28:5 87:8
   101:12 102:13
   105:6 218:5
   244:13
it'd   24:21 26:2
it'll   44:17
it's   5:5 6:9 12:18
   14:11 19:14 20:5
   24:18 27:3 28:21
   33:3 42:15 47:4,5
   47:10 49:9 54:20
   56:11 60:1,2,8
   61:8,12,13 65:12
   65:13 68:10 70:6
   70:9,15,16 71:9
   72:4,5,6 75:21
   76:1,21 77:9
   80:17 81:9 83:1
   85:13 86:22 89:2
   89:7 90:4,17 91:6
   91:10,21 96:15
   101:2 102:4
   103:21 104:2
   108:10 112:6,19
   112:20 113:15,16
   113:20,22 114:2,8
   114:10,16,18
   115:7,16 116:12
   117:6,22 119:7
   121:3 122:9,22
   124:15 127:21
   128:12,22 130:16
   130:17 132:16
   133:6 134:5,6
   136:15 137:22
   138:5,14,22 140:7
   141:18 144:19
   145:6 152:11

   156:6,12 157:10
   161:9 163:13
   171:3,21 172:8
   173:8 175:22
   176:1,1,8,10,16
   177:4,14 179:2,2
   179:15 180:10
   181:9,10 182:1,5
   183:1,2,9,17,21
   185:10,15 192:6
   193:16 198:19,20
   199:5,12,20 200:4
   200:15,19 203:15
   207:13,17 208:13
   209:2 210:4,20
   211:9 217:10
   218:1 219:12,16
   219:18,19 222:9
   223:22 224:15,18
   224:21 225:8,18
   226:11,12 228:20
   230:1,21 231:2
   233:20 236:3,13
   236:14 237:2
   242:15,15 243:22
   244:6 246:19
   251:20 252:4
   257:5 258:2
iv   3:10 14:5 58:12
i'd   4:18 16:17
   61:9,20 65:19
   69:20 70:7 73:6
   73:17 93:10 94:17
   130:11,17 136:22
   140:5 141:2
   142:15 165:13
   169:10 198:2
   226:1,7 228:12
   235:4 236:7 257:5
i'll   17:3 28:7
   58:14 92:20 97:19
   120:12 125:14
   130:15 131:19
   134:16 135:12

   136:20 170:22
   174:14 181:6
   205:5 229:18
   235:1 248:10
   257:16
i'm   4:8,9,11 16:9
   17:9 22:15 32:17
   38:12,15 45:12
   53:3 57:4 70:5
   75:17 76:12 79:11
   80:5,12,14 85:20
   88:3 90:13 93:19
   93:20 94:14 103:3
   105:9,10 110:22
   125:9 128:13
   130:6 132:8
   139:10 140:13
   146:1,6 148:2
   155:4 157:11,19
   157:21 162:16
   172:1 175:2
   177:12 182:8
   189:6 190:2,5
   194:15 196:14
   211:7 216:6
   218:17 225:15
   229:19 233:1
   235:3 240:11
   241:10 242:3
   243:6,7 244:5
   249:15 250:18
   252:12 257:6
i've   47:20 103:17
   108:2 117:10
   122:18 128:1
   130:6 164:13
   190:6 192:10
   198:4 199:13
   209:16 211:16
   213:19 232:17
   233:9

j

j 113:11
jackie 2:4 158:2,3
  158:11 160:18
  173:13 175:3
  178:14
jackie's 167:16
jeopardize 36:5
jersey 63:5
joan 38:8 57:12
job 128:11 143:21
  163:7 232:5
join 57:6 58:6
  169:20
joined 14:17
joining 4:13 16:4
  62:17,22 95:2,7
  127:5
joke 86:2
joking 225:18
jones 2:2 126:22
  127:5 132:8 137:4
  141:2 145:2 148:7
  149:7,11 156:8
josh 15:1 258:14
joshua 2:10
journey 43:2
jud 252:7
judge 122:13
  148:13 149:16,19
judicial 111:11
  132:19 133:7
  252:7
juggled 155:18
jumble 230:21,22
jump 76:13 198:1
  235:1
jumping 191:6
jurisdiction 42:2
  43:18 51:9 145:15
  146:9
jurisdictional
  23:6 40:1,18
  51:14

jurisdictions 42:5
  44:1
justification 74:6
  146:13
justify 217:12

k

kane 2:22 45:9,12
  126:8,10 130:10
  134:20 141:6
  143:17 146:6
  154:4 197:5
karol 2:4 17:4,7,8
  96:4,5 103:1,3
  104:22 110:8
  111:5 116:9 117:5
  120:19
keep 34:7 60:10
  65:11 75:21 92:21
  172:14 193:16
  194:8 203:21
  204:20 212:6
  225:12 242:13
  253:17
keeping 81:13
  253:8
keeps 223:1
kept 212:17
kerry 2:20 124:16
  124:16 125:7,8
  127:19 128:16
key 29:6 31:3 61:5
  103:16 116:16
  146:7
kia 19:7
kick 113:11
kicked 213:9
kidding 184:9
kids 238:14,20
  239:1,14
killed 220:17
  222:15
kind 61:7 70:4
  78:22 82:16 83:15
  86:5,8 98:5

104:20 107:7
112:11,12 128:13
129:4,8 130:19
152:1 154:15
171:14 176:3,4
197:20 205:13
212:10 213:18
216:8 220:2
221:13 222:9
226:3,10 232:9
233:22 236:12
239:21 249:13
252:18 255:2
kinds 88:7 105:22
  140:14 144:1
  168:7 239:10
king 158:3
knew 100:15
  167:9,14
knight 158:21
know 4:4 5:16 6:1
  6:4,6 13:7 16:19
  45:18,21 46:8,15
  48:2,12 60:16
  64:11 65:6,8,12
  65:14 67:20 69:3
  72:22 73:2 76:6
  76:21 77:7 78:13
  83:21 84:15 85:16
  86:11,12,16,16,18
  86:19,20 87:19
  91:10,14,16,20
  93:14 107:21
  109:5,8,21,22
  112:10,19 113:19
  113:22 114:13
  117:6,7 120:9,21
  121:3,11,12 123:4
  123:12 128:16
  129:10,16 130:10
  130:16,22 131:8,9
  131:22 132:4,15
  134:20,22 135:17
  136:3,13 141:1,6

141:12,14,15
142:7,8,10,11,15
143:8,17,18
144:12 146:6,8,8
146:15,20 147:7,9
147:17 148:2
151:7,19 152:4,19
153:7,13 154:4,8
154:11,17,21
155:6,16,19,19,21
156:1 157:7
162:16 163:18
167:16 169:9
171:20 181:22
183:1,4,13,15
184:10,12 188:22
191:22 192:9,15
192:17 193:2
194:1,2,9,20
195:22 196:2,8
197:13,20 201:11
205:14 206:13,14
206:22 207:12,13
207:20 208:6
210:2,8,13,19
211:3 212:11,21
213:6,9,22 214:5
214:9,9 215:22
216:8,13 217:10
217:14 219:1,4,17
220:8,15,15 221:5
221:6,12,17,18,21
221:22 222:2,2,5
224:14,15 225:4
225:18 226:16,17
230:19,21 233:14
234:14,14 235:2
235:12 237:18
240:9 241:4 242:6
242:15,16,21
243:1,3,5,5,22
244:12 246:11
247:22 249:11,18
249:20 250:5

252:22 253:2,18 255:15,21 256:15 256:16,20 257:1,3 258:3,9

knowing 174:1 252:3

knowledge 143:22 147:20 197:17 252:4 259:7

known 38:15 45:11 125:13 166:18 187:15 207:11

knows 83:6 169:9

kolodrieg 124:18 124:18,19,20,20 125:8,9 130:8 132:7 134:13 136:20 139:13 145:9 148:18 149:10 150:13 153:15 154:2 156:17

kolodriej 2:20

krayem 2:5 158:19 162:20 167:7 170:3 172:1 176:14 181:6 183:2

kurdock 2:16 38:6 57:12 62:20 70:12 77:6 78:19 79:11 79:15,19,22 86:1 91:17

l

lab 11:13 189:16 189:22

label 82:2

lack 34:17 47:14 115:2 131:12,14 131:14

lacking 139:11

lagged 146:17

lahood 154:1

laid 14:21

land 62:1 123:15

landed 131:8

lane 55:18

language 23:2 167:21 255:20

large 97:16 99:9 119:9 165:6 235:20

largely 66:18

larger 99:5 108:4

largest 119:16 120:9

laser 137:22

lasted 215:6,8

lasting 14:12

late 222:14

lately 203:17

latent 68:5,19

laughing 119:12

lautenberg 63:4

law 10:10 21:1 24:10,17 36:16 95:13,15,16,20 106:22 115:5,5 122:20 125:22 127:1 139:19 148:13 149:7,11 163:9 165:13 203:8,10,11,20 205:8 208:2 227:16,22 228:3 247:4 253:3

laws 8:22 9:17 13:8,14 17:22 20:17 23:16,18,21 24:12 25:2,10 28:14 29:18 30:16 33:14 37:20 42:9 45:19 46:4,6 52:14 53:14 54:6 54:10,11,15,17 55:6,8 140:16

207:20 208:4,17

lawsuits 235:18

lay 7:17

lays 12:22

lead 21:8 27:19 28:17 37:2 41:3 52:17 55:15 119:5 190:2 207:17 217:19 220:2 241:18

leader 4:9 96:13 158:15 258:13

leaders 126:3

leadership 3:4 6:11 19:18 28:12 50:22 53:19 97:17 128:7,12 129:7 152:9 181:1

leading 7:22 243:22

leads 219:5

lean 108:18

leaning 182:14

leap 201:13

learn 128:3 218:3 249:14

learned 72:10 90:1 198:5 209:18 253:12

learning 84:10 87:18 181:7,16 201:14 218:3 226:18 247:12 249:11,21

leave 184:17 239:7 253:20 258:15

leaves 34:20

leaving 119:21

led 126:5 135:13

leeway 51:12 78:1 78:12

left 15:17 109:17 239:11

leg 138:5

legal 21:18 24:15 62:12,12,15 115:3 115:7 245:9 247:3 247:18

legality 24:6 25:5

legally 99:22

legislating 51:17

legislation 96:12 118:14 133:10 208:9 229:9

legislative 40:21 50:20 62:17 63:1 63:3 94:22 166:13 189:2,6

legislatures 41:3 57:2 208:7

lehner 2:8 38:1,4

leigh 2:6 27:11,12 38:5

length 77:10 235:19 241:12

lessons 90:1

letter 26:7,9,11,15 26:21 27:5 70:3 71:6,8 74:17,19 75:9 83:8,13 84:7 85:3 86:6 88:19 106:21 123:3

letters 105:22 106:16

let's 59:22 91:13 91:13,14 134:13 135:12 160:18 162:17 168:5,16 175:1 185:11 188:18 221:6 225:14 243:5 249:16

level 19:16 20:3 22:15 25:11 30:17 37:3,3 39:22 40:9 40:12 41:2 42:17 53:18 61:15 76:2

76:3,3 85:4,6 94:9
96:20 110:16
111:2,9 146:18
155:15 166:8,17
168:2 169:18
170:6 173:21
177:4,11 178:8
180:20 181:2
184:16,19,21
211:1 228:22
234:13 243:14
248:5 254:16
levels 41:16 50:8,8
52:1 76:3,8 97:18
97:19,20,21
113:15 120:2
163:21 164:17
176:19 181:2
leverage 51:19
101:4
liability 9:18
10:13 18:1,3,5,9
18:11,14 44:4
90:8,18 95:20
102:10 114:13
117:17 118:5
205:7 207:20
248:1,4 254:13
255:21
liberties 226:22
license 42:2
licenses 206:14
licensing 9:17
17:21 20:22 42:5
42:9 51:10
lie 210:3
life 56:4 72:16
151:20 187:2,3
198:19 210:6
255:6
lifecycle 254:11
lifesaving 10:18
44:19 45:2 50:6
116:7

lifetime 100:7
lift 140:5
lifted 151:22
light 73:18,21
125:4 140:17
likelihood 116:13
121:15
likewise 106:10
118:15
limb 187:3 210:7
limit 33:9 161:16
161:17 166:3
limitation 90:18
184:14
limitations 36:21
86:21 184:20
246:8
limited 59:8 101:9
112:4 142:18
159:19 166:21
174:6 178:11
179:3 210:10
212:16 241:17,17
line 63:9 66:9 68:8
85:9,14 160:5
184:3 210:20
212:16
lines 23:22 24:16
40:1 210:10
lisa 260:3,14
list 12:17 92:6
208:8
listed 69:3 250:14
listen 16:7 80:17
listening 3:5 13:16
150:18 173:17
257:14
lists 190:15
literally 110:12
199:16 201:14
litigating 205:18
litigation 125:10
127:4 158:9

litigator 62:16
little 58:14 64:7
80:3 81:18 87:3
87:11 93:8,11
107:1 112:21
116:3,21 124:7,9
125:3 142:16
168:13 170:11
183:14 203:12
204:3,3 207:17
210:12 215:12
225:10 226:15
229:20 231:10
234:11 251:10
257:10 258:10
live 16:2 82:9
152:6 163:3 200:3
209:22 210:10
211:20 212:2
215:19 217:15
219:4,5
lives 5:9,15 12:16
52:4 70:19,21
71:1 73:3,3 171:9
196:3 207:10
215:20 218:17,20
219:6 221:7,12,20
local 7:16 23:18
25:11 51:17,22
52:1,4
localities 23:9
locations 55:20
locust 118:19
logic 233:17
long 33:7 49:2
77:9 84:16 102:15
102:19 114:11
126:11 147:1
192:2 238:22
241:18
longer 159:22
177:8 194:4 215:7
243:16 258:10

longstanding 30:5
64:20
look 14:18 16:7
47:17 48:4 52:10
52:20 72:17 83:13
107:1 121:12,13
121:15 129:2,5
133:14 136:7
138:8 140:1,2
141:8 142:1
143:19 147:11,18
159:8 163:11,20
164:1 173:7,18
175:18,18 176:19
177:6 185:20
187:4 194:21
205:22 206:1,22
207:3 212:8
216:18,19 219:15
219:21 220:9
223:22 232:14
256:17 258:17
looked 88:21
131:7 192:10
looking 12:10
47:22 48:14 76:7
80:7,9 88:17,20
89:19 111:13
115:18 131:4
134:21 140:16
141:12,22 146:1
147:7,15 156:1
157:19 161:7
162:1 170:16
175:17 181:22
206:5,6,6 212:10
218:16 219:10
220:15,16 230:13
238:4
looks 186:3
219:12 230:10
245:2,10
loop 233:19

loosening 82:19	**m**	**mandating** 74:16	83:19 90:12
lose 121:16 175:22		75:10 85:2 106:3	198:11
losing 215:20	**mac** 62:19	187:10	**marc's** 61:21
219:6	**machine** 113:3	**mandatory** 70:10	**mark** 2:3 4:19
loss 135:20 186:18	181:7,16 210:15	71:7 196:18	**market** 3:8 17:14
244:3	247:12 256:12	**maneuvers** 54:19	21:5 35:11 106:3
lost 5:18,19 12:14	**magic** 230:13	**manifest** 68:5	114:20,21 115:2
70:21 186:20	**magical** 153:11	**manner** 11:21	115:14 118:3,8
lot 30:1 46:20	**maintain** 222:18	**manufacture**	133:5 138:17
56:13 68:20 72:1	222:22	27:17	139:4,6 150:4
77:19 84:9 85:7	**maintains** 21:3	**manufactured**	196:2 204:3,4
86:1 98:20 99:7	**maintenance** 25:9	202:11	211:9 217:11
115:15 117:22	66:13 192:18	**manufacturer**	222:21
131:20 140:21	**major** 132:21	61:2 64:15 71:10	**marketplace**
142:21 143:14	163:1	71:14,16 72:12	102:12 108:12
156:9 159:16	**makers** 205:16	78:8 89:21 123:10	161:11
164:13 166:20	**making** 26:3 36:4	132:12,21 133:12	**market's** 79:3
167:12,20 182:14	37:5 41:3,4 64:12	136:1,2 137:20	**martin** 2:12 52:22
191:13 194:21	74:5 110:18,19	138:5 150:16	53:2,3
195:20 197:17	114:11,14 122:11	220:19,20 222:17	**mason** 190:11
198:5 199:11	123:12,17 124:10	**manufacturers**	**massive** 22:11
200:5,15 201:13	128:3 138:19	13:22 18:6 19:5	65:9
203:9,13,16 204:4	153:12 155:9	21:3,9 22:6,18,21	**material** 121:14
204:13,15 210:18	173:1 176:21	23:8 25:17,21	**math** 218:12
212:20 216:2,10	179:5,6 181:4	31:9,13 35:7 37:7	**matrix** 66:8
218:6,9 221:19,22	201:15 210:9	43:11 46:15 71:4	**matter** 22:3 31:18
224:17 225:1	212:11 247:15	77:22 78:12 80:20	50:19 51:18 63:10
230:4,4 231:5	**male** 237:20 238:2	89:13,18 90:10	64:2,5 116:20
232:11 241:9	**mallrats** 230:13	99:6 127:12	**matters** 67:21
250:1 253:3,12,14	**manage** 113:16	159:16 160:1,15	91:4,4,19,22
256:20	168:9 177:17	165:15 168:10	127:2 139:22
lots 85:18 99:20	182:1 222:22	186:16 188:2	227:15 255:1
157:6 160:17	**managed** 179:21	195:4,6 196:21	**maximize** 53:17
238:14	**management**	235:14	**mayer** 127:1,5
love 117:3 170:1	68:22 69:10 96:11	**manufacturer's**	**mc** 224:2
low 55:17 68:9	**management's**	27:15 63:13	**mean** 60:20 70:1
222:14	84:22	160:11	75:17 78:20 84:17
lower 55:21 76:8	**manager** 19:3	**manufacturing**	88:4 89:21 90:19
98:17,17	53:3	21:19 61:3,16	98:21 110:1
lowest 101:21	**managing** 62:18	78:22 82:6 92:11	130:21 140:13
lucky 109:22	**mandate** 26:15	**mapped** 122:15	141:17 142:2,4
lunch 16:1 57:22	51:3 69:16 150:16	**marc** 2:14 61:21	151:14 154:5
	mandated 75:7	63:22 65:18 70:16	171:17 182:19
	187:16	73:12 77:14 80:15	193:10,12 202:2

208:10 220:14,14
224:8 232:19,21
237:15 240:19
243:3 245:16
248:22 256:8,13
256:14,17
meaningful 244:9
251:12
means 8:11 12:4
67:7,11 81:13
82:13 100:6 105:8
116:2 155:6 162:4
164:16 171:5,8
174:4 177:10
196:15,19 200:13
231:13,22 253:8
meant 43:4 63:18
144:9 258:8
measure 100:6
180:16 203:1
251:12 254:11
measured 5:16
107:16 173:6
measurement
231:7
measures 23:4
33:17 73:16
145:14 155:11
mechanical
210:14 211:3
mechanics 66:13
mechanism 26:12
35:7 162:13 253:1
media 15:7 96:3
190:12
medical 191:1
199:11,17 202:6
204:16,18 209:2,7
213:15
medications
238:15
medicines 238:17
meet 21:12 22:19
31:10 69:11 91:11

160:12 161:4
169:8 172:10
176:3 177:11
237:2,19,22
meeting 1:4 13:5
14:3 16:2 21:10
49:18 58:8 67:18
109:11 111:19,20
122:10 147:17
162:12 178:16,20
237:11 257:18
258:19
meetings 4:14
14:19
meets 29:14 35:18
170:21
mema 27:11,15,16
28:5 29:5,16
31:14 32:3 38:1
mema's 31:3
32:13
member 53:5
181:10 258:12
members 17:12
19:6 25:16 27:19
31:15 40:20 53:9
92:20 102:9
226:20
membership
40:21
members' 39:17
44:8
mention 43:14
170:22 194:14
205:5 250:13
mentioned 127:10
128:19 131:11
134:17 136:21
137:15 138:21
148:19 181:15
197:15 202:2,14
207:20 208:19
228:19 237:16
251:10

men's 15:18
mercatus 190:11
227:9 232:4
merino 2:6 27:11
27:12,13 38:5
messages 56:18
met 48:19 239:1,2
239:5
metaphysical
199:18
method 37:10
247:4
methodology
176:5,8
methods 169:21
217:2
metric 168:15
mic 13:20 88:15
89:3
michael 2:10
189:14,15 191:5
195:16 205:20
208:18,21 212:3
michelle 2:14 15:2
258:16
michigan 118:14
microphone 89:4
125:4 186:2,5
223:22
microphones
16:14
mid 222:14
middle 104:21
227:10
mightily 199:8
miles 165:2
168:14
military 190:7
million 17:13 53:9
168:14 169:16
170:1
millions 49:1
mimic 105:20

mind 16:9 75:21
88:16 139:21
172:15 237:10
240:6 246:17
255:3
mindful 240:15
244:5
minds 106:18
minimum 48:17
48:19 49:6 208:14
minor 54:5
minute 125:7,14
185:17
minutes 14:12
59:3,4 88:10
minutia 254:17,20
mirrors 237:3
misconduct 91:3
92:2,3
misdemeanors
55:11
misjudge 7:2
missing 130:22
136:6
mission 5:8,10
50:3
mistake 36:4 92:7
251:11
mistakes 91:22
119:4 252:1
misunderstandin...
29:3
mitigate 55:5
127:13
mix 151:15 155:18
mobile 151:14
204:16,18
mobility 6:15 7:16
12:6 13:3 19:21
24:6 25:4 38:22
49:22 50:9 53:7
53:15 56:19 95:22
mobilization
32:19

mode 37:17 42:14
    42:20
model 3:6 8:14 9:4
    9:15 13:7 14:1
    17:19 20:2,13,18
    22:3,4 23:12,16
    26:17 29:10 31:19
    32:5,21 33:21
    34:7 35:3 36:10
    39:5 40:8 43:13
    44:10 45:17 46:2
    48:22 49:18 50:10
    54:1,4 57:15 58:8
    67:2 80:4,6 81:17
    83:9 111:11,11
    112:5 115:18
    138:2,11 214:22
    215:2,10 257:21
models 48:3
moderated 14:11
    60:2 124:15
    157:10 185:15
    223:10
moderator 93:4
moderators 14:13
    59:5
modern 10:15
    14:4 57:19 58:13
    136:9 142:6
    144:13 172:19
    257:22
modes 129:3
    137:16 138:12
    139:10,15
modifications
    30:2,5,10 200:15
    201:22
modified 29:22
    32:6 192:9
modify 184:20
moment 12:1
    14:22 76:13 85:20
    88:15 152:5
    153:11 198:9

255:11
monday 1:6
money 121:16
monitor 100:7
    126:7 209:9,17
    211:9
monitoring 30:13
    122:5 239:20
month 8:9
months 52:21
    107:17 175:13
    249:19
morning 4:2,5,8
    4:13,22 5:1,3,4
    13:5 16:12 19:2
    27:12 32:17 38:10
    38:12 45:12 49:15
    53:2 57:14,20
    58:6,7,14 83:8
    200:8 215:19
    223:12 257:21
morph 180:11
mortem 120:22
mother 6:2
motivated 6:18
motivating 81:8
motivations
    196:21
motor 8:18,20
    9:18 10:3 17:2,22
    19:5 23:13,20
    27:14 29:14 34:18
    35:21 38:14,19
    51:4 56:15 61:5
    64:12 65:22 73:19
    74:13 88:5,18
    133:16 148:6
    186:22 248:14
motorcycle 88:18
motorcycles 87:22
    88:8,20 89:14
    90:3
motoring 53:11
    248:11

motorist 33:7
motors 27:10 57:9
    131:10
move 11:12,16
    48:15,15 49:8
    52:4,6,17 75:12
    98:9 142:11
    151:17 174:5,8
    175:14 177:16
    184:15 215:11
    235:3 251:13
    256:2
moved 247:8
movement 129:6
movie 230:12
moving 75:2,5
    80:16 98:17
    135:14 156:6
    193:14 213:10
    223:2 232:2
    235:21
mullen 103:1
mullens 2:18 93:5
    93:14,18,19
    100:13 104:16
    105:1 111:4 112:9
    117:9 123:19
    124:1,4
multi 113:5
    203:20 220:2
    239:13 253:5
multiple 21:10,13
    40:4 59:19 200:7
    237:14 240:5,16
multiplicitous
    123:9
municipalities
    52:10
mutual 17:5,10
    96:7

n

n 2:1 3:1,1 4:1
naca 189:10

nail 252:19
name 16:14,22
    17:8 19:2 27:12
    33:12 124:16
    125:8 186:8
names 13:17
    16:10 17:4 57:5
name's 53:2
namic 18:18 96:8
    96:9
namic's 96:11,13
naps 60:11
narrow 167:22
    173:4 174:6,13
    237:9 243:3
national 4:20 5:13
    9:9 13:1,10 17:9
    19:19 20:16 28:7
    53:19 56:6 57:1
    95:17 96:7 126:19
    154:19 189:3,7
    208:7
nationwide 37:20
nation's 44:19
nature 110:5
    251:2
near 20:8 78:7
necessarily 60:16
    70:9 77:17 87:1
    99:22 103:19
    119:16,22 123:6
    128:21 137:10
    147:2 165:21
    172:2 208:2
    225:20
necessary 13:10
    24:13 25:3 28:3
    34:19 73:16
    127:17 152:13
    153:7 179:15
    244:17
need 10:9 15:10
    31:4 39:12 40:11
    40:12 43:6,16

64:9 65:11 71:13
75:1 77:12 83:16
86:6,7 87:1 99:16
102:20 103:13
108:4,10,16 109:3
109:10 115:22
119:18 123:6
131:1,20 133:13
134:11 136:17
137:3,7 138:16
144:14 146:12
150:22 151:12
152:6 154:6,22
155:20 159:17
162:22 163:6,15
164:1,2,3,4,11,20
165:3 168:14
170:6 171:4
172:14 178:5
181:2 182:15
183:13,22 184:5
184:11 195:16
197:4,14,18 200:4
202:10 204:6
207:4 213:1 214:3
215:11,15 219:19
222:6,22 225:11
225:12 229:9
232:1 234:3
239:22 249:2,20
250:4 252:20
255:21
needed   37:13 84:5
132:19 153:21
needing   133:10
needle   205:1
209:2,14
needs   65:4 75:5
98:6 101:4 130:21
146:16 152:12
177:11 182:20
197:18 211:12
219:11 225:16
226:17 234:17

240:15 245:22
246:7
negative   245:4,4
negotiating   97:7
negotiation
100:21 228:8
neighbors   12:17
neither   259:8
260:7
networks   227:3
248:17
nevada   118:13
never   102:4,12
116:10 217:22
nevertheless
31:17
new   10:16,17 11:8
11:10 13:2 14:7
14:18 51:18 54:16
61:5 63:5 64:13
74:3 81:9,10
82:16,21 83:2
90:13 99:8,11
102:11,17 103:5
110:1 115:17,17
116:7 120:4
133:10,13 137:8
140:2,3,17 152:5
152:10 153:12,13
156:13 165:16
175:15 177:14
186:21 191:4
193:17,18 198:10
202:1,7,15,22
206:8 214:9 229:9
232:10 235:20
240:13,17 243:20
254:10 258:18
newly   231:14
233:3
news   220:16
nhtsa   1:5 3:4 5:8
6:4,18 11:4 15:5
17:15,19 18:2,8

18:15,17,21 19:12
19:17 20:14,20,20
21:20 24:3,22
25:7 26:1,7 27:4
29:5,7,11,13,17
31:17 32:3,9 33:1
33:8,14 34:10,22
35:1,15 36:3,6,18
36:19 37:5,7,11
37:19 38:9 39:9
39:15 40:6,13
41:12 42:5 43:10
43:11,13,16 44:21
45:6 49:12 50:22
51:16,19 54:4,8
55:1 56:16 60:3
64:9,19 65:1
70:13 73:13 75:4
76:1,7 77:3 83:22
84:8,12 85:10
89:18 90:9 93:12
95:3,7 99:3,14
104:7 105:13,20
106:1,22 110:19
116:4 125:1
126:20 127:8,12
127:16 128:2,6,22
129:5,16,20
133:15 139:14,16
139:20 140:1
142:17 143:7
145:20,22 146:3,5
146:15 148:10,11
148:16,20 151:7
152:9 153:19
157:11 158:4
159:8 171:12
177:15 184:22
185:16,20 198:4
200:13 204:7
208:4,13 214:21
215:2,14 218:11
223:11 229:16
233:7 234:19

237:17 242:9,15
244:13 249:22
251:16 253:16
258:2
nhtsas   20:11
nhtsa's   20:11 22:9
28:6,18 35:19
42:16 44:22 49:17
49:19 50:12 52:6
85:17 87:22 97:5
97:16 106:12
127:7 128:11
140:7 143:1
181:22 210:17
211:4 238:11
240:10
nice   100:22
nicely   215:15
night   117:5
nimble   7:21 10:19
200:5 203:13
niskanen   227:1
nissan   19:7
non   45:14 63:2
91:21,22 92:2
156:15 188:11
noon   15:19
norma   2:5 158:19
158:22 162:17,19
167:6 170:2
176:13 179:1
182:19
normal   51:14
181:9
normally   258:10
notary   259:1,17
note   25:20 26:7
97:19 137:14
145:2
noted   19:22 31:14
97:12 245:17
notes   41:6
nother   205:8

notice 132:12 156:11 196:11
noticed 224:2
notices 193:13
notifies 98:11,13
notion 10:22 74:3 79:8 101:2,7 108:17 109:2 113:5,21 118:22 120:8 180:8 228:14,17 230:7
notions 123:14
notwithstanding 112:2
novel 51:18
november 14:17 19:12 31:13
ntia 203:18
number 5:19 6:1,4 6:7,19,20 10:9 15:20 19:22 22:1 24:19 74:18 84:5 95:4 96:18 99:4 104:7 105:18 113:10 117:10 138:9 141:2 142:18 149:14 152:20 165:2,2,20 165:22 187:6 206:17 213:1,8 220:14 221:18 231:14,16 233:10 246:9
numbers 5:17 12:16 121:7 165:6 219:2
nurses 206:7
nuts 66:14

o

o 3:1 4:1
oatmeal 120:1
object 230:10 254:10

objected 231:16 233:2
objective 13:15 20:14 180:21 228:20 231:7 233:12 235:2 236:3,8,13,22,22 237:2 238:6 239:3 240:10 254:8 256:5
objectively 173:5
objectives 24:5 240:5,8,14,16
obligation 98:17
observation 114:11
observations 224:11
observed 51:5
obsessing 217:20
obstacles 23:10
obstreperous 119:11
obstructions 55:22
obtaining 49:20
obtuse 86:13
obviously 89:20 94:2 96:15 198:17 226:4 237:21
occasion 60:19
occasionally 119:11,11
occupant 42:21
occur 141:3 180:4 192:13 195:3 223:4
occurred 72:14 217:3
occurring 144:11 219:13,14 242:8
occurs 18:7 137:20

oem 19:6 130:1 172:10
oems 31:12 84:18 129:11,14 153:6 162:8 163:14 166:1 167:18
offer 56:6,10 57:14 63:11 65:13 73:10 88:12 162:20 172:10 189:19
offered 11:15 31:10 186:16
offering 65:9
offers 44:5 212:20
office 26:11 62:11 93:6,20
officer 259:2
official 258:1
officials 35:8,22 210:9 249:3
oh 4:11 111:5 124:1 239:14 252:8,8
okay 4:2 5:5 17:3 24:18 27:11 38:8 38:10 45:9 57:3 57:11,13,17 58:1 58:3 73:6 76:12 89:20 93:18 117:14 123:19 124:1 135:19 136:2 141:19 142:5 146:4 157:2 157:13 162:18 168:4,18 175:1 185:1,9,9,11,13 204:20 206:8 207:1,4 217:4 220:13 223:5 224:1 252:14 254:6,7
old 81:17 191:4 198:9 200:16

243:10
once 37:21 54:16 133:5,5 139:22 236:1 251:21
ones 59:15 98:10 107:2 133:4 137:8 155:2,2 206:3 209:22 250:8
one's 117:12 236:22
ongoing 26:8 28:1 39:9 50:11 122:5 200:20 218:1 226:11 243:16 244:13 253:5
online 74:4 190:13
onset 60:10
open 13:20 59:5 81:4 100:16 102:18 161:10 238:21,22 239:1,6 239:7,7,8,11,15 239:16
opening 3:5 4:21 13:16 67:18 90:9
oper 192:1
operate 25:22 31:9 66:4 176:17 236:5
operated 34:15 43:5 44:10 217:7
operating 30:17 37:17 42:13,19 106:16 177:8
operation 9:8 22:11 24:21 25:15 36:13 37:12 55:10 61:5 66:13
operational 22:2 114:17 123:4
operations 25:20 52:17 62:4,14 113:20 190:8 192:2

operator 42:13,21
98:2 113:4,4
114:10 193:3
213:3
operators 18:6
30:7 67:20 137:20
206:3
opinion 103:14
opinions 103:4
opportunities
14:18 32:1 50:9
191:8 258:18
opportunity 13:19
19:9 27:7 31:16
32:20 44:21 53:21
56:20,21 82:15
93:11 98:14
127:20 130:1
137:21 140:2
151:10 152:11
191:20 217:15
oppose 33:17
opposed 35:13
74:7 76:10 174:6
203:9
opposite 219:21
optimality 245:2
245:11
optimally 244:22
244:22
optimistic 70:22
option 98:16
oral 13:18 15:20
16:11 32:20 57:14
order 30:1,21
115:22 132:11,14
133:10,11 139:3
148:10,11 149:4,5
149:7,21 150:16
165:3,8 194:8
210:15 218:16
organization
16:15 53:6 70:16
86:15

organizational
40:3
organizations
25:8 45:14 46:7
63:2 103:17
206:17 242:9
oriented 56:7
original 19:6
27:17 30:1 166:13
174:20,21 176:9
182:7 188:15
originally 202:11
orrick 227:14
ota 201:2
ought 54:11,17
85:11,11 173:18
outcome 163:3
172:4 177:11
259:13 260:9
outline 66:5
outlined 56:10
77:20
outlines 9:6
outmoded 246:12
246:14
outputs 233:18,20
outset 128:5
outside 51:14
172:7 179:8
238:10
overall 8:9 18:17
103:14
overlap 93:9 94:2
133:7
overlapping 51:21
overly 81:17 203:2
overnight 195:17
overriding 46:3
overripe 161:8
162:21
overseeing 158:6
oversight 8:18
9:22 180:21

overstated 37:4
overview 157:22
overwhelm 185:1
owner 192:16
193:3,9 194:17
owners 18:6
ownership 84:22
85:7
o'clock 58:4

p

p 2:1,1 4:1
p.m. 156:21
258:19
pace 27:1 81:10
81:20 211:1
225:12 242:9,13
pacing 200:8,9
package 128:20
169:6 238:20
packages 239:7,14
packaging 238:13
238:18
page 3:2
pages 49:7
paid 196:16
panel 3:7,8,9,10
3:11,13 46:11
59:2,5,8 60:1,12
61:20 92:20,22
93:4,9,12 94:15
124:14 125:6
126:6 157:9
160:20 171:2
185:12,13,22
186:11 188:19
194:16 197:15
198:8 223:6,6,9
224:3 226:20
228:10 249:17
257:9,15 258:9
panelist 59:10
62:9 96:4
panelists 16:20
63:7 94:18 96:22

125:2,13 156:18
157:22 160:4
165:13 168:8
185:8 186:2 223:8
223:21 224:18
226:2
panels 58:17
108:3 124:13
157:3,8 183:9
224:10 228:11
231:18 247:22
251:19 253:13
panel's 124:14
139:7 217:7
parallel 138:11
parameters
130:21 132:2
134:17,18 136:16
137:11 142:13
155:9,10
paramount
215:17
pareidolia 230:8,9
230:17
parenthetical
61:11
park 213:21
part 12:19 20:11
22:5 26:22 33:6
37:20 82:2 87:15
97:16,20 103:17
111:11 116:16
118:7 128:14,19
145:6 160:20
188:15,17 189:4
204:10 210:14,14
221:7 233:10
242:21
participants 90:21
235:5
participate 156:12
participating
257:14

participation
  11:20 156:15
  228:8
particular 6:9
  18:16,18 92:12
  101:6 106:3 113:8
  114:17 115:6
  120:2 161:3,20,22
  169:7 190:13
  209:20 231:9,21
  256:19
particularly 33:17
  37:2 74:21 77:4
  84:18 85:6 95:20
  107:12 135:3
  199:5 207:12
  215:10 239:22
  244:7
parties 111:9
  259:9,11 260:8
partly 202:21
  233:9
partner 94:19
  125:21 127:1
  158:2
partners 56:18
  158:13
partnership 45:1
  234:19
parts 66:11
party 214:12,16
pascrell 63:4
pass 24:18 57:10
  107:8 167:15
passed 59:9
passenger 27:18
passengers 18:6
passing 13:8
patchwork 13:14
  20:16 21:8 28:13
  33:12 48:22 49:8
  244:1,2
path 7:17 12:5
  24:1 136:12

158:14,17 160:15
  232:13
pathway 120:5
pattern 230:10
  254:16
patton 125:22
paul 2:5,13 18:22
  19:3 60:2,4 70:13
  88:13 94:1 223:11
  229:16 234:22
  243:7 245:17
  252:20 257:17
pause 71:3 138:20
  186:1,6 223:20
pay 220:8 240:1
paying 12:14
pedestrian 55:17
  56:1 194:22 195:1
  195:7
pedestrians 178:5
  192:6 194:15,18
  195:2,11
penalty 91:6 92:8
penn 228:2
pennsylvania
  228:1
pens 59:9 185:20
people 46:20 55:7
  102:3 103:4 105:3
  117:1,2 142:19
  151:5 152:6 153:3
  157:14 164:14
  167:18 168:1
  171:4 175:2
  196:20 205:17
  206:7,18 210:18
  213:1 215:20
  219:6,7 221:8,9
  224:22 225:4,11
  238:1 244:3
  246:14 253:9
  255:4
people's 133:22
  221:20

percent 6:8 7:3
  17:13 46:20
  154:20 176:22
  181:12 218:15
  239:1
percentage 6:21
  218:20
perceptions 187:6
perfect 116:18
  200:20 217:17
  225:17
perfectly 80:14
  108:22 200:19
perfor 188:4
perform 54:19
  78:4,9 113:9
  114:1 169:2
  176:15 179:3,4
  187:20 188:5,8
  195:19 237:1,13
  238:1 240:4,15
performance 21:7
  21:21 22:9 23:17
  29:13,17 35:19
  43:9 61:17 67:6
  67:13 70:2 79:13
  82:12 108:11
  110:3 113:8,13
  114:3,4,10 121:18
  160:9 173:5
  187:11 208:14
  211:10 222:13
  237:18 254:12
performances
  254:21
performed 237:22
performing 114:5
performs 114:14
period 75:16
  159:12,22 179:5
  218:18 245:21
  249:16
periodic 206:15

periodically
  249:14
permission 23:6
  34:14 35:22 223:2
permissions
  190:15
permit 36:9
permits 23:5
perseverance
  224:7
persevering
  228:11 257:9
person 42:16 83:4
  104:1
personal 157:17
personally 145:12
perspective 102:8
  140:17 152:17
  231:19
peter 2:16 38:6
  57:11 62:20 69:19
  70:7 76:13,15
  80:15 85:21
peter's 62:20
petition 246:14
petitions 246:11
pharmaceutical
  238:13
philosophers
  200:9
philosophy 100:5
  102:15
phone 199:16
  201:5 205:1
phones 198:17
phrase 198:12
phrases 232:18
physical 211:3
  234:4
pick 59:14 173:20
  196:22 209:18
  243:3,4
picture 118:7

piece 142:12,14 176:14 181:6	**pleased** 128:14 234:21	17:14,19,20 19:15 19:19 20:2,7,12	**politely** 71:15
pieces 68:8 161:3	**pledge** 17:17	20:14,18 22:3,4	**political** 181:1 203:8 228:1
pilot 66:12	**pledges** 18:18	23:1,12,16 26:17	**pool** 80:9
pilots 206:5 212:22	**plus** 252:16	28:7,22 29:6,10	**poor** 144:19
place 19:15 33:19	**point** 26:6 31:7,15	31:6,19 32:6,19	**pop** 159:15
35:13 45:20 48:17	39:8 40:16 71:18	32:21,22 33:2,14	**portion** 32:21
120:2,4 131:13,22	74:20 77:14,15	33:21,22 34:3,8,8	57:15 58:9 168:1
135:19 136:17	78:7 85:3 98:18	34:11,13 35:3	**pose** 59:10 191:8
144:14 145:15	106:4,10,21 111:7	36:3 37:22 39:5	**position** 34:21
172:9 173:3	113:13 123:2	39:17,19 40:8	50:22 51:20 103:3
175:12 176:12	129:13 133:4	41:2,6,12 42:7,12	103:6 128:21
182:20 199:2	136:3 137:11	43:8,14 44:11	143:14
207:4 216:20	139:18 142:7,9,16	45:17 46:3 47:9	**positive** 104:18,19
238:16 241:14	144:12,15 145:8	47:10 48:22 49:18	202:5 209:6
242:5 245:12	147:21 150:20	49:21 50:10,13	212:20 213:2,7
placed 108:8	156:9,16 165:12	51:12 52:19 53:20	245:5
places 131:8	167:16 168:3,13	54:1,4 56:10	**positively** 129:15
plan 22:7 122:1	169:10 176:6	57:15 58:9,10,12	**possibilities** 100:16
plane 137:18	177:21,21 178:13	61:13 62:2 72:1	**possibility** 53:12
planned 20:11	183:10 184:15	83:9 87:7 90:13	106:18
planning 160:1	188:12 192:20	90:14 93:13,21	**possible** 28:22
plans 20:4	194:7 198:1,20	94:9,21 96:15	32:9 44:20 61:9
platinum 66:16	200:20 212:13	106:17 125:12	106:19 115:20
platooned 41:9	213:9,17 216:1,2	153:2 158:20	143:12 194:12
platooning 41:7	216:11 220:10,11	186:13 190:3,10	234:8
play 34:11 46:1	223:14 231:7	190:19 191:6	**possibly** 179:22
47:2 52:10 136:4	234:13 240:9	196:9 200:10	180:2
152:9 155:3 233:6	250:5,20 251:9	202:9 208:1,5	**post** 3:11 58:21
235:14 248:6	**pointed** 242:7	214:8 217:18,21	120:20,22 185:14
253:14	**pointing** 243:4	226:7,13,14,22	186:12 187:6
playbook 200:14	**points** 170:3	227:3,13,16	191:7 193:5 197:8
200:16	**poisoning** 239:11	231:12 242:20	197:12 200:15
players 120:3	**policies** 28:9 29:18	248:20 250:14	201:21 204:3,4
playing 78:22	47:3 53:16 119:12	252:19 257:21	207:21 209:9
128:7 152:10	151:11 190:13	258:14	211:5 214:14
199:14	193:13 199:1,21	**policyholders** 17:13	217:11 222:5,21
plays 56:4 129:5	216:11 233:1	**policymakers** 11:15 26:13 53:14	248:1
135:9	**policy** 1:3 3:6 4:10	**policymaking** 228:9	**potential** 6:15,17
plea 32:3	4:16 7:9 8:1,2,5,7	**policy's** 7:14,20	7:4,7 10:16 13:3
please 15:4 210:3	8:9,12,14,15 9:4	36:10 37:15	13:11 24:4,13
258:17	9:15,20 10:2		25:4 27:1 28:4,13
	11:17,21 12:22		32:11 37:1 38:20
	13:7 14:2,21 16:6		

45:2 49:21 52:3
54:21 55:12 56:17
58:18 63:19 65:4
65:5 70:18 74:15
107:15 115:2
116:8 159:8
191:19 204:13
210:6 218:14
223:10 257:2
potentially 26:19
50:6 99:12 170:16
179:6 195:14
218:18 229:9
244:19
power 139:11
140:20,21 141:1,4
151:21 152:1
powerful 253:1
powers 153:12
204:8 205:17
practical 195:17
practice 30:6
62:15 96:14
125:22 126:2
127:1 237:10
240:16 241:22
practices 61:17
69:2,6 79:10 82:8
84:3 140:10,10
200:17 203:15
204:2 234:18
pre 3:8 87:22
103:9 110:15
197:9
preapproval
103:15 104:3
191:15
precedence
137:10
precedent 51:7
219:9
precisely 64:9
120:16 122:15
229:12

preclude 67:10
predicated 165:2
predict 103:22
216:22 225:14
predictability
245:6
predictive 103:21
predominantly
110:9
preempt 33:18
45:19
preemption 45:22
208:1,4
preemptive
201:20
preemptively
211:6
preintroduction
222:20
preliminary 94:9
premaking 222:20
premarket 11:9
26:12 35:14 58:20
60:13,13,19,20,21
64:8,22 65:2,20
70:1,8 73:14 74:7
77:3,8 79:8 80:8
93:2,8,21 94:2,3,4
97:2 100:12,17,19
101:7,16,19
102:21 105:21
106:14 107:22
108:16 109:10,13
109:16 111:13,21
112:11,18 114:8
124:6 139:8
162:10,11 180:12
180:12
premiere 129:5
prepare 30:22
prepared 260:4
preparing 109:14
preprogrammed
229:3

prerequisite 26:16
prescripted 82:12
prescriptive 81:17
155:11 201:20
present 51:6 98:6
115:17
presented 107:5
122:1 250:19
presenting 150:3
presents 98:15
153:20
preset 229:4
president 126:10
press 60:7
pressures 237:19
presumably 46:11
202:8,12
pretty 4:5 70:1
80:15 104:19
150:19 189:11
192:1 210:2
prevent 29:1
31:22 55:7 64:17
70:19 138:17
preventative
68:11 143:4
144:22 145:14
preventatively
131:6
prevented 72:15
220:21 221:6,21
preventing 132:5
preventive 131:5
preventively
142:1
previous 100:9
186:19 197:15
previously 122:18
125:18 148:19
158:22 227:7
253:2
price 65:6
primarily 67:7
82:14,22 94:9

243:9
primary 96:11
240:10 243:4
principally 111:12
248:5
principles 128:12
140:6 247:5
prior 27:5 62:17
62:22 95:2,7
105:11
priority 44:7
169:11
privacy 74:22
84:7,14 87:12,16
94:22 158:21
190:14 191:2
193:12 195:15
197:13 207:15
227:2 240:12
privacy's 84:21
private 85:12
96:10
privatization 62:5
privileged 62:9
118:16
proactive 68:10
140:6 143:15
probability 68:9
219:13
probably 4:4
57:18 59:14 67:7
69:6 78:13 83:6
102:1 108:21
110:12 121:9
143:9 152:14
161:14 162:20
168:19 180:5
183:15 200:17
219:18,20 220:3
234:11 236:7,19
238:12 248:9
problem 6:5 46:5
46:21 48:9 68:16
106:5 107:13,14

138:8,9 149:22
154:7 163:19
179:14 183:5
200:8,9 215:14
221:3 234:16
235:10,12 243:19
248:9 249:13
251:15
problematic 64:16
problems 47:6,12
55:18 68:5 141:9
141:13 142:7
144:10,20 147:1
147:22 155:16
164:19 194:9
201:16 202:22
216:22 222:12
224:14 225:20
230:4,5 250:8
problem's 200:12
procedure 228:14
procedures
151:12 235:2
236:7
proceeding 259:3
proceedings 259:4
259:6
proceeds 146:22
process 23:5 26:22
27:5 28:5 30:5
35:15 41:4 54:12
59:7 61:3,16
64:11 72:13 84:10
87:8 92:11 101:7
102:2,13,18,21
105:6 109:1,16
110:2,4,15 111:21
113:21 114:6,8
116:2 120:7
121:19 123:1,7
124:7,8 133:22
134:3 135:3,5,10
147:15 148:16
149:12 152:7

174:16 178:1
179:17,18 183:19
184:1,6 191:15
200:20 203:3
215:4 218:5 222:6
223:3 226:17
228:6 251:8 252:4
253:5
processes 82:2,7
101:19 124:10
203:20 232:18,19
processing 250:3
produce 21:4
169:6
producing 165:15
product 11:17
45:15 95:20 98:7
98:22 99:1 106:2
107:10,10 127:3
133:6,15 145:3
150:2 189:12
205:7,7 207:20
226:18 238:20
239:14
production 29:9
30:22 31:5 32:5
products 21:4
118:18 145:16,18
146:9,10 148:8
150:9 186:14,16
208:20 209:8
238:13,17 239:2,5
239:11 243:20
244:2
professional
208:20
professionals 30:8
professor 95:12
97:11 101:11
227:22
professor's
252:11
profit 45:14 53:5
63:2

profound 235:12
profoundly 36:4
program 35:9
55:16 57:16 88:1
158:6,14,14
162:10 174:10
180:7,17 190:11
228:3
programming
55:2,4
programs 23:4
38:13 55:3 68:14
69:13,13 90:22
158:10 161:14
progress 169:13
242:12
prohibit 23:9
37:12,16
prohibition 37:20
project 169:13
256:1
promise 11:3 65:9
101:11 102:3
247:17
promises 101:10
promote 50:3 54:1
promptly 156:22
promulgate 51:3
76:17 241:13,18
243:2
pronounce 124:16
pronouncement
90:14
proof 120:6
proper 178:11
179:19 196:1,11
222:2,2,4,4,5
properly 109:2
119:3 130:17
136:16 143:21
148:1
property 56:4
62:6 81:2,3 96:10
227:18

proposal 122:14
125:11
proposals 82:20
91:11
proposed 22:14
59:1 231:14
232:10 233:3,8
proposes 17:19
18:8,21 29:11
proposing 195:7
proprietary 81:1
81:2 85:11
proscriptive 66:6
67:5
prosecutorial
252:7
prospect 76:19
prosperity 218:2
protect 33:15 91:5
119:19 214:19
protected 26:21
85:12
protection 90:8
94:21 149:12
196:10 208:3,17
protections 39:3
48:17 189:9
protocol 30:9
prove 78:2,10
174:15,18,22
184:21
proven 8:11
102:19 132:17
164:16
provide 13:18,19
16:11 18:20 19:9
24:12 27:7 39:22
46:15 49:16 53:21
54:17 56:20 61:14
63:15,19 71:10,11
71:15 74:12 83:15
89:21 99:16
100:10 149:8,12
150:15 182:20

203:1 209:10
257:20
provided 19:12
20:10 24:11 31:10
63:12 111:2
128:16
provides 23:18
39:5 40:17 41:20
44:11 51:12 62:12
110:16 126:19
129:7
providing 17:12
26:12 107:6 112:8
128:12 202:18
proving 175:3
180:9
provision 31:11
31:16 43:19
128:16 145:7
161:20 165:14,22
244:8 249:12
provisions 161:22
241:21 242:4
245:11 248:8
249:17
provocative
130:15 131:19
132:9
prudence 252:13
prudent 252:6
psychological
230:9
public 1:4 4:14
8:6,8 9:8 11:16,18
12:7 23:8 25:16
26:4 28:11 31:1
33:16 34:15 36:1
36:9 49:17,22
52:9 53:11 56:14
61:6,19 62:5 71:5
71:22 72:4,8,11
74:17 77:22 83:10
83:16 86:3 87:6
89:11 100:3

101:10 108:6,16
111:1 115:21
116:16 118:21
153:10,18 163:14
166:11,16,18
171:10 181:21
187:4 189:11
190:19 201:10
203:2 204:11
206:13 217:21
227:13,16 228:8
252:2 258:11
259:1,17
publicly 69:2
251:14,15
published 20:8
147:12 164:22
pull 139:3
pun 167:10
puracol 228:6
pure 110:10
purpose 42:12
174:21 175:18,19
175:19 178:17,20
179:7,8
purposely 55:7
purposes 130:14
176:4 212:16
push 50:14 196:21
pushed 192:16
pushing 193:14
196:3
put 72:18 78:2
81:12 99:13 101:6
113:18 114:12
136:17 149:4
169:6 171:20
183:16 199:2
205:1 207:4
218:12 231:19
238:16 248:8
puts 250:1
putting 49:5 71:4
78:3 172:9 180:19

249:21 256:11

q

quality 50:2 92:12
246:2 253:16
quantify 218:12
quantitative 175:8
question 24:2
59:10 63:8 70:13
73:8 74:10 75:6
76:2,15 85:22
87:21 88:4,6,11
88:14 107:22
109:6 112:9 113:1
120:16 122:19
123:20,22 127:15
134:21 145:11
148:3 153:15
160:3,6 164:9
167:4 173:18,22
182:8,13 183:18
184:17 185:7,8,18
192:8 199:6
202:19 209:15
211:6 214:22
217:6 229:18
232:14 242:17
244:21 246:17
247:18 248:1,22
253:21 254:2,3
255:20
questioning
164:16
questions 15:4
20:3 56:22 59:6
73:13 85:18,19,20
87:19 93:11 94:11
113:13 120:12
145:10 158:1
168:6 188:18
191:6 217:5 219:3
253:19 254:5
256:20
quick 58:7 137:21
157:3 170:3 214:7

quickly 44:20
48:15 93:1 97:1
104:19 149:18
164:6 165:7
220:13 225:12,14
236:4
quite 71:8 75:20
87:4 94:14 96:18
143:2,2 167:19
205:15 241:17
249:15
quo 108:14 217:8
quote 140:11
215:3

r

r 2:1 4:1 227:11
227:11
r&d 158:14
rail 137:18 212:19
213:6
railroad 159:2
202:4
rain 4:7
raise 99:7
raised 74:18 76:6
raises 24:2 96:18
139:18 156:8
raising 222:8
ramifications
227:8
rand 164:22
range 10:5 27:20
55:11 56:17 67:21
90:20 91:3 92:17
97:14 119:8
121:13 126:14
192:12 208:22
238:4
ranging 8:10
240:20
rapid 50:5 81:11
134:11 137:19
212:4 242:12

rapidly 12:2 33:3
  74:4 99:5 156:6
rare 180:5
rate 254:12
rationale 80:13
reach 28:4 106:2
  206:17 223:15
  258:12
reaches 111:7
  113:15 151:22
reaching 140:7
  179:10
reaction 139:14
read 23:2 106:19
  117:1,2,11 139:19
  193:12,13
readily 37:4 144:6
reads 116:21,22
ready 93:15,17
  125:2,7 145:9
  186:6
reaffirms 9:20
real 31:1 32:1
  46:6,18,21,21,22
  47:9 48:9 86:9
  107:15 116:7
  135:9,12 141:8,11
  141:15,15 148:4
  200:21 201:2
  211:14 218:9
  221:3 231:2,7
  235:9,15,17
  242:16 243:19
  244:3 246:17
  247:20 248:8
reality 66:20 81:7
  81:9 82:11 107:18
  152:5 199:19
  212:2
realize 11:3
realizing 64:17
  65:16
really 6:14,16
  45:18 46:8 66:21

67:3,14 68:10
69:1 71:21 72:3,6
72:17 74:10 75:4
75:5,10 86:14
97:15 99:14
103:18 104:6
109:18 110:16
115:19 118:18
121:19 122:20
123:21 127:15
128:5,8 130:16
132:5 135:3 136:8
138:12,18 139:10
141:13,19,20
142:10 143:11,15
144:9 146:7,17
147:8 149:5 151:3
152:12 154:22
155:4,17 156:8
157:17,19 160:8
163:9,12 164:4,22
172:19 173:1,1
179:13 180:5
184:11,11 193:10
196:4,17 197:9
198:5 207:21
210:17 220:13
221:14 224:15,18
224:21 225:8,8,12
225:18 236:13
242:22 243:10
245:13 246:19
247:11,14,14,14
248:2 254:22
257:10 258:7
reason 10:22 51:6
114:7,18 148:7
161:16 231:20
233:10 237:5,7
reasonable 25:2
33:13 74:6 112:2
121:21 122:12,17
123:17

reasonably 112:1
  117:8
reasons 31:3 70:6
  100:2 134:4
  226:12 236:17
reassess 244:7
rebecca 2:3
  157:10 160:19
recall 114:6
  129:14 132:11
  133:10 134:1,2,11
  136:1 138:13
  139:11 144:11
  148:10,11,14,21
  150:2 156:11,15
  193:13 204:8
  211:4,12 235:18
recalls 132:18
  140:10 141:3,19
  154:18,20 155:5
  156:9,16 220:22
  221:2
recap 58:7
receive 11:19
  185:6
received 8:4 94:13
  129:11
recess 157:1
reckless 91:2,22
  217:8
recognition 18:17
recognize 32:4
  141:1 201:17
  222:17
recognized 89:15
  133:1
recognizes 143:13
recognizing 28:8
  35:2 107:4
recommend 9:6
  10:6 36:18,19
  37:11,19 54:8
  84:11 171:14
  214:13

recommendation
  25:1 37:5
recommendations
  18:12,16 20:18
  29:21 32:6 40:5
  44:5
recommended
  13:13 196:9
recommends
  22:18 25:6 42:5
  54:4
reconcile 105:17
reconsidered
  161:21
record 45:5 49:17
  58:2 259:6
recorded 43:11
  259:4
recorders 104:8
recordkeeping
  249:7
recourse 71:12
recovering 216:12
red 15:16
redevelopment
  62:6
reduce 7:6 25:4
  50:1 52:5 55:21
  65:16
reduced 259:5
reducing 76:19
redundancies
  43:21
reference 41:20
  151:6
referred 216:10
refers 200:10
  214:9,10
refinement 84:4
  203:3
reflect 64:13 84:2
  86:4
reflects 11:22

reform 114:22 158:5
refreshed 226:15
refresher 92:14
regard 87:8
regarding 13:21 42:8 49:20 60:22 83:7
regardless 108:20 184:6
regards 20:13 26:19 90:10 207:19 214:8
reggie 62:10,10,15 65:19,19 69:19 76:13,14 80:1 85:21 91:17 92:19
regime 64:10,21 67:14 72:22 74:14 98:20 101:6,12 102:10 109:2 110:6 111:15 112:14 119:2 122:14 246:13 255:13
regimes 9:19 10:8 18:1 98:10 100:17 112:20
reginald 2:15
region 227:12
regions 62:14
register 15:9
registration 9:17 10:8 16:10 17:22 20:22
regular 3:11 206:4
regularly 126:19 166:7,19
regulatable 188:17
regulate 8:20 21:6 21:21 23:3,9 36:12 42:2 133:16 138:3,3,4,4,15

185:14 187:22 232:15 234:9,9 254:17,20 255:4
regulated 8:21 103:7 159:18 208:21 243:14
regulating 33:5 99:9,10 112:17 205:8 233:5 249:10 253:3 257:2
regulation 8:18 9:5,7 23:13 42:10 51:22 58:22 62:5 65:22 66:17 69:8 83:3 95:22 96:12 118:19 144:13 147:3 174:11 188:14 217:15 227:19 228:3,5 241:4 247:1,8 248:12
regulations 5:11 10:7,20 13:9,14 24:20 39:7 46:1 47:7,18 52:14 53:14 67:2,6 68:4 69:14 77:11 80:2 140:2 144:14 145:15,17 146:17 163:9 206:9 233:13 241:3,13 241:19,21 242:18 243:12
regulatoin 114:19
regulator 94:5 98:2,3,12,13,13 98:16 120:8 123:16 153:14 238:7 244:15 250:21,22 251:3
regulators 201:10 222:17 230:6 234:19 253:6

regulatory 10:15 14:4 22:12,16 27:14 47:14 48:6 48:13 51:13 52:5 56:9 57:19 58:13 62:21 64:11 66:5 66:16 67:14 68:3 68:12,18 69:12,17 94:20 99:19 106:12 107:16 111:10,16 112:14 115:1 118:7 127:2 138:2 143:12 146:18 168:20 177:14,16 210:11 213:12 214:9,15 224:19 225:3 226:5 228:6,7 235:8 237:8 241:7 242:19 243:8,11 245:1,15 252:22 253:15 255:13 257:22
reinforce 19:11
reinforces 32:3
reiterate 27:4
reiterates 18:2 40:2
relate 191:15 236:21
related 23:15 24:8 24:20 25:13 36:14 46:5 50:14 58:21 127:3 133:3,8 190:7 216:7 259:8 260:7
relates 29:10 140:10,11 153:13 242:17
relations 53:3 158:9 228:9
relationship 153:14 210:15 251:1

relative 116:1 259:10
relatively 99:4 254:12
relaxing 67:14
release 4:15 12:22 19:18
released 4:17 220:4
releases 69:4
relevant 104:4,6 104:14 120:20 157:17 223:19
reliability 45:11 171:8
reliable 254:8
relied 66:21
reluctant 256:2
rely 68:13 81:14 82:11 99:22
relying 48:8 67:15
rem 150:7
remain 86:13
remains 35:13 206:16
remark 103:2
remarks 3:14 4:21 16:11 19:10 38:2 53:21 57:15
remediation 251:12
remedied 92:8 150:5
remedy 211:13
remember 109:10 177:20 178:4 205:22
remind 59:18 185:18 186:1
reminding 12:18
remote 10:22
remotely 43:5
remove 24:14 55:22

renewals 159:21	**reputed** 224:15	**researcher** 126:9	**responsibility**
renewed 226:14	**request** 15:21	**researchers** 54:13	8:16,20 9:1 17:21
rental 36:20	43:16	**resemblance**	20:20 21:2 23:14
reorganizing 72:1	**requested** 13:18	243:16	56:13 119:4
repaired 37:14	94:13	**reservations**	129:17 142:18
150:4	**requests** 41:11	236:6	143:6
repeated 159:20	42:15 43:3	**reshape** 6:16	**responsible** 9:21
replace 98:1	**require** 21:9 22:6	**residents** 208:11	18:3 20:21,22
replacement	22:18 36:20 41:16	**residents'** 208:12	34:13 42:17,22
114:22	43:10 54:14,21	**resistant** 238:12	43:1 166:10,18
replacing 191:20	56:2 69:14 71:12	238:18	**responsive** 103:21
report 68:15	78:7 98:14 99:11	**resolved** 154:7	**rest** 15:1 33:21
103:7 250:21	99:12 104:8	**resolves** 24:9	228:11 255:6
251:4	106:15 110:17	**resource** 34:22	**restrict** 33:15
reported 1:18	114:22 127:12	39:18 107:18	**restrictions** 46:10
reporter 16:16	159:20 229:7	**resources** 10:17	**restrictive** 52:16
89:5	241:6 245:18,21	21:11 35:4 71:19	**restrooms** 15:16
reporting 1:19	250:8	99:20 101:4,5	**result** 65:6
43:22 68:14 69:2	**required** 30:17	142:19 144:19	**retailers** 36:20
103:9,9,9 104:9	145:5	151:6,8 152:12	37:6
104:12 249:7	**requirement**	155:20 210:11,11	**retain** 9:16 17:20
reports 32:19	68:21 171:15	241:16,16,18	34:6
46:14 218:22	175:19	244:10 248:17	**retrieval** 43:11
represent 17:11	**requirements** 21:8	250:6	**retrofitted** 139:2
17:11 38:17 53:8	21:18 28:14,16	**respect** 18:14	**returning** 100:4
173:10	29:11,19 36:14	45:17 69:3 85:7	**review** 25:1 104:4
representation	37:6 45:19 51:11	90:1 107:13	110:15 122:14
154:12	52:16 68:12 69:12	196:13 237:14	150:15 162:11
representations	69:18 72:2 111:17	240:10 248:20	180:13 245:22
154:19	117:15,19 122:11	**respond** 100:14	**reviewed** 258:5
representative	122:16 145:14	113:5 129:15	**reviewing** 114:3
25:8	162:13 171:19	130:2 154:3	**reviews** 201:21
representatives	174:20 176:4	157:18	**revision** 20:7
34:6 40:22 50:17	**requires** 11:4	**responding**	**revisions** 24:22
representing	46:15 83:2 94:5	156:11 203:13	**revisit** 241:7
16:15 19:5 45:10	**requiring** 22:10	**response** 49:17	245:19 246:2
represents 7:3	28:18 45:6 69:7	91:15 96:12,16	**revolutionize** 6:17
27:16 96:9	106:6	229:20 241:2	**revolutionized**
repurchased	**research** 11:10	**responses** 68:1	151:19 198:10
150:5	55:13 61:22 95:17	240:20	**rick** 88:14 89:9,12
reputation 117:17	95:19 126:10	**responsibilities**	90:5
reputational	156:10 169:14	9:16 51:2 56:9	**ride** 161:14
118:5	189:15,17 190:10	102:11	**right** 7:14,15
	227:1,17 230:8,16		15:18 19:14 27:3

34:6 61:21 63:15
76:7 78:4 79:4,7
79:15 84:3,16
85:7 86:2,5 90:5
91:12 94:18 95:11
100:21 103:16
108:14 117:9,13
119:13,22 120:4
124:4 127:22
130:11,18 133:9
139:12 146:10
148:11 152:22
156:3 158:1 167:2
172:17 175:5
181:20 183:12
185:6 194:10
195:6,15,15,15
196:6,6 198:17
212:14,21 219:5
222:19 224:19,22
224:22 225:9
226:21 227:10,20
227:21 229:15
233:11 234:16
235:1,14,16 241:1
242:17 244:18
248:17 249:13,18
255:9,14 257:7
rightly 240:12
rights 62:6 189:9
195:14,21 208:17
rigid 245:1
rigidity 245:3,7
rigorous 204:4
255:15
rigorously 211:9
rings 101:18
ripe 160:7 182:13
rise 155:15 207:9
rises 65:6
rising 217:10
risk 55:21 56:4
60:21 62:5 95:19
108:5,19 117:17

119:2 149:13
188:7 191:20
204:15 207:10,14
216:21 219:10,13
219:14 223:1
230:4 250:19
risked 221:20
risking 196:3
221:12
riskless 217:9,9
219:4
risks 119:20 122:2
122:3 127:13
168:9 172:11
177:22 247:20
risky 209:22
217:11
road 11:13 42:18
46:17 48:19 53:6
62:8 71:5 72:8
75:14,15 77:12
106:17 114:13
119:5 160:2 169:4
170:19 172:17
174:2 177:22
178:4,7,12,22
179:5 180:2 194:5
194:5,20 215:21
221:10,11,15
252:1
roads 9:8 31:1
33:16 34:7,15
36:1,9 52:9 53:7
55:18 61:6 114:1
118:21 166:11,16
166:18 180:20
roadway 6:17
12:14,19 56:1
roadways 5:9
38:21 44:19 55:14
152:20
robotic 213:16,22
robotics 190:2,22
227:2

robust 69:6,14
72:13 108:22
131:12,14 136:9
144:13 158:10
rodney 2:21
125:16
role 34:10 35:16
47:2 52:10 128:7
129:5 152:10
174:10 205:7
228:8
roles 9:5 33:5
roll 200:5
rolled 61:19
rolling 66:8
198:21 199:3,4
room 15:7 16:4,18
83:18 183:14
rooted 131:11
136:8
roots 147:8
rosekind 2:3 4:19
4:22 5:2,5,21 6:1
12:13,14 13:6
14:2 34:1 90:12
258:6
round 69:11
116:17
rule 73:22 78:17
78:22 138:19
187:17
rulemaking 145:1
145:5 158:6 186:9
196:12
rules 18:3 24:14
42:18 74:5,8
76:16 82:21 85:5
137:12 194:22
242:20 243:2
247:9
run 57:4 100:22
179:12 191:19
231:6 256:16

running 230:4
243:12 256:18
runs 230:3
ruptures 126:16
rush 197:10,20,21
rushing 51:17
russ 2:12 52:22
53:3
ryan 2:11 16:18
16:18 57:7 226:21
226:21 229:14
242:2 252:15
256:7

s

s 2:1 3:1 4:1
sacramento
227:14
sadly 70:20
sae 30:17 40:9
41:16 50:8 76:3
safe 6:12 7:12,18
10:17 13:1 14:9
33:7 34:7 44:15
49:13 50:5 54:20
56:18,19 61:4
78:11 79:1,2 88:1
88:3 112:1,20
113:1 116:10
164:21 165:4
175:5,5 200:19
safeguard 51:21
safely 11:3 44:10
44:20 53:17 55:13
72:9 78:4 114:1
176:18
safer 5:11 49:16
53:7,7
safety 3:7 4:20
6:17 7:16 8:21
9:22 11:3,6 12:4,6
12:8,19 13:3 19:3
19:21 20:21 22:6
23:11 24:6 25:4
26:6,8,11,15,20

27:5,22 28:11	162:3,9,14 163:4	**saying** 78:16	75:4,17 83:20
29:14 33:16,19	164:12,15 165:10	79:11 90:12 100:4	**scrutiny** 65:15
34:11,18 36:2,5,7	166:1,6,12,14,16	107:21 128:1	**scullion** 2:5 18:22
36:12 37:15,18	168:9,11,22 169:5	129:22 140:13	19:2,3
38:7,21 44:10,22	169:8,18 170:21	161:19 162:4	**se** 172:3
45:10,11,13,15,16	171:9,18,22 172:3	166:15 177:12	**sealed** 60:17
46:5 47:5,8,18	172:9 173:15,21	181:12 184:1	**sean** 2:22 45:9
49:6,22 50:9 51:4	174:1,5,9 175:3,4	195:16 201:13	126:8 130:8
51:21 52:7 53:6	175:7,17 177:17	210:3 211:21	134:16 146:1
53:15 54:7 55:12	177:22 178:11	213:21 221:17	154:2 156:8 197:5
56:15 58:20 60:1	179:17 180:9,11	222:1 225:4	**sean's** 133:4
60:13,21 62:4,22	180:15 181:3	**says** 111:22	**season** 50:20
63:10,11 64:8,12	182:16 184:4,19	112:19,19 164:1	**seat** 5:13 42:17
64:17,22 65:2,10	184:22 187:11	166:5 169:7 184:6	258:16
65:14,21 66:17	188:15 189:13	204:20 215:3,15	**second** 4:13 10:14
67:13,19 68:3,19	190:13 191:2,9	230:21 231:1	37:11 55:1 62:9
68:22 69:10,16	195:1 196:5,7,11	234:10	88:13 93:3 111:12
70:2,3,8,15 72:2,2	199:7 206:18	**scalable** 52:11	117:13 170:13
72:3,13 73:15,20	208:12,15 215:16	**scale** 112:5	235:11 237:7
74:7,13,16,19	217:17,19 219:10	**scaling** 176:20	**secondly** 67:15
75:9 77:4,21	220:17 224:20	**scant** 46:22	81:16
78:14,15 79:5	229:6 232:18,19	**scenario** 171:3	**secretary** 6:11
80:21 81:5 83:7	240:11 248:14,15	173:9 209:20	93:6 125:17,18,21
83:13,15 85:3,10	250:16 254:11,13	**scenarios** 54:14,16	126:5 127:18
86:15 87:22 88:19	**sake** 196:3	144:11 180:1	130:20 137:14
90:9,20 91:9	**sale** 3:11 31:10	217:20,22	139:13 142:9
95:22 100:3,5,5,9	58:21 94:7 150:2	**schedule** 92:21	150:13 153:19,22
101:10 102:16	150:10 177:21,22	**scheme** 100:19	154:1
103:19,20 104:14	185:14 186:12	230:1	**section** 3:5 8:9
106:11 107:15	187:6 191:7,21	**scholar** 95:14	10:14,15 11:8
108:13,18 109:18	193:4,5 200:15	**school** 95:12,13,15	14:4,5,8 22:3,17
112:2,12 115:15	201:21 207:21	**school's** 228:4	24:3 31:7 33:2
115:17 116:1	209:10 222:5	**schooner** 230:14	35:3 39:17 40:3
117:14 122:9	**sales** 69:4 161:10	**science** 95:9 135:6	40:17 41:14 43:8
123:2,14,18 126:4	**samsung** 133:20	155:13 190:3	49:18 58:12 93:21
126:5,8,10,11,12	**satisfy** 67:12	196:14 228:1	106:18 132:11
126:15 127:3,3,13	**save** 49:1 52:3	**sciences** 126:19	145:4 168:1
129:6 132:13,17	70:18 71:1 218:20	**scientist** 189:15	248:17
133:3,8,15 139:12	**saved** 5:14 73:3	**scientists** 203:8	**sector** 38:19 44:13
140:6 145:3	218:19	**scipol** 190:4	183:13 199:8
147:11,14,17	**saving** 5:8	**scope** 101:9	**sectors** 167:20
148:8 152:16	**saw** 147:10 153:15	**scores** 158:6	171:6 172:13
153:10,20 155:16	231:13,21	**scribner** 2:14	196:17 198:9
158:10 159:12		61:21 64:1 74:9	205:12

secure   200:19
securities   172:4
security   62:5
  87:12 94:22 191:2
  199:7 200:21
see   15:4,16 23:7
  50:8 57:5,12 59:5
  71:22 79:4 86:10
  88:22 92:22 99:17
  99:18 100:20
  106:5 108:9 140:1
  140:8 157:14
  161:9,13 166:14
  167:20 172:13
  180:10 185:4
  186:3 187:9
  192:11 198:7
  206:19 207:1,3
  212:11 216:22
  221:19 230:14
  232:22 233:3
  238:21 243:20,21
  244:19 251:22
  256:6
seeing   76:9 87:15
  99:3 135:19
  139:11 143:18
  152:19 198:6,13
  203:7 212:9
seek   14:3 18:10
  22:6 26:14 115:7
  206:3 246:15
seeking   13:6 26:1
  149:18
seeks   33:12
seen   22:14 38:9
  45:21 47:11 70:20
  85:4 96:16 106:11
  117:10,10 118:11
  130:22 135:7,8
  154:16,18 195:8
  203:16 209:16
  221:4 230:12

sees   80:6 230:10
seize   150:8
seizures   150:7
selected   117:12
  156:11
self   7:6 22:8 31:14
  48:9 49:15,21
  50:4 63:13,21
  64:10,15,20 65:3
  74:13 80:10 82:1
  82:11,21 96:2
  97:5 101:13
  102:10 108:1,1,12
  108:15 109:1
  110:2 112:12
  114:9 117:16
  123:2 124:8 156:1
  156:11 176:9,11
  208:9 214:12
selfishly   105:17
sell   108:16 160:11
  160:16
senate   95:8
senator   63:3
  151:20
send   7:1 207:1
senior   27:13 95:10
  158:20 189:15
  190:10 227:11
sense   25:21 56:10
  73:9 74:3 98:3
  104:18 118:17
  183:11 191:22
  217:9 229:11
  241:10 243:3
  247:1 254:21
senseless   12:15
sensible   248:20
sensitive   26:19
sensor   55:22
  202:17
sensors   37:17
sent   139:3

sentence   188:21
separate   82:17
  117:19 188:17
separating   234:4
september   4:17
  7:10
series   4:14 8:5
  72:6 116:11
serious   64:8 81:7
  91:4,19 127:14
  156:13 164:18
  207:17 210:5,6
seriously   69:16
  257:10
serve   27:13 52:14
  258:13
served   62:18 63:1
  63:3 95:3 115:10
  125:17,18 127:5
  158:3,22 228:3
server   53:9 256:15
serves   39:8 96:5
  124:22 126:6,9
  130:14 158:19
  228:2
service   98:22
  137:18,18,19,22
  138:11
services   53:5
  96:13
serving   4:9 109:12
session   3:5 13:6
  13:15,16 14:3,6
  14:14 58:8,11
  100:10 130:7
  156:22 246:6
  257:21,22
sessions   14:12,19
  57:19 179:17
  191:14 193:11
  258:11
session's   58:15
set   9:14 15:8 27:1
  29:13 37:6 47:7

53:22 69:6 73:14
  78:7 84:15 93:3
  97:17 100:1 114:8
  125:1 137:10
  147:12,13 154:15
  155:1,9,11 185:13
  185:17 237:9,19
  238:7,8 247:9
  248:20
setting   48:17 49:6
  51:10 69:12 106:4
  107:8 118:15
  124:13 146:16
settled   130:18
seven   143:9
  189:10
severity   92:6
  103:12 219:13
shack   107:7
shaking   154:16,17
shame   251:15
shape   199:10
share   32:20 35:1
  56:13 107:12
  174:2 204:1
shared   20:14
  143:6
sharing   67:16
  161:14 190:22
sheridan's   97:20
she'll   15:10
she's   157:11 159:3
shield   101:21
shift   67:5 81:8
  82:12 83:1,2
  118:18 121:17
shifting   67:1
shils   227:22
shladover   2:6
  158:12 164:8
  168:18 172:14
  178:2 179:11
  180:22 183:18
  228:19

short   39:12 48:12 53:22 138:19 141:16 188:20 224:20 229:22
shot   85:21
shouldn't   48:21
shoved   253:10
show   17:8 83:22 164:11 165:4,9 238:21
shown   179:19
shows   122:2 156:10
sic   84:15 198:14 223:21
side   47:13 103:10 107:18 116:14 132:20 135:4,22 139:11 144:18,20 144:22 145:2 147:19 163:11 172:1 193:21 211:7
sides   152:6
sig   114:16
sight   212:17
sigma   114:16
sign   117:5
signal   51:16
signaling   253:1,9
signature   259:15
signed   57:4 118:14
significance 208:22
significant   19:13 20:2,8 26:18 37:1 38:18 46:2 63:11 70:18,19,21 71:18 71:19 94:2 96:17 135:2 143:2 152:15 176:6 187:2 199:1

significantly 21:13 37:13 38:20 152:21
signs   15:16 194:20
silence   15:13 57:17 59:20
silicon   198:11
similar   76:15 100:8 105:7 122:8 186:16
similarly   225:2
simple   192:14,19 219:18
simply   51:17 69:15 71:11,16 80:19 81:12 82:22 107:4 120:9 183:12 186:18,20 235:3 242:12 243:1
simulation   256:16
simulations   169:6
simultaneously 67:4
single   9:13 21:4 40:3,10 43:19 44:14 55:18 107:9 107:10 188:21 199:8,13 213:3 219:7 228:20 238:6,6 239:3
sister   133:15
sit   153:5
sitting   42:16 258:15
situated   80:14
situation   48:7 72:7,9 139:16 149:6 221:8 233:5 239:9,21
situations   30:14 54:6 78:5 140:3 233:14

six   14:11 58:17 59:2 143:9 175:13
sixth   223:9
sized   237:20
skills   259:7
skip   76:13 85:21 162:17
slater   2:21 125:16 125:18,21 126:5 127:18,19,22 137:14 139:13,17 141:5 142:15 145:8 150:13,18
sleeper   157:16 160:20
slight   152:19
slightly   73:11 162:21
slow   49:4 52:2 64:11 102:5 147:5
slowdown   218:16
small   99:4 119:10 246:9
smaller   115:9 238:1
smarter   110:14,20
smartphone 199:16 204:17
smith   2:19 95:11 95:12 97:9,12 100:22 101:11 105:9 109:19 114:19 117:20,22 121:17
smith's   95:19
smoke   216:16
smoothing   245:15
snacks   16:1
social   227:8
society   38:22 95:15 151:14,17 223:3
sociology   227:4

soft   106:14 162:10 203:8,11,20 211:1 253:3
software   3:11 58:22 89:14 110:5 110:13 113:21 116:22 124:11 185:15 186:12 187:8,12,22 188:3 188:6,10,13 195:18 198:12 202:7,10 207:16 209:1,21 211:7 212:5 214:15,18 217:11 222:20 232:20 234:7 254:17,20,22
softwarization 198:14
sold   192:9
solid   47:14 155:12
solution   234:16 248:9
solutions   18:10 52:11 55:21 225:21,21 227:6 248:8
solve   163:19 183:6 250:7
solved   234:17
somebody   138:21 197:15
someone's   66:8
somewhat   35:1 161:6
son   6:3
soon   194:12
sooner   15:19 160:14
sophisticated 119:10,17 120:10 238:3
sorry   4:11 195:20 217:9 218:17

sort   60:16 63:9
  64:5 65:11 68:7
  70:8 73:14 80:3,7
  80:9 94:10,16
  102:14,15 104:21
  112:16 118:15
  120:1 123:3 124:7
  128:4 140:8 150:7
  151:6 171:14
  179:8 182:18
  183:1 191:7
  198:13 199:18,22
  200:10,16,17
  201:12,19 203:8
  203:10,11 204:1,4
  208:9 225:15
  228:13 229:3,22
  230:15 233:22
  234:12 236:2
  238:7 240:19
  241:2 242:14
  243:16 245:3
  247:9 256:22
sorts   112:18
  203:16 239:17
sought   129:20
sound   187:18
sounded   241:20
  255:20
sounds   124:5
  182:14 256:3,9
soup   66:14
source   43:20
  222:9
south   95:14
space   50:12 54:3
  56:8 133:17
  151:22
sparingly   241:22
spaulding   158:3
speak   16:14 102:2
  125:3
speaker   89:3
  125:3 127:21

speakerphones
  128:4
speaking   8:19
  38:15 85:19
spearheading
  158:4
special   118:15
  127:8 139:3
  248:18
specializes   190:12
  228:5
specially   22:3
specialties   227:1
specific   13:7 14:4
  40:12 74:11,11
  86:7 98:7,8 99:19
  106:7 114:21
  121:18 122:10,16
  161:4 172:2
specifically   8:10
  102:6,17 126:4
  137:1 192:3
specifics   20:13
  128:3
specify   81:18
spectrum   97:15
  205:3
speech   190:13
speed   7:1 33:9
  55:17 222:14
speeding   92:16
speeds   55:22
spend   217:19
spending   169:15
spent   95:7 189:10
  199:11
spoken   115:15
spot   97:7
spread   91:7
spreadsheet
  203:19
squire   125:22
stability   113:11
  135:15 187:17

staff   15:5 86:12
  92:12 95:8 158:22
  185:20 215:8
staffing   99:13
stage   31:2 75:8,12
  85:8
stages   29:1
stake   195:21
stakeholder   17:16
  20:11 203:20
  253:5
stakeholders   10:5
  25:7 26:13 29:2
  33:1 37:8 39:14
  44:4,18 47:2
  49:10 56:8 253:7
stalking   233:4
  257:2
stance   72:20
stand   88:15
standard   66:17
  67:13 74:1,13
  79:13 110:3,4
  111:1 131:14
  135:19 144:22
  146:22,22 147:11
  214:17 238:19
  241:22
standardization
  170:8
standards   9:14
  29:15 33:19 34:5
  49:6 51:4 61:4
  64:13 66:16,20
  67:6,8 70:10 73:2
  73:9,20 75:15
  76:16 77:1 78:17
  78:18 79:1,9,18
  82:7,13,14,15
  121:18,19 131:12
  136:7,9,11 145:17
  147:14 160:12
  162:14 163:3
  166:2,6,8 170:21

171:5 172:3 173:3
  176:16 187:10,19
  187:21 196:1,12
  196:16,19 197:14
  208:12,14 218:21
  222:2,2,4,4,5
  225:6 233:12
  234:18 235:9
  238:16 246:3
standpoint   80:8
  181:21 195:13
  245:11
stanford   95:15
stark   210:3
start   5:6 16:18
  93:15 96:19 98:10
  111:1 147:14
  156:21 157:21
  160:18 168:16
  175:5 188:18,19
  191:6 193:1 207:8
  232:2 233:5 234:3
  253:3 254:18
started   4:3,18
  16:17 58:5 59:17
  59:22 67:17 73:11
  128:1 147:9 157:4
  175:4 215:18
  223:12 247:2
starting   39:8
  96:20 163:21
  198:17 215:22
  216:2 234:13
startup   99:10
startups   117:18
  117:19 118:2
  119:21
starved   151:8
state   3:6 7:16 8:15
  9:4,5,15 13:7 14:1
  17:19 19:16 20:3
  22:15 23:12,13,16
  23:18 25:11 28:8
  28:14 29:10,18

31:19 32:5,21
33:5,14,18,22
34:5,8 35:3,7,20
36:7,9,19 37:20
39:5,21 40:8,22
41:2,3 42:4,8
43:14,22 44:11
45:19 46:3,4,6
49:18 50:10,11
51:1,16,22 52:1,4
52:9 53:14 54:1,4
54:6,15,17 57:2
57:15 58:8 83:9
85:4 106:11,15,20
208:3,7 227:18
243:14 248:5
256:1,1 257:21
stated 28:20 91:13
236:18
stateliness 9:12
33:8
statement 20:1
41:19 42:3 49:17
95:4 207:9 208:1
208:5
statements 20:17
21:17 22:2 87:6
104:17
states 8:17,21 9:7
9:15 10:4,6 13:8
13:22 17:20 18:2
18:4,9,13 20:20
20:21 21:6,18,21
22:5,10,18 23:3,8
24:3,19 25:1,12
26:14 28:13,17
29:16,22 32:2
33:15 34:1,9,13
34:17,20 35:3,10
35:16 36:4,10,12
36:18 37:6,11
39:7 40:4,13,19
41:14 42:1 43:15
43:16 44:5 45:20

47:21 48:21 50:13
50:19 51:8,12
52:12 53:3,10,13
54:8,13,18 55:4,6
55:8,14,20 56:12
95:8 118:11 121:4
181:13 208:6,8,11
211:18 243:13
244:2 255:16
states' 35:2
state's 106:17
208:17
static 99:2 229:8
230:1
stating 45:5
statistically
174:18
statistics 174:15
174:18,22 175:2
status 108:14
217:8
statute 149:8
150:14 160:22
161:18
statutes 10:20
stay 7:22 156:2
stayed 258:9
stead 82:5
steer 175:22
steering 176:1
stengel 224:14
step 19:17 22:16
35:3 145:19 152:9
220:3 233:18,18
233:18
steps 8:1,3 14:20
36:17 108:15
135:13 232:3,12
steve 2:7 158:12
158:18 162:16
164:7 168:16
178:13 184:6
185:16 186:6,8
198:3 209:16

steven 2:6 170:4
steve's 168:13
179:10
stick 111:14
142:20 143:13,16
153:9 204:22
236:8
stickland 113:2
stool 138:5
stop 150:2 175:20
217:2 220:7,10
stopping 7:2
150:10 175:21
stopple 123:13
stops 175:20
stories 218:6
straddling 98:10
straight 163:22
straightforward
24:12 54:2
strange 205:13
strategies 126:10
228:7
strategy 158:9
249:9,10 254:9
strawman 105:10
street 227:11
255:10
streets 49:16
street's 227:12
strickland 2:11
49:12,14 94:19
95:2,7 97:7,11
100:15 101:1
107:20 109:14,21
117:3,21 118:20
122:22
strickland's 94:19
strict 174:12
254:13
strike 74:5 222:19
strikes 71:8
string 254:15

stringent 255:22
strong 5:11 21:17
33:18 50:22 189:8
strongly 21:20
25:6 29:16 35:15
52:13 188:16
structure 48:5
100:17 161:1
164:1 176:15
177:16
structured 58:17
struggle 198:8
199:7
struggles 112:10
struggling 210:17
stuck 16:21
studied 141:17
study 18:11,15
44:4 228:5
stuff 179:1
style 13:16
stymie 224:20
subaru 19:8
subject 51:18
111:8 186:11
188:14
submission 26:15
submit 45:7 71:13
submitted 43:17
subsequent 111:8
249:5
subsetted 86:8
substance 225:4,7
substances 238:18
substantially
76:19
substantive
184:18
substitute 35:11
subtext 232:22
success 52:8 218:6
successful 102:20
135:17

sudden 195:17
sued 205:14,15
sufficient 11:1
  83:15 115:5 197:8
sufficiently 36:2,8
suggest 54:12
  55:17 240:22
suggested 24:7
  166:21
suggesting 35:5
  53:22 211:7
suggestion 18:18
  44:2
suggestions 13:12
  14:8 22:4
suggests 10:6
  18:15 33:8 43:13
suitably 26:2
suited 56:6
summary 44:7
summing 224:12
sunset 241:20
  242:3 243:6 244:8
  244:17 245:11,20
  246:4 248:7
  249:12,17
sunsets 241:3
  242:4 243:8
  244:11 245:16
super 156:13
superior 73:9
supplant 78:17
supplement 19:11
  190:17
supplemented
  11:7
supplier 31:21
suppliers 19:6
  27:16 28:1 162:9
  166:22 167:1
support 17:17
  18:19 20:17 33:14
  44:8 45:1 50:4
  62:12,13 90:9

231:14,22
supported 130:17
supportive 26:10
  129:12
supports 28:5
  44:2
suppose 235:1
sure 15:10 46:13
  81:1 86:7,18 88:3
  89:12 105:9,9
  113:12 114:11,14
  119:1 120:3
  123:12,17 130:6
  130:10 139:17
  146:6 155:9 170:2
  175:20 179:18
  182:15 191:11
  198:2 207:5
  236:16 249:3,15
  250:4
surgeons 213:19
surgery 213:15,16
  214:1,1
surprise 78:13
  126:1
surrounding 13:9
surveillance 204:5
  222:21 227:2
susceptible 225:20
  229:4
suspect 50:18 81:5
  90:15
sustainability
  19:21
sutcliffe 227:14
suture 214:2
swath 53:15
sweet 2:17 15:1
  88:13 89:4,10
  117:13 145:11
  153:17 185:6,11
  258:14
swiss 68:7

switched 216:8
system 6:16 22:16
  30:21,22 55:8
  80:21 97:2,5
  100:7 107:16
  111:22 115:1
  122:4,6 123:1,2
  152:16 154:15
  155:1 169:1 174:6
  176:11 179:18
  180:6 190:7
  232:18 245:1,7,9
  245:15 247:3,18
  249:20 255:21
systems 9:3 23:10
  27:18,21 29:7
  30:12 31:22 36:22
  37:3,13,18 55:7
  68:22 69:10 89:13
  93:21 97:4 108:14
  115:22 116:3
  121:12 135:16,20
  144:6 147:16
  158:16,17 187:11
  187:17,21 188:1,9
  188:11 190:2,21
  191:18 206:2
  237:11,21 240:3
  240:15 249:2
  254:22

t

t 3:1,1
table 15:8 153:5
tagged 99:17,19
tailor 242:19
takata 131:8
  142:3
takata's 142:4
take 9:11 14:22
  30:13 34:6 35:15
  36:18 44:17 49:3
  50:22 55:4 59:20
  79:3 85:19 89:22
  91:1 92:4 93:16

104:19 106:20
125:6,14 127:12
128:21 133:14
134:19 135:12
144:3 147:1
148:11 149:17
156:21 163:11
168:22 170:2
176:11,13 177:3,9
180:3 201:13
204:7 228:13,21
235:3 241:12
254:1,3 255:5,6
taken 12:16 19:17
  69:16 73:21 75:18
  75:20 76:16 83:12
  114:13 123:18
  157:1 259:3,9
takes 30:15 77:11
  148:19 154:4
  174:12 175:12
  241:13 257:1
talent 151:5 153:3
  153:4
talented 152:6
talk 46:8 60:12
  73:1,18 77:18
  91:18 94:15
  101:18 105:12,13
  118:2 125:10
  127:10 129:18
  130:6 132:1 163:3
  163:9 171:4
  177:14 192:4
  214:4 226:2
talked 48:2 72:1
  122:18 145:13
  148:20 150:22
  151:2 162:7 178:3
  183:8 191:13
  210:19 213:19
  218:13 235:18
  252:20 253:2

talking 70:4 75:22
  101:3,11 102:14
  105:7 107:14
  108:21 112:10
  151:18,19 152:14
  161:12 166:4
  170:11 171:9
  172:3 176:20
  177:5 179:1
  191:12 193:1
  197:8 207:16
  208:20,22 215:2
  215:19 218:15
  225:3 226:4
  229:21 230:16
  232:17,20,21
  234:2,5 246:21
  256:10
talks 123:3
tandem 39:22
  41:10
tap 186:4
targeted 137:22
targets 21:10,13
task 43:1 113:17
  224:9
tasks 103:17
taxi 138:3
teach 189:22
teaching 96:1
team 4:9,10 15:1
  158:21 258:13,13
tease 64:6 191:2
tech 84:19
technical 13:18
  15:20 16:11 34:18
  35:12 54:5 57:15
  77:1 164:19
  169:21 250:8
technically 139:19
techno 226:21
technologies 6:13
  7:4,5,13,19 10:18
  11:12 13:2 21:22

23:11 27:21 28:2
28:10,20 35:5,10
39:2 50:6 52:8
53:17 62:7 65:9
74:4 90:2 102:5
102:18 107:19
116:7 135:13
137:5,7 141:10
142:6 190:20
191:3 198:10
203:9,18,21
204:18 205:4
210:6 237:11
242:5 247:12,13
248:21 253:4
technology 12:3
19:14 21:15 26:5
29:3 33:3 38:20
39:21 40:18 41:10
44:16,19 45:3
48:16 49:21 52:3
64:13 65:12,14
71:1 73:2 76:2
77:19 78:2,3,11
81:9,10,11,22
85:8 95:16,21
102:12 108:5,7,8
108:11 110:7,13
112:15,18 123:13
138:20 139:1
140:12 156:3
158:14 161:3
163:18 167:19
172:22 174:16,17
174:19 190:10,12
191:1 195:21
196:4,4,13,22
197:4 199:9 200:9
200:11 203:5
205:9 207:9
209:20 212:9
215:11 216:5
218:20 223:1
225:13 226:22

227:5 230:3 242:7
242:18 247:21
technology's 76:9
123:8 235:20
telephones 133:20
tell 58:16 100:4,5
telling 230:19
tells 230:15
temperature
120:1
template 26:9
temporal 184:13
184:13,19
temporally 161:17
temporarily 23:20
temporary 138:19
ten 73:22 74:2
76:16
tenable 34:20
tended 237:9
term 20:8 26:1
39:12 40:15
102:15 114:11
138:19 245:4
termination 122:5
terms 43:6 44:14
46:12 48:10 92:10
92:11 101:10
110:18 114:9
155:13 161:10
168:7 170:8 171:7
171:15 173:14
178:9 184:3
187:20 204:11
208:2 218:14
219:1 233:11
235:18 245:2
tesla 27:10 57:9
202:16
test 5:19 21:14
22:21 23:4,6
29:12,22 30:6,7,9
30:11,20 31:4,9
32:6,11 72:5

113:19 114:10
165:16 166:9,16
169:4 173:9 176:5
178:16,18,19
180:3,3,7,8
181:20 182:3
206:15 228:20
229:2,5,8,12
235:4,6,14 236:3
236:7,12,15 237:2
237:5,18,19,22
238:6,6,19 239:2
239:3,5,13 252:11
254:8 255:5,6
256:5,12
testament 132:21
141:4
tested 29:8 30:2
34:14 44:9 72:5
173:5 255:7
testers 30:19
testified 126:18
testimony 126:20
166:15
testing 9:7 10:8
13:1 14:9 21:19
22:5,7,8,11,19
23:9,14 24:20
26:16 28:19 29:20
32:1,4 36:13 40:1
43:18 44:15 52:15
56:2 60:21 61:4
118:21 121:22
161:15 162:4
165:8,20 166:11
166:17 169:4,5
170:17,20 173:11
176:8 221:7 222:4
228:14,15 229:10
230:1 235:2
236:18,21 237:12
239:21 240:20
251:19 255:13

tests   72:6 78:1,8,9
  113:8 178:21
  235:13 237:8
  238:3 255:8
texas   50:16
text   7:1
thank   4:12 5:21
  12:9,12,13 18:21
  18:22 27:7,9
  32:13 37:21 38:4
  38:5 45:4,8 49:10
  49:11,14 52:18,21
  52:22 53:18 56:20
  58:1 70:13 71:17
  90:5,6 93:13 97:9
  97:11 103:1
  104:16,22 117:9
  124:5,11 125:8
  127:19 130:8,10
  132:7 134:13
  136:20 156:18,22
  160:19 185:3,12
  189:20 197:22
  198:3,3 208:18
  223:7 229:16,16
  234:22 240:18
  253:18 258:7,17
thanks   5:6 12:11
  32:20 44:21 56:22
  60:5 65:18 69:19
  76:12 83:5 92:19
  92:20 97:16,16
  124:12 127:19
  157:13 159:6
  228:10,11 250:10
  256:7 257:8,9,13
  257:15
that'll   125:4 180:1
  186:4
that's   4:7 6:3,21
  6:22 8:11 57:3
  61:2,7,9 65:8 69:8
  69:15 70:3 71:19
  72:17,22 76:5

77:19 78:13,14
  80:15 81:5 82:19
  82:22 85:14,15
  88:8 89:7,17,18
  92:10 96:6 97:9
  98:19 100:8 102:1
  104:5,13,15 106:6
  107:5,18 111:9
  113:19 114:7,17
  114:18 115:18
  116:4 118:2
  119:15 122:13,20
  134:20 135:5
  138:22 141:19
  142:5 143:11
  145:7,8 149:22
  150:3,11 152:5
  156:16 160:22
  162:18 164:16
  165:21 166:21
  168:3 170:9,12
  172:12,18 175:4
  178:10,13,16,21
  181:21 182:2,3,15
  196:6 197:21
  198:15 199:8
  200:4 201:8
  205:11,21 207:21
  209:15 210:8,12
  211:8 212:1
  214:13 215:10
  217:17 220:1
  221:5 230:15
  231:1 236:16,18
  238:8 243:8,19
  246:12,19 248:2,2
  249:11,14,21
  251:6 252:2 255:7
theirs   195:14
there's   6:19 15:18
  15:21 25:13 42:7
  67:18 68:5,8
  71:17 73:7 74:15
  75:11 77:8,11

81:1 82:9 83:18
  83:21 85:7 86:13
  90:18 92:1,16,17
  108:7 113:7,18
  116:18 121:10
  131:2 135:7 137:2
  140:19 148:3
  155:9,10 156:9
  159:12 161:16
  166:3,17 167:3,17
  192:12 194:21
  195:8 197:3
  198:22 200:20
  202:10 205:8
  207:14 210:5,14
  210:22 211:13
  219:9 222:8 231:2
  231:7 232:11
  233:19 236:17
  240:5 242:22
  245:5 246:5,12
  248:22 249:16
  253:12,13 256:20
they'd   88:11
they'll   121:11
  185:21
they're   15:6,17
  47:4 48:8 59:2
  61:6 72:8 78:3,20
  80:9 82:3 86:8,21
  90:4 112:22
  118:13 133:5
  145:5 147:18
  148:5 161:15
  163:18 166:9
  169:15 196:17,20
  200:6 201:22
  204:19 212:16
  213:11 225:20
  255:7
they've   71:18
  133:18 134:3
  179:21 204:17
  209:18 213:7

217:3
thierer   2:9 190:9
  190:18 198:2
  203:4 209:15
  214:20 217:13
thing   70:4 72:18
  76:5 81:18 85:1
  102:4 116:9
  119:14 121:9
  128:4 142:20
  146:7 151:3
  159:15 169:19
  174:14 178:2
  182:21 189:12
  191:22 194:14
  199:19 200:19
  201:8 205:5,11,21
  209:16 241:11
  245:16 248:16
things   49:4 60:14
  66:7 67:4 69:20
  73:17 77:13,20
  81:8,12 90:11,13
  92:17 93:12 98:21
  101:14,14 104:9
  104:10 110:5,21
  111:5 113:12
  116:21 120:4
  122:16 123:4
  130:5 131:1,11,16
  131:20 135:4,11
  137:9 141:7
  142:11 144:5
  146:16 151:2
  155:14,17 159:8
  159:13 170:20
  173:3,5 175:9
  177:6 181:19
  192:4,7,8,11
  197:11 199:2,12
  203:16 205:18
  206:21 210:4
  211:8 212:15,21
  215:11 219:1

221:15 224:13,17
225:15,17 226:1,6
229:3 238:4
240:12 244:7
250:2 257:12
think   26:16 39:7
47:10 48:12 49:9
55:16 59:19 61:12
63:8,16,16 64:1,2
64:7,19 65:10,21
69:22 70:8,15
71:7 73:6,12 74:1
74:9,10,15 75:1,4
75:8,10,18,19
77:13,16 78:6,14
78:19,19,20 79:9
80:1 81:16 83:3
83:17,21,21 84:1
84:4,11 85:1,13
85:14 86:3,4,11
87:3,5,15 89:6,22
91:17 92:20 96:6
96:19,22 97:2,22
100:19 101:3,16
101:16 102:1,8,20
103:14 104:3,3,13
104:16 105:2,2,3
105:4 107:21
108:13,20,20
109:2,4,4,17,18
109:22 110:6
111:12 112:13
113:2 114:7,17,18
116:6,9,15 118:22
118:22 120:1,7,12
120:19,21 121:3
123:2,11,14 124:2
125:13 128:11,22
129:9,18,20 130:2
130:11,14,20
131:2,7,20 132:1
132:5,9 133:13
134:8,21 135:1,11
135:16 136:5,17

136:22 137:2
138:21,22 139:18
139:21 140:3,15
140:17 141:7,8,12
142:7,16 143:2,18
144:19 145:9
146:8,11,15 147:4
148:3 149:3,11,21
150:6,10,12,19
151:8,21 152:8
153:1,3,11,15
154:8,16 155:17
155:20 156:8,16
156:17 159:17
160:3,5,6,18,20
162:16,21,22
163:6,12,17,22
164:3,8 165:11,14
165:14,19 167:8
167:17,21 168:8
168:13,18 169:19
170:12 171:1,3,11
172:1,12,14 173:2
173:13,16 175:10
177:13,14 179:11
179:15 180:5,9
181:14,21 182:5
182:12 183:11,18
186:14 187:4,20
188:16 190:19
191:13 193:9,10
195:22 196:5,11
197:2,3,5 198:6
201:9,22 202:9
203:7 205:21
207:12,14 208:3,8
209:5,16 210:22
211:15 212:8
213:8 214:3,14,21
215:1,14 221:5
222:16,16 224:13
225:2,18 226:9
228:17,18 230:3
231:5 232:1,1,12

234:3,14,15
235:22 236:7,11
236:13,16,17,19
237:5,7 238:5,8
239:17,19,19,22
240:10,18 241:6
241:11,20 242:17
243:2 244:12,21
245:5,7,11,17
246:16 247:10
248:1,7,7 249:8,9
249:10,20 251:6
251:18 252:18
253:2,7,14 254:20
254:21 255:12
257:11,12
thinking   60:14
61:12 80:11 82:17
84:1,16 98:19
110:2,3,4 150:20
156:12 161:21
171:17 178:14,15
185:3 208:2
239:18 246:18
248:3 253:11
255:3,12
third   68:13 115:19
124:13 127:21
170:22 214:11,16
thomas   2:4,8 17:4
38:1
thoreau   139:22
thou   200:1,16
201:20
thought   64:6
80:13 139:21
159:14 205:12
224:11 225:16
232:5
thoughtful   100:16
123:16 257:11
thoughts   64:6
83:12 130:9
150:14 236:10

255:18
thousands   5:14
52:3 220:18
thread   73:7
threat   209:20
threats   172:15,16
179:20,21
three   67:4 74:1
148:14 157:4,8
161:17 170:3
180:11 213:10
215:5,12 221:15
226:2 233:18
thrilled   157:14
160:20
thrive   245:8
throw   73:17
134:16
tickets   92:16
ticking   60:15
tie   103:19 175:8
175:11 214:1,1
tied   6:21
tier   167:1,1
tiered   154:9,15
155:1
tiering   156:9
tim   92:22 93:19
time   7:15,22 9:20
12:19 15:12 32:10
34:4 39:3 46:18
46:22 48:16 57:22
59:8,20 69:14
76:19 81:13 88:7
96:22 98:8 102:19
109:11 123:21
135:9,12,18
137:12 141:8,16
141:21 147:2
148:13,19 152:5,8
153:17 156:17
161:2 162:1
167:12,15,19
191:12 193:4

199:11 200:22
201:2 206:19
212:18 215:8
217:20 221:16
229:2 238:2
240:10 241:12
242:11,17 244:5,6
245:21 249:16
253:22 255:7
timeline 163:12
timely 50:11
  152:18
times 12:22 68:17
  69:17 140:21
  143:9 146:2 200:7
  201:11 241:18
timing 37:10
timothy 2:18 93:5
tire 126:17
tires 126:15
titled 43:8
titling 36:15
toast 156:5
today 5:7 8:4,13
  9:12 10:15 11:20
  12:9 14:16 15:4
  16:2 18:18 27:8
  32:20 38:15 53:21
  53:22 56:21 60:12
  94:15 106:1
  119:13 163:5
  164:12,21 165:5
  165:10 169:8
  170:9,11 174:22
  177:13 181:5
  182:2 195:19
  198:4,7 203:21
  204:9 205:6 215:9
  223:16 224:10
  228:10 235:19
  240:9 246:13
  257:11,18 258:10
today's 10:20
  12:21 13:5 58:8

told 246:1
tom 17:8 96:4,9
  97:20 105:5 117:4
tombstone 216:10
tomorrow 160:10
  160:17
tom's 105:6
tool 7:14 64:3 65:5
  74:11 128:20,20
  130:12,13 132:17
  136:14,15 138:13
  141:18 142:10
  148:21 155:8
  159:9 228:12
  231:6,7 233:10
  251:8
toolbox 130:12
  131:18 136:14,15
  151:2
toolkit 229:20
  234:14 252:19
tools 3:11,13
  10:15,16 11:1,8
  11:11,14 14:4,7
  57:19 58:13,21
  64:9,22 65:2 74:7
  77:4,5,8 81:15
  99:11,19 100:1
  105:19 131:17
  134:9,10 137:7
  145:20 148:20
  185:14 205:6
  214:9,15 223:10
  225:3,3,6,7 226:3
  226:5 231:11,13
  231:20 232:3
  249:5,5 250:14,15
  257:22
top 12:8 194:10
  199:22 247:9
topic 86:9 157:22
  186:11 190:16,17
  198:7 257:15

topics 60:15,16
  86:5 87:4 157:16
  186:12 203:5
tort 95:20 207:20
  208:2
torts 205:7
toss 136:20 144:17
  144:19 248:10
tossed 240:8
total 59:2 161:18
totally 201:17
touched 70:16
  110:9
tough 225:19
  228:20
toyota 19:7 126:15
  131:10 144:5
  154:1
toyota's 126:5
  144:3
track 169:5
  203:22
tracked 43:5
tracking 190:3
trade 19:4 84:13
  203:17
tradeoffs 215:16
  217:16 219:3
  240:7,14
traditional 9:16
  17:21 51:9 64:14
  81:15 124:8
  173:21 174:3
  199:1 201:21
  203:10 247:1
  248:12
traditionally
  199:3
traffic 4:5,20 7:8
  8:22 9:17 16:21
  17:22 21:1 23:21
  24:10,12 25:2
  30:16 50:1 51:10
  173:8 194:22

train 147:5 193:19
  202:5 209:6,6
  212:20 213:2,7
trained 30:8,12,15
  206:3
training 92:15
  177:7 193:18
transcriber 260:1
transcript 260:4
transform 6:15
transformation
  128:10
transformative
  143:2
transition 128:9
transparency
  52:19 197:19
transportation
  6:10,16 38:18
  50:17 62:1,4,7
  63:5 93:6 94:21
  95:9,17 125:17
  126:1 128:7 129:3
  129:4 151:16
  153:19 158:13,16
transportation's
  4:15
traveling 153:10
  163:14 171:10
treat 29:7 192:6
  254:9
tremendous 170:5
trend 103:12
trial 124:22
  201:16 218:1,4,8
  221:7
tribute 12:14
trolley 55:16
trouble 231:5
troubling 23:1
truck 137:18
  255:10
true 69:8 115:16
  117:22 212:22

259:6
truly   12:19 92:7
  101:2 149:6
trust   28:11 115:20
  116:3,3,5,6 122:7
  143:9 150:22
  166:4,9 235:19
trusting   239:20
try   59:15 90:14
  92:21 105:17
  128:8 130:3
  148:14 167:8,22
  169:13 173:22
  179:11 206:17,18
  216:22 217:18
  218:12 220:9
  222:22 225:17
  238:9 241:2
  246:15
trying   67:3 91:11
  97:18 103:5 109:7
  116:12 160:11
  163:19 169:16
  173:18 174:15
  177:15 181:22
  183:6 213:7
  222:18,19 230:14
  232:15 249:12
tune   30:21 91:11
turn   53:18 59:20
  65:19 84:12 108:3
  113:11 114:2
  157:12 176:1
  186:2 223:22
  233:7
turned   239:4
  244:3
turning   71:21
twice   67:18
two   8:13 22:16
  59:15 64:5 67:3
  80:16 81:12 103:4
  106:17 111:5
  120:11,13 129:14

148:4 156:4
159:11 161:17
163:1 165:20,22
213:1 233:18
236:17 237:15
243:5
type   48:21 72:7
  86:22 92:13 97:6
  98:6 99:21 100:11
  103:13 104:13
  117:16 123:1
  141:15,15,16,16
  230:3 242:11
types   43:9 46:19
  78:4 145:16
  186:19 192:12
  201:21 202:17
  207:5 209:1,12
  210:5 219:15
  222:13 230:2
typewriting   259:5
typically   215:4

u

u.s.   1:10 4:15 21:4
  63:3 169:20
uas   62:8 80:2
uc   158:14
uh   75:3
ultimate   91:5
ultimately   30:22
  65:7 81:18 101:3
  101:11 102:4
  107:21 108:10,20
  109:6 113:2,14,20
  114:2 118:20
  119:7 122:4
  123:11,15 131:3
  176:22 217:21
  234:17 244:9
  251:6
unable   115:21
  116:1 144:8
  235:15 256:5

unaffordable
  165:7
unbundle   210:13
uncertainty   22:12
  24:15 29:1 159:21
  241:2
unclear   20:1
uncomfortable
  212:2
underlying   27:5
  136:9 141:7 145:6
  147:20 230:3
  232:14 233:5,6
  257:2
underpants
  233:17
underpinning
  48:8
underpinnings
  47:12,14
understand   40:8
  86:20 103:8 116:1
  122:2 144:9 164:3
  186:20 189:3
  222:3 225:13
understanding
  35:4,8 47:3 48:10
  48:14 131:15
  136:10 143:22
  172:9 210:10
  233:16 251:2
understands   41:8
  181:10,11 200:18
understate   34:10
understood   14:1
  137:6 139:7
undertake   173:22
underway   251:12
unduly   33:15
unfortunately   6:5
  71:2 85:4 188:20
  223:16
unified   97:17

unilateral   149:18
  149:19
unintended   31:20
  126:16 240:21
union   32:16,18,18
  97:6
unique   103:3,6
unit   257:4
united   25:11
  48:21 53:10 95:8
  181:13 211:18
university   95:13
  189:16 190:3
  228:1
unknown   127:21
  197:3 201:13
  207:10
unlimited   241:15
unpredictability
  245:8
unregulated
  146:10
unsafe   138:14
untold   7:3
unwilling   136:18
update   20:5 164:2
  186:20 191:15
  192:15 193:15,20
  194:11 201:2
  207:2 217:12
updated   39:9
  204:19
updates   58:22
  99:1 116:22
  185:15 186:12,15
  191:7 192:13
  194:2,18,19 195:3
  195:10 201:2,5,6
  201:6 202:8,13,20
  206:4 207:3,5,16
  209:1,10,21
  214:15,18 219:15
  222:20

version 35:19
  109:14
versions 105:15
versus 85:10
  110:4 209:13
  210:14
veto 98:14
vi 3:13
view 7:14 12:5
  69:5 77:2 81:16
  108:18 144:12
  182:17 188:13
views 63:9 83:10
violate 23:20
  54:19 68:4
violation 132:14
  133:11
violations 42:19
  54:6
violative 119:11
  150:9
virginia 1:12
  259:18
virtually 16:3
  172:18 173:8
visibility 55:17
vision 115:6,8
visions 111:18
volkswagen
  117:20
volume 184:14,20
voluntary 28:15
  28:18 33:22 37:19
  45:6 67:8,16
  68:14 70:6,7,10
  71:6,9,10 73:8,9
  75:11 77:4 79:2
  82:14 90:19 134:1
  145:17 146:21,22
  196:19,20
volunteers 59:11
vulnerable 172:7
  178:4,22

w

walker 2:19 95:11
wallace 2:7 32:15
  32:17,18
want 12:13 14:22
  46:13 58:5 59:9
  77:14 78:1,9
  86:18 89:12,17
  90:17 93:4 96:19
  97:1 99:13 107:15
  115:21 117:11
  119:14 121:7
  124:21 128:6
  142:22 150:2,3,4
  160:1 163:17,18
  165:11 170:2
  171:20 175:11
  176:13,14 184:8
  184:10,12,12,14
  194:10,11,14
  198:1 204:22
  208:10 220:3,7
  223:14,21 233:4
  244:10 249:6
  258:7
wanted 4:12 16:11
  105:4 128:2
  129:15 150:20
  156:18 159:8
  178:2 207:8
  234:12 245:18
  250:11
warn 33:11
warned 195:15
warning 141:20
washington 96:9
wasn't 208:1
wasted 71:18
wasting 244:10
watching 16:3
  135:14 147:5
way 5:6 12:8 24:9
  27:19 29:18 47:13
  48:4 57:20 61:12

69:8 72:3 82:16
  96:21 97:18 101:4
  105:15,20 106:1
  108:12 111:20
  112:7 113:18
  114:16 116:2
  117:11 121:18
  135:7,11 136:17
  148:10 151:17
  153:1 155:3 162:6
  164:3 166:3,10
  167:9,22 173:10
  177:1 178:10
  180:8 188:2
  194:22 195:19
  199:10 205:8
  223:1 224:8
  229:13 231:2,21
  235:3 236:4 240:6
  244:9,16 246:10
  251:14 255:8
  256:4
ways 11:5 16:5
  100:8 105:21
  106:13 107:6
  111:14 118:17
  122:9,19 123:9
  140:2 162:7
  165:20 173:6
  188:5 239:20
  241:9 245:14
wayside 67:3
weather 4:5
web 89:5
webcasted 16:2
website 190:3
week 50:16 118:15
weigh 65:4
welcome 3:3 5:22
  16:3 19:9 56:21
  58:5,5 60:9
  158:10,18
went 117:21
  124:10 134:2

144:10 157:2
  211:11 219:2
  239:9
weren't 58:6,13
west 78:21
western 227:12
we'd 235:16
  243:20,21
we'll 15:19 59:15
  60:9 63:8 65:19
  76:14 109:4 130:6
  158:1 160:5
  168:17 179:12
  200:21 225:17
  227:21 249:19
  254:1 258:2,4
we're 4:3,14 5:5
  8:3,11,13 12:1,10
  13:6 16:7 19:4
  45:14 47:6 49:4,7
  53:22 57:21 58:3
  58:4,11,16,17
  59:4,14 60:12
  61:7,8 62:9 67:13
  67:15 70:4 72:19
  74:5 75:8,22
  80:11 81:14 82:19
  82:20 85:18,19
  86:11 87:9,10,15
  89:18 98:20
  103:14 107:14
  109:6 110:1
  111:12 116:13,17
  116:18 117:7,7
  121:15,16 124:2
  124:13 125:1,10
  127:10 130:13,22
  132:1 135:19
  136:6,11 142:1,6
  143:18 144:15,17
  145:9 147:7
  151:18,19,20
  152:14,19 153:12
  156:17,20 157:3,7

160:8 161:9,12,19
161:21 162:1,2,12
163:12 167:1
170:11 172:3,5
173:16,20 174:13
176:20 177:5,15
178:8 181:2,12
182:2 186:6 196:3
197:8,9 198:6,13
200:14 201:15
203:7 206:2,11,14
207:16 211:17,21
211:22 212:8
215:17,22 217:1
221:17 222:1
223:5 225:2 226:4
226:13 229:21
230:16 232:15,17
232:20,21 234:2,4
238:4,11 240:16
241:1 243:12
246:12,21 248:19
250:10 251:22
we've 5:10 8:4,5
22:14 45:21 46:20
47:11 53:7 66:20
70:5,20 72:10
73:7 79:4 85:4
96:16 102:19
105:18 106:11
115:15 117:10
118:11 130:21
135:6,7,8,14
141:17 147:4
150:22 151:1,3
154:16,18 157:6
166:4 171:1,11
178:3 182:11
183:8 191:13
200:7 203:15
204:10 206:13
221:4,4 225:21
231:17 235:18
238:2 240:19

242:12 251:18
253:12
whatsoever 79:1,9
what's 46:16
81:14 86:10 91:15
116:13,13 121:15
183:14 184:3
201:11 204:5
213:20 221:19
247:11 248:3,12
251:6
wheel 7:1
wherewithal
130:18
white 55:13
whoop 64:2
who's 66:12
118:12 158:2
177:8 227:5
230:13
who've 84:19
wide 8:10 27:20
126:14 138:8
190:20
wider 146:10
wild 78:21
wiliams 224:5
william 2:7 32:15
32:17
williams 2:2 4:2,8
12:12 18:22 27:9
27:9 32:15 38:1,6
45:9 49:11 52:22
57:1,9,10,11 58:3
60:6 93:3,16
124:12,19,21
156:20 157:2
217:4 224:8
253:20 254:3,6
257:16 258:13
willing 15:6
250:22
willliams 223:5

wilson 1:11
wireless 59:18
wisdom 218:3
wisely 129:9
wish 52:12 64:19
224:3
women's 15:18
wonder 191:5
won't 179:13,13
183:15
wood 2:7 185:16
186:8,9 189:14
190:9 191:5
195:12 197:22
202:2 205:20
207:7 208:18
212:3 222:7
word 7:20 143:9
203:6
worded 31:11
words 186:3
189:19 245:18
work 5:15,16 16:5
25:7 28:9 33:1
37:7,21 39:1,21
44:8 45:1 47:3,4
52:18 58:15 70:10
75:11 97:2 105:4
110:7 121:13
126:12 128:4
138:12 143:15
151:13 152:13
170:5 175:3 183:9
187:21 190:6
194:22 201:22
210:16 221:22
234:15 243:9
workable 70:9
234:15
worked 66:15
73:1 95:3 102:19
109:19 126:14
174:17

working 6:11 12:7
28:12 38:16 39:16
41:10 52:11,20
53:13 60:5,8
61:10 96:21
126:11 141:19
143:7,14 159:3
190:1
workload 99:18
works 100:20
110:6 227:7
233:14,16
workshop 8:8
198:5 199:15
workshops 8:6
52:20 199:13
world 7:6 31:1
32:1 66:19 99:3
151:15 153:6
198:13 200:3,4
202:1 210:10
211:14,20 217:16
218:10 219:4,5
235:15,17 247:8
worlds 191:4
198:9
world's 7:10
worried 110:22
233:2
worries 233:9
worry 33:9 115:12
239:19
worrying 154:22
worse 4:6 6:6
worst 92:3 217:20
worth 76:5 115:18
159:14 183:1,17
worthwhile
197:16
worthy 122:7
wouldn't 133:3
138:18 188:10
wound 214:2

wriggle 183:14	187:9 189:11	**yvonne** 2:15
write 59:11 120:9	198:16 213:8,10	
190:18	213:17 215:5,8,13	
writing 5:10 188:3	239:12 241:5	
227:17	247:2 249:18	
written 19:11,22	**yep** 125:4	
24:17 161:1,3,5	**yesterday** 195:19	
175:7 190:15	**yield** 54:21	
211:16	**yoon** 2:3 157:11	
wrong 49:2 104:5	157:13 162:16	
121:7 211:11	164:7 165:11	
221:1 250:20	167:6 168:3 170:1	
wrote 113:8	171:13 173:13	
x	175:1 176:13	
	178:13 182:5	
x 109:10 245:21	184:9 185:3,10	
y	**young** 222:15	
yeah 57:10 64:1	**you'd** 103:2 139:5	
77:6 79:12 83:20	148:19 188:11	
89:9 93:16 100:22	**you'll** 14:12 60:18	
101:1 109:19	125:3 186:4 254:3	
114:19 117:5,21	**you're** 5:22 16:15	
142:15 145:8	57:11 66:3 76:9	
149:10 164:7,8	93:17 101:3 105:7	
165:11 168:3	110:10,22 113:3	
177:20 252:16	125:7 131:3 137:5	
254:19 256:8	137:11 141:9	
year 4:17 6:8	150:1,6 152:10,13	
14:18 67:18 99:1	156:4,5 163:19	
102:7 141:3	171:17 179:7	
159:11,11 165:1	183:20 184:5,15	
215:20 218:18,18	186:3 189:2	
243:6 258:18	193:14,14 201:4,5	
years 5:9 8:15	206:5,6,6,12	
52:21 53:8 70:20	212:14 218:16	
73:1,22,22 74:2	221:11,13,14	
76:16,17 77:18	231:5 250:13	
95:8 107:17	**you've** 14:15	
132:18,20 134:6	83:12 92:22	
135:2 144:4	117:12 129:10	
147:10 148:14	163:7 175:17	
156:4 159:5	190:15 203:5	
161:17,17,18	212:19,20 213:15	
169:16 175:15	235:17 244:1	